### AGENDA

**Standards Council Meeting**  
Hotel Republic San Diego  
481 West B Street  
San Diego, California 92101  
(619)398-3100

**April 11-13, 2022**

| 22-4-1 | Report of the Committee Membership Task Group (J. Quiter, Chair). |
| 22-4-1-a | Act on the Annual Non-Reappointments. No Attachment |
| 22-4-1-b | Act on pending applications for Committee Members. No Attachment |
| 22-4-1-c | Consider the request of American Fire Alarm Association, Inc., for reconsideration of AFAA applicants to the Correlating Committee on Safety to Life (SAF-AAC). No Attachment. |
| 22-4-1-d | Consideration of information requested by Council at the December 2021 meeting regarding the business and financial relationship among members of the Technical Committee on Portable Fire Extinguishers and their respective organizations. The request of Council was in response to an NFPA Board Subcommittee’s directive for prompt review of the Technical Committee’s membership and to make changes that the Council deemed appropriate. No Attachment. |
| 22-4-1-e | Review of Multi-Representative policy and status on NFPA committees. No Attachment. |

| 22-4-2 | Report of the Policy and Procedures Task Group (J. Foisel, Chair). No Attachment |

| 22-4-3 | Report of the Awards Task Group (J. Golinveaux, Chair). No Attachment |

| 22-4-4 | Report of the December 2021 Minutes. No Attachment |

### TENTATIVE INTERIM AMENDMENTS (TIA)

| 22-4-5 | Act on the issuance of proposed Tentative Interim Amendment No. 1631 to revise Section 28.11.1.7 of the 2021 and proposed 2024 editions of NFPA 30, *Flammable and Combustible Liquids Code*. |
| 22-4-5-a | Text of proposed TIA No. 1631. See Attachment 22-4-5-a |
| 22-4-5-b | Ballot results of TIA No. 1631. FAILED TC ballot on technical merit but PASSED on emergency nature—28 voting members/19 agree on technical merit/7 disagree/0 abstained/2 ballots not returned/20 agree on emergency nature/6 disagree/0 abstained/2 ballots not returned. PASSED CC ballot on correlation but FAILED emergency nature—14 voting members/7 agree on correlation/1 disagrees/1 abstained/5 ballots not returned/3 agree on emergency nature/5 disagree/1 abstained/5 ballots not returned. See Attachment 22-4-5-b |

**Posted:** April 4, 2022  
**Standards Council Agenda April 11-13, 2022**  
**Page 1 of 273**
| 22-4-5-c | No comments were received. No Attachment. |
| 22-4-6 NFPA 30A | Act on the issuance of proposed Tentative Interim Amendment No. 1621 to revise and add new Sections (as indicated) 1.1.3(new), 1.2, 2.2, 2.4, 3.3.7(new) through 3.3.10(new), 3.3.16(new), 3.3.20(new), Chapter 15(new), D.1.1, and D.1.2.7 to the 2021 edition of NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*. |
| 22-4-6-a | Text of proposed TIA No. 1621. See Attachment 22-4-6-a |
| 22-4-6-b | Ballot results of TIA No. 1621. FAILED TC ballot on both technical merit and emergency nature – 34 voting members/19 agree on technical merit/11 disagree/1 abstained/3 ballots not returned/20 agree on emergency nature/11 disagree/0 abstained/3 ballots not returned. See Attachment 22-4-6-b |
| 22-4-6-c | Sixteen comments were received. See Attachment 22-4-6-c |
| 22-4-7 NFPA 70 | Act on the issuance of proposed Tentative Interim Amendment No. 1616 to revise Article 100, Part III, and various sections in Articles 500, 503 and 506 of the 2020 edition of NFPA 70, *National Electrical Code®*. |
| 22-4-7-a | Text of proposed TIA No. 1616. See Attachment 22-4-7-a |
| 22-4-7-b | Ballot results of TIA No. 1616. PASSED TC ballot on both technical merit and emergency nature – 19 voting members/16 agree on technical merit/0 disagree/0 abstained/3 ballots not returned/16 agree on emergency nature/0 disagree/0 abstained/3 ballots not returned. PASSED CC ballot on correlation and emergency nature – 12 voting members/10 agree on correlation/1 disagree/0 abstained/1 ballot not returned/11 agree on emergency nature/0 disagree/0 abstained/1 ballot not returned. See Attachment 22-4-7-b |
| 22-4-7-c | No comments were received. No Attachment |
| 22-4-8 NFPA 70 | Act on the issuance of proposed Tentative Interim Amendment No. 1617 to revise Articles 100 (Ignitable Fibers/Flyings), 506.5, and 506.9(B) of the 2023 edition of NFPA 70, *National Electrical Code®*. |
| 22-4-8-a | Text of proposed TIA No. 1617. See Attachment 22-4-8-a |
| 22-4-8-b | Ballot results of TIA No. 1617. PASSED TC ballot on both technical merit and emergency nature – 19 voting members/16 agree on technical merit/0 disagree/0 abstained/3 ballots not returned/16 agree on emergency nature/0 disagree/0 abstained/3 ballots not returned. PASSED CC ballot on correlation and emergency nature – 12 voting members/10 agree on correlation/1 disagree/0 abstained/1 ballot not returned/11 agree on emergency nature/0 disagree/0 abstained/1 ballot not returned. See Attachment 22-4-8-b |
| 22-48-8-c | No comments were received. No Attachment |
| 22-4-9 NFPA 130 | Act on the issuance of proposed Tentative Interim Amendment No. 1623 to revise Section 8.4.1.16 of the 2020 edition of NFPA 130, *Standard for Fixed Guideway Transit and Passenger Rail Systems*. |
| 22-4-9-a | Text of proposed TIA No. 1623.  
See Attachment 22-4-9-a |
|----------|-------------------------------------------------|
| 22-4-9-b | Ballot results of TIA No. 1623. **PASSED** TC ballot on both technical merit and emergency nature – 29 voting members/23 agree on technical merit/0 disagree/0 abstained/6 ballots not returned/22 agree on emergency nature/1 disagree/0 abstained/6 ballots not returned.  
See Attachment 22-4-9-b |
| 22-4-9-c | One comment was received.  See Attachment 22-4-9-c |
| **22-4-10** | Act on the issuance of proposed Tentative Interim Amendment No. 1618 to revise Sections A.3.3.38 (2019 edition) and A.3.3.44 (2022 edition) of the 2019 and 2022 editions respectively of NFPA 484, *Standard for Combustible Metals*. |
| **NFPA 484** | |
| 22-4-10-a | Text of proposed TIA No. 1618.  
See Attachment 22-4-10-a |
| 22-4-10-b | Ballot results of TIA No. 1618. **PASSED** TC ballot on both technical merit and emergency nature – 35 voting members/25 agree on technical merit/1 disagree/1 abstained/8 ballots not returned/25 agree on emergency nature/2 disagree/0 abstained/8 ballots not returned.  
**PASSED** CC ballot on correlation and emergency nature – 15 voting members/10 agree on correlation/1 disagree/0 abstained/4 ballots not returned/10 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned.  
See Attachment 22-4-10-b |
| 22-4-10-c | No comments were received.  No Attachment |
| **22-4-11** | Act on the issuance of proposed Tentative Interim Amendment No. 1619 to revise and add new Sections (as indicated) 1.3.3(new), A.1.3.3, 2.4, 3.3.6, A.3.3.6, various new definitions in 3.3, 8.4.2.2, 8.4.2.6.2 item (4), 9.4.6, A.3.3.8, A.9.4.7.4.6 and D.1.2.8 of the 2019 edition of NFPA 652, *Standard on the Fundamentals of Combustible Dust*. |
| **NFPA 652** | |
| 22-4-11-a | Text of proposed TIA No. 1619.  
See Attachment 22-4-11-a |
| 22-4-11-b | Ballot results of TIA No. 1619. **PASSED** TC ballot on both technical merit and emergency nature – 38 voting members/26 agree on technical merit/3 disagree/1 abstained/8 ballots not returned/27 agree on emergency nature/3 disagree/0 abstained/8 ballots not returned.  
**PASSED** CC ballot on correlation and emergency nature – 15 voting members/10 agree on correlation/1 disagree/0 abstained/4 ballots not returned/10 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned.  
See Attachment 22-4-11-b |
| 22-4-11-c | No comments were received.  No Attachment |
| **22-4-12** | Act on the issuance of proposed Tentative Interim Amendment No. 1620 to revise and add new Sections (as indicated) 1.4.2(new), A.1.4.2(new), 2.4, 3.3.7, A.3.3.7, various new definitions in 3.3, 8.4.3.7 thru 8.4.3.9, 9.3.13.1.1.2(4)(e) and Annex, 9.4.2, A.9.4.2.2, Table A.9.4.2.2, A.3.3.8, A.9.3.12.2.1, A.9.4.3.6.6, A.9.4.8.2, G.1.2.6, and G.3 of the 2020 edition of NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*. |
| **NFPA 654** | |
| 22-4-12-a | |
| 22-4-12-a | Text of proposed TIA No. 1620.  
See Attachment 22-4-12-a |
|-------------|------------------------------------------------------------------|
| 22-4-12-b | Ballot results of TIA No. 1620. **PASSED** TC ballot on both technical merit and emergency nature – 36 voting members/25 agree on technical merit/3 disagree/1 abstained/7 ballots not returned/25 agree on emergency nature/3 disagree/1 abstained/7 ballots not returned. **PASSED** CC ballot on correlation and emergency nature – 15 voting members/10 agree on correlation/1 disagree/0 abstained/4 ballots not returned/10 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned.  
See Attachment 22-4-12-b |
| 22-4-12-c | No comments were received. No Attachment |
**See Attachment 22-4-13-a** |
| 22-4-13-a | Text of proposed TIA No. 1622.  
See Attachment 22-4-13-a |
| 22-4-13-b | Ballot results of TIA No. 1622. **PASSED** TC ballot on both technical merit and emergency nature – 24 voting members/16 agree on technical merit/0 disagree/0 abstained/5 ballots not returned/18 agree on emergency nature/0 disagree/0 abstained/5 ballots not returned. **PASSED** CC ballot on correlation and emergency nature – 27 voting members/16 agree on correlation/0 disagree/0 abstained/11 ballots not returned/16 agree on emergency nature/0 disagree/0 abstained/11 ballots not returned.  
See Attachment 22-4-13-b |
| 22-4-13-c | No comments were received. No Attachment |
| **22-4-14** | Act on the issuance of proposed Tentative Interim Amendment No. 1629 to revise Section 5.3.3.2, 5.1.5.4.5, 7.1.8.1, 7.3.2, 7.3.3, 8.3.1.2 and 8.5.3.8 of the 2022 edition of NFPA 1990, *Standards for Protective Ensembles for Hazardous Material and Emergency Medical Operations*.  
See **Attachment 22-4-14-a** |
| 22-4-14-a | Text of proposed TIA No. 1629.  
See Attachment 22-4-14-a |
| 22-4-14-b | Ballot results of TIA No. 1629. **PASSED** TC ballot on both technical merit and emergency nature – 33 voting members/25 agree on technical merit/0 disagree/0 abstained/8 ballots not returned/25 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned. **PASSED** CC ballot on correlation and emergency nature – 27 voting members/18 agree on correlation/0 disagree/0 abstained/9 ballots not returned/18 agree on emergency nature/0 disagree/0 abstained/9 ballots not returned.  
See Attachment 22-4-14-b |
| 22-4-14-c | No comments were received. No Attachment |
| **22-4-15** | Act on the issuance of proposed Tentative Interim Amendment No. 1630 to revise Table 5.2.3.1.2(b), Table 5.4.3.2(b), 7.2.2, 7.4.2, 7.4.3, 8.3.1.1.4.2, 8.3.1.2.8, and Table A.8.3.1.2.6.1(a) of the 2022 edition of NFPA 1990, *Standards for Protective Ensembles for Hazardous Material and Emergency Medical Operations*.  
**See Attachment 22-4-15-a** |
| 22-4-15-a | Text of proposed TIA No. 1630.  

*Posted: April 4, 2022*  
*Standards Council Agenda April 11-13, 2022*  
*Page 4 of 273*
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Result</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-4-15</td>
<td>Ballot results of TIA No. 1630. <strong>PASSED</strong> TC ballot on both technical merit and emergency nature – 33 voting members/25 agree on technical merit/0 disagree/0 abstained/8 ballots not returned/25 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned. <strong>PASSED</strong> CC ballot on correlation and emergency nature – 27 voting members/18 agree on correlation/0 disagree/0 abstained/9 ballots not returned/18 agree on emergency nature/0 disagree/0 abstained/9 ballots not returned.</td>
<td>See Attachment 22-4-15-b</td>
<td></td>
</tr>
<tr>
<td>22-4-15</td>
<td>No Comments were received. No Attachment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-4-16</td>
<td>Act on the issuance of proposed Tentative Interim Amendment No. 1627 to revise and add new Sections (as indicated) 7.1.2, 7.1.2.4(new), 7.1.2.5(new), and 7.1.3 of the proposed 2023 edition of NFPA 2112, <em>Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire</em>.</td>
<td><strong>PASSED</strong> TC ballot on both technical merit and emergency nature – 19 voting members/15 agree on technical merit/2 disagree/0 abstained/2 ballots not returned/15 agree on emergency nature/2 disagree/0 abstained/2 ballots not returned.</td>
<td>See Attachment 22-4-16-b</td>
</tr>
<tr>
<td>22-4-16</td>
<td>No comments were received. No Attachment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-4-17</td>
<td>Act on the issuance of proposed Tentative Interim Amendment No. 1624 to revise Sections 24.2.9 and 24.2.10 of the 2022 edition of NFPA 2500, <em>Standards for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services</em>.</td>
<td><strong>PASSED</strong> TC ballot on both technical merit and emergency nature – 27 voting members/19 agree on technical merit/0 disagree/0 abstained/8 ballots not returned/19 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned. <strong>PASSED</strong> CC ballot on correlation and emergency nature – 27 voting members/16 agree on correlation/0 disagree/0 abstained/11 ballots not returned/16 agree on emergency nature/0 disagree/0 abstained/11 ballots not returned.</td>
<td>See Attachment 22-4-17-b</td>
</tr>
<tr>
<td>22-4-17</td>
<td>No comments were received. No Attachment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-4-18</td>
<td>Act on the issuance of proposed Tentative Interim Amendment No. 1625 to revise Sections 27.14.1 and 27.14.2 of the 2022 edition of NFPA 2500, <em>Standards for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services</em>.</td>
<td><strong>PASSED</strong> TC ballot on both technical merit and emergency nature – 27 voting members/19 agree on technical merit/0 disagree/0 abstained/8 ballots not returned/19 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned.</td>
<td>See Attachment 22-4-18-a</td>
</tr>
<tr>
<td>22-4-18</td>
<td>No Comments were received. No Attachment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Ballot results of TIA No. 1625

- **PASSED** TC ballot on both technical merit and emergency nature – 27 voting members/19 agree on technical merit/0 disagree/0 abstained/8 ballots not returned/19 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned. **PASSED** CC ballot on correlation and emergency nature – 27 voting members/16 agree on correlation/0 disagree/0 abstained/11 ballots not returned/16 agree on emergency nature/0 disagree/0 abstained/11 ballots not returned.

See Attachment 22-4-18-b

---

### 22-4-18-c

No comments were received. No Attachment

---

### 22-4-19

Act on the issuance of proposed Tentative Interim Amendment No. 1626 to revise and add new Sections (as indicated) 27.4.3, 27.4.3.1(new), 27.5.3, 27.5.3.1(new) and A.27.2.3 of the 2022 edition of NFPA 2500, *Standards for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services*.

---

### 22-4-19-a

Text of proposed TIA No. 1626.

See Attachment 22-4-19-a

---

### 22-4-19-b

Ballot results of TIA No. 1626. **PASSED** TC ballot on both technical merit and emergency nature – 27 voting members/19 agree on technical merit/0 disagree/0 abstained/8 ballots not returned/19 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned. **PASSED** CC ballot on correlation and emergency nature – 27 voting members/16 agree on correlation/0 disagree/0 abstained/11 ballots not returned/16 agree on emergency nature/0 disagree/0 abstained/11 ballots not returned.

See Attachment 22-4-19-b

---

### 22-4-19-c

No comments were received. No Attachment

---

### GENERAL BUSINESS

#### 22-4-20

Consider the request of Timothy Windey to process Tentative Interim Amendment (TIA) No. 1632 to add new paragraph 700.10(B)(5)(e) to the 2017 edition of NFPA 70, *National Electrical Code®*.

**Note:** The text of proposed TIA No. 1632 is identical to a TIA currently being processed on the 2020 edition of the National Electrical Code® and a revision proposed for the 2023 edition.

See Attachment 22-4-20

---

#### 22-4-21


**Note:** The text of proposed TIA No. 1641 is identical to a TIA currently being processed on the 2022 edition of NFPA 13, *Standard for the Installation of Sprinkler Systems*.

See Attachment 22-4-21

---

#### 22-4-22

Consider the request of Wes Baker, FM Global, to process Tentative Interim Amendment (TIA) No. 1633 proposing revisions to Figure 25.8.2.4(b) in the 2019 edition of NFPA 13, *Standard for the Installation of Sprinkler Systems*.

**Note:** There is no other TIA on this section for the current edition being proposed.

See Attachment 22-4-22
Consider the request of Dave Christian, Gentex Corporation, to process Tentative Interim Amendment (TIA) No. 1642 proposing revisions to Section 29.11.3.4(6) in the 2019 edition of NFPA 72®, National Fire Alarm and Signaling Code®.

Note: The text of this proposed TIA addresses the same effective dates for UL217 and UL 268 as a TIA that is currently being processed on the 2022 edition of NFPA 72®, National Fire Alarm and Signaling Code®.

See Attachment 22-4-23

Review of the current ANSI patent policy and commercial terms and conditions.

See Attachment 22-4-24

REVISION CYCLES

Consider the request of the Emergency Response and Responder Safety (ERRS) Division to approve the custom revision cycles for ERRS Group 4 and ERRS Group 5.

See Attachment 22-4-25 and related item 22-4-29

Consider requests to change the respective revision schedules as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>2020</td>
<td>PI Closing: January 7, 2025</td>
</tr>
</tbody>
</table>

See Attachment 22-4-26

Consider the request of Chris Creamer, et al, to change consolidated new standard NFPA 1225, Standard for Emergency Services Communications, from a 5-year to a 3-year revision cycle.

See Attachment 22-4-27

SCOPES

Consider the request of the Chairs of the Technical Committee on Hydrogen Technology (HYD-AAA) and the Technical Committee on Industrial and Medical Gases (IMG-AAA) to approve the proposed revised committee scopes as follows for clarity of responsibilities:

**HYD-AAA (NFPA 2)**
This committee shall have primary responsibility and for documents on the storage, transfer, production, and use of hydrogen. The use of hydrogen would include includes stationary, portable, and vehicular applications. This Committee shall be referred to by the Technical Committee on Industrial and Medical Gases for any material on gaseous and liquid hydrogen storage and use.

**IMG-AAA (NFPA 55)**
This Committee shall have primary responsibility for documents on the storage, transfer, and use of industrial gases. Included are the storage and handling of such gases in their gaseous or liquid phases; the installation of associated storage, piping, and distribution equipment; and operating practices. The Committee also has a technical responsibility for contributions in the same areas for medical gases and clean rooms. The Committee shall coordinate the defer to the Technical Committee on Hydrogen...
## REPORTS BACK TO COUNCIL

### 22-4-29
Consider the request of the Emergency Response and Responder Safety (ERRS) Division for the Standards Council to amend its decision on agenda item 20-12-29 and direct that NFPA 901, 950, 951 and 1401 enter into their next revision cycle without being consolidated. If this request is approved by the Standards Council, NFPA 901, 950, 951 and 1401 will each open for Public Input and proceed through the NFPA standards development process. 

There is no request to amend the revision schedule, therefore the standards will follow the ERRS Group 5 custom schedule.

See Attachment 22-4-29 and related item 22-4-25

### 22-4-30

See Attachment 22-4-30

### 22-4-31

See Attachment 22-4-31

## GENERAL ITEMS

### 22-4-32
The Council to review and approve the dates of upcoming Council meetings:

- **August 10-12, 2022**
  - Quincy, Massachusetts

- **December 2022**
  - Date and Location to be determined

- **April 2023**
  - Date and Location to be determined

### 22-4-33
Update from the Council Secretary.

No Attachment.
NFPA 30-2021 and Proposed 2024 Editions
Flammable and Combustible Liquids Code
TIA Log No.: 1631
Reference: 28.11.1.7
Comment Closing Date: March 7, 2022
Submitter: Paul Sundby, American Environmental Aviation
www.nfpa.org/30

Wording for both 2021 and Proposed 2024 editions:

1. Revise paragraph 28.11.1.7 to read as follows:

28.11.1.7 When bottom loading a tank vehicle, a positive means shall be provided for loading a predetermined quantity of liquid, together with a secondary automatic shutoff control to prevent overfill. When bottom loading a tank vehicle, a positive means of preventing overfill shall be provided and meet one of the following requirements:

   (1) The means shall load a predetermined quantity of liquid with a secondary automatic shutoff control.

   (2) The means shall be primary and secondary overfill protection combined with a metering system.

Substantiation: Section 28.11.1.7 addresses the filling of transports and other tank vehicles that do not have any type of overfill protection other than an electronic overfill (like a Scully device) system. In this case, a preset on a meter makes sense. However, on an aviation refueler, there is a “jet level sensor” designed to keep from over filling a refueler tank. A jet level sensor, when combined with an electronic overfill system (similar to a Scully System) are combined, it should be sufficient to prevent the overfilling a refueler. Also, when a refueler comes back to the rack to be filled, the tanks are not completely empty and the practice of sticking the tanks or inspecting the fuel level before filling is not common practice. Therefore, having a pre-set number would be a guess and could actually lead to overfilling a refueler.

Inspectors are utilizing NFPA 30 information for guides for inspections at aviation fuel farms and read 28.11.1.7 as the fuel farm should have presets on the meters. 98% of the aviation fuel farms in this country do not have pre-set. The emergency nature of this TIA is to correct this code to provide operators and inspectors a clean, practical method to refill refuelers.

Emergency Nature: The standard contains an error or an omission that was overlooked during the regular revision process. The proposed TIA intends to correct a circumstance in which the revised NFPA Standards has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.

Inspectors are utilizing NFPA 30 information for guides for inspections at aviation fuel farms and read 28.11.1.7 as the fuel farm should have presets on the meters. 98% of the aviation fuel farms in this country do not have pre-set. The emergency nature of this TIA is to correct this code to provide operators and inspectors a clean, practical method to refill refuelers.
MEMORANDUM

TO: Technical Committee on Operations (FLC-OPS)
FROM: Kristi Smith, Committee Administrator
DATE: March 14, 2022
SUBJECT: NFPA 30 Proposed TIA No. 1631 FINAL TC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(a) in the NFPA Regs, the final results show this TIA HAS NOT achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

28 Eligible to Vote
2 Not Returned (Cosey, Schaffhauser)

**Technical Merit:**
- 0 Abstentions
- 19 Agree (LeBlanc, Riegel)
- 7 Disagree (Blackford, Fisher, Hild, Kirby, Lebowitz, Patton, II, Snyder)

**Emergency Nature:**
- 0 Abstentions
- 20 Agree (Jaskolka, Richmond, Sr., Riegel)
- 6 Disagree (Blackford, Fisher, Hild, LeBlanc, Lebowitz, Snyder)

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

1. In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.
   
   \[28 \text{ eligible} \div 2 = 14 + 1 = (15)\]

2. The number of affirmative votes needed to satisfy the ¾ requirement is 20.
   
   \[28 \text{ eligible to vote} - 2 \text{ not returned} - 0 \text{ abstentions} = 26 \times 0.75 = 19.5 (20)\]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is March 19, 2022.
Eligible to Vote: 28
Not Returned : 2
Ronald G. Schaffhauser, William V. F. Cosey

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>This appears to be a valid technical concern however there appears to be concern on how the modification is written. There is value to this issue being addressed by the full committee. If it fails as a TIA for now, the committee should discuss the issue during the second draft meeting and then decide if the issue should be put forward again as a TIA with improved wording.</td>
</tr>
<tr>
<td>Roland A. Riegel</td>
<td></td>
<td>Agree the requirements should reflect common practice and different options to prevent overfills.</td>
</tr>
<tr>
<td>Claire V. De Taeye</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Jay J. Jablonski</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Anthony M. Ordile</td>
<td>AGREE</td>
<td></td>
</tr>
<tr>
<td>David P. Nugent</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>John W. Richmond, Sr.</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Mark Driscoll</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Duane L. Rehmeyer</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>David B. Wechsler</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Scott M. Tyler</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Janna E. Shapiro</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Stephen M. Jaskolka</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Paul E. May</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Leo T. Old</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Brian Sickinger</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Mohammad I. Nashwan</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Scott Wright</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td>Randy Slama</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>Richard J. Hild</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I do not believe the proposed new wording meets the intent of the current requirements. Current requires &quot;positive means shall be provided for loading a predetermined quantity of liquid&quot; and new wording &quot;a positive means of preventing overfill shall be provided&quot; Overfill is not the only hazard being addressed.</td>
<td></td>
</tr>
</tbody>
</table>

| Gregory D. Kirby      |          |
|                       |          |
|                       | Although I am sympathetic to the issue raised in the substantiation, I don’t believe the TIA as proposed addresses the concern. The proposed wording and new section 28.11.1.7.3 would be subordinate to 28.11.1.7 and could be interpreted as being required in addition to, and not instead of, the current requirements of 28.11.1.7. |

| Michael D. Snyder     |          |
|                       |          |
|                       | The language in proposed 28.11.1.7(2) is unclear as to what is "primary" and "secondary" in the overfill protection. In the substantiation language an example is provided of a jet level (high level) sensor combined with an electronic overfull system, which seem to be a single system. While I fundamentally support the framework described in the substantiation, I don’t believe the proposed language for inclusion in the TIA effectively conveys this concept. |

| Tim D. Blackford      |          |
|                       |          |
|                       | Preset metered quantities for loading is a proactive safeguard to prevent overfill. Reliance on sensors (which can fail) seems to go against the stated intent of the current NFPA 30 language and a cautionary note in API 1007 stating "Under no circumstances should the overfill sensors be used as a meter stop. The pump’s gradual slow down is controlled by the meter settings and use of the overfill sensors or other methods of shutting down product flow can result in a sudden shock to the product pumps, resulting in possible damage to pumps and piping". Additionally, the current text directly aligns with API 2610 language. |

| Jeffrey S. Patton, II |          |
|                       |          |
|                       | Paragraph 28.11.1.7 needs revision to include the reality of aviation refuelers, but the submitted 28.11.1.7 revision, as presented, may be technically inaccurate and has wording that is unclear and cumbersome. Perhaps revise 28.11.1.7, as follows: When bottom loading a tank vehicle, a positive means of preventing overfill shall be provided that satisfies one of the following: (1) The means shall pre-set the quantity of liquid and automatically shut-off liquid flow upon detecting the potential for overfill. (2) The means shall monitor the liquid level and automatically shut-off liquid flow upon detecting the potential for overfill. |


Douglas W. Fisher

While I understand the concern, the proposed revision appears to confuse the issue more. Also, the substantiation states "it should be sufficient to prevent..." but no documentation is provided to show that it will (shall) be sufficient. The substantiation states that "the practice of sticking the tanks or inspecting the fuel level before filling is not common practice". However, the fueler knows exactly how much fuel they have put into each aircraft. That is not a guess as the pilot/flight operations request a specific quantity of fuel. If the refueler knew how much they started with and did simple math subtracting out what was put into each aircraft, the volume would be known without a need to stick the tank.

Jeremy Lebowitz

The proposed subject matter is complex enough in nature to warrant detailed substantiation (more so than provided by the submitter).

Abstain 0
QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 28
Not Returned: 2
Ronald G. Schaffhauser, William V. F. Cosey

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Roland A. Riegel</td>
<td></td>
<td>Agree that if the current requirements exclude different overfill methods that reflect common practice, it needs to be changed.</td>
</tr>
<tr>
<td>Claire V. De Taeye</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Jay J. Jablonski</td>
<td>A, D</td>
<td></td>
</tr>
<tr>
<td>Anthony M. Ordile</td>
<td>A &amp; F</td>
<td></td>
</tr>
<tr>
<td>David P. Nugent</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>John W. Richmond, Sr.</td>
<td>C. The proposed TIA intends to correct a previously unknown existing hazard.</td>
<td></td>
</tr>
<tr>
<td>Mark Driscoll</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Gregory D. Kirby</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Duane L. Rehmeyer</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>David B. Wechsler</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Scott M. Tyler</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Janna E. Shapiro</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Stephen M. Jaskolka</td>
<td>A. The standard contains an error or an omission that was overlooked during the regular revision process.</td>
<td></td>
</tr>
<tr>
<td>Paul E. May</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Jeffrey S. Patton, II</td>
<td>A. F.</td>
<td></td>
</tr>
<tr>
<td>Leo T. Old</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Brian Sickinger</td>
<td>Reason F</td>
<td></td>
</tr>
<tr>
<td>Mohammad I. Nashwan</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Scott Wright</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td>Randy Slama</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

Disagree: 6
John A. LeBlanc I am changing my vote on this. This is clearly an issue that the code should address. However, this issue is not necessarily new or being driven by an immediate need. I do not believe it meets the intent of "Emergency Nature."

Richard J. Hild I do not believe this issue is of an emergency nature.
Michael D. Snyder  
Scully Systems have been available since 1964 and the language in NFPA 30 for Section 28.11.1.7 has been in place since the 2012 edition (if not earlier). Section 1.5 of NFPA 30 (Equivalency) provides a vehicle to address (short term) the issue with code enforcement, versus any of the available topics for "Emergency Nature". I support the concept being proposed, but believe that it is appropriate to have it enter the next code cycle at the Public Input stage.

Tim D. Blackford  
The language in question has been in NFPA 30 since at least the 2012 edition.

Douglas W. Fisher  
Don't agree that this is an emergency nature. The proponent doesn't discuss why this wasn't submitted as a PI for the 2024 edition which would have been the appropriate avenue.

Jeremy Lebowitz  
Unclear why the proposed language was not submitted as part of the regular revision cycle.

Abstain  
0
MEMORANDUM

TO: Correlating Committee on Flammable and Combustible Liquids

FROM: Kristi Smith, Committee Administrator

DATE: March 14, 2022

SUBJECT: NFPA 30 Proposed TIA No. 1631 FINAL CC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(b) in the NFPA Regs, the final results show this TIA HAS NOT achieved the ¾ majority vote needed on both Ballot Item No. 1 (Correlation Issues) and Ballot Item No. 2 (Emergency Nature).

14 Eligible to Vote
5 Not Returned (Bellamy, Cosey, Johns, P.E., Riegel, Woycheese)

<table>
<thead>
<tr>
<th>Correlation Issues:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Abstentions (Fisher)</td>
<td>1 Abstentions (Fisher)</td>
</tr>
<tr>
<td>7 Agree</td>
<td>3 Agree (Wright)</td>
</tr>
<tr>
<td>1 Disagree (Blackford)</td>
<td>5 Disagree (Blackford, Denhardt, LeBlanc, Lebowitz, Nugent)</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[14 \text{ eligible} \div 2 = 7 + 1 = (8)\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is 6.

\[14 \text{ eligible to vote} - 5 \text{ not returned} - 1 \text{ abstentions} = 8 \times 0.75 = (6)\]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

Appeal Closing Date for this TIA is March 19, 2022.
Eligible to Vote: 14  
Not Returned : 5  
Tracey D. Bellamy, Roland A. Riegel, John P. Woycheese, William V. F. Cosey, Bill Johns, P.E.

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>David P. Nugent</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>John August Denhardt</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Leo T. Old</td>
<td></td>
<td>AGREE</td>
</tr>
<tr>
<td>Bryan Edwin Matthews</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Scott Wright</td>
<td></td>
<td>No correlation issues identified</td>
</tr>
<tr>
<td>Jeremy Lebowitz</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tim D. Blackford</td>
<td></td>
<td>I see no evidence to suggest that NFPA Reg. 3.4.3 (g) was met. &quot;Determining whether the technical committee has given due consideration to all evidence presented to it in connection with the preparation of its report, including all comments relating to negative votes.&quot;</td>
</tr>
<tr>
<td>Abstain</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Douglas W. Fisher</td>
<td></td>
<td>I am a member of FL OPS and voted in the negative under the original TIA ballot.</td>
</tr>
</tbody>
</table>
**QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.**

**Eligible to Vote:** 14  
**Not Returned :** 5  
Tracey D. Bellamy, Roland A. Riegel, John P. Woycheese, William V. F. Cosey, Bill Johns, P.E.

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Leo T. Old</td>
<td></td>
<td>a</td>
</tr>
<tr>
<td>Bryan Edwin Matthews</td>
<td></td>
<td>Reasons A &amp; F are both applicable.</td>
</tr>
<tr>
<td>Scott Wright</td>
<td></td>
<td>Difficult for me to judge but I'll support it</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>This is clearly an issue that the code should address. However, this issue is not necessarily new or being driven by an immediate need. In addition it appears that the language may result in confusion. This issue should be addressed though the committee. I do not believe it meets the intent of &quot;Emergency Nature.&quot;</td>
</tr>
<tr>
<td>David P. Nugent</td>
<td></td>
<td>It should be handled during the normal revision cycle.</td>
</tr>
<tr>
<td>John August Denhardt</td>
<td></td>
<td>This is TIA does not meet the requirements for &quot;Emergency Nature&quot;.</td>
</tr>
<tr>
<td>Tim D. Blackford</td>
<td></td>
<td>The language in question has been in NFPA 30 since at least the 2012 edition.</td>
</tr>
<tr>
<td>Jeremy Lebowitz</td>
<td></td>
<td>No substantiation has been provided why this was not submitted during the normal revision cycle</td>
</tr>
<tr>
<td>Abstain</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Douglas W. Fisher</td>
<td></td>
<td>I am a member of FL OPS and voted in the negative under the original TIA ballot.</td>
</tr>
</tbody>
</table>
NFPA 30A-2021 Edition

Code for Motor Fuel Dispensing Facilities and Repair Garages

TIA Log No.: 1621

Reference: 1.1.3(new), 1.2, 2.2, 2.4, 3.3.7(new) through 3.3.10(new), 3.3.16(new), 3.3.20(new), Chapter 15(new), D.1.1, and D.1.2.7

Comment Closing Date: March 2, 2022

Submitter: Scott Boorse, Petroleum Equipment Institute (PEI)

www.nfpa.org/30A

1. Add a new 1.1.3 and renumber subsequent paragraphs to read as follows:

1.1.3 This code shall apply to areas and equipment for the purpose of charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility.

1.1.34* This code shall not apply to those motor fuel dispensing facilities where …

A.1.1.34* See NFPA 2, NFPA 52, and NFPA 58 for requirements for facilities where…

1.1.45 This code shall not apply to aircraft fueling.

2. Revise 1.2 to read as follows:

1.2* Purpose The purpose of this document shall be to provide reasonable safeguards for dispensing liquid and gaseous motor fuels into the fuel tanks of automotive vehicles and marine craft and charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility.

3. Add new entry to 2.2 to read as follows:

2.2 NFPA Publications. …


…

4. Add new entry to 2.4 to read as follows:

2.4 References for Extracts for Mandatory Sections. …


5. Add new sections 3.3.7 through 3.3.10, 3.3.16 and 3.3.20, and renumber paragraphs accordingly to read as follows:

3.3.7* Electric Vehicle (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are electric vehicles having a second source of motive power. [70, 100]

A.3.3.7 Off-road, self-propelled electric mobile equipment, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not considered electric vehicles. [70, 100]

3.3.8 Electric Vehicle Charging Station (EVCS). Any space that can be served by electric vehicle supply equipment and a charger energy supply system or used by an EV for the purpose of charging the battery or other energy storage device in an EV.

3.3.9 Electric Vehicle Connector. A device that, when electrically coupled (conductive or inductive) to an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. [70:625.2]
3.3.10* Electric Vehicle Supply Equipment (EVSE). The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle. [70:625.2]

A.3.3.10 For this code, EVSE also includes an electric vehicle charger with a battery integrated supply.

3.3.711 Flammable Liquid. …
3.3.812 Gas. …
3.3.913* Liquid. …
3.3.913.1* Combustible Liquid. …
3.3.913.2* Flammable Liquid. …
3.3.4014 Low Melting Point Materials. …
3.3.415 Motor Fuel Dispensing Facility. …
3.3.415.1 Attended Self-Service Motor Fuel Dispensing Facility. …
3.3.415.2 Fleet Vehicle Motor Fuel Dispensing Facility. …
3.3.415.3 Full-Service Motor Fuel Dispensing Facility. …
3.3.415.4 Marine Motor Fuel Dispensing Facility. …
3.3.415.5* Motor Fuel Dispensing Facility Located Inside a Building. …
A.3.3.415.5. …
3.3.415.6 Unattended Self-Service Motor Fuel Dispensing Facility.

3.3.16 Output Cable to the Electric Vehicle. An assembly consisting of a length of flexible EV cable and an electric vehicle connector (supplying power to the electric vehicle). [70, 100]

3.3.17 Repair Garages.
3.3.18* Major Repair Garage. …
A.3.3.17.1 …
3.3.18* Minor Repair Garage. …
A.3.3.18.2 …
3.3.18.3 CNG/LNG Vehicle Major Repair Area. …
3.3.18.4 CNG/LNG Vehicle Minor Repair Area. …
3.3.18.5 Safety Can. …
3.3.19 Submersible Pump. …
3.3.20 Tank Vehicle. Any single self-propelled motor vehicle equipped with a cargo tank mounted thereon, tank full-trailer, or tractor and tank semi-trailer combination, used for the transportation of flammable or combustible liquids or gases.

3.3.21 Tanks.
3.3.21.1 Aboveground Storage Tank. …
3.3.21.2 Fire-Resistant Tank. …
3.3.21.3* Protected Aboveground Tank. …
A.3.3.21.3 …
3.3.22 Vapor Processing Equipment. …
3.3.22* Vapor Processing System. …
A.3.3.22 …
3.3.24* Vapor Recovery System. …
A.3.3.24 …

6. Add a new Chapter 15 to read as follows:
Chapter 15 Electric Vehicle Charging Stations.
15.1 **Scope.** This chapter shall apply where electric vehicle charging stations (EVCS) are installed at a motor fuel dispensing facility.

15.2 Definitions Specific to Chapter 15.

15.2.1* Electric Vehicle (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are electric vehicles having a second source of motive power. *(See 3.3.7.)* [70, 100]

A.15.2.1 Off-road, self-propelled electric mobile equipment, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not considered electric vehicles. *(See A.3.3.7.)* [70, 100]

15.2.2 Electric Vehicle Charging Station (EVCS). Any space that can be served by electrical vehicle supply equipment or a charger energy supply system or used by an EV for the purpose of charging the battery or other energy storage device in an EV. *(See 3.3.8.)*

15.2.3 Electric Vehicle Connector. A device that, when electrically coupled (conductive or inductive) to an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. *(See 3.3.9.)* [70: 625.2]

15.2.4* Electrical Vehicle Supply Equipment (EVSE). The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle. *(See 3.3.10.)* [70: 625.2]

A.15.2.4 For this code, EVSE also includes an electric vehicle charger with an integrated energy storage system (i.e., EV chargers with integrated battery supply). *(See A.3.3.10.)*

15.2.5 Output Cable to the Electric Vehicle. An assembly consisting of a length of flexible EV cable and an electric vehicle connector (supplying power to the electric vehicle). *(See 3.3.17.)* [70, 100]

15.3 General Requirements.

15.3.1 Location Adjacent to Buildings or Property Lines. EVCS and EVSE installed outdoors at motor fuel dispensing facilities shall be located as follows:

(1) 3 m (10 ft) or more from property lines

(2) 3 m (10 ft) or more from buildings, other than canopies, having combustible exterior wall surfaces or buildings having noncombustible exterior wall surfaces that are not a part of a 1-hour fire-resistive assembly

(3) 1 m (3 ft) or more from buildings having exterior wall surfaces that are part of a 1-hour fire-resistive assembly

15.3.1.1 All parts of the EV being served shall be located on the premises.

15.3.2 Location Adjacent to Storage, Handling, or Dispensing of Flammable or Combustible Liquids or Gases. EVCS, EVSE, and EV while charging, and the electric vehicle connector when the output cable to the EV is extended to its maximum length, shall be located as follows:

(1) 6 m (20 ft) or more in all directions from a dispensing device or areas handling or dispensing flammable or combustible liquids or gases

(2) 3 m (10 ft) or more in all directions from an underground storage tank fill connection or vapor recovery connection or vent line storing flammable or combustible liquids or gases

(3) 3 m (10 ft) or more in all directions from a remote/submersible pump transferring flammable or combustible liquids or gases
(4) 3 m (10 ft) or more in all directions from the shell or ends of an aboveground tank or the aboveground tank fill connection, vapor recovery connection or open end of the vent
(5) 3 m (10 ft) or more in all directions from vapor processing equipment and vacuum assist blowers
(6) 7.6 m (25 ft) or more in all directions from the location of a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank

15.3.3 Location Beneath Canopies.
15.3.3.1 EVCS or EVSE installed under a canopy also covering dispensers for flammable or combustible liquids or gases shall meet the separation distances in 15.3.2.

15.3.4 Requirements for EVSE Systems.
15.3.4.1* EVSE, the electric vehicle connector, and the output cable to the EV shall be listed.
A.15.3.4.1 Appropriate electric vehicle standards include the following:
(1) UL 2202, Standard for Electric Vehicle Charging System Equipment, for EV charging systems
(2) UL 2202 and UL 1973, Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications, for battery integrated chargers
(3) UL 2594, Standard for Electric Vehicle Supply Equipment, for battery integrated chargers
(4) UL 2750, Outline of Investigation for Wireless Power Transfer Equipment for Electric Vehicles

15.3.4.2 Any modification of the EVSE, electric vehicle connector, and the output cable to the EV shall be listed or listed by report.
15.3.4.3* EVSE shall be designed to protect the employees and the public from electrical hazards, including arc flash.
A.15.3.4.3 See NFPA 70E for more information on electrical hazard protection.

15.4 Installation Requirements.
15.4.1 EVCS shall be designed and constructed in accordance with state and local building codes, ordinances, and this code.
15.4.2 EVCS shall be designed so that pooling of flammable or combustible liquids cannot occur within its area.
15.4.3 EVSE shall be the type specified and installed in accordance with Article 625 of NFPA 70.
15.4.4 EVSE shall be installed in accordance with their listing, the equipment manufacturer’s installation instructions, approved design plans, and this code.

15.5 Collision Protection.
15.5.1 EVSE shall be protected against collision damage by guard posts or other approved means.
15.5.2 When guard posts are installed, they shall be designed as follows:
(1) Posts shall be constructed of steel not less than 100 mm (4 in) in diameter.
(2) Posts shall be filled with concrete.
(3) Posts shall be spaced not more than 1.2 m (4 ft) on center.
(4) Posts shall be set not less than 0.9 m (3 ft) deep in a concrete footing of not less than 380 mm (15 in) diameter.
(5) The top of the posts shall be set not less than 0.9 m (3 ft) above ground.
(6) Posts shall be located not less than 0.9 m (3 ft) from the EVSE.
15.5.3 EVSE shall be securely bolted in place per the manufacturer’s instructions.

15.6 Maneuvering on Site.
15.6.1 Motor vehicle traffic patterns at motor fuel dispensing facilities shall be designed to inhibit movement of vehicles that are not being charged from passing through the charging area.
15.6.2 EVCS or EVSE shall not impede or obstruct tank vehicle fuel deliveries.

15.7 Signage.

15.7.1 Emergency instructions shall be conspicuously posted in the area of the EVCS equipment and incorporate the following or equivalent wording:

   **In case of fire:**
   (1) Use emergency stop button.
   (2) Report accident by calling (specify local fire service number).
   (3) Report location.

15.8* Operation. EVSE shall be operated in accordance with manufacturer’s instructions. A.15.8 See Chapter 34 of NFPA 70B for additional guidance.

15.8.1 The attendant shall be familiar with EVSE operation and be able to supervise and respond to an emergency.

15.8.2 EVSE thermal fluids shall not be dumped into sewers, into streams, or on to the ground.

15.9 Emergency Electrical Disconnects.

15.9.1 EVSE shall be provided with one or more clearly identified emergency shutoff devices or electrical disconnects and labeled with an approved sign stating “EMERGENCY ELECTRIC VEHICLE CHARGING SYSTEM SHUTOFF” or equivalent language.

15.9.2 Emergency shutoff devices or electrical disconnects shall be installed in approved locations accessible to patrons, but not less than 6 m (20 ft) or more than 30 m (100 ft) from the EVCS.

15.9.3 Emergency shutoff devices or electrical disconnects shall disconnect power to all EVSE not supplied by circuits that are identified as intrinsically safe and to all associated power control and signal circuits serving the EVCS.

15.9.4 Emergency shutoff devices or electrical disconnects for EVCS shall be actuated by the emergency electrical disconnect required in Section 6.7 unless EVCS is greater than 30 m (100 ft) from any of the equipment in 15.2.2.

15.9.5 Resetting from an emergency shutoff condition shall require manual intervention.

15.9.6 At attended motor fuel dispensing facilities, an additional emergency shutoff or electrical disconnect device shall be accessible to the attendant.

15.10 Lighting. Lighting should be selected and installed in accordance with applicable building codes and standards and sufficient for safe operation and security.

15.11 Fire Extinguishers.

15.11.1 At least one portable fire extinguisher shall be provided at each group of EVSE, so as not to exceed a maximum travel distance of 23 m (75 ft) to any single portable fire extinguisher.

15.11.2 Portable fire extinguishers shall be selected, installed, inspected, and maintained in accordance with 9.2.5.2 and NFPA 10.

15.12 Inspection and Maintenance.

15.12.1 EVSE shall be periodically inspected by a person who is knowledgeable in the operation of the equipment to verify that it is in proper working order.

15.12.2 When maintenance to EVSE is necessary, the following precautions shall be taken before such maintenance is begun:

   (1) Only persons knowledgeable in performing the required maintenance shall perform the work.
   (2) All electrical power to the EVSE and to all associated control circuits shall be shut off at the main electrical disconnect panel.
   (3) During the maintenance period, all power and associated control circuits shall be capable of being locked in the open position and tagged with the identity of the worker servicing the equipment.
(4) All vehicular traffic and unauthorized persons shall be prevented from entering the EVCS.

7. Revise D.1.1 adding new entries to read as follows:

**D.1.1 NFPA Publications.** …


…

8. Revise D.1.2.7 adding multiple new entries to read as follows:

**D.1.2.7 UL Publications.** …


**Substantiation:** Over the course of several months, an electrical vehicle task group comprised of several members of the NFPA 30A committee developed the following criteria for the installation of electrical vehicle charging equipment at motor fuel dispensing facilities. This chapter incorporates Electric Vehicle charging into the scope of 30A when installed at a motor fuel dispensing facility. EV charging stations located at a motor fuel dispensing facility present a potential source of ignition, as well as, an additional source of traffic and congestion at a motor fuel dispensing facility. National codes are very limited in addressing the unique issues associated with these operations at a motor fuel dispensing facility. This chapter provides guidance for the location, installation, and operation of EV charging at these facilities.

The technical basis for the sections is provided below.

**3.3.20** - The term tank vehicle is used in this chapter as well as other chapters of NFPA 30A, but not defined. NFPA 385 defines a tank vehicle to include a tank truck which is defined separately. The proposed definition combines the NFPA 385 3.3.11 & 3.3.12 definitions to replace “tank truck” in the definition in 3.3.12 with the definition for a tank truck in 3.3.11 for clarity and to limit to flammable or combustible liquids or gases.

**15.2** - Definitions that are unique to this Chapter are provided. The definitions are taken from other NFPA codes as noted.

**15.2.3** - The EV is considered a potential source of ignition and addressed in this chapter. This definition was created by the Task Group to define the area occupied by the vehicle while charging.

**15.2.5** - EV Charging technology is evolving. EV chargers with integrated batteries are being introduced. The task group felt it was important to note these types of EV chargers in the definition. NEC 70 Article 625.2 definition was used.

**15.3** - General requirements focus on the location of the charging equipment and the vehicle while being charged with respect to areas handling, storing or dispensing flammable and combustible liquids along with buildings and property lines. It also requires the equipment to be listed and protective for electrical hazards. Applicable standards are provided in the annex.

**15.3.1** – These requirements are consistent with maximum separation distances for dispensers in NFPA 30A 6.2.1.
15.3.2 - Existing codes address separation distance for potential sources of ignition and applied to this chapter. The 20 ft and 10 ft for areas listed in 15.3.2 (1) through (5) are based on the maximum separation distances class 1 division 1/2, or class 1 zone 1/2 requirements (Table 8.3.3). The 25-foot separation for a tank vehicle while transferring petroleum products for 15.3.2(6) is supported by IFC 5706.5.1.1 requirement for 25-foot separation for class I and 15 feet for class II liquids. The maximum separation distance is selected to be conservative.

15.3.3 - This provision allows EV charging under the same canopy as liquid fuel dispensers as long as the space and the equipment meet the separation requirements.

15.4 - Building codes are still evolving; however, spaces are typically either 9-foot-wide space by 18-foot-deep for a vehicle or 11-foot-wide space by 18-foot-deep space for van accessible vehicles with a pedestrian access aisle of 5 feet on the passenger side. General installation requirements are provided to ensure that the equipment is installed in accordance with applicable codes in addition to this chapter, as well as manufacturer's requirements.

15.4.2 - Provision added to ensure that the EV space is not located in an area where a spill or release on the facility would migrate and pool in the charging space.

15.5 - Requirements to protect the EV charger or battery storage device from damage by a vehicle. This incorporates requirements for guard posts taken from the International Fire Code requirements for vehicle impact protection.

15.6 - Requirements adapted from NFPA 30A 6.3.7 to address traffic flow on a facility and specifically as it would relate to a tank vehicle.

15.7 - Requirements adapted from NFPA 30A 9.5.3.

15.9 - Requirements adapted from NFPA 30A 6.7.

15.9.4 - If there is an emergency that requires the petroleum fueling systems to be shut down, the EV equipment should also be shut down if it is in close proximity to the areas handling, storing or dispensing liquid fuels. A distance of 100 feet was selected.

15.10 - Since EV charging can be remote from the canopy and building areas, proper lighting is needed for the EV charging space. 30A does not have specific lighting requirements, although requirements for adequate lighting are provided in Chapter 14 for mobile refueling. This provision is similar pointing to building and other codes for specifications for lighting.

15.11 - Requirements based on NFPA 30A 9.2.5.2.

15.12 – Requirements adapted from NFPA 30A 6.3.6.

Emergency Nature: The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

This TIA is proposed to provide emergency direction in order to protect the health, safety and welfare of the general public where Electrical Vehicle Supply Equipment (EVSE) is installed at liquid fueling facilities. EVSE is currently being installed at liquid fueling facilities and there are no current standards to guide the installation. In addition, it is likely that the pace of EVSE installation will greatly increase over the next 6-18 months based on the recent passage of the Federal Infrastructure Act which commits $7.5 billion to the EV charging effort, yet there is no language in the existing Code to guide the AHJ and the potential EVSE host in the safe siting, installation, operation, inspection and maintenance of the 500,000 new EVSEs provided for in the legislation.
MEMORANDUM

TO: Technical Committee on Automotive and Marine Service Stations
FROM: Kristi Smith, Committee Administrator
DATE: March 15, 2022
SUBJECT: NFPA 30A Proposed TIA No. 1621 FINAL TC BALLOT RESULTS

The public comment circulation has passed, therefore, according to Section 5.6(a) in the NFPA Regs, the final results show this TIA HAS NOT achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

34 Eligible to Vote
3 Not Returned (Harding, Katekar, Robbins)

<table>
<thead>
<tr>
<th>Technical Merit:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Abstentions (Williams)</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>19 Agree (Forsythe, Moses, Riegel, Walters)</td>
<td>20 Agree (Laurence, Jr., Moses, Riegel, Walters)</td>
</tr>
<tr>
<td>11 Disagree (Burns, Deacon, Doyle, Fredenburg, Hickman, Hunter, Morgan, Myers, Rocco, Swiecicki, Tanner)</td>
<td>11 Disagree (Burns, Deacon, Doyle, Fredenburg, Morgan, Myers, Rocco, Smith, Swiecicki, Tanner, Williams)</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[
\text{[34 eligible ÷ 2} = 17 + 1 = (18)]
\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is as follows:

- **Technical Merit:** (34 eligible to vote - 3 not returned - 1 abstentions = 30 × 0.75 = 22.5 (23)
- **Emergency Nature:** (34 eligible to vote - 3 not returned - 0 abstentions = 31 × 0.75 = 23.25 (24)

Ballot comments are attached for your review.

The Regs at Section 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with Section 4.2.6. **Appeal Closing Date for this TIA is March 20, 2022.**
QUESTION NO. 1: I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1621 to 1.1.3(new), 1.2, 2.2, 2.4, 3.3.7(new) through 3.3.10(new), 3.3.16(new), 3.3.20(new), Chapter 15(new), D.1.1, and D.1.2.7.

Eligible to Vote: 34
Not Returned: 3
Curtis N. Harding, Jess A. Robbins, Chaitanya Katekar

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>19</td>
<td>UL is voting yes on this TIA to advance it in the process and fill a requirement gap, but we have comments from other NFPA Code members that hopefully will be addressed: General - Restricting EV supply equipment outside the Classified area and from above the Classified area (as it would most likely permit the EV to be within the Classified area while charging) is appropriate. However, if installed outside the Classified area, why not consider it as any other electrical installation and just installed per the NEC Article 514 for Motor Fuel Dispensing Facilities (Sec 514.7 &amp; 511.7)? 3.3.20 New Tank Vehicle definition should be extracted from NFPA 38S, NFPA 30 or NFPA 1. New Ch 15 - In 15.3.1 there are specific requirements pertaining to the physical location of charging equipment in the motor fuel dispensing facility. Those locations may be prohibitive for some facilities that have smaller area and will prohibit the use of EV charging in these facilities. If these dimensions are the same as all other refueling equipment, then you can ignore these comments. If not, then someone needs to explain why an EV charger cannot be located within 10 feet of property lines. That requirements is identical to energy storage systems, which allow a flame to be emitted up to 10 feet prior to other measures being enforced. EV chargers are not bursting into flame as long as they are certified to UL 2594 or UL 2202. The same rationale pertains to EV chargers located close to buildings. In my opinion, this requirement does not make any sense from a charger perspective. If the requirement is meant to force a physical location of the EV being charged (the vehicle will be 10 feet away from property lines because the charger is) then is should be noted that the charger can have an output cable up to 25 feet with no cable management which means I could charge an EV from the parking lot next door even if the charger is located 10 feet from the property line. So, again, there is no sense to this requirement.</td>
</tr>
</tbody>
</table>
Continued... Lastly, if the 10 feet is intended to be a fire barrier in case the lithium battery on the vehicle goes into thermal runaway, then this is probably ok, but not the best solution. Lithium fires are problematic in any form and 10 feet is not a magical number that will prevent the propagation of this fire. In the end, this prohibition on physical location does not seem to have a rationale that supports its inclusion. 1) In 15.3.1.1, the state all parts of the vehicle being served shall be located on the premises. In most cases, this would always occur without a written requirement, but it is not enforceable. All that the AHJ can enforce is that there is sufficient space to park the EV near the charger. What actually occurs may be a different story. 2) In 15.3.2, it appears that the idea is to separate the vehicle and charger from the defined hazardous location. I am fine with the concept but wanted to provide the following. a. Arcing and sparking parts inside the charger are not prohibited from being located lower than 18 inches to grade. The standard requires the product to be installed in non-classified location. However, if the charger was installed on a 18 inch tall concrete block it could be installed anywhere without causing an explosion hazard. b. We do not control the vehicle and arcing or sparking parts of the vehicle are unknown. So, if the vehicle is required to meet these dimensions, then the EV connector will meet them by default (but see item c). c. The connector on the output of the EV is highly controlled and is not allowed to make and break while charging. I am not sure this is understood. There will be no arcs or sparks from the EV connector so excluding it by these dimensions is unfounded.

Robert N. Renkes  Agree
Ronald B. Laurence, Jr.  Agree
Rob Brown  Agree
Mike Walters  I agree except for the use of the words "and the like" in 3.3.7 and A3.3.7. Do not believe they are appropriate for a code document as they are too subjective and leave the door open for literally everything. Recommend to remove them as the difference already stated between on-road and -off road are spelled out.
Joel E. Sipe  Agree
Thomas J. Forsythe  Agree. This is my 3rd attempt to record and transmit this ballot. I intended to add notes and questions/comments for the writer, with hopes of improving the document modifications.
David T. Phelan  Agree
Randy Moses  
Agree - While I 100% agree that we need something in the code, I do think we should have stayed focus on the relationship for EV chargers to the hazardous zones and not gone into the property and building setback areas. However, I am not willing to throw out everything else due to that.

Andrew S. Klein  
Agree

Scott C. Boorse  
Agree

Johnny Rhodes  
AGREE

Joseph Spaeder  
Agree

Hamdan Abdalla Alsenaani  
i agree

Eric C. Smith  
Agree

Matt Lauber  
Agree

Guy L. Jones, Jr.  
agree

Christopher M. Platz  
Agree

Dennis Boyd  
Agree
Disagree
James R. Rocco

The TIA adds over 150 lines of code that have not been thoroughly vetted. The potential consequences of this can be seen in the requirements of section 15.3.1 (Location Adjacent to Buildings or Property Lines) of the TIA. This section requires a setback of 10 feet from property lines and 10 feet or three feet from buildings depending on building construction. This requirement is contrary to current installation practices not only at a retail fueling facility, but anywhere else EV chargers are being installed. EV chargers are currently being installed on or immediately adjacent to property lines, on and in residential buildings, in parking garages, adjacent to commercial buildings, along public roads and just about everywhere. Further, the definition of a motor fuel dispensing facility is the “portion of a property where motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles...” The current code does not define at what point the portion of the property used for fueling extends to a property line. If an EV charging space meets the requirements for separation from the fuel storage, handling and dispensing equipment, this code should not address the more universal issue of setbacks from buildings or property lines or buildings. The application of these setbacks to motor fueling facilities in the absence of uniform guidelines for setbacks governing the installation of all EV chargers will result in unintentional consequences that present a significant disadvantage for retail and commercial fueling facilities. For example, a retail fueling station adjacent to a Fast-Food restaurant would have to install EV chargers 10 feet from a shared property line or a building while the Fast-Food restaurant could install EV chargers on the shared property line or next to their building. Retail fueling facilities can play a significant role in providing convenient charging for electric vehicles and a 10-foot setback could eliminate a safe and convenient location on a property otherwise available for EV charging.

The unintended consequences of this code should not exclude these facilities from the opportunity to be part of the development of an EV charging infrastructure. Developing reasonable and safe fire codes related to EV chargers at fuel dispensing facilities, such as retail fueling stations and truck stops, should be done through the regular process that is underway for the 2024 version of the NFPA 30A. I urge others on the NFPA 30A Technical Committee to vote NO (Disagree) on the TIA and allow the development of this addition to the code to continue through the normal revision process.

Charles A. Burns
I believe that the issues involved are properly addressed in NFPA 70 in particular in article 514

Nils Deacon
I do not agree that it is of an emergency nature. Allow the process to go through for greater general input.

Paul J. Doyle
I disagree
<table>
<thead>
<tr>
<th>Name</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill Hickman</td>
<td>Upon additional review after being contacted by a major EV charging provider, it appears that some of the requirements contained in Chapter 15 may be more prohibitive than is necessary and/or lacking considerations for the differences in how this equipment is commonly installed and used. While I agree that the subject is of an emergency nature, it is my opinion that moving this forward without first determining that the requirements aren't overly prohibitive will cause disruption in the installation and availability of these systems. I am changing my vote to Disagree.</td>
</tr>
<tr>
<td>Richard G. Fredenburg</td>
<td>Adding the same definitions to chapters 3 and 15 is unnecessary and unwise. It can lead to different wording in the future if we’re not careful. This is a lot of change for one TIA. I would not agree to it if it were not so important under emergency nature D. Splitting it could lead to problems if separate, codependent TIAs were not all passed at the same time. This is putting a lot of trust in the electrical vehicle task group! I was initially concerned with the level of detail in this TIA and not having it receive the level of review it deserves. Others have pointed out problems that will negatively impact current methods of installation. I’m changing my vote to disagree so a better review can be performed.</td>
</tr>
<tr>
<td>John Morgan</td>
<td>After realizing no research was done and reading the letter provided by Bill Hickman from NACS, SATSO, and SIGMA, it is clear a need to include industry experts and their opinions in the decision making process exists. Disagree.</td>
</tr>
<tr>
<td>Philip Myers</td>
<td>My vote is absed on agreement with the Statement by NACS and Sigma of Jan 26, 2022 that (a) there has not been enough expert input to the process of incorporating these new rules, (b) that this is not an emergency situation, and (c) that a possible significant disruption in the existing processes is possible due to these changes.</td>
</tr>
</tbody>
</table>
Daniel John Hunter

In the proposed section 15.3.1- Location Adjacent to Buildings or Property Lines, the distances proposed are applied too broadly to include not just ESSs but also EVCSs and EVSEs. The stated justification for this addition was that these requirements are consistent with maximum separation distances for dispensers in NFPA 30A 6.2.1 and clearance distances for ESS in NFPA 855 4.4.3.3. The issue I have here is that if you look at NFPA 855 4.4.3.3 it applies only to ESSs not EVCSs or EVSEs in regard to separations distances. I think that the committee is applying the code too broadly here and should provide further technical justification or reference code if it seeks to extend these separations distances to EVCSs and EVSEs. If there is another part of the code where EVCSs or EVSEs are included in these required separations that should be added to the justification statement. In the proposed section 15.3.3.1 there is a reference to separation distances in 15.2.2. Section 15.2.2 is the definition for an Electric Vehicle (EV). I believe this is an error and may actually be in reference to 15.3.2 instead which includes separation distances. This needs to be corrected before it is useful as code. As it is currently written it is confusing. As written this standard contains an error that was overlooked during the TIA revision process and should be addressed before it is put into the code. I disagree with the technical merits of the proposed TIA given the broad application of code intended for ESSs separations distances being applied to EVCSs or EVSEs and the error in section 15.3.3.1. If these issues were addressed and corrected I would be in agreement with the technical merits of the proposed TIA.

R. Jeff Tanner

While I agree that the new Chapter is something we need for the AHJ’s for what is coming down the road, placing it into immediate effect with an already adopted standard without industry at the table seems to be moving to fast at this point in time.

Bruce J. Swiecicki

There is sufficient division among the parties affected by this TIA that it is obvious to me that a more refined proposal must be developed to address all concerns. I would recommend that all parties convene over the next several weeks to work together in drafting another TIA.

Abstain

Ted A. Williams

As the proponent points out in several statements of the TIA, EV charging equipment, facilities, and understanding of interactions with fueling facility hazards is "evolving" at the present time. As such, it is unclear that the minimum requirements being proposed are either necessary or sufficient. In any case, I have not been involved in discussion of the proposed requirements to develop an opinion of their efficacy.
**QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.**

<table>
<thead>
<tr>
<th>Eligible to Vote: 34</th>
<th>Not Returned: 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curtis N. Harding, Jess A. Robbins, Chaitanya Katekar</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Roland A. Riegel</td>
<td>This TIA fills a Code gap that is greatly needed for the existing 2021 edition. Although not perfect, this does more good than harm to drive consistent requirements.</td>
</tr>
<tr>
<td>Robert N. Renkes</td>
<td>D</td>
</tr>
<tr>
<td>Ronald B. Laurence, Jr.</td>
<td>The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.</td>
</tr>
<tr>
<td>Rob Brown</td>
<td>The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard. If my memory serves me correctly we were trying to reference a different standard and there was a conflict.</td>
</tr>
<tr>
<td>Mike Walters</td>
<td>I agree due to the fact that charging stations are being installed literally everywhere.</td>
</tr>
<tr>
<td>Joel E. Sipe</td>
<td>Agree</td>
</tr>
<tr>
<td>Thomas J. Forsythe</td>
<td>A.</td>
</tr>
<tr>
<td>David T. Phelan</td>
<td>Agree</td>
</tr>
<tr>
<td>Randy Moses</td>
<td>C. Agree - I do not believe this can wait until the next code cycle given the push to install EV chargers.</td>
</tr>
<tr>
<td>Andrew S. Klein</td>
<td>D</td>
</tr>
<tr>
<td>Scott C. Boorse</td>
<td>D</td>
</tr>
<tr>
<td>Johnny Rhodes</td>
<td>C</td>
</tr>
<tr>
<td>Joseph Spaeder</td>
<td>Agree</td>
</tr>
<tr>
<td>Hamdan Abdalla Alsenaani</td>
<td>i agree</td>
</tr>
<tr>
<td>Matt Lauber</td>
<td>Agree</td>
</tr>
<tr>
<td>Guy L. Jones, Jr.</td>
<td>agree</td>
</tr>
<tr>
<td>Christopher M. Platz</td>
<td>D</td>
</tr>
</tbody>
</table>
Bill Hickman  
D

Dennis Boyd  
The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation

Daniel John Hunter  
The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

Disagree  
11

James R. Rocco  
The NFPA 30A Technical Committee has taken a first step in developing a uniform code for EV charging stations by proposing requirements applicable only to motor fuel dispensing facility as part of the 2024 revision cycle. The value of proposing this code as part of the normal revision cycle is that it provides the opportunity for the Committee to consider public comment and make appropriate adjustments before the code is finalized. While there is a need for a uniform national code addressing the installation of EV chargers at a motor fuel dispensing facility, it is essential that development of that code take into account stakeholder input and feedback, as well as recognize existing EV charger installation practices. The emergency nature of the TIA is based on offering the public a benefit that would lessen a recognized (known) hazard and to provide an AHJ with guidance for safe siting, installation, operation, inspection, and maintenance. However, that is not the case. The comprehensive nature and unintended consequences of the TIA will result in significant inconsistencies with common practices for the installation of EV chargers at other facilities; create a significant and unnecessary disadvantage for motor fueling facilities in the development of an EV charging infrastructure (See comments on Technical Merit); and unnecessarily eliminate convenient and familiar locations that would otherwise be available to the public for EV charging. Developing reasonable and safe fire codes related to EV chargers at fuel dispensing facilities, such as retail fueling stations and truck stops, should be done through the regular process that is underway for the 2024 version of the NFPA 30A. I urge others on the NFPA 30A Technical Committee to vote NO (Disagree) on the TIA and allow the development of this addition to the code to continue through the normal revision process.

Charles A. Burns  
Since the issues are already properly addressed there is no emergency

Nils Deacon  
I do not agree that it is of an emergency nature. Allow the process to go through for greater general input.

Paul J. Doyle  
Do not feel this is an emergency subject
Eric C. Smith: This is a large amount of new information to add to the code without the ability for the public to participate and comment. To my knowledge there has not been sufficient incidents to demonstrate that this addition is of an emergency nature.

Bruce J. Swiecicki: There is sufficient division among the parties affected by this TIA that it is obvious to me that a more refined proposal must be developed to address all concerns. I would recommend that all parties convene over the next several weeks to work together in drafting another TIA.

Ted A. Williams: I do not believe the proponent has provided a sufficient justification for the coverage to be implemented as addressing building and facility issues of an emergency nature. As an alternative to the proposed additional coverage, electric vehicle equipment and charging systems can be installed in locations not in proximity to fueling facilities.

Richard G. Fredenburg: While reason D is the correct emergency nature for this TIA when it is technically correct, the TIA is not ready for implementation.

John Morgan: After reviewing charging stations in NJ and SC, taking photos and measurements, and no emergent issues were observed, including watching owners charge their vehicles, I am changing my vote-disagree.

Philip Myers: There is no evidence to date that incidents have occurred as a result of these rules not being applied formally.

R. Jeff Tanner: The information and guidance is needed, but not for already adopted standards. There is no substantiation at this time for the retro requirement.

Abstain: 0
Foran, Rosanne

Subject: FW: NFPA 30A and 855 harmonization

From: Boyd, Dennis
Sent: Friday, January 7, 2022 6:20 PM
To: Marando, Michael <MMarando@nfpa.org>
Cc: 'Bob Renkes'; 'Scott Boorse'; 'Jim Rocco'
Subject: NFPA 30A and 855 harmonization

Mike,
Here is my statement on 855 and 30A.
Have a great weekend.
Dennis

It is my engineering judgement, that NFPA 855 provides the minimum requirements for mitigating the hazards associated with ESS equipment. However, in application, NFPA 855 does create some confusion due to the standard’s lack of a scope, and its broad definition of an ESS.

The NFPA 855 standard, outlines many provisions which NFPA 30A has also universally adopted. Some examples are vehicle protection bollards, setbacks from buildings and property lines, requirements for outdoor installation, and compliance with NFPA 70.

The NFPA 30A task force, in its proposed new chapter, is in my judgement attempting to provide some specific guidance on safety and hazard mitigation of equipment solutions solely intended to charge EV cars in a filling station setting. The new chapter also acknowledges that in the marketplace today, there are NRTL certified battery integrated electrical vehicle chargers which are currently being installed at filling stations. These devices, by purpose and design are only intended to charge EV cars. These devices are not intended to be an ESS systems, as defined by the 2020 NFPA 855 standard. They are not by purpose or design intended “… to supply electrical energy at a future time to the local power loads, to the utility grid or for grid support” (NFPA 855. Section 3.3.9)

The 855 standard, without scope, creates end user and AHJ confusion, where in Table 1.3 adopts threshold battery quantities that broadly define all nature of equipment as ESS devices if aggregate capacities exceed the table quantities.

It is my engineering judgment that by following NFPA 855, these conflicts can be address. The NFPA 30A task force has acknowledged one pathway. When a US NRTL (MET, and Intertek) upon examining the equipment, can determined that the battery integrated chargers are chargers with batteries and not an ESS that charges cars. The NRTL can determined that battery management system, and batteries that pass UL 1973 certification is an adequate. This provision is allowed under NFPA 855 Table 9.2 for thermal runaway protection.

The NRTL also determined that the device since it is a charger, needs to be listed to UL 2202. Additional listings required by the NTRL included UL 2231-1, UL 2231-2, and UL 991. It is my engineering judgement that when the NRTL determination that UL 2202 plus UL 1973, and the supporting listings, this would conform with Section 4.2.1 of NFPA 855 allows for equipment to be exempted from UL 9540, if the ESS system is “no less safe” than a system meeting UL 9540. Equipment not listed to 9450 should be “documented and verified as meeting the provision of this standard using the equivalency requirements in section 1.5.” Section 1.5 states that “nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, reliability, and safety over those prescribed in this standard.”
It is my engineering judgment to agree with the NRTLs (MET, Intertek) who have examined battery integrated chargers, and has determined that due to design and intended purpose it, does not required UL 9540, but its “quality, strength, fire resistance, effectiveness, durability, reliability, and safety” are equivalently evaluated by UL 2202, UL 1973 and the supporting listings.

In the proposed new chapter in NFPA 30A the task force has attempt to recognize this NRTL determination for battery integrated chargers and agree with them that this approach is “no less safe”.

Should the purpose and intent of a battery integrated changer change to provide local power, or grid support, then it is my engineering judgment that the equipment would be required to be listed to UL 9540, in addition to any other standards that the NRTL determines are necessary to ensure safety to the public and the worker.

Dennis

Dennis Boyd | bp innovation and engineering - applied sciences – advance fuel products
Expert Technologist Regulatory and Risks
To whom it may concern:

I appreciate the effort and utility of this document. One thing that quickly comes to mind is the ambiguity of the following statement:

(1) 6 m (20 ft) or more in all directions from a dispensing device or areas handling or dispensing flammable or combustible liquids or gases.

A dispensing device is a definite reference point. An area handling or dispensing flammable or combustible liquids or gases is very undefined. This would cause great variation in enforcement, and accordingly, design parameters. In my opinion, the phrase "area handling or dispensing flammable or combustible liquids or gases" would have to be as delimited as the extents of a dispenser. I understand that such an area may literally be an area where a trailer or some other delivery device that is transportable might be parked, but in such a case, the area would have to be delimited with visible signs, pavement markings, fences or other delimitations. If judging the intent of the code proposal, the distances of 20 ft would have to be measured from those delimiting lines. This would remove a great deal of the ambiguity.

Thank you for your efforts, and I hope you will appreciate the spirit with which I offer this advice.

All the best,

John G. Dzvonczyk, PE, CFPS
Fiedler Group, Inc.
Via Mobile Device
I would like to submit that I agree with the proposed TIA 1621 as written and feel that it will enhance NFPA 30A.

Roy Creley

Fuel Systems Specialist

ENVIRONMENTAL CONTRACTORS, INC.
We see the TIA as a necessary first step toward providing regulatory structure around EVCS.

Thank you,

Glen Vanderveen | VP Auditing and Compliance Services
Belshire Environmental Services, Inc.
25971 Towne Centre Drive, Foothill Ranch, CA 92610

Check out our website at www.belshire.com for information that you may not know about Belshire.

---

Mr. VanderVeen et al,
This will acknowledge receipt of Belshire Environmental Services’ comments on Proposed TIA No. 1621 to NFPA 30A. At the end of the Public Comment period, March 2, 2022, they will be forwarded to the Technical Committee on Automotive and Marine Service Stations for review and then to the Standards Council for consideration.

Just so we are on the same page, do you Support or Oppose the proposed TIA?
~Rosanne

Regards,

Rosanne Foran
Standards Operations Coordinator | NFPA
1 Batterymarch Park
Quincy, MA 02169-7471
+1 617 984-7243
www.nfpa.org

Learn more about NFPA LiNK™, your custom, on-demand code knowledge tool brought to you by NFPA.
Belshire is pleased to present to the National Fire Protection Agency comments to the proposed TIA 1621 of NFPA 30A. The comments provided are primarily addressing inspection and training, as well as the required safeguards. The following comments are specific to citations noted.

15.7 Signage
Belshire recommends including minimum or recommended sizes for signage and/or text, or references to other NFPA requirements that clarify those requirements. The Washington State UST emergency signage requirement is similar to the proposed requirement and Belshire saw confusion over the minimum signage requirements.

15.8 Operation
In the event of an emergency at a combination EVCS / motor fuel dispensing facility, any employee responsible for responding to emergencies should be knowledgeable in how to shut off both the fueling and charging equipment, so Belshire recommends revising the training requirement to require all fuel attendants to be trained in how to respond to an EVCS emergency and vice versa. Additionally, adding a requirement to document training would allow regulatory inspectors to confirm compliance with this requirement. A sample form and minimum syllabus, provided by either the NFPA or the equipment manufacturer, would also help sites to better train their employees.

15.9 Emergency Electrical Disconnects
Many facilities have breaker panels that are locked in a back room or are otherwise slow or difficult to access as compared to an emergency shutoff switch. Belshire recommends that for 15.9.6, which states “At attended motor fuel dispensing facilities, an additional emergency shutoff or electrical disconnect device shall be accessible to the attendant”, the word “immediately” be added before the word “accessible” to make clear that locked breaker panels, or other slow to reach shut off methods, do not meet this requirement. There should also be emergency shutoff device available to the public and within a given distance from the charging stations.

15.12.1 Inspection and Maintenance
Requirement 15.12.1 states “EVSE shall be periodically inspected by a person who is knowledgeable in the operation of the equipment to verify that it is in proper working order” but does not define “knowledgeable”, the frequency of the inspection, or specifically what equipment should be inspected and what deficiencies would require removal from service. Belshire recommends requiring training documentation to demonstrate knowledgeability, and further recommends that a sample training syllabus and form be supplied by either NFPA or the manufacturer of the equipment. Regarding the inspection frequency, Belshire recommends that they be required “at least once each day the equipment is subject to use” to ensure that the defects are caught quickly but it is clear that when a site is not operating, the inspections are not required.
These comments were prepared by Belshire employees Andy DeGregorio and John Warrington.

Thank you,

Sincerely,

Glen VanderVeen
VP Auditing and Compliance Services
Belshire Environmental Services, Inc.
Please see the attached comment letter on TIA No. 1621 from NACS, NATSO, and SIGMA.

Doug Kantor  
General Counsel

NACS | Advancing Convenience & Fuel Retailing  
1600 Duke Street  
Alexandria, VA 22314 USA  
convenience.org

This message and any attachments to it may contain confidential information. If you are not the intended recipient and received this message in error, you should not read it, and any disclosure, copying, distribution, or use is strictly prohibited. If you received this message in error, please reply immediately to the sender by return e-mail, and delete this message from your system. Thank you.
January 26, 2022

NFPA Standards Administration
1 Batterymarch Park
Quincy, MA 02169

RE: TIA No. 1621

Dear NFPA Standards Administration:

We are writing to express our strong opposition to expediting the proposed NFPA 30-2021 Code for Motor Fuel Dispensing Facilities and Repair Garages TIA Log No. 1621 and urge the committee to vote against the Tentative Interim Amendment regarding fire code changes related to electric vehicle (EV) chargers at motor fuels facilities.

We respect the important work this committee does to keep the public safe and the collaborative process that the NFPA brings to complex issues. But, the Tentative Interim Amendment (TIA) would be a sharp departure from this otherwise sound process. The background work receiving information from experts and studying actual experience in the retail motor fuel space simply has not been done to a sufficient level to support issuance of a Tentative Interim Amendment.

Developing reasonable and safe fire codes related to EV chargers at fuel dispensing facilities, such as gas stations and truck stops, should be done through the regular process that is underway for the code review for the 2024 version of the 30A-Motor Facilities Code. Following that process should allow for transparent and robust stakeholder input and feedback from subject matter experts from electric vehicle manufacturers, electric vehicle supply equipment manufacturers, fuel retailers, utilities, and other valuable resources. That has not occurred to date, and cannot occur in any meaningful way in the short time period permitted for committee consideration of the TIA.

No Emergency Exists

While there is a strong interest and effort to move the transportation energy sector towards electrification as quickly as possible, the consumer demand for EVs and the need to build a competitive EV charging market will not happen overnight, nor would it be prudent to unintentionally develop fire codes and standards that would unnecessarily inhibit this transition. The proposed Tentative Interim Amendment risks doing just that.

There is no substantial evidence to date of safety issues relating to charging EVs at retail fueling locations. Without that evidence, there is nothing to suggest that an emergency exists that would justify going through the TIA process rather than taking the time to go through the full process to consider the code for 2024.
No Technical Merit

There is also no evidence supporting the substance of the TIA as written. Fuel retailers have a vested interest in ensuring the safety of their customers and employees and want to be a partner with other stakeholders in making sure the EV charging experience is as safe, convenient and efficient as possible. Fuel retailers operate many EV chargers at their locations today and are adding more sites. These sites safely charge vehicles every day. The technical committee does not have information before it to support the TIA approach.

By using the process and timeline for revising the code for 2024, it would allow for greater input and better data to make the most informed decision in developing an effective fire code for EV chargers at fuel dispensing facilities.

The proposal that was just released for the TIA process does not allow enough time to gather the technical information and data needed to make a reasonable, supportable decision. To date, adequate data has not been collected, disseminated or evaluated. This is a vital step in the process that cannot be overlooked.

* * *

In the strongest possible terms, we urge every member of the committee to oppose issuance of any TIA at this time. These issues can only be reliably handled through a full process with complete information.

Thank for your attention to, and consideration of, this matter. We look forward to working with you through a full, deliberative process.

Sincerely,

David H. Fialkov
Executive Vice President, Government Affairs
NATSO, Representing America’s Travel Centers and Truck Stops
SIGMA: America’s Leading Fuel Marketers

Doug Kantor
General Counsel
National Association of Convenience Stores
Dear Standards Council Members

Thank you for the opportunity to comment on TIA 1621 regarding Electric Vehicle Charging requirements being placed in NFPA 30A.

First and foremost, I believe this subject material on Electric Vehicle Charging Equipment is outside the scope of the NFPA 30A Committee.

Scope

This Committee shall have primary responsibility for documents on safeguarding against the fire and explosion hazards associated with the general storage, handling, and dispensing of flammable and combustible liquids at automotive and marine service stations, farms, and isolated construction sites and with related activities such as dispensing gaseous fuels. This Committee shall also have primary responsibility for documents on construction, control of fire hazards, ventilations, fire protection, and maintenance of repair garages.

I believe that this material is overly restrictive as far as locating EV Charging and best left to NEC Code Making Panel 12 which has had charging station subject matter experts on the committee since the 1996 NEC edition.

Second, I commend the 30A committee for their work, but EV charging requirements should be limited to Hazardous/Classified locations with regard to electrical equipment. Chapter 8 Electrical Installations in NFPA 30A contains all of the necessary electrical requirements necessary to safely implement EV Charging. Beyond the safety issues related to flammable and combustible liquids and electrical equipment as a source of ignition, the remainder of the requirements in this TIA are basically design issues.

This TIA should be rejected as well as further material regarding this topic in the next edition of NFPA 30A.

I am one of the creating members of Article 625 in the NEC, I have been chair of CMP-12 for three cycles and I am currently on CMP-12. I would request that the Standards Council reject this particular TIA with regard to material outside the limited scope of the NFPA 30A technical committee.

Thank you.

Timothy M. Croushore, P.E.
TO: Secretary, Standards Council

NEMA is submitting for consideration, the attached Comments to Proposed TIA 1621 on NFPA 30A. Questions regarding these comments should be directed to Megan Hayes, cc: Steve Griffith and Andrei Moldoveanu.

Sincerely,

Marilyn

Marilyn Williams
Senior Assistant
Technical Services Department
NEMA
1300 North 17th Street, Suite 900
Rosslyn, VA 22209
http://www.nema.org
NEMA proposed comments on NFPA 30A TIA 1621

Background

The TIA 1621, embedded in NFPA 30A, was approved in the Technical Committee on Automotive and Marine Service Stations of NFPA 30A “Code for Motor Fuel Dispensing Facilities and Repair Garages”, see embedded.

NEMA’s arguments in opposition to the TIA are as follows:

- **Technical Criteria:**
  - In general, NFPA 70 is the electrical installation code. The additional requirements for installing EVSEs in a Motor Fuel Dispensing Facility, if indeed needed, should have been proposed for inclusion in that NFPA document.
  - The definition of “Electric Vehicle Charging Stations (EVCS) is very problematic.
    - The definition states an EVCS is “any space that can be served.” Since every space on the premises of dispensing facility or repair garage can have an EVSE installed, the scope of these changes would apply to the entire premises which is substantially restrictive.
    - The definition states an EVCS is “EVSE and a charger energy supply system.” A charger energy supply system has not been defined nor appears to be describing a real product in the marketplace.
  - The rules appear to be limited to just EVSE, excluding Electric Vehicle Power Export Equipment (EVPE) and Wireless Power Transfer Equipment (EVSE). This appears to be a restraint on commercial trade for EVSE alone and not the other electric vehicle power transfer systems in the market today.
  - Section 15.3.1(1) is overly restrictive. If the property line of a gas station or repair shop is next to a water retention pond or undeveloped property, there is absolutely no hazard with the installation of EVSE along the property line. This rule appears out of scope and should be addressed in local zoning ordinance.
  - Section 15.3.2 is already addressed in Chapter 8 of the Standard and Article 514 of NFPA 70. The requirements stated here are overly restrictive and discriminate against EVSE installation. Other utilization equipment and appliances regularly found on the premises of gas station or repair garage are excluded. This includes tire inflation machines, automotive vacuum machines, vending machines, electrical ice coolers, and the like. There has been no evidence submitted showing that EVSE present a greater hazard as compared to these other appliances.
Section 15.3.4.1 is already addressed in the NFPA 70 under section 625.5. There is no need to repeat this information in the NFPA 30A. The inclusion of UL 2750 is misleading given the wireless charging is not included in the EVSE definition. The output cable doesn’t have to be separately listed in case it is an integral part of a listed EVSE.

Section 15.3.4.2 states modified EVSE shall be listed or listed by report. “Listed by report” is not an industry recognized term. While this could be referring to a Field Evaluation by a Field Evaluation Body, NEMA would contend that modification of a listed EVSE is in violation of the NEC and should not be approved by the AHJ.

Section 15.4.2 is a site, property, or zoning issue and not an electrical issue so out of place in this section.

Section 15.4.3 is already address by the applicable product safety standards that address the protection of persons and protect from the hazards of shock, electrocution, fire, and arc-flash.

Section 15.4.3.1 has an error in text. It currently reads “Appropriate electric vehicle standards include the following”. It should read “Appropriate electric vehicle EVSE standards include the following”.

Section 15.6.1 is overly restrictive and not achievable in practice.

Section 15.8.2 is out of scope for this standard. However, it should be noted that conventional EVSE does not incorporate thermal fluids. EVSE with liquid-cooled output cable jackets or micro-chillers are listed equipment that must comply with the applicable listing standard and installation and operation instructions.

Section 15.9 is overly restrictive and already addressed in the section 625.43 of the NFPA 70. No substantiation was provided to indicate a need for emergency electrical disconnects beyond the requirements of the NEC.

Emergency Nature:

The proponent states “EVSE is currently being installed at liquid fueling facilities and there are no current standards to guide the installation.” This is an inaccurate statement as Chapter 8 of the NFPA 30A is applicable to EVSE installed at this type of facility along with Article 514 and 625 of the NFPA 70. There is no evidence submitted by the proponent that clearly shows the current language of the NFPA 30A and NFPA 70 are not adequately addressing the safe installation of EVSE at these facilities. Therefore, this does not meet the NFPA criteria of an emergency amendment.

Noting here that neither the EV, EVSE nor electrical industries were part of the development of this code language. By denying the emergency nature of this TIA, development of code language involving these important stakeholders would subsequently be permitted. For this reason and the other points raised within, NEMA opposes approval of this TIA.
Ms. Bellis –

Tesla respectfully submits comments regarding the proposed Tentative Interim Amendment (TIA) Log No. 1621 for NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages. Please see attached.

Thank you.

Tessa Sanchez

Tessa Sanchez  |  Business Development and Public Policy
3500 Deer Creek Rd, Palo Alto, CA 94304

TESLA
Dawn Michele Bellis, Director and NFPA Standards Council Secretary
NFPA Standards Administration
1 Batterymarch Park
Quincy, Massachusetts 02169-7471

RE: NFPA 30A TIA No. 1621

Dear Ms. Bellis:

Tesla respectfully submits comments regarding the proposed Tentative Interim Amendment (TIA) Log No. 1621 for NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages. Tesla strongly opposes the proposed TIA and encourages the NFPA 30A Committee to vote against it. The TIA lacks technical justification and is proposed on the premise that $7.5 billion in federal funding for electric vehicle (EV) charging stations will pose a hazard to public health and safety. EV charging stations have been deployed safely for more than a decade and are not a public safety hazard. With the absence of clear and present risks, the Committee should swiftly reject the TIA and instead deliberate about code modifications through the standard code cycle process.

Tesla’s mission is to accelerate the transition to sustainable energy through the development of all-electric vehicles and clean energy products. Founded in 2003, Tesla has delivered more than 2 million electric vehicles globally to customers in more than 35 countries around the world. To support the viability and growth of electric vehicles, Tesla launched a DC fast charging (DCFC) network in 2012, known as the Tesla Supercharger network. Superchargers are publicly accessible and located at retail locations, such as convenience stores and restaurants, to provide quick charging along highway corridors and convenient locations around town. In the US, there are over 1,400 Supercharger locations and more than 14,000 Supercharger stalls. Superchargers are located in all fifty States, the District of Columbia, and Puerto Rico, and represent approximately 60% of the DCFC plugs operational in the US.1 There are more than 31,000 Superchargers currently in operation globally.2

1 AFDC station locator https://afdc.energy.gov/stations/#/analyze
2 A map of the global Supercharger network is available at www.tesla.com/findus
I. **Safety Considerations**

There is no emergency or risk to public safety that justifies approval of the TIA. Electric vehicles and EV charging stations are extremely safe. A recent study using data from the National Transportation Safety Bureau and Bureau of Transportation Statistics found that there are 25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively. EV charging is extremely safe as well. Charging cables are only energized when connected and locked to the electric vehicle and communication is established between the charging equipment and the vehicle. The flow of electricity to the charging cable is automatically shut off if the charging connector is unlocked or communication between the vehicle and charging equipment ceases.

II. **Existing Code Provisions**

In North America, more than 200 Supercharger locations and nearly 2,000 Supercharger stalls are located at the same property as motor fuel dispensing stations. Tesla disagrees with the Committee’s assertion in the TIA’s justification that “there is no language in the existing Code to guide the AHJ and the potential [EV charging] host in the safe, siting, installation, operation, inspection and maintenance” of charging stations. The existing 2021 NFPA 30A code, Section 8.3 “Installation in Electrical Classifications” accounts for electrical equipment installations, such as charging stations, within liquid fuel dispensing areas. The code requires that electrical systems be rated for use in proximity to flammable and combustible fuels. If EV charging stations are not rated, they are prohibited from being installed within the fueling island radius specified in the existing NFPA 30A. Tesla’s Superchargers are not rated equipment and are therefore not installed near liquid fueling equipment. When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.

Moreover, EV charging stations are subject to building and electrical codes regardless of the property type. Tesla’s stations follow NFPA 70 and the International Building Code, in addition to any locally adopted codes and utility requirements, including local permitting and inspections. The proposed TIA would be inconsistent with electrical code (NFPA 70) by prohibiting installations within 10 feet of property lines or buildings at properties with liquid fueling, whereas the electrical code (NFPA 70, Article 625) does not restrict EV charging adjacent to property lines or buildings, such as a restaurant or shopping center.

---

III. Limiting EV Charging Development

The code changes in the proposed TIA are significant and would severely limit EV charging infrastructure developments. Requiring various setbacks from property lines, buildings, liquid fueling locations, liquid fuel storage tanks, as well as being above grade from liquid fueling, would effectively prohibit EV charging from being deployed at many existing fueling locations where NFPA 30A is enforced. For properties where EV charging is possible, charging hosts would face significant additional costs for system emergency shut offs that are integrated with liquid fueling pumps, and fire suppression equipment despite minimal risks of fire or safety hazards. The Committee should carefully deliberate these code modifications through the standard code cycle process, rather than through an emergency TIA. Moreover, the Committee should seek additional stakeholder input from electrical experts in the 2024 standard code cycle.

IV. Conclusion

Tesla appreciates the opportunity to provide feedback on the proposed TIA. We believe the proposed TIA should be voted down due to a lack of sufficient technical justification and adequate deliberation about the proposal and potential unintended consequences. We look forward to participating in the 2024 code development cycle where the code can be refined and finalized through a robust, open, and consensus-based process.

Sincerely,

Christina F. Francis, PE, FSFPE
Senior Staff Regulatory Specialist
Test and Compliance Engineering

Tessa Sanchez
Senior Policy Associate
Business Development and Public Policy
Please find attached the comments of EDTA of TIA Log 1621.
Thank you for your consideration.

Please direct any inquiries to me.

Genevieve Cullen

Genevieve Cullen
President
Electric Drive Transportation Association (EDTA)
1250 Eye Street, NW, Suite 902, Washington, DC 20005
ElectricDrive.org | GoElectricDrive.org
March 1, 2022

NFPA Standards Administration
RE: TIA Log No. 1621
To: Secretary, Standards Council,

Dear Secretary,

I am writing today on behalf of the Electric Drive Transportation Association (EDTA), the cross-industry trade association promoting the advancement of electric drive technology and electrified transportation. EDTA’s members represent the entire value chain of electric drive, including vehicle manufacturers, battery and component manufacturers, utilities and energy companies, smart grid and charging infrastructure developers. Collectively, we are committed to realizing the economic, national security and environmental benefits of displacing oil with electricity in hybrid, plug-in hybrid, battery, and fuel cell electric vehicles.

We strongly oppose the proposed NFPA 30-2021 Code for Motor Fuel Dispensing Facilities and Repair Garages TIA log No. 1621 and urge the Committee to vote against the TIA regarding fire code changes related to EV chargers at motor fuels facilities. The proposed change is not supported by facts evidencing a need for use of the emergency process to advance the proposal. Further, there is no technical evidence supporting the proposal as an effective or justified fire code for electric vehicle chargers at fueling facilities.

EDTA’s mission is to advance electrification and the policies that can ensure U.S. leadership in emissions reduction and the global electrification supply chain market. Safety is integral to our members’ work and to the successful transition to electric transportation. We are supportive of developing reasonable and effective standards through the established process, which is underway for the 2024 version of the 30A- Motor Facilities Code. This process allows for on-the-record input from experts in the industry, including vehicle, electric vehicle supply and component manufacturers and utilities. There is no record of safety issues related to EV charging at retail fueling locations and no factual justification is offered for circumventing the established process with an emergency designation.

Further, the proposed Amendment is not supported by any evidence of its efficacy in addressing the alleged need. There is no data supporting the effectiveness of the proposed standards and the expedited process sought would not allow for the technical review necessary to evaluate its merits. The established review process is designed to ensure that the code reflects rigorous data collection and review to ensure the safety of the fueling facilities. Allowing this process to be circumvented makes that assurance impossible. We urge you to reject TIA No. 1621

Sincerely,
Genevieve Cullen
President
To Whom It May Concern:

Please find attached to this email the comments of ChargePoint Inc. on NFPA 30A TIA No. 1621.

Please let me know if you have any questions.

Sincerely,
Justin

Justin Wilson
Director, Public Policy
ChargePoint | chargepoint.com
March 1, 2022

NFPA Standards Administration
1 Batterymarch Park
Quincy, MA 02169

TIA Log No.: 1621

Dear NFPA Standards Administration:

We are writing to express our strong opposition to the proposed NFPA 30-2021 Code for Motor Fuel Dispensing Facilities and Repair Garages TIA Log No. 1621 and urge the members the committee to vote against (disagree) the Tentative Interim Amendment regarding fire code changes related to electric vehicle (EV) chargers at motor fuels facilities on both technical merit and emergency nature.

We respect the important work this committee does to keep the public safe and the role that standards making bodies such as NFPA bring to complex issues. Unfortunately, the Tentative Interim Amendment (TIA) would be a sharp departure from this otherwise sound process.

Developing reasonable and safe fire codes related to EV chargers at fuel dispensing facilities, such as gas stations, truck stops, and fleet facilities should be done through the regular process that is underway for the 2024 code review cycle. Following that process should allow for transparent and robust stakeholder input and feedback from subject matter experts from electric vehicle manufacturers, electric vehicle supply equipment manufacturers, fuel retailers, utilities, additional standards making bodies, and other valuable resources. This critical stakeholder engagement has not occurred to date and cannot occur in any meaningful way in the short time period permitted for committee’s consideration of the TIA.

**No Emergency Exists**
While there is a strong interest and effort to move the transportation sector towards electrification as quickly as possible, the consumer demand for EVs and the need to build a competitive EV charging market will not happen overnight, nor would it be prudent to unintentionally develop fire codes and standards that would unnecessarily inhibit this transition.

The TIA fails to meet the standards of Emergency Nature per Section 5.4 of the NFPA Standards Directory. Although the submitter relies on Section 5.4(d) as the basis for this TIA, there is no detail of any public benefit, no substantiation of a recognized hazard, and no evidence that the proposal would ameliorate a continuing dangerous condition or situation. ChargePoint firmly disagrees with the statement that “there are no current standards to guide the installation”, such a statement is both inaccurate and misleading.
Installation of EVSE is guided by the National Electrical Code and the existing NFPA codes which already provide for safe distances from potential sources of ignition.

**No Technical Merit**
There is no evidence supporting the technical aspects of the TIA as written. Electric vehicle charging providers, fuel retailers, and fleet operators have a vested interest in ensuring the safety of their customers and employees and want to be a partner with other stakeholders in making sure the EV charging experience is as safe, convenient, and as efficient as possible. These groups operate many EV chargers at their locations today and are adding more sites. These sites safely charge vehicles every day and ChargePoint has seen no evidence to support the overly restrictive approach in the TIA.

By using the standard process and timeline for revising the code for 2024, it will allow for greater input and better data to make the most informed decision in developing an effective fire code for EV chargers at fuel dispensing facilities. The TIA process does not allow enough time to gather the technical information and data needed to make a reasonable, supportable decision. To date, adequate data has not been collected, disseminated, or evaluated. This is a vital step in the process that cannot be overlooked.

**ChargePoint has identified the following concerns and conflicts created with the proposed TIA.**

- **Many of the provisions in the TIA are already covered in the National Electrical Code (NEC) or NFPA 70.** Multiple sections in the NEC contain provisions for electrical equipment installed at sites covered by the TIA (e.g. NEC Article 511 “Commercial Garages, Repair and Storage” Article 514 “Motor Fuel Dispensing Facilities”) and these provisions have already been coordinated with NFPA 30. The NEC already requires ordinary electrical equipment considered a hazard to be 6m away from a dispenser. Additionally, charging equipment is also already required to be away from fill and vent locations under existing NFPA codes.

- **There is insufficient justification provided in the TIA for why separate requirements need to be established for EVSE and not other electrical equipment given NFPA 70.** The NEC requirements, which cross-reference NFPA 30A and include provisions for the location of electrical equipment at fueling sites, are currently sufficient for other electrical equipment at a gas station like tire pumps, ice machines, and vending machines, and there is no evidence that EVSE should be treated differently. The NEC also requires equipment to be tested to product standards.

- **Several sections in the TIA are redundant to Articles in the NEC and duplication risk inconsistent overlap of codes which could lead to confusion during the installation and inspection process:**
  - 15.3.4.1 is redundant to NFPA 70 110.2, 625.5, etc. since all electrical equipment is required to be approved.
  - 15.3.4.1 is redundant to Annex A of NEC.
  - 15.4.3 is redundant, and inadequate since many other articles of the NEC apply.
  - 15.4.4. is redundant to NEC Article 110.3(B), NEC Article 514, etc.
15.5.1 is redundant to NEC Article 110.3(A), 110.26(E)(2), 110.27, etc.
15.5.3 is redundant to NEC 110.3(B), 110.13(A).
15.3.4.2 is incorrect. Approved, Labeled, Listed, Identified, are all defined terms in NEC. It is not realistic to expect a relisting as it needs to be done by a certification body accredited by ANSI. Modification is already covered under “use” of electrical equipment in NEC 110.1, 110.3.(B), etc., and does not require a relisting if done in accordance with NEC.

- **NFPA 30A is not the appropriate code to address EVSE setback from the property line.** It is not clear why EVSE are to be kept away from the property line as specified in Section 15.3.1. Setback from the property line regulations are more appropriately considered in the NEC or state building codes. Current NFPA provisions for electrical equipment installed in the area around the flammable dispenser are already sufficient.

- **The building set back requirements outlined in Section 15.3.1 would exclude many locations for EVSE installation.** This provision would prevent a number of fueling and convenience locations from providing EVSE to their customers. EVSE at fueling locations are typically installed on the sidewalk in front of or adjacent to the main building at fueling and convenience locations, which is primarily where striped stalls are located. Forcing EVSE further away from the buildings while other electrical equipment could be installed directly to the buildings is overly restrictive and punitive to EVSE electrical equipment.

- **Section 15.3.1. may conflict with ADA requirements for EVSE parking stalls designed for accessible access.** In some locations, installations may also provide clearance for ADA and pedestrian path of travel, which in most jurisdictions would be 5 feet from the building. ADA or accessibility consideration or requirements in some states could conflict with the requirements of 15.3.1. The requirements in 15.3.1, either by way of the EVSE location or location of EVCS, would make the path of travel more difficult or impossible for those with accessibility needs.

- **Section 15.4.3.1 has an error in text.** It currently reads “Appropriate electric vehicle standards include the following”. It should read “Appropriate electric vehicle EVSE standards include the following”.

- **Installation of EVSE on existing sites fall under the electrical permit process and thus reference the NEC.** Overlapping regulation as proposed in the TIA will create challenges as codes are applied in practice across different disciplines.

- **Data on fire risk suggests that EVs have lower risk of catching on fire than gasoline or hybrid vehicle, demonstrating no clear emergency need for the TIA.** The purpose of NFPA 30A is “reasonable safeguards for dispensing motor fuels into fuel tanks”. A recent study based on National Transportation Safety Board data shows that internal combustion engine motor vehicles are 61x more likely (1529.9/100k) to catch fire and hybrid vehicles 138.4x more likely (3474.5/100k), than battery electric vehicles (25.1/100k).  

In the strongest possible terms, we urge every member of the committee to oppose (disagree) with this TIA on both technical merit and emergency nature. These issues can only be appropriately handled through the full standards development process with

---

complete information and dialogue with those knowledgeable of the installation and operation of electric vehicle supply equipment.

Thank for your attention to, and consideration of, this matter. We look forward to working with you through a full, deliberative process.

Sincerely,

Justin Wilson
Director, Public Policy
ChargePoint, Inc.
Hello,

Please find the attached letter from the Alliance for Automotive Innovation (Auto Innovators) opposing TIA 1621 for NFPA 30A.

Thank you for the opportunity to provide feedback, and please do not hesitate to reach out with any questions or if I can provide any additional information.

Dan Bowerson  
Senior Director, Energy & Environment

Alliance for Automotive Innovation  
2000 Town Center - Suite 625, Southfield, MI 48075
autosinnovate.org - twitter - linkedin
March 2, 2022

NFPA Standards Administration
1 Batterymarch Park
Quincy, MA 02169

Re: **TIA No. 1621, NFPA 30A – Code for Motor Fuel Dispensing Facilities and Repair Garages**

Dear NFPA Standards Administration:

The Alliance for Automotive Innovation1 (Auto Innovators) writes to express our opposition to the proposed NFPA 30A-2021 Code for Motor Fuel Dispensing Facilities and Repair Garages Technical Interim Amendment (TIA) No. 1621. There is no technical basis for making such an amendment and this will negatively impact fuel retailers’ ability to safely install electric vehicle (EV) charging stations. Amendments such as the one being proposed should be handled through regular processes, which are already underway for the 2024 version of NFPA 30A.

Auto Innovators represents manufacturers producing nearly 98 percent of cars and light trucks sold in the U.S., original equipment suppliers, as well as technology and other automotive-related companies. We are committed to achieving a net-zero carbon transportation future for America’s cars and light trucks, and the only way that we can achieve our collective goals is if EV charging is readily available. We strongly support the safe installation and use of EV chargers, but without evidence requiring use of this emergency procedure, the TIA looks to sidestep the robust process that NFPA has in place to engage relevant stakeholders and subject matter experts.

As the transition to an electrified fleet speeds up, safely installed EV charging stations at fuel retailers will be important. The TIA unnecessarily inhibits the ability of fuel retailers to install EV charging stations, and the siting requirements included in the TIA do not have evidence that would support the need for a TIA. This topic should be discussed and debated through the normal NFPA 30A processes.

---

1 Formed in 2020, the Alliance for Automotive Innovation is the singular, authoritative and respected voice of the automotive industry. Focused on creating a safe and transformative path for sustainable industry growth, the Alliance for Automotive Innovation represents the manufacturers producing nearly 98 percent of cars and light trucks sold in the U.S. The newly established organization, a combination of the Association of Global Automakers and the Alliance of Automobile Manufacturers, is directly involved in regulatory and policy matters impacting the light-duty vehicle market across the country. Members include motor vehicle manufacturers, original equipment suppliers, as well as technology and other automotive-related companies. The Alliance for Automotive Innovation is headquartered in Washington, DC, with offices in Detroit, MI and Sacramento, CA. For more information, visit our website http://www.autosinnovate.org.
process. If the subject matter experts on the NFPA 30A committee agree with adding the requirements, they should instead be considered for the 2024 edition.

Additionally, we recommend that, if modifications to NFPA 30A are deemed necessary, the committee consult with electrical code subject matter experts, such as committee members from NFPA 70 E, *Standard for Electrical Safety in the Workplace*. It is unclear if any such subject matter experts were consulted in the drafting of the TIA.

For the reasons laid out above, we oppose the TIA and encourage the NFPA committee to follow the robust process they have in place for code updates. If there is a technical and safety reason for NFPA 30A to include EV charging station requirements, it should be considered for the 2024 edition and not as a TIA.

We appreciate the opportunity to provide this feedback and would welcome the prospect of discussing this topic further with NFPA staff and/or committee members.

Sincerely,

Dan Bowerson
Senior Director, Energy & Environment
To whom it may concern:

On behalf of the Energy Marketers of America (EMA), please see attached comments regarding the proposed TIA 1621 on NFPA 30A.

Best Regards,

Rob Underwood
President
Energy Marketers of America
1901 N. Fort Myer Drive, Suite 500
Arlington, Virginia 22209

***As of October 9, 2020, Petroleum Marketers Association of America (PMAA) is now the Energy Marketers of America. Our website is www.energymarketersofamerica.org

THIS EMAIL MESSAGE AND ANY ATTACHMENTS ARE INTENDED FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified any dissemination, distribution or copying of this communication is strictly prohibited.

Re: Energy Marketers of America Public Input on TIA Log No.: 1621

Intro
The Energy Marketers of America (EMA), previously known as the Petroleum Marketers Association of America (PMAA), is a federation of 47 state and regional trade associations representing energy marketers throughout the United States. Energy marketers represent a vital link in both the wholesale and retail motor fuels distribution chain. EMA members supply 80 percent of all finished motor fuel products sold nationwide including renewable hydrocarbon biofuels, gasoline, diesel fuel, biofuels, heating fuel, jet fuel, kerosene, racing fuel and lubricating oils. Moreover, energy marketers represented by EMA own and operate approximately 60,000 retail motor fuel locations across the country serving local communities and long-distance travelers along the nation’s highways.

EMA opposes the implementation of the TIA as currently written. Based on discussions with EMA members and other organizations, we have identified issues with provisions of the proposed TIA that will result in significant impediments to the installation of EV chargers at motor fueling facilities. EMA believes that reasonable guidance can be developed for the installation of EV Chargers at motor fueling facilities; however, it is essential that development of the guidance does not create significant and unwarranted impediments for motor fueling facilities in offering EV charging services. Unfortunately, the TIA process does not allow for revisions of the TIA to address issues raised or public input received during the TIA balloting process. The only alternative is to agree or disagree with the TIA as proposed.

Our specific concerns with the proposed TIA are provided below:

Section 15.3.1 (Location Adjacent to Buildings or Property Lines)

Delete Section 15.3.1 through 15.3.1.1 in its entirety. Section 15.3.1 requires a setback of 10 feet from property lines and three feet or 10 feet from buildings depending on the fire rating of the building materials. This provision is inconsistent with common practices for the installation of EV chargers and is outside the scope of this code:

1. The definition of a motor fuel dispensing facility is the “portion of a property where motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles...” The current code does not define at what point the portion of the property used for fueling extends to a property line. If an EV charging space meets the requirements for separation from the fuel storage, handling and dispensing equipment, this code should not address the more universal issue of setbacks from buildings or property lines or buildings.

2. The setbacks in this section are contrary to current installation practices not only at a motor fueling facility, but anywhere else EV chargers are being installed. EV chargers are currently being installed on or immediately adjacent to property lines, on and in residential buildings, in parking garages, adjacent to commercial buildings, along public roads and just about everywhere. The application of these setbacks to motor fueling facilities in the absence of uniform guidelines for setbacks governing the installation of all EV chargers will result in unintentional consequences that present a significant disadvantage for retail and commercial fueling facilities.

3. The unintended consequences of applying this section of the code should not exclude motor fueling facilities from the opportunity to be part of the development of an EV charging infrastructure. For example, a motor fuel dispensing facility adjacent to a Fast-Food restaurant would have to install EV chargers 10 feet from a shared property line or a building while the Fast-Food restaurant could install EV chargers on the shared property line or...
next to their building. Motor fuel dispensing facilities can play a significant role in providing convenient charging for electric vehicles and a 10-foot setback applied only to these facilities could eliminate a safe and convenient location on a property otherwise available for EV charging.

Section 15.3.2 (6) (Location of a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank)

Delete Section 15.3.2 (6). This section establishes a 25 ft setback from the EV charging space to a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank. Separation distances for an EV charging space are already established in 15.3.2 (3) through 15.3.2 (5) from the fill, vapor recovery connection, and remote pump. Establishing a 25 ft separation from a tank vehicle is excessive in comparison to the separation distances for points on a tank that are accessed by the tank vehicle while transferring fuel. Separation from the tank vehicle will be achieved by the distances required to maneuver an electric vehicle into and out of a charging space. This is already addressed in Section 15.6.2 which requires that the location of an EV charging space or EV charger not impede or obstruct tank vehicle fuel deliveries. Further Section 15.6.1 requires traffic patterns to be designed so that movement of vehicles not being charged cannot pass through the charging area which would require sufficient space for a vehicle to pass between a tank vehicle and the EV charging space. Both provisions will result in reasonable separation distances from a tank vehicle while fueling.

Section 15.9.4 (Combined emergency shutoff devices for fueling systems and EV chargers.

Section 15.9.4 Needs Further Investigation. EMA members have expressed concern over the ability and potential complexity of combining the emergency shutoff for fuel dispensing equipment and EV chargers. The technical practicality of this provision needs to be further investigated. Electrical service for EV chargers will vary depending on the type and number of chargers and in many cases will require separate electrical services from the service to the building and dispensing equipment at a motor fuel dispensing facility.

Section 15.5.2 (Guard Posts)

Delete Section 15.5.2. The detailed description of guard post installations goes beyond what is currently required in Section 6.3.4 of the code for protection against collision damage for a fuel dispenser. These requirements are taken from the IFC Section 312 Vehicle Impact Protection. Proposed Section 15.5.1 is consistent with the requirements for a dispenser and is all that is needed for purposes of collision damage protection for an EV charger. An authority having jurisdiction can elect to apply the IFC requirements or other requirements for collision protection.

EMA has worked closely on NFPA issues for many years, and we are willing and available to discuss these issues in more detail and provide input on guidance for the deployment of electric vehicle charging infrastructure at motor fueling facilities.

Sincerely,

Rob Underwood
President
Energy Marketers of America
Ms. Bellis,

Please see the Zero Emission Transportation Association (ZETA)’s attached comment regarding TIA No. 1621. We appreciate the opportunity to provide feedback on the TIA and welcome further discussion about widespread, safe electric vehicle deployment.

Thank you!

--
Leilani Gonzalez (she/her/hers)
Senior Policy Advisor

Zero Emission Transportation Association
March 2, 2022

Dawn Michele Bellis
Director and NFPA Standards Council Secretary
NFPA Standards Administration
1 Batterymarch Park
Quincy, Massachusetts 02169-7471

SUBMITTED VIA ELECTRONIC MAIL
RE: NFPA 30A TIA No. 1621

Dear Ms. Bellis:

The Zero Emission Transportation Association (ZETA) is an industry-backed coalition of 65 member companies advocating for 100% electric vehicle (EV) sales by 2030. The buildout of a robust charging infrastructure landscape is a critical component of EV deployment and emissions reduction. Ensuring that Electric Vehicle Supply Equipment (EVSE) deployment is done swiftly, safely, and strategically is a priority for ZETA’s members. With this interest in mind, ZETA writes to urge members of the Committee to vote against Tentative Interim Amendment (TIA) Log No. 1621.

Upon assessment of the TIA, we found that key stakeholders—including EV and EVSE manufacturers, utility companies, and relevant rule making bodies—were not materially included in the development of the code. As a result, provisions of the TIA pertaining to EV charging at motor fuels facilities are unduly restrictive, overcomplicate provisions already addressed by the NFPA 70, the National Electrical Code (NEC), and fail to meet the Emergency Nature Standards outlined in the NFPA Standards Directory. ZETA appreciates NFPA’s work to address safety guidelines for fire protection. As safe EVSE installation is a priority for our membership, we would like to offer the following observations:

ZETA is concerned with how the TIA defines “Electric Vehicle Charging Stations” (EVCS). The TIA incorrectly defines EVCS, or properly termed EVSE, as “any space that can be served.” This phrasing is problematic because EVSE can be installed in any space at a dispensing facility or repair garage. As the Committee continues to evaluate EVSE in terms of fire safety, the Committee should continue to seek education from industry prior to implementing measures such as TIA without reviewing standard definitions in the market.

Several provisions of the proposed TIA are overly restrictive or complicate sufficient, pre-existing guidelines of NFPA 70 and its National Electrical Code (NEC). In particular, it is aligned to Article 514 (“Motor Fuel Dispensing Facilities”), which establishes a standard six meter distance between electrical systems and fueling stations that applies to EVSE in electrically classified areas. We would also like to ensure that any new standard provides a grandfather clause that avoids mandatory retrofits.

Additionally, concerns pertaining to EVSE in the TIA Sections 15.3.4.1 and 15.9 overlap with code outlined in Chapter 6 Article 625 (“Electric Vehicle Power Transfer System”) of the NEC.
Section 15.3 is particularly restrictive to property design and planning considerations. Currently, EVSE is installed close to buildings across North America in accordance with the NEC. Enactment of Section 15.3 would specify the distance where EVSE could be installed and would reduce the number of eligible locations. This section would prevent a number of fueling and convenience locations from providing charging services to their customers, and this is especially problematic considering that some EVSE is designed to be wall mounted in accordance with the NEC. For example, a typical fast charging station at a fueling station may be installed on the sidewalk in front of or adjacent to the main building. Furthermore, the property line requirements in 15.3.1 are out of the scope of the jurisdiction of NFPA 30A, and are more adequately addressed by municipal zoning ordinances or the NEC.

ZETA would like to emphasize the non-emergency nature of the issues raised by the proposed amendment. With just under 46,000 public charging stations active to date, there have been no recorded incidents pertaining to improper placement of EVSE infrastructure at fueling stations. Similarly, no evidence has been provided to suggest that existing NFPA 30 code and NFPA 70 code do not adequately address electrical installation of EVSE, or any of the various similarly-wired utilization appliances already installed at fueling stations. Many of the requirements are already listed in the NEC. Direct reference to the NEC, as opposed to overlapping requirements, would reflect best practices and ensure consistency with core electrical standards as they evolve overtime.

As the Committee finalizes its decision on TIA Log No. 1621, ZETA strongly recommends members vote against the amendment. It is critical that a wide scope of relevant stakeholders are included in order to develop thoughtful codes for EVSE installation. While the rate of charging deployment will increase in the coming year, EVSE installation will not happen instantaneously and current projects present no immediate identifiable threat. For these reasons, ZETA urges NFPA to consider changes to the standard 2024 code review cycle instead. This will allow the NFPA to more adequately develop code that complements provisions already established by the NEC and prioritize soliciting feedback from parties with technical expertise in EVSE. ZETA appreciates the opportunity to provide the Committee with technical assessment of the TIA and we look forward to participating in the 2024 code development cycle.

Sincerely,

Joe Britton
Executive Director
Zero Emission Transportation Association
Please find attached Schneider Electric concerns with the proposed TIA 1621 language.

Alan Manche  
VP, External Affairs  
North America Operations  
Schneider Electric  
1601 Mercer Rd  
Lexington, Kentucky 40511  
United States
March 2, 2022

Dawn Michele Bellis, Director and NFPA Standards Council Secretary
NFPA Standards Administration
1 Batterymarch Park
Quincy, Massachusetts 02169-7471

NFPA 30A TIA 1621 – Schneider Electric Opposition

Ms. Bellis

Schneider Electric is submitting comments opposing proposed TIA 1621.

The proposed scope revision in 1.1.3 establishes a conflict with the scope of the NFPA 70. The proposed scope states that “charging of the battery or other energy storage device... for an electric vehicle” should reside within the scope of NFPA 30A. “Energy Storage” in this context could be misapplied to on-site energy storage that is intended for transfer to an automobile for which the electrical installation rules reside within NFPA 70.

NFPA 70 contains the electrical installation provision for motor fuel dispensing facilities as found in Article 514. If special provision are necessary to address an identified hazard to amend the rules in Chapters 1-4 and NEC 625 that govern the installation of electrical systems for Electric Vehicle Supply equipment, then a TIA should be developed and submitted to NFPA 70 for consideration.

Revisions to NFPA 30A may be necessary to support the EV charging within the boundaries of a motor fuel dispensing facility, however provisions found within this TIA on Location to Buildings and Property Lines do not appear to apply here for electrical infrastructure that may be required for combustible and flammable liquids.

Schneider Electric oppose TIA 1621 as drafted and would encourage the Standards Council consider a task group be formed from interested parties from both NFPA 30A, NEC CMP-12, NEC CMP-15 and other interested parties from the electrical industry.

Respectfully submitted for your consideration,

Alan Manche
V.P. External Affairs
Schneider Electric
Lexington, KY
7-Eleven would like to submit the attached comments in response to NFPA 30A-2021 Edition Code for Motor Fuel Dispensing Facilities and Repair Garages TIA Log No.: 1621.

Becky Knox
Sr. Policy Advisor, Electric Vehicles
NFPA Standards Administration
1 Batterymarch Park
Quincy, MA 02169

RE: TIA No. 1621

Dear NFPA Standards Administration:

7-Eleven is writing to express its opposition to the proposed NFPA 30-2021 Code for Motor Fuel Dispensing Facilities and Repair Garages TIA Log No. 1621 and ask the Committee to vote against the Tentative Interim Amendment (TIA) regarding fire codes changes related to electric vehicles (EV) chargers at motor fueling facilities.

We appreciate the opportunity to provide comments to assist the National Fire Prevention Association (NFPA) in the development of important safety codes such as those being proposed. We greatly respect the NFPA’s long and distinguished history of helping to enhance public safety by making critical information and resources available to the public. We also appreciate the NFPA’s standards’ development process and the collaborative, transparent way important codes are considered and developed. The expedited TIA process being proposed however, does not provide for the appropriate level of discussion and fact-finding necessary to fully address this issue. We ask that the Committee instead continue to utilize the standard process already underway for the 2024 code review of the Motor Facilities Code.

Existing Safety Codes Already Exist

There is currently only a small proportion of electric vehicles (EVs) on the road today, however customer interest is accelerating. Federal and state governments are also adopting policies that promote the development and sales of electric vehicles. For example, the recent Infrastructure Investment and Jobs Act designated $7.5 billion to build out a national EV fast charging network. Fueling station owners see this as a great opportunity to expand their existing business to include fuel for the next generation of vehicles – those that run on electricity.

Today there are charging stations already in operation at various fueling locations. They are safely charging vehicles every day. Those charging stations were installed after undergoing a rigorous inspection process utilizing existing codes already in place through the NFPA. There has been no evidence presented to suggest that those existing codes are insufficient to protect the safety, health, and welfare of the public. Nor has there been any evidence that suggests that EV chargers present an emergency that would cause an immediate or imminent risk to public safety. At present there is no need for an expedited Tentative Interim Amendment (TIA) process. To move forward now would not only increase permitting timelines and costs for existing charging projects, but it also runs the risk of creating a chilling effect on future charging stations by setting codes that could be considered duplicative and overly prescriptive.

*******

As EV charging technology continues to evolve it may require additional safety protocols in the future. However, more time and debate are needed to determine what, if any, gaps there are in the existing NFPA codes. Thoughtful,
transparent dialogue among the NFPA and subject matter experts, utilizing technical information and data from real world examples will help to identify areas of potential concern.

Respectfully, 7-Eleven’s strongly suggest that the members of the Committee reject the issuance of the proposed TIA and move forward through the standard deliberative process.

Thank you for your attention and consideration of this matter.

Sincerely,

Becky Knox
Senior Policy Advisor, Electric Vehicles
7-Eleven Inc.
To whom it may concern,

Please find attached Advanced Energy Economy’s letter in response to the National Fire Protection Association Standards Administration’s proposed Tentative Interim Amendment No. 1621. Thank you for the opportunity to provide feedback and AEE and our member companies look forward to engaging further with your organization on this issue.

--

Ryan Gallentine
Director, Electrifying Transportation
ADANCED ENERGY ECONOMY
Transforming Policy. Expanding Markets.

www.AEE.net  @AEEnet
March 2, 2022

NFPA Standards Administration
1 Batterymarch Park
Quincy, MA 02169

Via email: TIAs_Errata_Fls@nfpa.org

Re: Tentative Interim Amendment No. 1621

Dear NFPA Standards Administration:

Advanced Energy Economy respectfully urges the National Fire Protection Association (“NFPA”) Standards Administration to deny the proposed Tentative Interim Amendment (“TIA”) No. 1621 to the 2021 Edition, 30A – Code for Motor Fuel Dispensing Facilities and Repair Garages and enable greater engagement by electric vehicle (“EV”) charging industry stakeholders in its process to establish such standards.

Advanced Energy Economy (AEE) is a national association of businesses that are making the energy we use secure, clean, and affordable. We work to accelerate the move to 100% clean energy and electrified transportation in the U.S. Advanced energy encompasses a broad range of products and services that constitute the best available technologies for meeting energy needs today and tomorrow. AEE represents more than 100 companies in the $238 billion U.S. advanced energy industry, which employs 3.2 million U.S. workers.

Summary

Safety is of paramount concern to AEE and its member companies. AEE welcomes the NFPA’s attention to fire safety issues that pertain to installation and operation of EV chargers at fuel dispensing establishments and repair garages. AEE and its members are committed to working with NFPA and industry stakeholders on this topic as part of the regular revision cycle for the 2024 edition. However, the proposed TIA No. 1621, is at this time premature and we recommend that it be denied.

Technical Concerns

AEE is concerned that the proposed TIA language is unnecessarily restrictive. In particular, the proposed site distance requirements present as erring beyond safety needs. As we believe this would make it difficult if not impossible to deploy EV chargers at many small and even medium-sized retail fuel establishments, repair garages and fleet fueling/charging depots, we recommend further process to achieve right-sizing of distances. While the local authority having jurisdiction (“AHJ”) can exercise discretion and allow exceptions to these distance requirements in certain instances, for instance if the property owner invests in additional mitigation actions, availing of this avenue will create additional uncertainty for property owners, EV charging developers, and fleets. In many cases these stakeholders have already or are in the process of establishing their own safety requirements. Indeed, many fuel retailers have already established strict technical
requirements for engineering, installation and commissioning of EV charging stations to protect against fire or explosion hazards.

Emergency Treatment

AEE does not see the need for an emergency TIA process to revise the 2021 code. EV charging stations have been deployed and operated at traditional fueling stations and repair garages for years without notable resulting fires or fire hazards. Although AEE welcomes NFPA’s engagement on this topic it is unclear why—after thousands of EVs have already been charging at traditional fuel retailers and in repair garages for years, without incident—NFPA would deem there to be an imminent threat that requires an emergency revision.

AEE is further concerned this TIA appears to have been promulgated and put forward for consideration with only minimal input and engagement from charging industry stakeholders. AEE believes such collaborative engagement will likely help address concerns NFPA members may have about the perceived need for an emergency TIA and can result in a more fit for purpose forward approach. Accordingly, AEE encourages NFPA to discontinue this emergency process and instead engage collaboratively with industry stakeholders as part of the normal revision process for the 2024 edition, and to promulgate a regulation that safeguards the public while also enabling the continued electrification of transportation.

In Closing

AEE is encouraged by NFPA’s attention to EV charger installation and operation at traditional fuel dispensing facilities and repair garages, including fleet facilities. This is an important topic which can benefit from NFPA’s engagement. AEE respectfully urges the NFPA to reject the proposed TIA No. 1621 and instead engage with AEE, its members and other EV industry stakeholders to develop appropriate treatment of this issue as part of the regular revision cycle for the 2024 edition.

Sincerely,

Ryan Gallentine
Director
Advanced Energy Economy
1. Revise Article 100, Part III to include Combustible Fibers/Flyings and Ignitible Fibers/Flyings to read as follows:

   **Part III. Hazardous (Classified) Locations (CMP-14).**

   **Combustible Fibers/Flyings.** Fibers/flyings, where any dimension is greater than 500 µm in nominal size, which can form an explosible mixture when suspended in air at standard atmospheric pressure and temperature. [499:3.3.4.1]

   Informational Note No. 1: This definition and Informational Notes No. 2 and 3 have been extracted from NFPA 499-2021, *Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas.* The NFPA 499 reference is in brackets. Only editorial changes were made to the extracted text to make it consistent with this Code.

   Informational Note No. 2: Section 500.5(D) defines a Class III location. Combustible fibers/flyings can be similar in physical form to ignitible fibers/flyings and protected using the same electrical equipment installation methods. Examples of fibers/flyings include flat platelet-shaped particulate, such as metal flake, and fibrous particulate, such as particle board core material. If the smallest dimension of a combustible material is greater than 500 µm, it is unlikely that the material would be combustible fibers/flyings, as determined by test. Finely divided solids with lengths that are large compared to their diameter or thickness usually do not pass through a 500 µm sieve, yet when tested could potentially be determined to be exploisable. [499:A.3.3.4.1]

   Informational Note No. 3: See ASTM E1226-2012a, *Standard Test Method for Explosibility of Dust Clouds*, ISO 6184-1-1985 (2005), *Explosion protection systems — Part 1: Determination of explosion indices of combustible dusts in air*, or ISO/IEC/UL 80079-20-2-2016, *Explosive atmospheres — Part 20-2: Material characteristics — Combustible dusts test methods*, for procedures for determining the explosibility of dusts. A material that is found to not present an explosible mixture hazard could still be an ignitible fiber/flying, as defined in this article. Historically, the explosibility condition has been described as presenting a flash fire or explosion hazard. It could be understood that the potential hazard due to the formation of an explosible mixture when suspended in air at standard atmospheric pressure and temperature would include ignition. [499:A.3.3.4.1]

   ...  

   **Ignitible Fibers/Flyings.** Fibers/flyings where any dimension is greater than 500 µm in nominal size, which are not likely to be in suspension in quantities to produce an explosible mixture, but could produce an ignitible layer fire hazard. [499:3.3.4.2]

   Informational Note No.1: This definition and Informational Note No. 2 have been
extracted from NFPA 499-2021, *Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas.* The NFPA 499 reference is in brackets.

Only editorial changes were made to the extracted text to make it consistent with this Code.

Informational Note No. 2: Section 500.5 of this Code prescribes a Class III location as one where ignitible fibers/flyings are present, but not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. This description addresses fibers/flyings that do not present a flash-fire hazard or explosion hazard by test. This could be because those fibers/flyings are too large or too agglomerated to be suspended in air in sufficient concentration, or at all, under typical test conditions. Alternatively, this could be because they burn so slowly that, when suspended in air, they do not propagate combustion at any concentration. In this document the zone classification system includes ignitible fibers/flyings as a fire hazard in a layer, which is not addressed in the IEC zone system (see IEC 60079-10-2, *Explosive atmospheres — Part 10-2: Classification of areas — Explosive dust atmospheres*). Where these are present, the user could also consider installation in accordance with Article 503 of this Code. [499:A.3.3.4.2]

2. Revise Section 500.5(D) to read as follows:

500.5(D) Class III Locations. Class III locations are those that are hazardous because of the presence of easily ignitible fibers or where materials producing combustible flyings are handled, manufactured, or used, but in which such fibers/flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. Class III locations shall include those specified in 500.5(D)(1) and (D)(2). Class III locations shall be locations meeting the requirements of 500.5(D)(1) and (D)(2).

(I) Class III, Division 1. A Class III, Division 1 location is a location in which easily ignitible fibers/flyings are handled, manufactured, or used. Class III, Division 1 locations shall include those locations specified in 500.5(D)(1)(a) and (D)(1)(b).

(a) Combustible Fibers/Flyings. Locations where nonmetal combustible fibers/flyings are in the air under normal operating conditions in quantities sufficient to produce explosible mixtures or where mechanical failure or abnormal operation of machinery or equipment might cause combustible fibers/flyings to be produced and might also provide a source of ignition through simultaneous failure of electrical equipment, through operation of protection devices, or from other causes shall be classified as Class III, Division 1. Locations where metal combustible fibers/flyings are present shall be classified as Class II, Division 1, Group E.

Informational Note No. 1: Such locations usually include some parts of rayon, cotton, and other textile mills; combustible fibers/flyings associated manufacturing and processing plants; cotton gins and cotton-seed mills; flax-processing plants; clothing manufacturing plants; woodworking plants; and establishments and industries involving similar hazardous processes or conditions.

Informational Note No. 2: Combustible fibers/flyings include flat platelet-shaped particulate such as metal flakes and fibrous board such as particle board.

(b) Ignitible Fibers/Flyings. Locations where ignitible fibers/flyings are handled, manufactured, or used shall be classified as Class III, Division 1.

Informational Note No. 1: Such locations usually include some parts of rayon, cotton,
and other textile mills; combustible fibers/flyings associated manufacturing and processing plants; cotton gins and cotton-seed mills; flax-processing plants; clothing manufacturing plants; woodworking plants; and establishments and industries involving similar hazardous processes or conditions.

Informational Note No. 2: Easily ignitible fibers/flyings can include rayon, cotton (including cotton linters and cotton waste), sisal or henequen, istle, jute, hemp, tow, cocoa fiber, oakum, baled waste kapok, Spanish moss, excelsior, and other materials of similar nature.

(2) Class III, Division 2. A Class III, Division 2 location is a location in which easily ignitible fibers/flyings are stored or handled other than in the process of manufacture. Class III, Division 2 locations shall include those locations specified in 500.5(D)(2)(a) and (D)(2)(b).

(a) Combustible Fibers/Flyings. Locations where nonmetal combustible fibers/flyings might be present in the air in quantities sufficient to produce explosible mixtures due to abnormal operations or where accumulations of nonmetal combustible fibers/flyings accumulations are present but are insufficient to interfere with the normal operation of electrical equipment or other apparatus but could, as a result of infrequent malfunctioning of handling or processing equipment, become suspended in the air shall be classified as Class III, Division 2.

(b) Ignitible Fibers/Flyings. Locations where ignitible fibers/flyings are stored or handled, other than in the process of manufacture, shall be classified as Class III, Division 2.

3. Revise Section 500.6 to read as follows:

500.6 Materials Groups. For purposes of testing, approval, and area classification, various air mixtures (not oxygen-enriched) shall be grouped in accordance with 500.6(A) and (B).

Exception: Equipment identified for a specific gas, vapor, dust, or fiber/flying.

Informational Note: This grouping is based on the characteristics of the materials.

Facilities are available for testing and identifying equipment for use in the various atmospheric groups.

(A) Class I Group Classifications. …

(B) Class II Combustible Dust Group Classifications. Class II groups shall be in accordance with 500.6(B)(1) through (B)(3). Combustible dust shall be grouped in accordance with 500.6(B)(1) through (B)(3).

(1) Group E. Atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys, or other combustible dusts whose particle size, abrasiveness, and conductivity present similar hazards in the use of electrical equipment.

[499:3.3.4.1-3.3.8.1.1]

(2) Group F. Atmospheres containing combustible carbonaceous dusts that have more than 8 percent total entrapped volatiles (see ASTM D3175-2017, Standard Test Method for Volatile Matter in the Analysis Sample of Coal and Coke, for coal and coke dusts) or that have been sensitized by other materials so that they present an explosion hazard. [499:3.3.4.2-3.3.8.1.2]

Coal, carbon black, charcoal, and coke dusts are examples of carbonaceous dusts. [499:A.3.3.4.2]

Informational Note: Although coal, carbon black, charcoal, and coke dusts are examples of carbonaceous dusts, only those atmospheres containing combustible carbonaceous dusts that have more than 8 percent total entrapped volatiles are Class II, Group F. [499:A.3.3.8.1.2]

(3) Group G. Atmospheres containing combustible dusts not included in Group E or Group F,
including flour, grain, wood, plastic, and chemicals. 

(C) Class III Combustible Fibers/Flyings. Combustible fibers/flyings shall not be further grouped.

(D) Class III Ignitible Fibers/Flyings. Ignitible fibers/flyings shall not be further grouped.

4. Revise Section 500.8(D)(2) and (D)(3) to read as follows:

500.8(D) Temperature.

(1) Class I Temperature. …

(2) Class II Temperature. The temperature marking specified in 500.8(C) shall be less than the ignition temperature of the specific dust or metal fiber/flying to be encountered. For organic dusts that might dehydrate or carbonize, the temperature marking shall not exceed the lower of either the ignition temperature or 165°C (329°F).

Informational Note: See NFPA 499-2017-2021, Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas, for minimum ignition temperatures of specific dusts.

(3) Class III Temperature. The temperature marking specified in 500.8(C) shall be less than the ignition temperature of the specific fiber/flying to be encountered, except as specified in 500.8(D)(3)(a) or (D)(3)(b).

(a) For nonmetal combustible fibers/flyings that might dehydrate or carbonize, the temperature marking shall not exceed the lower of either the ignition temperature or 165°C (329°F).

(b) When ignitible fibers/flyings are present, the maximum surface temperatures under operating conditions shall not exceed 165°C (329°F) for equipment that is not subject to overloading, and 120°C (248°F) for equipment (such as motors or power transformers) that might be overloaded.

5. Revise Section 503.1 to read as follows:

503.1 Scope. Article 503 covers the requirements for electrical and electronic equipment and wiring for all voltages in Class III, Division 1 and Division 2 locations where fire or explosion hazards might exist due to nonmetal combustible fibers/flyings or ignitible fibers/flyings.

6. Revise Section 503.5 and 503.6 to read as follows:

503.5 General. Equipment installed in Class III locations shall be able to function at full rating without developing surface temperatures high enough to cause excessive dehydration or gradual carbonization of accumulated fibers/flyings. Organic material that is carbonized or excessively dry is highly susceptible to spontaneous ignition. The maximum surface temperatures under operating conditions shall not exceed 165°C (329°F) for equipment that is not subject to overloading, and 120°C (248°F) for equipment (such as motors or power transformers) that might be overloaded.

Informational Note No. 1: For electric trucks, see NFPA 505-2018, Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations, for information on electric trucks.

Informational Note No. 2: Organic material that is carbonized or excessively dry is highly susceptible to spontaneous ignition.
**503.6 Zone Equipment.** Equipment listed and marked in accordance with 506.9(C)(2) for Zone 20 locations and with a temperature marking class of in accordance with 500.8(D)(3), not greater than T120°C (for equipment that may be overloaded) or not greater than T165°C (for equipment not subject to overloading) shall be permitted in Class III, Division 1 locations.

Equipment listed and marked in accordance with 506.9(C)(2) for Zone 20, Zone 21, or Zone 22 locations and with a temperature marking in accordance with 500.8(D)(3) class of not greater than T120°C (for equipment that may be overloaded) or not greater than T165°C (for equipment not subject to overloading) shall be permitted in Class III, Division 2 locations.

7. **Revise Section 503.125 Exception to read as follows:**

**503.125 Motors and Generators — Class III, Divisions 1 and Division 2.** In Class III, Divisions 1 and Division 2 locations, motors, generators, and other rotating machinery shall be totally enclosed nonventilated, totally enclosed pipe ventilated, or totally enclosed fan cooled.

Exception: In locations where, in the judgment of the authority having jurisdiction, only moderate accumulations of lint or ignitible fibers/flyings are likely to collect on, in, or in the vicinity of a rotating electrical machine and where such machine is readily accessible for routine cleaning and maintenance, one of the following shall be permitted:

1. Self-cleaning textile motors of the squirrel-cage type
2. Standard open-type machines without sliding contacts, or centrifugal or other types of switching mechanisms, including motor overload devices
3. Standard open-type machines having such contacts, switching mechanisms, or resistance devices enclosed within tight housings without ventilating or other openings

8. **Revise Section 503.145 Exception to read as follows:**

**503.145 Receptacles and Attachment Plugs — Class III, Divisions 1 and Division 2.** Receptacles and attachment plugs shall be of the grounding type, shall be designed so as to minimize the accumulation or the entry of fibers/flyings, and shall prevent the escape of sparks or molten particles.

Exception: In locations where, in the judgment of the authority having jurisdiction, only moderate accumulations of lint or ignitible fibers/flyings are likely to collect in the vicinity of a receptacle, and where such receptacle is readily accessible for routine cleaning, and mounted to minimize the entry of fibers/flyings, general-purpose grounding-type receptacles mounted so as to minimize the entry of fibers/flyings shall be permitted.

9. **Revise Section 506.1 to read as follows:**

**506.1 Scope.** This article covers the requirements for the zone classification system as an alternative to the division classification system covered in Article 500, Article 502, and Article 503 for electrical and electronic equipment and wiring for all voltages in Zone 20, Zone 21, and Zone 22 hazardous (classified) locations where fire and explosion hazards may exist due to combustible dusts, or combustible fibers/flyings, or ignitible fibers/flyings.

This article does not cover area classification and general requirements for dusts for the
division system as described in 500.1. This article does not address the unique risk and explosion hazards associated with explosives, pyrotechnics, and blasting agents.

Informational Note No. 1: For the requirements for electrical and electronic equipment and wiring for all voltages in Class I, Division 1 or Division 2; Class II, Division 1 or Division 2; Class III, Division 1 or Division 2; Zone 0; Zone 1; or Zone 2 hazardous (classified) locations where fire or explosion hazards may exist due to flammable gases or vapors, flammable liquids, or combustible dusts or ignitible fibers/flyings, refer to Articles 500 through 505. See 505.20 or 505.22 for Zone 0, Zone 1, or Zone 2 hazardous (classified) locations where fire or explosion hazards may exist due to flammable gases or vapors or flammable liquids.

Informational Note No. 2: Zone 20, Zone 21, and Zone 22 area classifications are based on the modified IEC area classification system as defined in ANSI/ISA 60079-10-2 (12.10.05)-2013, Explosive Atmospheres — Part 10-2: Classification of Areas — Combustible Dust Atmospheres.

Informational Note No. 3: The unique hazards associated with explosives, pyrotechnics, and blasting agents are not addressed in this article.

Informational Note No. 34: NFPA 499-20172021, Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas, provides additional information for classification of hazardous (classified) locations using zone methodology.

10. Revise Section 506.5 to read as follows:

506.5 Classification of Locations.

(A) Classifications of Locations. Locations shall be classified on the basis of the properties of the combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings that may be present, and the likelihood that a combustible or ignitible combustible concentration or quantity is present. Each room, section, or area shall be considered individually in determining its classification. Where pyrophoric materials are the only materials used or handled, these locations are outside of the scope of this article.

(B) Zone 20, Zone 21, and Zone 22 Locations. Zone 20, Zone 21, and Zone 22 locations are those in which combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings are or may be present in the air or in layers, in quantities sufficient to produce explosive or ignitible mixtures. Zone 20, Zone 21, and Zone 22 locations shall include those specified in 506.5(B)(1), (B)(2), and (B)(3).

Informational Note: Through the exercise of ingenuity in the layout of electrical installations for hazardous (classified) locations, it is frequently possible to locate much of the equipment in a reduced level of classification and, thus, to reduce the amount of special equipment required.

(1) Zone 20. A Zone 20 location is a location in which any of the following occur where one of the following apply:

(1) Ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings are present continuously or for long periods of time.

(2) Ignitible concentrations of combustible dust or ignitible fibers/flyings are present for long periods of time.

Informational Note No. 1: As a guide to classification of Zone 20 locations, refer to ANSI/ISA 60079-10-2 (12.10.05)-2013, Explosive Atmospheres — Part 10-2.
Classification of areas — Combustible dust atmospheres.

Informational Note No. 2: Zone 20 classification includes locations inside dust containment systems; hoppers, silos, etc., cyclones and filters, dust transport systems, except some parts of belt and chain conveyors, etc.; blenders, mills, dryers, bagging equipment, etc.

(23) Group IIIC combustible dusts are present in quantities sufficient to be hazardous continuously or for long periods of time.

(2) Zone 21. A Zone 21 location is a location where one of the following apply:

(1) Ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings are likely to exist occasionally under normal operating conditions; or

(2) Ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings may exist frequently because of repair or maintenance operations or because of leakage; or

(3) Equipment is operated or processes are carried on of such a nature that equipment breakdown or faulty operations could result in the release of ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings and also cause simultaneous failure of electrical equipment in a mode to cause the electrical equipment to become a source of ignition; or

(4) The location is adjacent to a Zone 20 location from which ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings could be communicated.

Exception: When communication from an adjacent Zone 20 location is minimized by adequate positive pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

(5) Group IIIC combustible dusts are present in quantities sufficient to be hazardous occasionally; under normal or abnormal operating conditions; or frequently because of repair or maintenance operations or because of leakage.

Informational Note No. 1: As a guide to classification of Zone 21 locations, refer to ANSI/ISA 60079-10-2 (12.10.05)-2013, Explosive Atmospheres — Part 10-2: Classification of areas — Combustible dust atmospheres.

Informational Note No. 2: This classification usually includes locations outside dust containment and in the immediate vicinity of access doors subject to frequent removal or opening for operation purposes when internal combustible mixtures are present; locations outside dust containment in the proximity of filling and emptying points, feed belts, sampling points, truck dump stations, belt dump over points, etc., where no measures are employed to prevent the formation of combustible mixtures; locations outside dust containment where dust accumulates and where due to process operations the dust layer is likely to be disturbed and form combustible mixtures; locations inside dust containment where explosive explosible dust clouds are likely to occur (but neither continuously, nor for long periods, nor frequently) as, for example, silos (if filled and/or emptied only occasionally) and the dirty side of filters if large self-cleaning intervals are occurring.

(3) Zone 22. A Zone 22 location is a location where one of the following apply:

(1) Ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings are not likely to occur in normal operation and, if they do occur, will only persist for a short period; or
(2) Combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings are handled, processed, or used, but in which the dust or fibers/flyings are normally confined within closed containers of closed systems from which they can escape only as a result of the abnormal operation of the equipment with which the dust or fibers/flyings are handled, processed, or used; or

(3) The location is adjacent to a Zone 21 location, from which ignitible concentrations of combustible dust, or ignitible combustible fibers/flyings, or ignitible fibers/flyings could be communicated.

Exception No. 1: When communication from an adjacent Zone 21 location is minimized by adequate positive pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

Exception No. 2: For Group IIIC combustible dusts or metal combustible fibers/flyings, there shall only be Zone 20 or 21 locations.

Informational Note No. 1: As a guide to classification of Zone 22 locations, refer to ANSI/ISA 60079-10-2 (12.10.05)-2013, Explosive Atmospheres — Part 10-2: Classification of areas — Combustible dust atmospheres.

Informational Note No. 2: Zone 22 locations usually include outlets from bag filter vents, because in the event of a malfunction there can be emission of combustible mixtures; locations near equipment that has to be opened at infrequent intervals or equipment that from experience can easily form leaks where, due to pressure above atmospheric, dust will blow out; pneumatic equipment, flexible connections that can become damaged, etc.; storage locations for bags containing dusty product, since failure of bags can occur during handling, causing dust leakage; and locations where controllable dust layers are formed that are likely to be raised into explosive explosive dust–air mixtures. Only if the layer is removed by cleaning before hazardous dust–air mixtures can be formed is the area designated unclassified.

Informational Note No. 3: Locations that normally are classified as Zone 21 can fall into Zone 22 when measures are employed to prevent the formation of explosive explosive dust–air mixtures. Such measures include exhaust ventilation. The measures should be used in the vicinity of (bag) filling and emptying points, feed belts, sampling points, truck dump stations, belt dump over points, etc.

11. Revise Section 506.6 to read as follows:

506.6 Material Groups. For the purposes of testing, approval, and area classification, various air mixtures (not oxygen enriched) shall be grouped as required in 506.6(A), (B), and (C).

(A) Group IIIC. Combustible metal dust, including combustible metal fibers/flyings. Group IIIC shall be considered to be equivalent to Class II, Group E. [499:3.3.8.2.1]

(B) Group IIIB. Combustible dust other than combustible metal dust. Group IIIB shall be considered to be equivalent to Class II, Groups F and G. [499:3.3.8.2.2]

Informational Note: Group IIIA materials are larger particle-size than Group IIIB materials and do not include metal dust or metal fibers/flyings. [499:A.3.3.8.2.3]

(C) Group IIIA. Solid particles, including fibers, greater than 500 µm in nominal size, which could be suspended in air and could settle out of the atmosphere under their own weight. Group IIIA shall be considered to be equivalent to Class III. Combustible fibers/flyings or ignitible fibers/flyings other than metal. [499:3.3.8.2.3]
Informational Note No. 1: Group IIIA materials are larger particle-size than Group IIIB materials and do not include metal dust or metal fibers/flyings.

Informational Note No. 2: Examples of ignitible fibers/flyings include rayon, cotton (including cotton linters and cotton waste), sisal, jute, hemp, cocoa fiber, oakum, and baled waste kapok.

Informational Note No. 3: Combustible fibers/flyings include flat platelet-shaped particulates, such as metal flakes, and fibrous board, such as particle board.

12. Revise Sections 506.7(C) and (D) to read as follows:

506.7 Special Precaution.

... 

(C) Reclassification Permitted. A Class II or Class III, Division 1 or Division 2 location shall be permitted to be reclassified as a Zone 20, Zone 21, or Zone 22 location, provided that if all of the space that is classified because of a single combustible dust, or ignitible combustible fiber/flying, or ignitible fiber/flying source is reclassified under the requirements of this article.

(D) Simultaneous Presence of Flammable Gases and Combustible Dusts or Fibers/Flyings. Where flammable gases, combustible dusts, or ignitible combustible fibers/flyings, or ignitible fibers/flyings are or may might be present at the same time, the simultaneous presence shall be considered during the selection and installation of the electrical equipment and the wiring methods, including the determination of the safe operating temperature of the electrical equipment.

13. Revise Sections 506.9(B) and (C)(1) to read as follows:

506.9 Equipment Requirements.

... 

(B) Listing. Equipment that is listed for Zone 20 shall be permitted in a Zone 21 or Zone 22 location of the same combustible dust, or ignitible combustible fiber/flying, or ignitible fiber/flying. Equipment that is listed for Zone 21 may be used shall be permitted in a Zone 22 location of the same combustible dust, or ignitible combustible fiber/flying, or ignitible fiber/flying.

(C) Marking.

(1) Division Equipment. Equipment identified for Class II, Division 1, or Class II, Division 2, Class III, Division 1, or Class III, Division 2 shall, in addition to being marked in accordance with 500.8(C), be permitted to be marked with all of the following:

1 Zone 20, 21, or 22 (as applicable)
2 Material group in accordance with 506.6
3 Maximum surface temperature in accordance with 506.9(D), marked as a temperature value in degrees C, preceded by “T” and followed by the symbol “°C”

14. Revise Section 506.16 to read as follows:

506.16 Sealing. Where necessary to protect against the ingress of combustible dust, or ignitible combustible fiber/flying, or ignitible fiber/flying, or to maintain the type of protection, seals shall be provided. The seal shall be identified as capable of preventing the ingress of combustible, or ignitible combustible fiber/flying, or ignitible fiber/flying and maintaining the type of protection but need not be explosionproof or flameproof.
15. Revise Section 506.20 to read as follows:

506.20 Equipment Installation.

(A) Zone 20. In Zone 20 locations, only equipment listed and marked as suitable for the location shall be permitted.

Exception No. 1: Equipment listed for use in Class II, Division 1 locations with a suitable temperature class shall be permitted.

Exception No. 2: For locations involving Group IIIA materials, equipment listed for use in Class III, Division 1 locations with a suitable temperature in accordance with 500.8(D)(3) shall be permitted.

(B) Zone 21. In Zone 21 locations, only equipment listed and marked as suitable for the location shall be permitted.

Exception No. 1: Apparatus listed for use in Class II, Division 1 locations with a suitable temperature class shall be permitted.

Exception No. 2: Pressurized equipment identified for Class II, Division 1 shall be permitted.

Exception No. 3: For locations involving Group IIIA materials, equipment listed for use in Class III, Division 1 locations with a suitable temperature in accordance with 500.8(D)(3) shall be permitted.

(C) Zone 22. In Zone 22 locations, only equipment listed and marked as suitable for the location shall be permitted.

Exception No. 1: Apparatus listed for use in Class II, Division 1 or Class II, Division 2 locations with a suitable temperature class shall be permitted.

Exception No. 2: Pressurized equipment identified for Class II, Division 1 or Division 2 shall be permitted.

Exception No. 3: For Group IIIA materials, equipment listed for use in Class III, Division 1 or Class III, Division 2 locations with a suitable temperature in accordance with 500.8(D)(3) shall be permitted.

(F) Temperature. The temperature marking specified in 506.9(C)(2)(5) shall comply with 506.20(F)(1) or (F)(2):

(1) For combustible dusts, or combustible fibers/flyings shall be less than the lower of either the layer or cloud ignition temperature of the specific combustible dust or combustible fiber/flying. For nonmetal organic dusts or nonmetal combustible fibers/flyings that might dehydrate or carbonize, the temperature marking shall not exceed the lower of either the ignition temperature or 165°C (329°F).

(2) For ignitable fibers/flyings, less than 165°C (329°F) for equipment that is not subject to overloading, or 120°C (248°F) for equipment (such as motors or power transformers) that may be overloaded.

Informational Note: See NFPA 499-20172021, ...

Substantiation: This TIA is being resubmitted to supersede TIA 1520. Additional changes were needed to align with NFPA 499 that were not previously included in TIA 1520. These changes are in reference to the work done by a multi-committee task group who, at the direction of the Standards Council, put together TIAs to correlate the dust standards with NFPA 70.
This TIA is necessary to define the terms “combustible fibers/flyings” and “ignitable fibers/flyings” and include them in the hazardous (classified) location descriptions to draw the connection to the combustible dust standards and hazardous location classification documents. This alignment will allow the combustible dust documents to remove any prescriptive limitation or prohibition for use of the Zone system for classification.

We have not yet and do not expect to completely agree on a definition for combustible dust because of the need to include process-specific atmospheres in NFPA 652 and the commodity standards. This proposal makes the functional usage of the term “combustible dust” equivalent between NFPA 70 and the various dust standards.

**Emergency Nature:** The NFPA Standard contains a conflict within the NFPA Standards or within another NFPA Standard.
MEMORANDUM

TO: NEC® Code-Making Panel 14
FROM: Sarah Caldwell, Committee Administrator
DATE: February 28, 2022
SUBJECT: NEC® Proposed TIA No. 1616 FINAL TC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(a) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

<table>
<thead>
<tr>
<th>Eligible to Vote</th>
<th>Not Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>3 (Cahill, Fam, McBride)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical Merit:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>16 Agree (w/comment: Wechsler)</td>
<td>16 Agree (w/comment: Simmons, Wechsler)</td>
</tr>
<tr>
<td>0 Disagree</td>
<td>0 Disagree</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

1. In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.
   \[
   \text{19 eligible} / 2 = 9.5 = 10
   \]

2. The number of affirmative votes needed to satisfy the ¾ requirement is 12.
   \[
   (19 \text{ eligible to vote} - 3 \text{ not returned} - 0 \text{ abstentions} = 16 \times 0.75 = 12)
   \]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is **March 5, 2022**.
NEC CMP 14 TIA No. 1616 Ballot Final

Election:70_A2022_NEC_P14_Log1616_TIABallot

Results by Revision

**QUESTION NO. 1:** I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1616, on the NEC 2020 Edition, to revise Article 100, Part III, Revise Section 500.5(D), Revise Section 500.6, Revise Section 500.8(D)(2) and (D)(3), Revise Section 503.1, Revise Section 503.5 and 503.6, Revise Section 503.125, Revise Section 503.145, Revise Section 506.1, Revise Section 506.5, Revise Section 506.6, Revise Section 506.7(C) and (D), Revise Section 506.9(B) and (C)(1), Revise Section 506.16 and Revise Section 506.20.

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>David B. Wechsler</td>
<td></td>
<td>NFPA please correct this response to agree, or to agree with comment. We should not have to add when we agree with adding a statement.</td>
</tr>
<tr>
<td>Donald W. Ankele</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>William T. Fiske</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Paul E. Guidry</td>
<td>I agree.</td>
<td></td>
</tr>
<tr>
<td>William G. Lawrence, Jr.</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Michael W. Smith</td>
<td>I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1616, on the NEC 2020 Edition, to revise Article 100, Part III, Revise Section 500.5(D), Revise Section 500.6, Revise Section 500.8(D)(2) and (D)(3), Revise Section 503.1, Revise Section 503.5 and 503.6, Revise Section 503.125, Revise Section 503.145, Revise Section 506.1, Revise Section 506.5, Revise Section 506.6, Revise Section 506.7(C) and (D), Revise Section 506.9(B) and (C)(1), Revise Section 506.16 and Revise Section 506.20.</td>
<td></td>
</tr>
<tr>
<td>Jeremy Neagle</td>
<td>Agree.</td>
<td></td>
</tr>
<tr>
<td>Haywood Kines</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Ted H. Schnaare</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Lowell Reith</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Mark C. Wirfs</td>
<td>AGREE</td>
<td></td>
</tr>
<tr>
<td>Steven J. Blais</td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
<td></td>
</tr>
</tbody>
</table>
Rexford Belleville  
Mark Goodman  
John L. Simmons  
Karl von Knobelsdorff  
**Disagree**  
**Abstain**  

<table>
<thead>
<tr>
<th>Name</th>
<th>Vote</th>
</tr>
</thead>
<tbody>
<tr>
<td>William E. McBride, Corey</td>
<td></td>
</tr>
<tr>
<td>Patrick Fam</td>
<td></td>
</tr>
</tbody>
</table>

**QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.**

Eligible to Vote: 19  
Not Returned: 3  

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

David B. Wechsler  
Donald W. Ankele  
William T. Fiske  
Paul E. Guidry  
William G. Lawrence, Jr.  
Michael W. Smith  
Jeremy Neagle  
Haywood Kines  
Ted H. Schnaare  
Lowell Reith  
Mark C. Wirfs  
Steven J. Blais  
Rexford Belleville  
Mark Goodman  

NFPA please correct this response to agree, or to agree with comment. We should not have to add when we agree with adding a statement.

B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.

A and B

A

B

I AGREE that the subject is of an EMERGENCY NATURE in order to correlate with the other NFPA documents

B

B

A, and B

B

B

B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.
John L. Simmons  B. These changes are needed to align with changes made to NFPA 499.
Karl von Knobelsdorff  Agree
Disagree  0
Abstain  0
MEMORANDUM

TO: NEC® Correlating Committee

FROM: Sarah Caldwell, Committee Administrator

DATE: February 28, 2022

SUBJECT: NEC® Proposed TIA No. 1616 FINAL CC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(b) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Correlation Issues) and Ballot Item No. 2 (Emergency Nature).

12 Eligible to Vote
1 Not Returned (McDaniel)

<table>
<thead>
<tr>
<th>Correlation Issues:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>10 Agree</td>
<td>11 Agree</td>
</tr>
<tr>
<td>1 Disagree (Hickman)</td>
<td>0 Disagree</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[12 \text{ eligible} \div 2 = 6 + 1 = 7\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is 9.

\[(12 \text{ eligible to vote} - 1 \text{ not returned} - 0 \text{ abstentions} = 11 \times 0.75 = 8.25)\]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is **March 5, 2022**.
**NEC CC TIA No. 1616 Ballot Final**

**Election:** 70_A2022_NEC_AAC_Log1616_Ballot

**Results by Revision**

**QUESTION NO. 1: I AGREE there are no CORRELATION ISSUES in accordance with 3.4.2 and 3.4.3 of the NFPA Regs.**

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreed</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Ernest J. Gallo</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Lawrence S. Ayer</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>John R. Kovacik</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>David H. Kendall</td>
<td></td>
<td>There are no correlating issues.</td>
</tr>
<tr>
<td>Alan Manche</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Christine T. Porter</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Dean C. Hunter</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Timothy James Schultheis</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Richard A. Holub</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>David A. Williams</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Palmer L. Hickman</td>
<td></td>
<td>It is poor practice to repeat information contained in 90.5(C) and 90.9(C)(2) again in informational notes related to bracketed information. In addition, the informational notes are not written in compliance with 4.1.3 of the NEC Style Manual.</td>
</tr>
<tr>
<td><strong>Abstain</strong></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 12
Not Returned: 1
Roger D. McDaniel

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Palmer L. Hickman</td>
<td>B.</td>
<td></td>
</tr>
<tr>
<td>Ernest J. Gallo</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Lawrence S. Ayer</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>John R. Kovacik</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>David H. Kendall</td>
<td>B - The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
<td></td>
</tr>
<tr>
<td>Alan Manche</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Christine T. Porter</td>
<td>A and B</td>
<td></td>
</tr>
<tr>
<td>Dean C. Hunter</td>
<td>The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
<td></td>
</tr>
<tr>
<td>Timothy James Schultheis</td>
<td>B The NFPA Standard contains a conflict within the NFPA Standards or within another NFPA Standard</td>
<td></td>
</tr>
<tr>
<td>Richard A. Holub</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>David A. Williams</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Abstain</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
1. Revise Article 100 Ignitible Fibers/Flyings to read as follows:

**Ignitible Fibers/Flyings.** Fibers/flyings where any dimension is greater than 500 μm in nominal size, which are not likely to be in suspension in quantities to produce an explosible mixture, but could produce an ignitible layer fire hazard. [499:3.3.4.2]

Informational Note No. 1: This definition and Informational Note No. 2 have been extracted from NFPA 499-2021, *Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas*. The NFPA 499 reference is in brackets. Only editorial changes were made to the extracted text to make it consistent with this Code.

Informational Note No. 2: Section 500.5 of this Code prescribes a Class III location as one where ignitible fibers/flyings are present, but not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. This description addresses fibers/flyings that do not present a flash-fire hazard or explosion hazard by test. This could be because those fibers/flyings are too large or too agglomerated to be suspended in air in sufficient concentration, or at all, under typical test conditions. Alternatively, this could be because they burn so slowly that, when suspended in air, they do not propagate combustion at any concentration. In this document the zone classification system includes ignitible fibers/flyings as a fire hazard in a layer, which is not addressed in the IEC zone system (see IEC 60079-10-2, *Explosive atmospheres — Part 10-2: Classification of areas — Explosive dust atmospheres*). Where these are present, the user could also consider installation in accordance with Article 503 of this Code. [499:A.3.3.4.2]

2. Revise Section 506.5 to read as follows:

**506.5 Classification of Locations.**

(A) Classifications of Locations. …

(B) Zone 20, Zone 21, and Zone 22 Locations. …

(1) **Zone 20.** A Zone 20 location is a location where one of the following apply:

(1) Ignitible concentrations of combustible dust, or combustible fibers/flyings, or ignitible fibers/flyings are present continuously or for long periods of time.

…

(2) **Zone 21.** …

(3) **Zone 22.** A Zone 22 location is a location where one of the following apply:

(1) …

(2) Combustible dust, combustible fibers/flyings, or ignitible fibers/flyings are handled, processed, or used…

(3) …
3. Revise Section 506.9(B) to read as follows:

506.9 Equipment Requirements.

... 

(B) **Listing.** Equipment that is listed for Zone 20 shall be permitted in a Zone 21 or Zone 22 location of the same combustible dust, combustible fiber/flying, or ignitible fiber/flying. Equipment that is listed for Zone 21 can be used shall be permitted in a Zone 22 location of the same combustible dust, combustible fiber/flying, or ignitible fiber/flying.

**Substantiation:** This TIA is being submitted to align the proposed 2023 edition of the NEC with NFPA 499 and the combustible dust standards. CMP 14 accounted for most of the changes in the NEC 2020 TIA in the 2023 Second Draft stage, but these few additional changes need to be made for alignment. These changes are in reference to the work done by a multi-committee task group who, at the direction of the Standards Council, put together TIAs to correlate the dust standards with NFPA 70.

**Emergency Nature:** The NFPA Standard contains a conflict within the NFPA Standards or within another NFPA Standard.
MEMORANDUM

TO: NEC® Code-Making Panel 14

FROM: Sarah Caldwell, Committee Administrator

DATE: February 28, 2022

SUBJECT: NEC® Proposed TIA No. 1617 FINAL TC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(a) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

- 19 Eligible to Vote
- 3 Not Returned (Cahill, Fam, McBride)

<table>
<thead>
<tr>
<th>Technical Merit:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>16 Agree (w/comment: Wechsler)</td>
<td>16 Agree (w/comment: Goodman, Simmons, Wechsler)</td>
</tr>
<tr>
<td>0 Disagree</td>
<td>0 Disagree</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

1. In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

   \[\frac{19 \text{ eligible}}{2} = 9.5 = (10)\]

2. The number of affirmative votes needed to satisfy the ¾ requirement is 12.

   \[19 \text{ eligible to vote} - 3 \text{ not returned} - 0 \text{ abstentions} = 16 \times 0.75 = 12\]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is **March 5, 2022**.
**QUESTION NO. 1: I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1617, on the NEC 2023 Proposed Edition, to revise Article 100, Section 506.5 and Section 506.9(B).**

<table>
<thead>
<tr>
<th>Eligible to Vote: 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Returned : 3</td>
</tr>
<tr>
<td>William E. McBride, Corey Cahill, Patrick Fam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>David B. Wechsler</td>
<td></td>
<td>NFPA please correct this response to agree, or to agree with comment. We should not have to add when we agree with adding a statement.</td>
</tr>
<tr>
<td>Donald W. Ankele</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>William T. Fiske</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Paul E. Guidry</td>
<td>Agree.</td>
<td></td>
</tr>
<tr>
<td>William G. Lawrence, Jr.</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Michael W. Smith</td>
<td>I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1617, on the NEC 2023 Proposed Edition, to revise Article 100, Section 506.5 and Section 506.9(B)</td>
<td></td>
</tr>
<tr>
<td>Jeremy Neagle</td>
<td>Agree.</td>
<td></td>
</tr>
<tr>
<td>Haywood Kines</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Ted H. Schnaare</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Lowell Reith</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Mark C. Wirfs</td>
<td>AGREE</td>
<td></td>
</tr>
<tr>
<td>Steven J. Blais</td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
<td></td>
</tr>
<tr>
<td>Rexford Belleville</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Mark Goodman</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>John L. Simmons</td>
<td>Agree.</td>
<td></td>
</tr>
<tr>
<td>Karl von Knobelsdorff</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Abstain</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

<table>
<thead>
<tr>
<th>Eligible to Vote: 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Returned: 3</td>
</tr>
<tr>
<td>William E. McBride, Corey Cahill, Patrick Fam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>David B. Wechsler</td>
<td></td>
<td>NFPA please correct this response to agree, or to agree with comment. We should not have to add when we agree with adding a statement.</td>
</tr>
<tr>
<td>Donald W. Ankele</td>
<td></td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
</tr>
<tr>
<td>William T. Fiske</td>
<td></td>
<td>A and B</td>
</tr>
<tr>
<td>Paul E. Guidry</td>
<td></td>
<td>A.</td>
</tr>
<tr>
<td>William G. Lawrence, Jr.</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Michael W. Smith</td>
<td></td>
<td>I AGREE that the subject is of an EMERGENCY NATURE in order to correlate with other NFPA standards</td>
</tr>
<tr>
<td>Jeremy Neagle</td>
<td></td>
<td>B.</td>
</tr>
<tr>
<td>Haywood Kines</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Ted H. Schnaare</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Lowell Reith</td>
<td></td>
<td>A and B</td>
</tr>
<tr>
<td>Mark C. Wirfs</td>
<td></td>
<td>B.</td>
</tr>
<tr>
<td>Steven J. Blais</td>
<td></td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
</tr>
<tr>
<td>Rexford Belleville</td>
<td></td>
<td>A and D</td>
</tr>
<tr>
<td>Mark Goodman</td>
<td></td>
<td>B. To provided consistency in the 2023 NEC.</td>
</tr>
<tr>
<td>John L. Simmons</td>
<td></td>
<td>B. These changes are needed to align with changes made to NFPA 499.</td>
</tr>
<tr>
<td>Karl von Knobelsdorff</td>
<td></td>
<td>Agree</td>
</tr>
</tbody>
</table>

| Disagree | 0 |
| Abstain  | 0 |
MEMORANDUM

TO: NEC® Correlating Committee
FROM: Sarah Caldwell, Committee Administrator
DATE: February 28, 2022
SUBJECT: NEC® Proposed TIA No. 1617 FINAL CC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(b) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Correlation Issues) and Ballot Item No. 2 (Emergency Nature).

12 Eligible to Vote
1 Not Returned (McDaniel)

<table>
<thead>
<tr>
<th>Correlation Issues:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>10 Agree</td>
<td>11 Agree</td>
</tr>
<tr>
<td>1 Disagree (Hickman)</td>
<td>0 Disagree</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[12 \text{ eligible} \div 2 = 6 + 1 = (7)\]

2) The number of affirmative votes needed to satisfy the ¾ requirement is 9.

(12 eligible to vote - 1 not returned - 0 abstentions = 11 \times 0.75 = 8.25)

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is **March 5, 2022**.
QUESTION NO. 1: I AGREE there are no CORRELATION ISSUES in accordance with 3.4.2 and 3.4.3 of the NFPA Regs.

Eligible to Vote: 12
Not Returned : 1
Roger D. McDaniels

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Ernest J. Gallo</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Lawrence S. Ayer</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>John R. Kovacik</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>David H. Kendall</td>
<td>There are no correlating issues.</td>
<td></td>
</tr>
<tr>
<td>Alan Manche</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Christine T. Porter</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Dean C. Hunter</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Timothy James Schultheis</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Richard A. Holub</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>David A. Williams</td>
<td>Agree</td>
<td></td>
</tr>
</tbody>
</table>

Disagree
Palmer L. Hickman
It is poor practice to repeat information contained in 90.5(C) and 90.9(C)(2) again in informational notes related to bracketed information. In addition, the informational notes are not written in compliance with 4.1.3 of the NEC Style Manual.

Abstain
0
QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 12
Not Returned: 1
Roger D. McDaniel

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Palmer L. Hickman</td>
<td></td>
<td>B.</td>
</tr>
<tr>
<td>Ernest J. Gallo</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Lawrence S. Ayer</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>John R. Kovacik</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>David H. Kendall</td>
<td></td>
<td>B - The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
</tr>
<tr>
<td>Alan Manche</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Christine T. Porter</td>
<td></td>
<td>A and B</td>
</tr>
<tr>
<td>Dean C. Hunter</td>
<td></td>
<td>The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
</tr>
<tr>
<td>Timothy James Schultheis</td>
<td></td>
<td>B - The NFPA Standard contains a conflict within the NFPA Standards or within another NFPA Standard</td>
</tr>
<tr>
<td>Richard A. Holub</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>David A. Williams</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Abstain</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
1. Revise 8.4.1.16 to read as follows:

8.4.1.16 Testing of Adhesives and Sealants. Adhesives and sealants shall be tested in accordance with both ASTM E162 and ASTM E662 by applying the adhesive or sealant to the smooth face of 6.4 mm (1/4 in.) thick inorganic, reinforced cement board, nominal density 1762 kg/m³ ± 160 kg/m³ (110 lb/ft³ ± 10 lb/ft³), using recommended (or practical) application techniques and coverage rates.

8.4.1.16 Testing of Adhesives and Sealants.

8.4.1.16.1 Adhesives and sealants shall be tested in accordance with both ASTM E162 and ASTM E662 as a composite system, including a substrate, as shown in 8.4.1.16.2 through 8.4.1.16.3, as appropriate.

8.4.1.16.2 In the absence of a specified assembly or system, or if the adhesive or sealant is used on several different assemblies or systems, adhesives and sealants intended for application to combustible base materials shall comply with 8.4.1.16.2.1 and 8.4.1.16.2.2.

8.4.1.16.2.1 The adhesive shall be applied to the smooth face of 6.4 mm (1/4 in.) thick tempered hardboard, nominal density 800 kg/m³ to 960 kg/m³ (50 lb/ft³ to 60 lb/ft³), using recommended (or practical) application techniques and coverage rates.

8.4.1.16.2.2 Tests shall also be conducted on the hardboard alone, and these values shall be recorded as supplemental to the measured values for the composite specimen.

8.4.1.16.3 Adhesives and sealants intended for application to noncombustible substrate materials shall be applied to the smooth face of 6.4 mm (1/4 in.) thick inorganic reinforced cement board, nominal density 1762 kg/m³ ± 160 kg/m³ (110 lb/ft³ ± 10 lb/ft³), using recommended (or practical) application techniques and coverage rates.

Substantiation: The language in NFPA 130-2020 regarding testing of adhesives and sealants is incorrect and was corrected for the 2023 edition.

An input and comment were accepted in the 2020 edition of NFPA 130 to require testing of adhesives or sealants intended for use with combustible substrates by testing on a specific hardboard. This resulted in information being presented that identified problems with the testing procedure, as follows:

1. The thick tempered hardboard being identified for use (at least since the 1983 edition of the ASTM E662 test method), which had a nominal density 50 to 60 lb./ft³ and a thickness of 0.25 inches) appears no longer to be a reasonable substrate for two reasons: (a) because typical hardboard now (per ANSI/AHA A135.4 “Basic Hardboard”, with a minimum density specification of 31 lb./ft³ and a thickness range of 0.21 to 0.265 inches) is more common and (b) because it no longer appears to be commercially available. Although the hardboard in the standard is within the parameters of the ANSI/AHA standard it is no longer typical, and may not even be available.

2. The hardboard referenced in the standard is not referenced in other standards that use the same chamber, albeit with a different burner): ASTM E1995, NFPA 270 and ISO 5659-2.
3. The NFPA 130 standard uses ASTM E662 in combination with either ASTM E162 (for most materials) or ASTM D3675 (for plastics), for flame spread. Neither ASTM E162 nor ASTM D3675 reference that type of hardboard.

4. ASTM E162 does reference “thick tempered hardboard” (without any clarification) for use with “opaque sheet materials up to 1/16-in. (1.6-mm) thickness, and liquid films such as paints, etc. intended for application to combustible base materials” but not for adhesives. ASTM E162 also states that the hardboard shall have a “mean flame spread index of 130 to 180”, which indicates that this section has not been updated for many years, since the ASTM E162 standard does not determine flame spread index but a radiant panel index, so that clearly this section of ASTM E162 has been ignored for years.

5. NFPA 130 was revised for the 2020 edition to require the use of the thick tempered hardboard for testing adhesives in accordance with both ASTM E162 and ASTM E662. That was a mistake that is intended to be corrected by this public input. An informal survey of users of adhesives for trains and underground rail vehicles for smoke emission indicates that the actual testing of adhesives is done by applying them to a noncombustible substrate and not using a system.

6. An informal survey of some fire test labs indicates that none use the thick tempered hardboard for testing adhesives.

7. Much more important, tests conducted on two commercial adhesives a commercial hardboard fairly close to the one in the ASTM E662 standard showed that it produces such a large amount of smoke that the smoke generated by the adhesive itself is dwarfed by the smoke from the hardboard (a table is attached).

Consequently, the section on testing adhesives needs to be reworded as follows:

1. The specific thick tempered hardboard required needs to be eliminated and the requirement to test adhesives with any type of hardboard needs to be eliminated.

2. Adhesives should simply be tested on the cement board used in the ASTM E662 standard, which is the same board also used in ASTM E162 and ASTM E84.

3. In terms of smoke emission it is very likely that the adhesive will be a small contributor.

4. Adhesives or sealants should be tested as individual materials and not as composite systems because neither ASTM E662 nor ASTM E162 (or ASTM D3675) are fully suited to testing composite systems. Other fire test standards, such as ASTM E1354 would be more suitable for that. An annex note was added in an alternate PI, to explain that this reverts much of the 2002 edition.

**Emergency Nature:** The standard contains an error or an omission that was overlooked during the regular revision process. The proposed TIA intends to correct a previously unknown existing hazard.

The 2020 edition contains an error that will lead to testing producing incorrect results. This was recognized by the technical committee for the 2023 edition. This TIA (on the 2020 edition of NFPA 130) is being introduced by Marcelo Hirschler (principal member of the committee) and by John Powell White (principal member of the committee).
MEMORANDUM

TO: Technical Committee on Fixed Guideway Transit and Passenger Rail Systems

FROM: Elena Liolin, Sr. Committee Administrator

DATE: February 24, 2022

SUBJECT: NFPA 130 Proposed TIA No. 1623 FINAL TC BALLOT RESULTS

The public comment circulation has passed, therefore, according to Section 5.6(a) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

29 Eligible to Vote
6 Not Returned (Isaac, Kennedy, Lakkonen, Lampkin, McAleese, White)

<table>
<thead>
<tr>
<th>Technical Merit:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>23 Agree (w/comment:</td>
<td>22 Agree (w/comment: Alston)</td>
</tr>
<tr>
<td>Fagerlund)</td>
<td></td>
</tr>
<tr>
<td>0 Disagree</td>
<td>1 Disagree (Lewis)</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[29 \text{ eligible} \div 2 = 14.5 = (15)\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is 18.

\[(29 \text{ eligible to vote} - 6 \text{ not returned} - 0 \text{ abstentions} = 23 \times 0.75 = 17.25)\]

Ballot comments are attached for your review.

The Regs at Section 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with Section 4.2.6.

Appeal Closing Date for this TIA is March 1, 2022.
 QUESTION NO. 1: I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1623 to Revise Section 8.4.1.16.

Eligible to Vote: 29
Not Returned: 6
Max Lakkonen, Steven C.
White, Bernard J. Kennedy, IV, Scott W. McAleese, Nequan Isaac, William H. Lampkin

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGREE</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Marcelo M. Hirschler</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Kenneth E. Bush</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>William E. Koffel</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>John Powell White</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Kevin M. Lewis</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Silas K. Li</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Dilip S. Shah</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Zoran Radojevic</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Joshua H. Teo</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Harold A. Locke</td>
<td>I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1623 to Revise Section 8.4.1.16</td>
<td></td>
</tr>
<tr>
<td>Katherine Fagerlund</td>
<td>The Annex A language to be added to the 2023 edition refers to language in the 2020 edition that will be eliminated if this TIA is successful. A TIA may be needed to adjust the 2023 Annex A language, hopefully prior to publication of the 2023 edition.</td>
<td></td>
</tr>
<tr>
<td>Jarrod Alston</td>
<td>Agree.</td>
<td></td>
</tr>
<tr>
<td>Robert C. Till</td>
<td>I agree with the technical merits of the proposal.</td>
<td></td>
</tr>
<tr>
<td>Ritch D. Hollingsworth</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Robert W. Falvey</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>David J. Volk</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Todd Marc Pearson</td>
<td>Agree.</td>
<td></td>
</tr>
<tr>
<td>William Ventura</td>
<td>I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1623 to Revise Section 8.4.1.16.</td>
<td></td>
</tr>
<tr>
<td>Andrew R. Coles</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Richard M. Arvin</td>
<td>I agree with the technical merits.</td>
<td></td>
</tr>
<tr>
<td>Thomas Eng</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Michel Fournier</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>James J. Convery</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ABSTAIN</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
**QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.**

**Eligible to Vote:** 29  
**Not Returned:** 6  
Max Lakkonen, Steven C.  
White, Bernard J. Kennedy, IV, Scott W. McAleese, Nequan Isaac, William H. Lampkin  
*Vote Selection* | *Votes* | *Comments*
---|---|---
AGREE | 22 |  
Marcelo M. Hirschler | A and C |  
Kenneth E. Bush | A |  
William E. Koffel | A. The standard contains an error or an omission that was overlooked during the regular revision process. |  
John Powell White | A. The standard contains an error or an omission that was overlooked during the regular revision process. |  
Silas K. Li | agree |  
Dilip S. Shah | A. |  
Zoran Radojevic | F |  
Joshua H. Teo | A |  
Harold A. Locke | I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box. |  
Katherine Fagerlund | I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box. |  
Jarrod Alston | Agree (F), the revision corrects a circumstance in which the testing condition (e.g., backing/substrate) requirements overwhelm the results from the test result of the material itself. However, it is noted that the change to the 2020 edition creates a minor conflict to the associated Annex note created within the 2023 edition that substantiated the modification from the 2020 to the 2023 edition. |  
Robert C. Till | A |  
Ritch D. Hollingsworth | A |  
Robert W. Falvey | Agree |  
David J. Volk | A |  
Todd Marc Pearson | Agree |  
William Ventura | The standard contains an error or an omission that was overlooked during the regular revision process. |  
Andrew R. Coles | Agree |  
Richard M. Arvin | I agree that this is an emergency nature. |  
Thomas Eng | A |
Michel Fournier  
James J. Convery  
**DISAGREE**  
Kevin M. Lewis

<table>
<thead>
<tr>
<th>Name</th>
<th>Vote</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michel Fournier</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>James J. Convery</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Kevin M. Lewis</td>
<td>1</td>
<td>I didn't find anything in the TIA to substantiate a true emergency nature to the proposal, as the same proposed change is being introduced in the 2023 edition currently being balloted.</td>
</tr>
</tbody>
</table>

**ABSTAIN**  
0
From: Sharma, Puneet  
Sent: Wednesday, December 22, 2021 3:34 PM  
To: Shared TIAs  
Subject: Comment on Proposed TIA 1623 on NFPA 130  
Attachments: Proposed_TIA_1623_NFPA_130.pdf

TIA Log No.: 1623 & Reference:  8.4.1.16

I fully support the TIA No 1623 for 8.4.1.16 to 2020 edition of NFPA 130.

Regards.

PUNEET SHARMA, MSc FPE (he/him/his)  
Manager – East Canada  
2150 Islington Avenue, Suite 100, Toronto, ON M9P 3V4  
Canada

jensenhughes.com

CONNECT WITH US  
Receive the latest company updates, industry news and free educational insights from our experts. Sign-up here

This message contains information that may be confidential and legally privileged. If you are not the intended recipient, do not use, copy, or disseminate this message, or any of its contents. If you have received the message in error, please immediately advise the sender by replying to this message and delete the original message and any copy of it from your computer system.
1. Revise A.3.3.38 (2019 edition) and A.3.3.44 (2022 edition) to read as follows:

Proposed wording for the 2019 edition:

A.3.3.38 Ignitible Fibers/Flyings. …
_In this document, the zone classification system does not address includes ignitible fibers/flyings as a fire hazard in a layer, which is not addressed in the IEC zone system (see IEC 60079-10-2, Explosive atmospheres — Part 10-2: Classification of areas — Explosive dust atmospheres). Where these are present, the user should could also consider installation in accordance with Article 503 of NFPA 70. [499, 2021]

Proposed wording for the 2022 edition:

A.3.3.44 Ignitible Fibers/Flyings. …
_In this document, the zone classification system does not address includes ignitible fibers/flyings as a fire hazard in a layer, which is not addressed in the IEC zone system (see IEC 60079-10-2, Explosive atmospheres — Part 10-2: Classification of areas — Explosive dust atmospheres). Where these are present, the user should could also consider installation in accordance with Article 503 of NFPA 70. [499, 2021]

Substantiation: This TIA is being submitted to correct a portion of TIA 1527. Additional changes were needed to align with NFPA 499 that were not previously included in TIA 1527. These changes are in reference to the work done by a multi-committee task group who, at the direction of the Standards Council, put together TIAS to correlate the dust standards with NFPA 70.

Emergency Nature: The NFPA Standard contains a conflict within the NFPA Standard or within another NFPA Standard.

To resolve the conflict between these standards as it pertains to the use of Zone electrical classifications for combustible dusts.
MEMORANDUM

TO: Technical Committee on Combustible Metals and Metal Dusts

FROM: Yiu Lee, Committee Administrator

DATE: February 16, 2022

SUBJECT: NFPA 484 Proposed TIA No. 1618 FINAL TC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(a) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

35 Eligible to Vote
8 Not Returned (Burridge, Creswell, Davis, Dillon, Downing, Prather, Reding, Schlentz)

Technical Merit:  Emergency Nature:
1 Abstentions (Ural) 0 Abstentions
25 Agree (w/comment, Buc, Drake) 25 Agree (Buc, Drake, Super)
1 Disagree (Kong) 2 Disagree (Kong, Ural)

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

[35 eligible ÷ 2 = 17.5 = 18 (round up)]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is as follows:

Technical Merit: (35 eligible to vote - 8 not returned - 1 abstentions = 26 × 0.75 = 19.5) 20
Emergency Nature: (35 eligible to vote - 8 not returned - 0 abstentions = 27 × 0.75 = 20.25) 21

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

Appeal Closing Date for this TIA is February 21, 2022.
QUESTION NO. 1: I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1618 to revise A.3.3.38 (2019 edition) and A.3.3.44 (2022 edition)

Eligible to Vote: 35
Not Returned: 8
Brad D. Burridge,
Gregory F. Creswell,
Scott G. Davis,
Peter F. Downing,
Scott E. Dillon,
Nicholas P. Schlentz,
Nicholas S. Reding,
Daniel B. Prather

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Mark W. Drake</td>
<td></td>
<td>The NFPA Standard TIA addresses a conflict with another NFPA Standard.</td>
</tr>
<tr>
<td>Daniel J. Hubert</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Donna R. Bruce</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Patrick A. Thornton</td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
<td></td>
</tr>
<tr>
<td>Tom Christman</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Elizabeth C. Buc</td>
<td>The TIA is a correction.</td>
<td></td>
</tr>
<tr>
<td>Gregory M. Super</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Burke Desautels</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Samuel A. Rodgers</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>David K. Young</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Timothy J. Myers</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Ashok Ghose Dastidar</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Eli Horden</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Keenan Thomas Dotson</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Doug Thomas</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Michelle R. Murphy</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jason L. Angell</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Ryan Giberson</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Andrew Ryerson</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Ryan Condon</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Michael David Heroux</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Warren Greenfield</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Jason Krbec</td>
<td>Agree</td>
<td></td>
</tr>
</tbody>
</table>

| Disagree | 1 |
As stated in Article 500.5 (D) (1) of NFPA 70, the fibers/flyings of concerns in this article are either natural materials or synthetic polymers. Most of these materials are electrically nonconductive. At least, NFPA 70 does not explicitly state that the fibers/flyings include electrically conductive materials. Article 503 of NFPA 70 implies that the fibers/flyings are organic materials and states in 503.5 (General) that the safety basis is to ensure that “Equipment installed in Class III locations shall be able to function at full rating without developing surface temperatures high enough to cause excessive dehydration or gradual carbonization of accumulated fibers/flyings.” It appears that Article 503 of NFPA 70 does not address the potential ignition hazard associated with the electrical conductivity of metal fibers/flyings. Thus, an ignition risk could be introduced if electrical installations rated for Class III locations (Article 503, NFPA 70) are used in an area where combustible metal fibers/flyings are processed, used or stored without completing an evaluation of the effectiveness of the safety measures in this article on preventing the short-circuit hazard associated with the electrically conductive nature of combustible metal fibers/flyings.

Erdem A. Ural

Abstain 1

This tia is a correction to a previous tia which was drafted and approved in haste. I would rather prefer that my concerns for the tia 1527 addressed.

QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 35
Not Returned : 8
Brad D. Burridge,
Gregory F. Creswell,
Scott G. Davis,
Peter F. Downing,
Scott E. Dillon,
Nicholas P. Schentz,
Nicholas S. Reding,
Daniel B. Prather

Vote Selection

<table>
<thead>
<tr>
<th>Agree</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark W. Drake</td>
<td></td>
</tr>
<tr>
<td>Daniel J. Hubert</td>
<td></td>
</tr>
<tr>
<td>Donna R. Bruce</td>
<td>Agree</td>
</tr>
<tr>
<td>Patrick A. Thornton</td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or within another NFPA Standard</td>
</tr>
<tr>
<td>Tom Christman</td>
<td>B</td>
</tr>
<tr>
<td>Elizabeth C. Buc</td>
<td>The TIA addresses a conflict between documents</td>
</tr>
<tr>
<td>Gregory M. Super</td>
<td>I can see the argument that this was overlooked</td>
</tr>
<tr>
<td>Burke Desautels</td>
<td>agree</td>
</tr>
</tbody>
</table>

I can see the argument that this was overlooked

Burke Desautels
<table>
<thead>
<tr>
<th>Name</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samuel A. Rodgers</td>
<td>B</td>
</tr>
<tr>
<td>David K. Young</td>
<td>B</td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td>B</td>
</tr>
<tr>
<td>Timothy J. Myers</td>
<td>B</td>
</tr>
<tr>
<td>Ashok Ghose Dastidar</td>
<td>agree</td>
</tr>
<tr>
<td>Eli Horden</td>
<td>B</td>
</tr>
<tr>
<td>Keenan Thomas Dotson</td>
<td>Agree, B.</td>
</tr>
<tr>
<td>Doug Thomas</td>
<td>B</td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td>A</td>
</tr>
<tr>
<td>Michelle R. Murphy</td>
<td>B</td>
</tr>
<tr>
<td>Jason L. Angell</td>
<td>B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.</td>
</tr>
<tr>
<td>Ryan Giberson</td>
<td>Agree</td>
</tr>
<tr>
<td>Andrew Ryerson</td>
<td>D</td>
</tr>
<tr>
<td>Ryan Condon</td>
<td>A and B</td>
</tr>
<tr>
<td>Michael David Heroux</td>
<td>Agree</td>
</tr>
<tr>
<td>Warren Greenfield</td>
<td>b</td>
</tr>
<tr>
<td>Jason Krbec</td>
<td>B</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>2</td>
</tr>
<tr>
<td>Dehong Kong</td>
<td>Same as the Comments for Question No. 1 above.</td>
</tr>
<tr>
<td>Erdem A. Ural</td>
<td>The real emergency is the need to correct the flawed definitions in NFPA 499 and NFPA 499, rather than adopting them into the combustible dust standards.</td>
</tr>
<tr>
<td><strong>Abstain</strong></td>
<td>0</td>
</tr>
</tbody>
</table>
MEMORANDUM

TO: Correlating Committee on Combustible Dusts

FROM: Yiu Lee, Committee Administrator

DATE: February 16, 2022

SUBJECT: NFPA 484 Proposed TIA No. 1618 FINAL CC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(b) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Correlation Issues) and Ballot Item No. 2 (Emergency Nature).

15 Eligible to Vote
4 Not Returned (Creswell, Davis, Roberts, Snoeys)

<table>
<thead>
<tr>
<th>Correlation Issues:</th>
<th>0 Abstentions</th>
<th>10 Agree (w/comment, LeBlanc)</th>
<th>1 Disagree (Cholin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Nature:</td>
<td>0 Abstentions</td>
<td>10 Agree (w/comment, Sapper)</td>
<td>1 Disagree (Cholin)</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

[15 eligible ÷ 2 = 7.5 = 8]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is 9 (round up).

(15 eligible to vote - 4 not returned - 0 abstentions = 11 × 0.75 = 8.25)

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is **February 21, 2022**.
QUESTION NO. 1: I AGREE there are no CORRELATION ISSUES in accordance with 3.4.2 and 3.4.3 of the NFPA Regs.

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>Agree It is unfortunate that NFPA 499 has any sway over the combustible dust standards. I do not understand how a recommended practice can control a definition.</td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jason Krbec</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Matthew J. Bujewski</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Chris Aiken</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Martin P. Clouthier</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Arthur G. Sapper</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
The proposed TIA is NOT suitable for adoption. First it is based upon the premise that particulates having one dimension greater than 500 micron do not pose a deflagration and explosion hazard. That is false. The particulate that caused the explosions and fires and Malden Mills in Methuen MA in 1995 was a 1.2 mm long, 12 micron diameter nylon 6-6 fiber. The proposed TIA would exclude this particulate from the scope of all of the NFPA combustible dust standards. There are numerous other cases where a high aspect ratio particulate with a largest dimension in excess of the 500 micron criterion has supported a deflagration and resulting explosion or flash-fire. The size criterion in the proposed TIA does not address the fact of particle attrition occurs during handling in the process equipment and of the particulate that escapes the process and exists as fugitive material. All particulates, regardless of their chemical composition will suffer particle attrition over time and fluctuations of humidity and temperature. Consequently, a particulate that is prevented from entering electrical enclosures due to particle dimensions will eventually become capable of entering as particle attrition occurs. The proposed TIA does not address this reality and sets the stage for the development of an unrecognized hazard of slowly increasing severity. The experience of the combustible dust community contradicts the distinction between the particulates that are present in the Class II hazardous locations and those in a Class III hazardous location. This TIA would have the effect of institutionalizing a fundamentally false premise. This matter should not be resolved with a TIA. It should be resolved through the normal standard revision process where the motives for the adoption of a fundamentally false premise can be challenged in the public forum.

**QUESTION NO. 2:** I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

<table>
<thead>
<tr>
<th>Eligible to Vote: 15</th>
<th>Not Returned : 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gregory F. Creswell,</td>
<td></td>
</tr>
<tr>
<td>Scott G. Davis,</td>
<td></td>
</tr>
<tr>
<td>Jef Snoeys,</td>
<td></td>
</tr>
<tr>
<td>Jeffrey R. Roberts</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Jason Krbec</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td>Reason B.</td>
<td></td>
</tr>
<tr>
<td>Matthew J. Bujewski</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Chris Aiken</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Martin P. Clouthier</td>
<td>Agree</td>
<td></td>
</tr>
</tbody>
</table>

**Abstain**

0
Arthur G. Sapper

<table>
<thead>
<tr>
<th>Disagree</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>John M. Cholin</td>
<td></td>
</tr>
</tbody>
</table>

| Abstain | 0 |

I agree with Matt Bujewski that we should generally not be in favor of using the TIA process for complicated topics that should be discussed with the full committee. Ordinarily, I would not consider this an emergency. However, as Matt observes, since this was the result of a multi-committee task group and has been vetted by them, I am willing to go along with their conclusion.

There is no emergency. This matter should not be resolved with a TIA. It should be resolved through the normal standard revision process where the motives for the adoption of a fundamentally false premise can be challenged in the public forum.
1. Add a new 1.3.3 and associated Annex material to read as follows; and renumber existing paragraphs accordingly:

**1.3.3** This standard shall apply to the storage or use of ignitible fibers/flyings, specifically with regard to fire hazards.

**A.1.3.3** Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flash-fire hazard or explosion hazard and are not included in the definition of combustible dust in this standard. Ignitible fibers/flyings present a fire hazard, so locations are classified differently and the electrical installation includes additional restrictions compared to combustible fibers/flyings.

**1.3.34** This standard shall not apply to the following: …

**1.3.45** Where an industry …

2. Add a new reference to Section 2.4 as follows:


3. Revise 3.3.6 Combustible Dust, and associated Annex material to read as follows:

**3.3.6** Combustible Dust. A finely divided combustible particulate solid, including combustible fibers/flyings, that presents a flash-fire hazard or explosion hazard when suspended in air or the process-specific oxidizing medium over a range of concentrations.

**A.3.3.6** Combustible Dust. The term combustible dust when used in this standard includes powders, fines, fibers, flyings, etc. Combustible fibers/flyings are specifically mentioned because, while the hazard is the same, NFPA 70 and NFPA 499 treat combustible dust and combustible fibers/flyings separately in regards to establishing hazardous (classified) locations and specifying the electrical installation. Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flash-fire or explosion hazard and are not included in the definition of combustible dust in this standard. Ignitible fibers/flyings present a fire hazard, so locations are classified differently and the electrical installation includes additional restrictions compared to combustible fibers/flyings.

This definition also includes consideration of a process-specific oxidizing medium other than air. A larger particle size material might not present a hazard in air, yet could present a hazard in an atmosphere with increased oxygen concentration. Similarly, a combustible metal might still present a hazard in an atmosphere typically considered inert, such as CO₂ or nitrogen.
Dusts traditionally were defined as material 420 μm or smaller (i.e., capable of passing through a U.S. No. 40 standard sieve). For consistency with other standards, 500 μm (i.e., capable of passing through a U.S. No. 35 standard sieve) is now considered an appropriate size criterion. Particle surface area-to-volume ratio is a key factor in determining the rate of combustion. Combustible particulate solids with the smallest a minimum dimension more than 500 μm generally have a surface-to-volume ratio that is too small to pose a deflagration hazard. Flat platelet-shaped particles, flakes, or fibers Fibers/flyings with lengths that are large compared to their diameter or thickness usually do not pass through a 500 μm sieve, yet could still pose a deflagration hazard. Many particulates accumulate electrostatic charge in handling, causing them to attract each other, forming agglomerates. Often, agglomerates behave as if they were larger particles, yet when they are dispersed they present a significant hazard. Therefore, it can be inferred that any particulate that has the smallest a minimum dimension less than or equal to 500 μm could behave as a combustible dust if suspended in air or the process-specific oxidizer. If the smallest minimum dimension of the particulate is greater than 500 μm, it is unlikely that the material would be a combustible dust, as determined by test. The determination of whether a sample of combustible material presents a flash-fire or explosion hazard could be based on a screening test methodology such as provided in the ASTM E1226, Standard Test Method for Explosibility of Dust Clouds. Alternatively, and a standardized test method such as ASTM E1515, Standard Test Method for Minimum Explosible Concentration of Combustible Dusts, could be used to determine dust explosibility. Chapter 5 has additional information on testing requirements.

4. In 3.3 add new definition for Combustible Fibers/Flyings, and associated Annex material to read as follows:

**3.3.x* Combustible Fibers/Flyings.** Fibers/flyings, where any dimension is greater than 500 μm in nominal size, which can form an explosible mixture when suspended in air at standard atmospheric pressure and temperature. [499, 2021]

**A.3.3.x Combustible Fibers/Flyings.** Section 500.5 of NFPA 70 defines a Class III location. Combustible fibers/flyings can be similar in physical form to ignitible fibers/flyings and protected using the same electrical equipment installation methods. Examples of fibers/flyings include flat platelet-shaped particulate, such as metal flake, and fibrous particulate, such as particle board core material. If the smallest dimension of a combustible material is greater than 500 μm, it is unlikely that the material would be combustible fibers/flyings, as determined by test. Finely divided solids with lengths that are large compared to their diameter or thickness usually do not pass through a 500 μm sieve, yet when tested could potentially be determined to be explosible. [499, 2021]

The typical test methods for evaluating an explosible mixture are ASTM E1226, Standard Test Method for Explosibility of Dust Clouds, ISO 6184-1, Explosion protection systems — Part 1: Determination of explosion indices of combustible dusts in air, or ISO/IEC/UL 80079-20-2, Explosive atmospheres — Part 20-2: Material characteristics — Combustible dusts test methods, for procedures for determining the explosibility of dusts. A material that is found to not present an explosible mixture could still be an ignitible fiber/flying, as defined in 3.3.y. Historically, the explosibility condition has been described as presenting a flash fire or explosion hazard. It could be understood that the potential hazard due to the formation of an explosible mixture when suspended in air at standard atmospheric pressure and temperature would include ignition. [499, 2021]
While this standard includes larger yet still hazardous materials as a subset of combustible dust, *NFPA 70* addresses them separately for purposes of defining the appropriate electrical classification. Although the hazard is the same when dispersed in a cloud, the electrical installation to prevent ingress of combustible fibers/flyings is different.

5. In 3.3 add new definition for Ignitible Fibers/Flyings, and associated Annex material to read as follows:

**3.3.y* Ignitible Fibers/Flyings.** Fibers/flyings where any dimension is greater than 500 μm in nominal size, which are not likely to be in suspension in quantities to produce an explosible mixture, but could produce an ignitible layer fire hazard. [499, 2021]

**A.3.3.y Ignitible Fibers/Flyings.** Section 500.5 of *NFPA 70* defines a Class III location as one where ignitible fibers/flyings are present, but not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures. This description addresses fibers/flyings that do not present a flash-fire hazard or explosion hazard by test. This could be because those fibers/flyings are too large or too agglomerated to be suspended in air in sufficient concentration, or at all, under typical test conditions. Alternatively, this could be because they burn so slowly that, when suspended in air, they do not propagate combustion at any concentration. [499, 2021]

In this document the zone classification system includes ignitible fibers/flyings as a fire hazard in a layer, which is not addressed in the IEC zone system (see IEC 60079-10-2, *Explosive atmospheres — Part 10-2: Classification of areas — Explosive dust atmospheres*). Where these are present, the user could also consider installation in accordance with Article 503 of *NFPA 70*. [499, 2021]

6. Revise 8.4.2.2, and associated Annex material to read as follows:

**8.4.2.2 Vacuum Cleaning Method.**

...  

**8.4.2.2.1.7* Portable vacuum cleaners that meet the following minimum requirements shall be permitted to be used to collect combustible particulate solids in unclassified (nonhazardous) areas locations:**

(1) Materials of construction shall comply with 9.4.7.1.  
(2) Hoses shall be conductive or static dissipative.  
(3) All conductive components, including wands and attachments, shall be bonded and grounded.  
(4) The fan or blower shall be on the clean side of the primary filtration media or wet separation chamber.  
(5) Electrical motors shall not be located on the dirty side of the primary filtration media or wet separation chamber unless listed for Class II or Class III, Division 1, as appropriate, or Zone 20 or Zone 21 locations.  
(6)*Where liquids or wet materials are picked up by the vacuum cleaner, paper filter elements shall not be used.  
(7) Vacuum cleaners used for metal dusts shall meet the requirements of *NFPA 484*.  

**A.8.4.2.2.1.7** If a large quantity of material is spilled in an unclassified area, the bulk material should be collected by sweeping or shoveling or with a portable vacuum cleaner listed as suitable for combustible dust hazardous (classified) Class II locations. Vacuum cleaners
meeting the requirements in 8.4.2.2.1 can be used to clean up residual material after the bulk of the spill has been collected.

8.4.2.2.2* In combustible dust hazardous (classified) Class II electrically classified (hazardous) locations, electrically powered vacuum cleaners shall be listed for the purpose and location or shall be a fixed-pipe suction system with a remotely located exhauster and an AMS installed in conformance with Section 9.3, and they shall be suitable for the dust being collected.

A.8.4.2.2.2 The Committee is not aware of vendors providing equipment listed for Class III hazardous (classified) electrically classified (hazardous) locations. A common practice is to use equipment listed for combustible dust hazardous (classified) locations Class II in areas classified as Class III.

8.4.2.3 Where flammable vapors or gases are present in combustible dust hazardous (classified) locations Class II areas, vacuum cleaners shall be listed for both flammable vapors or gases and combustible dust Class I and Class II hazardous (classified) locations.

7. Revise 8.4.2.6.2 item (4) to read as follows:
8.4.2.6.2* Where blowdown using compressed air is used, the following precautions shall be followed:
(1) Prior to using compressed …
(4) All electrical equipment, including lighting, potentially exposed to airborne dust in the area during cleaning is suitable for use in a Class II, Division 2, or Zone 22, hazardous (classified) location in accordance with NFPA 70.

8. Revise 9.4.6, and associated Annex material to read as follows:
9.4.6 Hazardous (Classified) Locations for Electrical Installations.
9.4.6.1* The identification of the possible presence and extent of hazardous (classified) locations Class II and Class III locations shall be made based on the criteria in 500.5(C) and (D) Articles 500 and 506 of NFPA 70.

A.9.4.6.1 The best method to eliminate the need for hazardous (classified) locations electrically classified areas is to prevent the release of dust from equipment. The next best method to eliminate the need for hazardous (classified) locations electrically classified areas is to remove the dust by developing proper housekeeping procedures. If the release of dust from equipment cannot be prevented or the dust cannot be cleaned up, then that area might be a hazardous (classified) location or an electrically classified area. NFPA 499 can be used for guidance to supplement the criteria in Article 500.5 of NFPA 70. This guidance depends on a determination of the combustibility of dust in a particular area, the ignitibility properties of the dust, and the nature of possible dust cloud formation and dust layer accumulations within and outside the electrical equipment near the dusts. NFPA 499 is a good source for guidance on identifying hazardous (classified) locations Class III areas.

The user of this document should be aware that the dust layer accumulation criteria in Articles 500 and 506 of NFPA 70 and NFPA 499 are intended to address electrical ignition hazards due to overheating or shorting of electrical equipment. However, the
threshold housekeeping dust accumulation criteria in this standard are based on a dust flash-fire or dust deflagration hazard. These differing criteria can lead to different layer depth requirements. It is possible that even where electrically classified equipment is installed the area can still be considered a flash-fire or deflagration hazard.

9.4.6.1* The locations and extent of Class II and Class III hazardous (classified) locations shall be documented, and such documentation shall be preserved for access at the facility.

A.9.4.6.1 Local signage or floor indications should be considered. Having local floor signage provides the everyday operators and anyone else who would be in the facility with the awareness of the electrically classified areas hazardous (classified) locations. Knowledge of electrically classified areas hazardous (classified) locations gives anyone over the lifetime of the facility the awareness of immediate hazards within the facility.

9.4.6.2 Electrical equipment and wiring within Class II hazardous (classified) locations shall comply with Article 502 of NFPA 70.

9.4.6.3 Electrical equipment and wiring within Class III locations shall comply with Article 503 of NFPA 70.

9.4.6.34* Preventive maintenance programs for electrical equipment and wiring in Class II and Class III hazardous (classified) locations shall include provisions to verify that dusttight electrical enclosures are not experiencing visible dust accumulation.

A.9.4.6.34 NFPA 70B contains recommendations on the development of an effective electrical equipment maintenance program. Article Section 502.15 of NFPA 70 contains descriptions of seals for electrical enclosures and fittings. The description includes a requirement that sealing fittings be accessible. This requirement is intended to include cabinets and other enclosures such as MCCs, control panels, and main switch gear, but not conduit, raceways, junction boxes, or other similar equipment. Section 506.16 of NFPA 70 also addresses seals.

9.4.6.5* Zone classification for dusts in accordance with Article 506 of NFPA 70 shall not be permitted.

A.9.4.6.5 Article 502 of NFPA 70 permits the use of Zone 20 equipment installation in a Class II, Division 1, location for the same dust. If the dust is a metal dust and not a combustible metal dust according to the test methods for Group IIIC, based on a conductivity criterion, this would potentially have equipment identified for Group IIIB (suitable for nonconductive dusts) installed in a Class II, Division 1, Group E, location. This would definitely not be appropriate. Contrary to the general statement in 506.6(A) of NFPA 70, a metal dust could be in Division Group E but not be conductive enough to be in Zone Group IIIC.

Another discrepancy in the requirements for zone classification versus division classification is that Article 506 of NFPA 70 provides no limitation on the designation of Zone 22 locations for combustible metal dusts. Under the division system in Article 500.5(C)(1)(3), where there is Group E metal dust in hazardous quantities, the location would be classified as Division 1 and would not be permitted to be classified as Division 2. Under the zone system, the less protective Zone 22 could be chosen.
Both of these discrepancies are nonconservative in comparison to the division classification system. While the NEC has established a framework for the use of zone classification for dusts, these nonconservative discrepancies in the boundaries between dust groups and area classification zones/divisions must be resolved before applying these concepts to industrial situations. The NFPA EECA committee had previously coordinated the boundaries between zone and division for gases but has not yet addressed this significant issue for dusts. Until these discrepancies can be addressed, NFPA 652 should not permit the application of zone classification for combustible dusts in industrial occupancies.

9.4.6.4* Electrical equipment exposed to a process-specific oxidizing medium, other than air, shall only use dust exclusion protection methods unless supported by a documented risk assessment.

A.9.4.6.4 Intrinsic safety and nonincendive circuits are defined for use in atmospheric oxygen at concentrations not greater than 21 percent as stated in the ANSI standards used to certify the equipment. Greater than 21 percent oxygen concentration or a more sensitive oxidizing medium would greatly lower the safety factor on these circuits. Dust exclusion types of protection, such as dust ignitionproof, dusttight, purged and pressurized, encapsulation, and hermetically sealed, remain effective regardless of the process-specific oxidizing medium.

9. Add new text to the end of Annex A.3.3.8 to read as follows:

A.3.3.8 Combustible Particulate Solid…

For purposes of determining appropriate electrical installation requirements for combustible particulate solids, NFPA 499 has defined three material subgroups that can warrant establishing hazardous (classified) locations. Combustible dusts, per NFPA 499, are materials with a particle size less than 500 μm that can propagate a deflagration when suspended in a cloud, as determined by test. Combustible fibers/flyings are larger than 500 μm in at least one dimension, yet can still propagate a deflagration in a cloud. Both of these first two subgroups present flash-fire or explosion hazards when suspended in a cloud, as well as fire hazards when in a layer. Ignitible fibers/flyings are larger than 500 μm in at least one dimension, but either are too large or too agglomerated to suspend in the typical test or do not propagate a deflagration in a cloud. Ignitible fibers/flyings do not present a flash-fire or explosion hazard, yet still present a fire hazard when in a layer. All three of these subgroups defined in NFPA 499 are included in the term combustible particulate solid as defined and used in NFPA 652. Combustible fibers/flyings as defined in NFPA 499 are included in the term combustible dust as used and defined in NFPA 652.

NFPA 70 provides different installation requirements for each of these three material subgroups. Materials smaller than 500 μm require more stringent dust exclusion designs (i.e., Class II or Zone Group IIIB) than materials larger than 500 μm (i.e., Class III or Zone Group IIIA). The exception to this is combustible metals, where both combustible metal dust and combustible metal fibers/flyings require Class II or Zone Group IIIIC installations. Ignitible fibers/flyings additionally require lower maximum surface temperatures than combustible fibers/flyings for certain electrical equipment subject to overload conditions. When a hazardous (classified) location is established to address the presence of more than one of the three subgroups, the more stringent electrical installation requirements should be applied.
10. Revise Annex A.9.4.7.4.6 to read as follows:

A.9.4.7.4.6 Table A.9.4.7.4.6 and Figure A.9.4.7.4.6 provide guides for the selection and use of FIBCs based on the MIE of product contained in the FIBC and the nature of the atmosphere surrounding it. While Table A.9.4.7.4.6 indicates division locations, equivalent zone locations are also included. Class I, Division Group C/D is equivalent to Zone Group IIA/IIIB. Class II, Division 1 and 2 is equivalent to Zone 20/21/22. Inner liners for FIBCs are separated into three types. Note that the selection of the type of liner is critical to maintaining classification of the FIBC. Appropriate inner liner selection, where applicable, is addressed in IEC 61340-4-4, Electrostatics — Part 4-4: Standard Test Methods for Specific Applications — Electrostatic Classification of Flexible Intermediate Bulk Containers (FIBC).

11. Add a new citation to D.1.2.8 as follows:

D.1.2.8


Substantiation: This TIA is being resubmitted to supersede TIA 1525. Additional changes were needed to align with NFPA 499 that were not previously included in TIA 1525. These changes are in reference to the work done by a multi-committee task group who, at the direction of the Standards Council, put together TIA s to correlate the dust standards with NFPA 70.

There are two main reasons for this TIA, first to clearly include combustible fibers/flyings and ignitable fibers/flyings, in order to draw the connection to the NFPA 70 application and second to remove any prescriptive limitation or prohibition for use of the Zone system for classification. A number of paragraphs in the main body and annex specifically call out Division system criteria, and these are updated to either remove the specific Division reference or add the equivalent Zone reference. Lastly the term “electrically classified area(s)” has been replaced with “hazardous(classified) location(s)” to more clearly align with NFPA 70 terminology.

We have not yet and do not expect to completely agree on a definition for combustible dust because of the need to include process-specific atmospheres in NFPA 652 and the commodity standards. This proposal makes the functional usage of the term combustible dust equivalent between NFPA 70 and the various dust standards.

These changes are due to Standards Council input to expeditiously correlate the dust standards to NFPA 70.

Emergency Nature: The NFPA Standard contains a conflict within the NFPA Standard or within another NFPA Standard.

To resolve the conflict between these standards as it pertains to the use of Zone electrical classifications for combustible dusts.
MEMORANDUM

TO: Technical Committee on Fundamentals of Combustible Dusts

FROM: Yiu Lee, Committee Administrator

DATE: February 16, 2022

SUBJECT: NFPA 652 Proposed TIA No. 1619 FINAL TC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(a) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

38 Eligible to Vote
8 Not Returned (Burridge, Clouthier, Gombar, Hansen, House, Masta, Rangwala, Statham)

Technical Merit:
1 Abstentions (Theilen)
26 Agree (w/comment Buc, Drake, Greenfield, Salman, Scherpa)
3 Disagree (Cholin, Koch, Ural)

Emergency Nature:
0 Abstentions
27 Agree (Buc, Drake)
3 Disagree (Cholin, Theilen, Ural)

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[
\text{[38 eligible ÷ 2 = 19 + 1 = 20]}
\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is as follows:

Technical Merit: (38 eligible to vote - 8 not returned - 1 abstentions = 29 × 0.75 = 21.75) 22
Emergency Nature: (38 eligible to vote - 8 not returned - 0 abstentions = 30 × 0.75 = 22.5) 23

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

Appeal Closing Date for this TIA is February 21, 2022.
NFPA 652 TECHNICAL COMMITTEE ON FUNDAMENTALS OF COMBUSTIBLE DUSTS
PROPOSED TENTATIVE AMENDMENT LOG NO. 1619 - FINAL BALLOT RESULTS

**QUESTION NO. 1:** I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1619 to add a new 1.3.3 and associated Annex material, add a new reference to Section 2.4, in 3.3 add a new definition for Combustible Fibers/Flyings, Ignitible Fibers/Flyings, and associated Annex material, add new text to the end of Annex A.3.3.8, add a new citation to D.1.2.8, revise 3.3.6 Combustible Dust, and associated Annex material, revise 8.4.2.2, 9.4.6, and associated Annex material, revise 8.4.2.6.2 item(4), Annex A.9.4.7.4.6.

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Mark W. Drake</td>
<td></td>
<td>The NFPA Standard TIA addresses a conflict with another NFPA Standard.</td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Elizabeth C. Buc</td>
<td></td>
<td>The identification of and difference in fire hazard of fibers/flyings is now better defined and supported with annex material.</td>
</tr>
<tr>
<td>Randal R. Davis</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Samuel A. Rodgers</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Timothy J. Myers</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Jeffrey R. Roberts</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Robert D. Taylor</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Bruce McLelland</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Thomas C. Scherpa</td>
<td></td>
<td>This creates a common beginning across multiple standards, but work remains to improve the clarity.</td>
</tr>
<tr>
<td>Niels H. Pedersen</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Shawn M. Hanson</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Todd E. Baker</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Jeffrey D. Sprouse</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Andrew Ryerson</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Edward L. Jones</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Caroline Nosbisch</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Michael A. Maxwell</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Warren Greenfield</td>
<td></td>
<td>NFPA 652 currently contains a definition for combustible particulate solid (3.3.8). There should be a definition added for Fibers/Flyings to help those starting out and less familiar with the subject understand how Fibers/Flyings differ from particulate solids. In A3.3.x, metal flake should not be used as an example in this paragraph.</td>
</tr>
<tr>
<td>Steve Sallman</td>
<td></td>
<td>We hope this improves the understandings of how fiber/flyings differ from particulate solids. Metal flake should not be used.</td>
</tr>
<tr>
<td>Jason Krbec</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Eric P. Maynard</td>
<td></td>
<td>Agree</td>
</tr>
</tbody>
</table>
I do not believe this TIA is ready for prime time yet. For example, proposed A.1.3.3 says “Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flashfire hazard or explosion hazard and are not included in the definition of combustible dust in this standard.” This is simply false. There is ample evidence that particles greater than 500 microns can present a flashfire hazard or explosion hazard. Furthermore, the new definitions do not consider particle size distribution, morphology, and mixture composition. Another example is that the proposed definitions 3.3.x and 3.3.y are not enforceable. They rely on an ambiguous term called “nominal size,” which is not defined. They ignore important factors such as particle size distribution, morphology, and mixture composition. A user will have no clue on how to pick the nominal size of a sample. It is also not clear who will decide if the material can form an explosible cloud and how. While 3.3.x talks about the ASTM or ISO test, 3.3.y refers to a fictional test by saying: “This description addresses fibers/flyings that do not present a flash-fire hazard or explosion hazard by test.” The Committee, and particularly the Standards Council need to be cognizant of the fact that NFPA 499 is a recommended practice, whereas NFPA 652 is a standard. Just because flawed definitions appear in 499 do not justify their adoption in NFPA dust standards. Similarly, NFPA 70 committee sorely lacks the combustible dust expertise. Adopting their flawed definitions into combustible dust standards will be detrimental to life safety and property conservation.

James F. Koch

There is conflicting information in the proposed changes that is extremely confusing. In A.1.3.3, it is stated that "Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flashfire-hazard or explosion hazard and are not included in the definition of combustible dust in this standard." However, if you look at the proposed change in 3.3.6, this is given "Combustible Dust. A finely divided combustible particulate solid, including combustible fibers/flyings,". This is such a complicated TIA that I believe a larger group should meet to review this better than can be done individually.
Reason of John Cholin, P.E. for Opposition to TIA 1526

In 1993 there was an explosion and fire at the Malden Mills manufacturing facility in Methuen, MA that injured a number of people. Unfortunately, the analysis of that event was flawed and the hazard management criteria of NFPA 654 were not applied, based upon the erroneous notion that fibers 12 micron in diameter and 1.2 mm in length were not within the scope of NFPA 654. At that time NFPA 654 relied on the 420 micron, U.S.#40 sieve criterion for defining “combustible dust”. The facility was returned to production without meaningful additions to the management of the combustible particulate hazards. Two years later a second explosion and fire occurred that injured 14 employees, burned 5 fully-sprinklered buildings to the slab and totaled approximately $500,000,000 in property damage and business interruption losses. Consequently, the Technical Committee responsible for NFPA 654 abandoned that particle size designation and embraced a reliance upon testing for the determination of what particulates posed a deflagration hazard. Caveats were added in Annex text warning the user of the phenomenon of particle attrition – that coarse, non-hazardous particles break down into finer, more hazardous particles. Over the ensuing years, this knowledge found its way into all of the combustible dust standards, and rightfully so. Facilities that sort, grade and package fir 2-by-10s, 2-by-8s and 2-by-6s all have a layer of fine, talcum powder-like dust on the upward-facing roof support beam flanges. Facilities that take in whole junked cars and convert them to a shower of bits of metal, rubber and plastic all have a layer of fine, talcum powder-like dust on the upward-facing roof support beam flanges. MDF and HDF panel production facilities that turn wood chips into a river of wood fiber, 20 to 30 metric tons per hour, all have a layer of fine, talcum powder-like dust on the upward-facing roof support beam flanges. Process particulate attrition is the rule, not the exception. Yet this TIA would have us embrace the delusion that fibers and flyings are somehow different and immune from the reality that pertains to all other particulate process flows. The fatal flaw in this TIA is that it is a case of the tail wagging the dog. The fire protection engineering community has learned a lot about combustible particulate solids in the past 25 years, yet this TIA seeks to cancel that new knowledge. In my experience there are no locations suitable for Class III electrical equipment because one cannot rely upon the “fibers and flyings” to not attrite, becoming progressively finer particulates that warrant dust-tight, Class II electrical enclosures. I have no alternative but to oppose the issuance of the subject TIA.

Abstain 1

P. D. (Nick) Thielen

I think this should be added as part of the full process. Timing is such that it can under go full assessment and does not need to be done as an emergency. That said under normal process this is a valid concern that if we had a standard that was not going to be rewritten, and was already undergoing this rewrite it would be something I agree with.

QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 38
Not Returned : 8
Brad D. Burridge,
Denise N. Statham,
Martin P. Clouthier,
Robert C. Gombar,
David M. House,
Dale C. Hansen,
Richard F. Masta,
Ali S. Rangwala

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>
The NFPA Standard TIA addresses a conflict with another NFPA Standard.

It addresses said conflicts between documents.

A. The standard contains an error or an omission that was overlooked during the regular revision process.

Reason B

B

Agree

A

F

D. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

Rationale: B, D, and F

B

Agree

A

Agree

D.

D.

D.

D.

B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.

C.

b

Agreed.

B

B

Agree

None

Hastily correlating NFPA dust standards into NFPA 70 is not an emergency, but is a big mistake. The real emergency is the need to correct the flawed definitions in NFPA 70 and NFPA 499, rather than adopting them into the combustible dust standards. The Committee, and particularly the Standards Council need to be cognizant of the fact that NFPA 499 is a recommended practice, whereas NFPA 652 is a standard. Just because flawed definitions appear in 499 do not justify their adoption in NFPA dust standards. Similarly, NFPA 70 committee sorely lacks the combustible dust expertise. Adopting their flawed definitions into combustible dust standards, particularly in haste, will be detrimental to life safety and property conservation.

This matter should be given full consideration in the normal revision process rather than as a TIA. There is no emergency.
With a complete and total rewrite underway the standard for making something an emergency addition has to be adjusted. Hard to see how a rewrite will not include this concern, but that as a given, the number of changes that are going on that affect so much of the standard makes adding something at this time questionable

Abstain 0
MEMORANDUM

TO: Correlating Committee on Combustible Dusts

FROM: Yiu Lee, Committee Administrator

DATE: February 16, 2022

SUBJECT: NFPA 652 Proposed TIA No. 1619 FINAL CC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(b) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Correlation Issues) and Ballot Item No. 2 (Emergency Nature).

15 Eligible to Vote
4 Not Returned (Creswell, Davis, Roberts, Snoeys)

<table>
<thead>
<tr>
<th>Correlation Issues:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>10 Agree</td>
<td>10 Agree (w/comment, Bujewski, Sapper)</td>
</tr>
<tr>
<td>1 Disagree (Cholin)</td>
<td>1 Disagree (Cholin)</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[15 \text{ eligible} \div 2 = 7.5 = 8\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is 9 (round up).

\[(15 \text{ eligible to vote} - 4 \text{ not returned} - 0 \text{ abstentions} = 11 \times 0.75 = 8.25)\]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

**Appeal Closing Date** for this TIA is **February 21, 2022**.
The proposed TIA is NOT suitable for adoption. First it is based upon the premise that particulates having one dimension greater than 500 micron do not pose a deflagration and explosion hazard. That is false. The particulate that caused the explosions and fires and Malden Mills in Methuen MA in 1995 was a 1.2 mm long, 12 micron diameter nylon 6-6 fiber. The proposed TIA would exclude this particulate from the scope of all of the NFPA combustible dust standards. There are numerous other cases where a high aspect ratio particulate with a largest dimension in excess of the 500 micron criterion has supported a deflagration and resulting explosion or flash-fire. The size criterion in the proposed TIA does not address the fact of particle attrition occurs during handling in the process equipment and of the particulate that escapes the process and exists as fugitive material. All particulates, regardless of their chemical composition will suffer particle attrition over time and fluctuations of humidity and temperature. Consequently, a particulate that is prevented from entering electrical enclosures due to particle dimensions will eventually become capable of entering as particle attrition occurs. The proposed TIA does not address this reality and sets the stage for the development of an unrecognized hazard of slowly increasing severity. The experience of the combustible dust community contradicts the distinction between the particulates that are present in the Class II hazardous locations and those in a Class III hazardous location. This TIA would have the effect of institutionalizing a fundamentally false premise. This matter should not be resolved with a TIA. It should be resolved through the normal standard revision process where the motives for the adoption of a fundamentally false premise can be challenged in the public forum.
**QUESTION NO. 2:** I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

<table>
<thead>
<tr>
<th>Eligible to Vote: 15</th>
<th>Not Returned: 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gregory F. Creswell,</td>
<td>Scott G. Davis,</td>
</tr>
<tr>
<td>Jef Snoeys,</td>
<td>Jeffrey R. Roberts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Jason Krbec</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td></td>
<td>Reason B</td>
</tr>
<tr>
<td>Matthew J. Bujewski</td>
<td></td>
<td>B Generally, I am not in favor of using the TIA process for complicated topics that should be discussed with the full committee. However, since this was the result of a multi-committee task group and has been vetted by them, I am willing to go along with their conclusion.</td>
</tr>
<tr>
<td>Chris Aiken</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Martin P. Clouthier</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Arthur G. Sapper</td>
<td></td>
<td>I agree with Matt Bujewski that we should generally not be in favor of using the TIA process for complicated topics that should be discussed with the full committee. Ordinarily, I would not consider this an emergency. However, as Matt observes, since this was the result of a multi-committee task group and has been vetted by them, I am willing to go along with their conclusion.</td>
</tr>
</tbody>
</table>

| Disagree             | 1     |          |
| John M. Cholin       |       | There is no emergency. This matter should not be resolved with a TIA. It should be resolved through the normal standard revision process where the motives for the adoption of a fundamentally false premise can be challenged in the public forum. |

| Abstain              | 0     |          |
1. Add a new 1.4.2 and associated Annex material to read as follows; and renumber existing paragraphs accordingly:

1.4.2* This standard shall apply to the storage or use of ignitible fibers/flyings, specifically with regard to fire hazards.
A.1.4.2 Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flash-fire-hazard or explosion hazard and are not included in the definition of combustible dust in this standard. Ignitible fibers/flyings present a fire hazard, so locations are classified differently and the electrical installation includes additional restrictions compared to combustible fibers/flyings.

2. Revise section 2.4 to read as follows:

2.4 References for Extracts in Mandatory Sections. …


…

3. Revise 3.3.7, and associated Annex A.3.3.7 to read as follows:

3.3.7* Combustible Dust. A finely divided combustible particulate solid, including combustible fibers/flyings, that presents a flash-fire hazard or explosion hazard when suspended in air or the process-specific oxidizing medium over a range of concentrations. [652, 2019]

A.3.3.7 Combustible Dust. The term combustible dust when used in this standard includes powders, fines, fibers, flyings, etc. Combustible fibers/flyings are specifically mentioned because, while the hazard is the same, NFPA 70 and NFPA 499 treat combustible dust and combustible fibers/flyings separately in regards to establishing hazardous (classified) locations and specifying the electrical installation. Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flash-fire or explosion hazard and are not included in the definition of combustible dust in this standard. Ignitible fibers/flyings present a fire hazard, so locations are classified differently and the electrical installation includes additional restrictions compared to combustible fibers/flyings. [652, 2019]

This definition also includes consideration of a process-specific oxidizing medium other than air. A larger particle size material might not present a hazard in air, yet could present a hazard in an atmosphere with increased oxygen concentration. Similarly, a combustible metal might
still present a hazard in an atmosphere typically considered inert, such as CO₂ or nitrogen. [652, 2019]

Dusts traditionally were defined as material 420 μm or smaller (i.e., capable of passing through a U.S. No. 40 standard sieve). For consistency with other standards, 500 μm (i.e., capable of passing through a U.S. No. 35 standard sieve) is now considered an appropriate size criterion. Particle surface area-to-volume ratio is a key factor in determining the rate of combustion. Combustible particulate solids with the smallest a minimum dimension more than 500 μm generally have a surface-to-volume ratio that is too small to pose a deflagration hazard. Flat platelet-shaped particles, flakes, or fibers Fibers/flyings with lengths that are large compared to their diameter or thickness usually do not pass through a 500 μm sieve, yet could still pose a deflagration hazard. Many particulates accumulate electrostatic charge in handling, causing them to attract each other, forming agglomerates. Often, agglomerates behave as if they were larger particles, yet when they are dispersed they present a significant hazard. Therefore, it can be inferred that any particulate that has the smallest a minimum dimension less than or equal to 500 μm could behave as a combustible dust if suspended in air or the process-specific oxidizer. If the smallest minimum dimension of the particulate is greater than 500 μm, it is unlikely that the material would be a combustible dust, as determined by test. The determination of whether a sample of combustible material presents a flash-fire or explosion hazard could be based on a screening test methodology such as provided in the ASTM E1226, Standard Test Method for Explosibility of Dust Clouds. Alternatively, and a standardized test method such as ASTM E1515, Standard Test Method for Minimum Explosible Concentration of Combustible Dusts, could be used to determine dust explosibility. Chapter 5 of NFPA 652 has additional information on testing requirements. [652, 2019]

4. In 3.3 add new definitions for Combustible Fibers/Flyings, Ignitible Fibers/Flyings, and their associated Annex material to read as follows:

3.3.x* Combustible Fibers/Flyings. Fibers/flyings, where any dimension is greater than 500 μm in nominal size, which can form an explosible mixture when suspended in air at standard atmospheric pressure and temperature. [499, 2021]

A.3.3.x Combustible Fibers/Flyings. Section 500.5 of NFPA 70 defines a Class III location. Combustible fibers/flyings can be similar in physical form to ignitible fibers/flyings and protected using the same electrical equipment installation methods. Examples of fibers/flyings include flat platelet-shaped particulate, such as metal flake, and fibrous particulate, such as particle board core material. If the smallest dimension of a combustible material is greater than 500 μm, it is unlikely that the material would be combustible fibers/flyings, as determined by test. Finely divided solids with lengths that are large compared to their diameter or thickness usually do not pass through a 500 μm sieve, yet when tested could potentially be determined to be exploisible. [499, 2021]

The typical test methods for evaluating an explosible mixture are ASTM E1226, Standard Test Method for Explosibility of Dust Clouds, ISO 6184-1, Explosion protection systems — Part 1: Determination of explosion indices of combustible dusts in air, or ISO/IEC/UL 80079-20-2, Explosive atmospheres — Part 20-2: Material characteristics — Combustible dusts test methods, for procedures for determining the explosibility of dusts. A material that is found to not present an explosible mixture could still be an ignitible fiber/flying, as defined in 3.3.y. Historically, the explosibility condition has been described as presenting a flash fire or explosion hazard. It could be
understood that the potential hazard due to the formation of an explosible mixture when suspended in air at standard atmospheric pressure and temperature would include ignition. [499, 2021]

While this standard includes larger yet still hazardous materials as a subset of combustible dust, NFPA 70 addresses them separately for purposes of defining the appropriate electrical classification. Although the hazard is the same when dispersed in a cloud, the electrical installation to prevent ingress of combustible fibers/flyings is different.

5. In 3.3 add new definition for Ignitible Fibers/Flyings, and associated Annex material to read as follows:

3.3.y* Ignitible Fibers/Flyings. Fibers/flyings where any dimension is greater than 500 μm in nominal size, which are not likely to be in suspension in quantities to produce an explosible mixture, but could produce an ignitible layer fire hazard. [499, 2021]

A.3.3.y Ignitible Fibers/Flyings. Section 500.5 of NFPA 70 defines a Class III location as one where ignitible fibers/flyings are present, but not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. This description addresses fibers/flyings that do not present a flash-fire hazard or explosion hazard by test. This could be because those fibers/flyings are too large or too agglomerated to be suspended in air in sufficient concentration, or at all, under typical test conditions. Alternatively, this could be because they burn so slowly that, when suspended in air, they do not propagate combustion at any concentration. [499, 2021]

In this document the zone classification system includes ignitible fibers/flyings as a fire hazard in a layer, which is not addressed in the IEC zone system (see IEC 60079-10-2, Explosive atmospheres — Part 10-2: Classification of areas — Explosive dust atmospheres). Where these are present, the user could also consider installation in accordance with Article 503 of NFPA 70. [499, 2021]

6. Revise 8.4.3.7, 8.4.3.8, 8.4.3.9, and associated Annexes A.8.4.3.7 and A.8.4.3.8 to read as follows:

8.4.3.7* Portable vacuum cleaners that meet the following minimum requirements shall be permitted to be used to collect combustible particulate solids in unclassified (general purpose) areas/locations:
(1) Materials of construction shall comply with 9.3.13.2 and 9.4.3.2.
(2) Hoses shall be conductive or static dissipative.
(3) All conductive components, including wands and attachments, shall be bonded and grounded.
(4) Dust-laden air shall not pass through the fan or blower.
(5) Electrical motors shall not be in the dust-laden air stream unless listed for Class II or Class III, Division 1, as appropriate, or Zone 20 or Zone 21 locations.
(6)* When liquids or wet material are picked up by the vacuum cleaner, paper filter elements shall not be used.
(7) Vacuum cleaners used for metal dusts shall meet the requirements of NFPA 484.

8.4.3.8* In combustible dust hazardous (classified) Class II electrically classified (hazardous) locations, vacuum cleaners shall be listed for the purpose and location or shall be a fixed-pipe suction system with remotely located exhauster and AMS installed in conformance with 9.3.13 and shall be suitable for the dust being collected.
8.4.3.9 Where flammable vapors or gases are present, vacuum cleaners shall be listed for both flammable vapors or gases and combustible dust Class I and Class II hazardous (classified) locations.

A.8.4.3.7 The intention of this requirement is to provide specifications for vacuum cleaners that could be used to remove incidental amounts of combustible dusts from unclassified areas in order to maintain the unclassified area designation.

If a large quantity of material is spilled in an unclassified area, the bulk material should be collected by sweeping, by shoveling, or with a portable vacuum cleaner listed as suitable for combustible dust hazardous (classified) Class II locations. Vacuum cleaners meeting the requirements in 8.4.3.2 can be used to clean up residual material after the bulk of the spill has been collected.

These requirements for portable vacuum cleaners also should be applied to the use of vacuum trucks for combustible dust. However, there can be other safety issues concerning vacuum truck applications that are not covered within this section. Given that this application might represent a change from normal procedures, operators should also consider the guidance found in conducting a management of change evaluation.

A.8.4.3.8 The Committee is not aware of vendors providing equipment listed for Class III hazardous (classified) electrically classified (hazardous) locations. A common practice is to use equipment listed for combustible dust hazardous (classified) locations Class II in areas classified as Class III.

7. Revise 9.3.13.1.1.2(4)(e) and associated Annex A.9.3.13.1.1.2(4)(e) to read as follows:

9.3.13.1.1.2* The requirement of 9.3.13.1.1.1 shall not apply to…
(4)* Enclosureless AMSs meeting all the following criteria shall be permitted to be used:
…
(e)* The fan motor is suitable for Class II or Class III, Division 2, as appropriate, or Zone 22, or Class III, as appropriate.
…

A.9.3.13.1.1.2(4)(e) NFPA 70, in 502.125(B), states: In Class II, Division 2, locations, motors, generators, and other rotating electrical equipment shall be totally enclosed non ventilated, totally enclosed pipe-ventilated, totally enclosed water-air-cooled, totally enclosed fan-cooled or dust-ignition proof for which maximum full-load external temperature shall be in accordance with 500.8(D)(2) of NFPA 70 for normal operation when operating in free air (not dust blanketed) and shall have no external openings. NFPA 70 does not include an equivalent description of suitable zone-rated equipment.

8. Revise Section 9.4.2 and associated Annex A.9.4.2.2 and Table A.9.4.2.2 to read as follows:

9.4.2 Electrical Equipment.

9.4.2.1 All electrical equipment and installations shall comply with the requirements of NFPA 70.

9.4.2.2* In local areas of a plant where a hazardous quantity of dust accumulates or is suspended in air, the area shall be classified and all electrical equipment and installations in those local areas shall comply with Article 502 or Article 503 of NFPA 70, as applicable. The
Identification of the possible presence and extent of hazardous (classified) locations shall be made based on the criteria in Article 500 or Article 506 of NFPA 70.

9.4.2.3 Hazardous (classified) areas locations that are identified in accordance with 9.4.2.2 shall be documented, and such documentation shall be permanently maintained on file for the life of the facility.

A.9.4.2.2 Refer to NFPA 499. See also Table A.9.4.2.2 (Note: Table A.9.4.2.2 does not apply to Class III materials).

Threshold dust accumulation that would require electrically classified equipment is tied to the likelihood of the accumulations and the housekeeping policy as shown in Table A.9.4.2.2 provided as guidance. Dust accumulations present hazards due to potential overheating and failure of the covered equipment or overheating of the dust layer resulting in a fire, as well as potential to be put into suspension as a cloud resulting in a flash fire or explosion. However, neither the NFPA 70 nor NFPA 654 provides a mandatory prescription for the user to decide how much dust accumulation should trigger the use of classified equipment.

When evaluating how much dust is too much for electrical equipment, several factors need to be considered. NFPA 70 provides Class II, Division 1 and Division 2 criteria in article 500. It states that a Division 2 location is one of the following:

1. A location in which combustible dust due to abnormal operations might be present in the air in quantities sufficient to produce explosive or ignitible mixtures
2. A location in which combustible dust accumulations are present but are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus but could, as a result of infrequent malfunctioning of handling or processing equipment, become suspended in the air
3. A location in which combustible dust accumulations on, in, or in the vicinity of the electrical equipment could be sufficient to interfere with the safe dissipation of heat from electrical equipment or could be ignitible by abnormal operation or failure of electrical equipment

The first two criteria deal with the potential for presence of a dust cloud in the location under abnormal conditions. The third criterion deals with the potential for ignition of a dust accumulation by unprotected hot surfaces, either internal or external to the electrical equipment under normal as well as abnormal conditions.

The first and second criteria are process related, and the third criterion is directly related to the layer thickness on the electrical equipment.

The likelihood of a dust to be heated to ignition temperature when accumulated on the outside of an electrical enclosure or a piece of electrical equipment is a function of the thickness, thermal conductivity, density, and combustion chemistry of the dust layer as well as the fractional coverage of the equipment’s heat dissipation area and the time it remains on the heated equipment.

Both NFPA 654 and NFPA 499 recognize early ignition possibilities due to dehydration and carbonization phenomena but do not offer any methods to evaluate this potential. The appropriate electrical equipment for a given dust is that equipment designed with a maximum surface temperature, designated by the T-code, less than the lower of the layer or cloud ignition temperature of the specific dust. The layer ignition temperature can be determined according to ASTM E2021, Standard Test Method for Hot-Surface Ignition of Dust Layers, using at least a 1/2 in. (13 mm) layer thickness. This is greater than the 1/8 in. (3.2 mm) nominal dust layer establishing a Division 1 or Zone 20 or 21 hazardous (classified) area.
location per NFPA 499, thus providing a safety factor. NFPA 499 also establishes that a Division 2 or Zone 22 hazardous (classified) area location would exist when the dust layer prevents clearly discerning the underlying floor color. Given that dust layers tend to be thicker on the upward-facing surfaces of equipment while heat dissipation area is more evenly distributed, it can be seen that this is a significantly conservative approach.

Table A.9.4.2.2 Guidance for Area Electrical Classification

<table>
<thead>
<tr>
<th>Depth of Dust Accumulation (in.)</th>
<th>Frequency</th>
<th>Housekeeping Requirement</th>
<th>Area Electrical Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible(^a)</td>
<td>N/A</td>
<td>N/A</td>
<td>Unclassified (general purpose)</td>
</tr>
<tr>
<td>Negligible to &lt;1/32(^b)</td>
<td>Infrequent(^c)</td>
<td>Clean up during same shift.</td>
<td>Unclassified (general purpose)</td>
</tr>
<tr>
<td>Negligible to &lt;1/32(^b)</td>
<td>Continuous/frequent(^d)</td>
<td>Clean as necessary to maintain an average accumulation below 1/64 in.(^e)</td>
<td>Unclassified; however, electrical enclosures should be dusttight(^f,g)</td>
</tr>
<tr>
<td>1/32 to 1/8</td>
<td>Infrequent(^c)</td>
<td>Clean up during same shift.</td>
<td>Unclassified; however, electrical enclosures should be dusttight(^f,g)</td>
</tr>
<tr>
<td>1/32 to 1/8</td>
<td>Continuous/frequent(^d)</td>
<td>Clean as necessary to maintain an average accumulation below 1/16 in.(^e)</td>
<td>Class II or Class III, Division 2 or Zone 22</td>
</tr>
<tr>
<td>&gt;1/8</td>
<td>Infrequent(^c)</td>
<td>Immediately shut down and clean.</td>
<td>Class II or Class III, Division 2 or Zone 22</td>
</tr>
<tr>
<td>&gt;1/8</td>
<td>Continuous/frequent(^d)</td>
<td>Clean at frequency appropriate to minimize accumulation.</td>
<td>Class II or Class III, Division 1 or Zone 20 or 21</td>
</tr>
</tbody>
</table>

Notes:
(1) Note: For SI units, 1 in. = 25.4 mm.
(2) This table does not apply to Class III materials. Note: Where the combustible material is anticipated to be solely combustible fibers/flyings, installation in accordance with Class III or Zone Group IIIA is suitable. Where the combustible material is anticipated to be either combustible dust with particle size less than 500 μm or a mixture with combustible fibers/flyings, installation in accordance with Class II or Zone Group IIIB is appropriate.

\(^a\)Surface color just discernible under the dust layer.
\(^b\)1/32 in. is approximately the thickness of a typical paper clip.
\(^c\)Episodic release of dust occurring not more than about two or three times per year.
\(^d\)Episodic release of dust occurring more than about three times per year or continuous release resulting in stated accumulation occurring in approximately a 24-hour period.
It has been observed that a thickness of about \(\frac{1}{64}\) in. of a low-density dust is sufficient to yield a small puffy cloud with each footstep. \(^1\)

For example, National Electrical Manufacturers Association (NEMA) 12 or better. Note: Ordinary equipment that is not heat producing, such as junction boxes, can be significantly sealed against dust penetration by the use of silicone-type caulking. This can be considered in areas where fugitive dust is released at a slow rate and tends to accumulate over a long period of time. \(^2\)

Guidance to be applied for existing facilities. For new facilities, it is recommended that the electrical classification be at least Class II or Class III, depending on the material form, Division 2 or Zone 22. \(^8\)

9. Add new text to the end of Annex A.3.3.8 to read as follows:

A.3.3.8 Combustible Particulate Solid...

For purposes of determining appropriate electrical installation requirements for combustible particulate solids, NFPA 499 has defined three material subgroups that can warrant establishing hazardous (classified) locations. Combustible dusts, per NFPA 499, are materials with a particle size less than 500 \(\mu m\) that can propagate a deflagration when suspended in a cloud, as determined by test. Combustible fibers/flyings are larger than 500 \(\mu m\) in at least one dimension, yet can still propagate a deflagration in a cloud. Both of these first two subgroups present flash-fire or explosion hazards when suspended in a cloud, as well as fire hazards when in a layer. Ignitible fibers/flyings are larger than 500 \(\mu m\) in at least one dimension, but either are too large or too agglomerated to suspend in the typical test or do not propagate a deflagration in a cloud. Ignitible fibers/flyings do not present a flash-fire or explosion hazard, yet still present a fire hazard when in a layer. All three of these subgroups defined in NFPA 499 are included in the term combustible particulate solid as defined and used in NFPA 652.

Combustible fibers/flyings as defined in NFPA 499 are included in the term combustible dust as used and defined in NFPA 652. [652, 2019]

NFPA 70 provides different installation requirements for each of these three material subgroups. Materials smaller than 500 \(\mu m\) require more stringent dust exclusion designs (i.e., Class II or Zone Group IIIB) than materials larger than 500 \(\mu m\) (i.e., Class III or Zone Group IIIA). The exception to this is combustible metals, where both combustible metal dust and combustible metal fibers/flyings require Class II or Zone Group IIIC installations. Ignitible fibers/flyings additionally require lower maximum surface temperatures than combustible fibers/flyings for certain electrical equipment subject to overload conditions. When a hazardous (classified) location is established to address the presence of more than one of the three subgroups, the more stringent electrical installation requirements should be applied. [652, 2019]

10. Revise Annex A.9.3.12.2.1 to read as follows:

A.9.3.12.2.1 The Committee is aware of installations of AMDs (electrical motor and impeller) inside the clean-air plenum of AMSs. Standard duty AMDs are not suitable for such service. Because of the potential for failure of the filter medium or other malfunction, the clean-air side of air-material separators should be considered as at least a Class II, Division 2 or Zone 22, location with regard to proper installation of electrical equipment. NFPA 91 also addresses AMD materials of construction and clearances, including specific requirements where combustible materials could be present.
11. Revise Annex A.9.4.3.6.6 to read as follows:

A.9.4.3.6.6 Table A.9.4.3.6.6 and Figure A.9.4.3.6.6 provide guides for the selection and use of FIBCs based on the MIE of product contained in the FIBC and the nature of the atmosphere surrounding it. While Table A.9.4.3.6.6 indicates division locations, equivalent zone locations are also included. Class I, Division Group C/D is equivalent to Zone Group IIA/IIB. Class II, Division 1 and 2 is equivalent to Zone 20/21/22.

12. Revise Annex A.9.4.8.2 to read as follows:

A.9.4.8.2 Diesel-powered front-end loaders suitable for use in hazardous (classified) locations have not been commercially available. The following provisions can be used to reduce the fire hazard from diesel-powered front-end loaders used in Class II combustible dust hazardous areas, as defined in Articles 500 and 506 of NFPA 70:

1) Only essential electrical equipment should be used, …

13. Revise section G.1.2.6 to read as follows:

G.1.2.6 IEC Publications. …


14. Revise section G.3 to read as follows:

G.3 References for Extract in Informational Sections.

…


…

Substantiation: This TIA is being resubmitted to supersede TIA 1526. Additional changes were needed to align with NFPA 499 that were not previously included in TIA 1526. These changes are in reference to the work done by a multi-committee task group who, at the direction of the Standards Council, put together TIAs to correlate the dust standards with NFPA 70.

There are two main reasons for this TIA, first to clearly include combustible fibers/flyings and ignitible fibers/flyings, in order to draw the connection to the NFPA 70 application and second to remove any prescriptive limitation or prohibition for use of the Zone system for classification. A number of paragraphs in the main body and annex specifically call out Division system criteria, and these are updated to either remove the specific Division reference or add the equivalent Zone reference. Lastly the term “electrically classified area(s)” has been replaced with “hazardous(classified) location(s)” to more clearly align with NFPA 70 terminology.

We have not yet and do not expect to completely agree on a definition for combustible dust because of the need to include process-specific atmospheres in NFPA 652 and the commodity standards. This proposal makes the functional usage of the term combustible dust equivalent between NFPA 70 and the various dust standards.
These changes are due to Standards Council input to expeditiously correlate the dust standards to NFPA 70.

**Emergency Nature:** The NFPA Standard contains a conflict within the NFPA Standard or within another NFPA Standard.

To resolve the conflict between these standards as it pertains to the use of Zone electrical classifications for combustible dusts.
MEMORANDUM

TO: Technical Committee on Handling and Conveying of Dusts, Vapors, and Gases

FROM: Yiu Lee, Committee Administrator

DATE: February 16, 2022

SUBJECT: NFPA 654 Proposed TIA No. 1620 FINAL TC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(a) in the NFPARegs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Technical Merit) and Ballot Item No. 2 (Emergency Nature).

36 Eligible to Vote
7 Not Returned (Eaves, Jandrain, Jennett, Mayer, Parsons, James L. Roberts, Schlentz)

Technical Merit:
1 Abstentions (Hash)
25 Agree (w/comment, Reza, Runyon Scherpa)
3 Disagree (Cholin, Koch, Ural)

Emergency Nature:
1 Abstentions (Hash)
25 Agree (w/comment, Buc, Drake)
3 Disagree (Cholin, Thomas, Ural)

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

[36 eligible ÷ 18 + 1 = 19]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is: 21

(36 eligible to vote – 7 not returned - 1 abstentions = 28 × 0.75 = 21)

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

Appeal Closing Date for this TIA is February 21, 2022.
NFPA 654 TECHNICAL COMMITTEE ON HANDLING AND CONVEYING OF DUSTS, VAPORS, AND GASES
PROPOSED TENTATIVE AMENDMENT LOG NO. 1620 - FINAL BALLOT RESULTS

QUESTION NO. 1: I AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1620 to add a new 1.4.2, and associated Annex material; renumber existing paragraphs accordingly, in 3.3 add new definitions for Combustible Fibers/Flyings, Ignitible Fibers/Flyings, and their associated Annex material, add new text to the end of Annex A.3.3.8, revise section 2.4, 3.3.7, A.3.3.7, 8.4.3.7, 8.4.3.8, 8.4.3.9, A.8.4.3.7, A.8.4.3.8, 9.3.13.1.1.2(e), A.9.3.13.1.1.2(4)(e), 9.4.2, Annex A.9.4.2.2 and Table A.9.4.2.2, A.9.3.12.2.1, A.9.4.3.6.6, A.9.4.8.2, A.9.4.8.2, G.1.2.6, G.3.

Eligible to Vote: 36
Not Returned : 7
Jerry J. Jennett,
James L. Roberts,
Dennis W. Eaves,
Philip J. Parsons,
Gerd Ph. Mayer,
Eric Jandrain,
Nicholas P. Schlentz

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Paul F. Hart</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Samuel A. Rodgers</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Burke Desautels</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Ashok Ghose Dastidar</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Jeffrey R. Roberts</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Stephen T. Greeson</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Vahid Ebadat</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Tony DiLucido</td>
<td>AGREE with the TECHNICAL MERITS of the Proposed TIA Log No. 1620 to add a new 1.4.2, and associated Annex material; renumber existing paragraphs accordingly, in 3.3 add new definitions for Combustible Fibers/Flyings, Ignitible Fibers/Flyings, and their associated Annex material, add new text to the end of Annex A.3.3.8, revise section 2.4, 3.3.7, A.3.3.7, 8.4.3.7, 8.4.3.8, 8.4.3.9, A.8.4.3.7, A.8.4.3.8, 9.3.13.1.1.2(e), A.9.3.13.1.1.2(4)(e), 9.4.2, Annex A.9.4.2.2 and Table A.9.4.2.2, A.9.3.12.2.1, A.9.4.3.6.6, A.9.4.8.2, A.9.4.8.2, G.1.2.6, G.3.</td>
<td></td>
</tr>
</tbody>
</table>

Bruce McLelland          agree
Niels H. Pedersen        Agree
Geoffrey A. Raifsnider   Agree
Jeffrey J. Davis         Agree
Fatima Gamal Ibrahim    Agree
Richard Pehrson          Agree
Robert D. Taylor         Agree in principal
Andrew Ryerson           Agree
Tony L. Thomas           Agree with the technical merit

Posted: April 4, 2022
Standards Council Agenda April 11-13, 2022
Page 146 of 273
<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas C. Scherpa</td>
<td>This creates a common beginning across multiple standards, but work remains to improve the clarity. Necessary first step, but further clarification is necessary.</td>
</tr>
<tr>
<td>Ali Reza</td>
<td>Agree</td>
</tr>
<tr>
<td>Jason Krbec</td>
<td>Agree</td>
</tr>
<tr>
<td>Eric P. Maynard</td>
<td></td>
</tr>
<tr>
<td>Mark L. Runyon</td>
<td>Disagree 3</td>
</tr>
<tr>
<td>Erdem A. Ural</td>
<td></td>
</tr>
<tr>
<td>James F. Koch</td>
<td>This addition should be included in the standard.</td>
</tr>
</tbody>
</table>

I do not believe this TIA is ready for prime time yet. For example, proposed A.1.4.2 says "Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flashfire hazard or explosion hazard and are not included in the definition of combustible dust in this standard." This is simply false. There is ample evidence that particles greater than 500 microns can present a flashfire hazard or explosion hazard. Furthermore, the new definitions do not consider particle size distribution, morphology, and mixture composition. Another example is that the proposed definitions 3.3.x and 3.3.y are not enforceable. They rely on an ambiguous term called "nominal size," which is not defined. They ignore important factors such as particle size distribution, morphology, and mixture composition. A user will have no clue on how to pick the nominal size of a sample. It is also not clear who will decide if the material can form an explosible cloud and how. While 3.3.x talks about the ASTM or ISO test, 3.3.y refers to a fictional test by saying: "This description addresses fibers/flyings that do not present a flash-fire hazard or explosion hazard by test ??." The Committee, and particularly the Standards Council need to be cognizant of the fact that NFPA 499 is a recommended practice, whereas NFPA 65h4 is a standard. Just because flawed definitions appear in 499 do not justify their adoption in NFPA dust standards. Similarly, NFPA 70 committee sorely lacks the combustible dust expertise. Adopting their flawed definitions into combustible dust standards will be detrimental to life safety and property conservation.

There is conflicting information in the proposed changes that is extremely confusing. In A.1.4.2, it is stated that "Ignitible fibers/flyings, as defined in NFPA 70 and NFPA 499, do not present a flash fire-hazard or explosion hazard and are not included in the definition of combustible dust in this standard." However, if you look at the proposed change in 3.3.7, this is given "Combustible Dust. A finely divided combustible particulate solid, including combustible fibers/flyings,". This is such a complicated TIA that I believe a larger group should meet to review this better than can be done individually.
Reason of John Cholin, P.E. for Opposition to TIA 1526: In 1993 there was an explosion and fire at the Malden Mills manufacturing facility in Methuen, MA that injured a number of people. Unfortunately, the analysis of that event was flawed and the hazard management criteria of NFPA 654 were not applied, based upon the erroneous notion that fibers 12 micron in diameter and 1.2 mm in length were not within the scope of NFPA 654. At that time NFPA 654 relied on the 420 micron, U.S.#40 sieve criterion for defining “combustible dust”. The facility was returned to production without meaningful additions to the management of the combustible particulate hazards. Two years later a second explosion and fire occurred that injured 14 employees, burned 5 fully-sprinklered buildings to the slab and totaled approximately $500,000,000 in property damage and business interruption losses. Consequently, the Technical Committee responsible for NFPA 654 abandoned that particle size designation and embraced a reliance upon testing for the determination of what particulates posed a deflagration hazard. Caveats were added in Annex text warning the user of the phenomenon of particle attrition – that coarse, non-hazardous particles break down into finer, more hazardous particles. Over the ensuing years, this knowledge found its way into all of the combustible dust standards, and rightfully so. Facilities that sort, grade and package fir 2-by10s, 2-by-8s and 2-by-6s all have a layer of fine, talcum powder-like dust on the upward-facing roof support beam flanges. Facilities that take in whole junked cars and convert them to a shower of bits of metal, rubber and plastic all have a layer of fine, talcum powder-like dust on the upward-facing roof support beam flanges. MDF and HDF panel production facilities that turn wood chips into a river of wood fiber, 20 to 30 metric tons per hour, all have a layer of fine, talcum powder-like wood dust on the upward-facing roof support beam flanges. Process particulate attrition is the rule, not the exception. Yet this TIA would have us embrace the delusion that fibers and flyings are somehow different and immune from the reality that pertains to all other particulate process flows. The fatal flaw in this TIA is that it is a case of the tail wagging the dog. The fire protection engineering community has learned a lot about combustible particulate solids in the past 25 years, yet this TIA seeks to cancel that new knowledge. In my experience there are no locations suitable for Class III electrical equipment because one cannot rely upon the “fibers and flyings” to not attrite, becoming progressively finer particulates that warrant dust-tight, Class II electrical enclosures. I have no alternative but to oppose the issuance of the subject TIA.

Abstain 1
Robert T. Hash I am abstaining from a vote because I became a member of this committee between any discussions that happened on this topic and the vote. I feel like a vote from me would be based only on partial information.

QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the Instructions box.

Eligible to Vote: 36
Not Returned: 7
Jerry J. Jennett,
James L. Roberts,
Dennis W. Eaves,
Philip J. Parsons,
Gerd Ph. Mayer,
Eric Jandrain,
Nicholas P. Schlientz

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>25</td>
<td>D</td>
</tr>
<tr>
<td>Paul F. Hart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

Posted: April 4, 2022 Standards Council Agenda April 11-13, 2022
Samuel A. Rodgers  Reason B
Burke Desautels       agree
Walter L. Frank       Rationale: B, D, and F
Ashok Ghose Dastidar agree
Jeffrey R. Roberts Yes
Stephen T. Greeson B
Jack E. Osborn A
Vahid Ebadat          The standard contains an error or an omission that was overlooked during the regular revision process.

Tony DiLucido         A. The standard contains an error or an omission that was overlooked during the regular revision process.

Bruce McLelland       D. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

James F. Koch         B
Niels H. Pedersen     Agree
Geoffrey A. Raifsnider B
Jeffrey J. Davis      B
Fatima Gamal Ibrahim  B. The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.

Richard Pehrson       The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

Robert D. Taylor      F
Andrew Ryerson        D
Thomas C. Scherpa     B
Ali Reza              A,D
Jason Krbec           B
Eric P. Maynard       B
Mark L. Runyon        I agree.

Disagree  3
Erdem A. Ural         Hastily correlating NFPA dust standards into NFPA 70 is not an emergency, but is a big mistake. The real emergency is the need to correct the flawed definitions in NFPA 70 and NFPA 499, rather than adopting them into the combustible dust standards. The Committee, and particularly the Standards Council need to be cognizant of the fact that NFPA 499 is a recommended practice, whereas NFPA 654 is a standard. Just because flawed definitions appear in 499 do not justify their adoption in NFPA dust standards. Similarly, NFPA 70 committee sorely lacks the combustible dust expertise. Adopting their flawed definitions into combustible dust standards, particularly in haste, will be unconscionable.

John M. Cholin        This matter should be debated under the normal process rather than as a TIA.
Tony L. Thomas        This should be addressed during the next revision.

Abstain  1
Robert T. Hash        I am abstaining from a vote because I became a member of this committee between any discussions that happened on this topic and the vote. I feel like a vote from me would be based only on partial information.
MEMORANDUM

TO: Correlating Committee on Combustible Dusts
FROM: Yiu Lee, Committee Administrator
DATE: February 16, 2022
SUBJECT: NFPA 654 Proposed TIA No. 1620 FINAL CC BALLOT RESULTS

No comments were received on this TIA, therefore, according to 5.6(b) in the NFPA Regs, the final results show this TIA HAS achieved the ¾ majority vote needed on both Ballot Item No. 1 (Correlation Issues) and Ballot Item No. 2 (Emergency Nature).

15 Eligible to Vote
4 Not Returned (Creswell, Davis, Roberts, Snoeys)

<table>
<thead>
<tr>
<th>Correlation Issues:</th>
<th>Emergency Nature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Abstentions</td>
<td>0 Abstentions</td>
</tr>
<tr>
<td>10 Agree (w/comment, LeBlanc)</td>
<td>10 Agree (w/comment, Bujewski, Sapper)</td>
</tr>
<tr>
<td>1 Disagree (Cholin)</td>
<td>1 Disagree (Cholin)</td>
</tr>
</tbody>
</table>

There are two criteria necessary to pass ballot [(1) simple majority (2) affirmative vote of ¾ of ballots received]. Both questions must pass ballot in order to recommend that the Standards Council issue this TIA.

(1) In all cases, an affirmative vote of at least a simple majority of the total membership eligible to vote is required.

\[15 \text{ eligible} \div 2 = 7.5 = 8\]

(2) The number of affirmative votes needed to satisfy the ¾ requirement is 9 (round up).

\[(15 \text{ eligible to vote} - 4 \text{ not returned} - 0 \text{ abstentions} = 11 \times 0.75 = 8.25)\]

Ballot comments are attached for your review.

The Regs at 1.6.2.(c) state: An appeal relating to a proposed Tentative Interim Amendment that has been submitted for processing pursuant to Section 5.2 shall be filed no later than 5 days after the notice of the TIA final ballot results are published in accordance with 4.2.6.

Appeal Closing Date for this TIA is February 21, 2022.
**NFPA 654 CORRELATING COMMITTEE ON COMBUSTIBLE DUSTS**

**PROPOSED TENTATIVE AMENDMENT LOG NO. 1620 - FINAL BALLOT RESULTS**

**QUESTION NO. 1: I AGREE there are no CORRELATION ISSUES in accordance with 3.4.2 and 3.4.3 of the NFPA Regs.**

<table>
<thead>
<tr>
<th>Eligible to Vote: 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Returned: 4</td>
</tr>
<tr>
<td>Gregory F. Creswell,</td>
</tr>
<tr>
<td>Scott G. Davis,</td>
</tr>
<tr>
<td>Jef Snoeys,</td>
</tr>
<tr>
<td>Jeffrey R. Roberts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>Agree. I believe some of the disagreements brought forward are valid and need to be addressed but it seems we will keep voting on this TIA until it will pass. Hopefully the technical committee responsible for combustible dust will correct this issue during the creation of the new dust document and take full ownership of all definitions and hazards associated with combustible dust.</td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jason Krbec</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Matthew J. Bujewski</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Chris Aiken</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Martin P. Clouthier</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>Arthur G. Sapper</td>
<td>Agree</td>
<td></td>
</tr>
</tbody>
</table>

| Disagree | 1 |
The proposed TIA is NOT suitable for adoption. First it is based upon the premise that particulates having one dimension greater than 500 micron do not pose a deflagration and explosion hazard. That is false. The particulate that caused the explosions and fires and Malden Mills in Methuen MA in 1995 was a 1.2 mm long, 12 micron diameter nylon 6-6 fiber. The proposed TIA would exclude this particulate from the scope of all of the NFPA combustible dust standards. There are numerous other cases where a high aspect ratio particulate with a largest dimension in excess of the 500 micron criterion has supported a deflagration and resulting explosion or flash-fire. The size criterion in the proposed TIA does not address the fact of particle attrition occurs during handling in the process equipment and of the particulate that escapes the process and exists as fugitive material. All particulates, regardless of their chemical composition will suffer particle attrition over time and fluctuations of humidity and temperature. Consequently, a particulate that is prevented from entering electrical enclosures due to particle dimensions will eventually become capable of entering as particle attrition occurs. The proposed TIA does not address this reality and sets the stage for the development of an unrecognized hazard of slowly increasing severity. The experience of the combustible dust community contradicts the distinction between the particulates that are present in the Class II hazardous locations and those in a Class III hazardous location. This TIA would have the effect of institutionalizing a fundamentally false premise. This matter should not be resolved with a TIA. It should be resolved through the normal standard revision process where the motives for the adoption of a fundamentally false premise can be challenged in the public forum.

**QUESTION NO. 2: I AGREE that the subject is of an EMERGENCY NATURE for one or more of the reasons noted in the**

<table>
<thead>
<tr>
<th>Eligible to Vote: 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Returned: 4</td>
</tr>
</tbody>
</table>

**Vote Selection**

<table>
<thead>
<tr>
<th>Vote Selection</th>
<th>Votes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>10</td>
<td>A</td>
</tr>
<tr>
<td>John A. LeBlanc</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Jack E. Osborn</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Kevin Kreitman</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Jason Krbec</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Jeffery W. Sutton</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Walter L. Frank</td>
<td></td>
<td>Reason B.</td>
</tr>
<tr>
<td>Matthew J. Bujewski</td>
<td></td>
<td>B I do not agree with using the TIA process but can agree with the task force's conclusion. A lot of detailed work was put into this.</td>
</tr>
<tr>
<td>Chris Aiken</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Martin P. Clouthier</td>
<td></td>
<td>Agree</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Comment</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Arthur G. Sapper</td>
<td></td>
<td>I agree with Matt Bujewski that we should generally not be in favor of using the TIA process for complicated topics that should be discussed with the full committee. Ordinarily, I would not consider this an emergency. However, as Matt observes, since this was the result of a multi-committee task group and has been vetted by them, I am willing to go along with their conclusion.</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>John M. Cholin</td>
</tr>
<tr>
<td>John M. Cholin</td>
<td></td>
<td>There is no emergency. This matter should not be resolved with a TIA. It should be resolved through the normal standard revision process where the motives for the adoption of a fundamentally false premise can be challenged in the public forum.</td>
</tr>
<tr>
<td>Abstain</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>