Standards Council Meeting  
SUPPLEMENTAL AGENDA  
Tremont House  
2300 Ship’s Mechanic Row  
Galveston, TX 77550  
409-763-0300  

December 5-6, 2017

<table>
<thead>
<tr>
<th>17-12-1</th>
<th>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise various sections of the 2017 edition of NFPA 25, <em>Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems</em> (TIA No. 1287).</th>
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<tbody>
<tr>
<td>17-12-1-a</td>
<td>Text of proposed TIA No. 1287. See Attachment 17-12-1-a</td>
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<tr>
<td>17-12-1-b</td>
<td>Ballot results of TIA No. 1287. <em>(PASSED TC</em> ballot on both technical merit and emergency nature -34 voting members/26 agree on technical merit/6 disagree/1 abstained/25 agree on emergency nature/7 disagree/1 abstained/1 ballot not returned. See Attachment 17-12-1-b</td>
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<td>17-12-1-c</td>
<td>One comment was received. See Attachment 17-12-1-c</td>
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<tbody>
<tr>
<td>17-12-2-a</td>
<td>Text of proposed TIA No. 1295. See Attachment 17-12-2-a</td>
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<tr>
<td>17-12-2-b</td>
<td>Ballot results of TIA No. 1295. <em>(FAILED TC</em> ballot on both technical merit and emergency nature -27 voting members/11 agree on technical merit/10 disagree/3 abstained/10 agree on emergency nature/9 disagree/5 abstained/3 ballots not returned. See Attachment 17-12-2-b</td>
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<td>17-12-2-c</td>
<td>Two comments were received. 17-12-2-c</td>
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<tbody>
<tr>
<td>17-12-3-a</td>
<td>Text of proposed TIA No. 1342. See Attachment 17-12-3-a</td>
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<tr>
<td>17-12-3-b</td>
<td>Final Ballot results of TIA No. 1342. <em>(PASSED TC</em> ballot on both technical merit and emergency nature -26 voting members/26 agree on technical merit/0 disagree/0 abstained/25 agree on emergency nature/1 disagree/0 abstained/0 ballots not returned. See Attachment 17-12-3-b</td>
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<td>17-12-3-c</td>
<td>No comments were received. No Attachment</td>
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<thead>
<tr>
<th>17-12-4</th>
<th>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Article 700.10(D)(1)(3) of the 2017 edition of NFPA 70, <em>National Electrical Code®</em> (TIA No. 1282).</th>
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<tbody>
<tr>
<td>17-12-4-a</td>
<td>Text of proposed TIA No. 1282. See Attachment 17-12-4-a</td>
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<tr>
<td>17-12-4-b</td>
<td>Ballot results of TIA No. 1282. <em>(PASSED Panel</em> ballot on both technical merit and emergency nature – 21 voting members/19 agree on technical merit/0 disagree/0 abstained/18 agree on emergency nature/1 disagree/0 abstained/2 ballots not returned and <em>(PASSED CC</em> ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-4-b</td>
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<td>17-12-4-c</td>
<td>No comments were received. No Attachment</td>
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**17-12-5**  
Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Article 700.10(D) of the 2017 edition of NFPA 70, *National Electrical Code®* (TIA No. 1293).

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<tr>
<th>17-12-5-a</th>
<th>Text of proposed TIA No. 1293. See Attachment 17-12-5-a</th>
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<tr>
<td>17-12-5-b</td>
<td>Ballot results of TIA No. 1293. <strong>(PASSED Panel)</strong> ballot on both technical merit and emergency nature – 21 voting members/16 agree on technical merit/2 disagree/0 abstained/16 agree on emergency nature/2 disagree/0 abstained/3 ballots not returned and <strong>PASSED CC</strong> ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned. See Attachment 17-12-5-b</td>
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<tr>
<td>17-12-5-c</td>
<td>Four comments were received. See Attachment 17-12-5-c</td>
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**17-12-6**  
Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Article 625.17(B) of the 2017 edition of NFPA 70, *National Electrical Code®* (TIA No. 1296).

| 17-12-6-a | Text of proposed TIA No. 1296. See Attachment 17-12-6-a |
| 17-12-6-b | Ballot results of TIA No. 1296. **(PASSED Panel)** ballot on both technical merit and emergency nature – 12 voting members/11 agree on technical merit/0 disagree/0 abstained/11 agree on emergency nature/0 disagree/0 abstained/1 ballot not returned and **PASSED CC** ballot on both correlation and emergency nature – 12 voting members/11 agree on correlation/1 disagree/0 abstained/11 agree on emergency nature/1 disagree/0 abstained/0 ballots not returned. See Attachment 17-12-6-b |
| 17-12-6-c | One comment was received. See Attachment 17-12-6-c |

**17-12-7**  
Act on the issuance of proposed Tentative Interim Amendment (TIA) to add a new definition to 725.2, revise 725.121(C) and revise 725.144(A) of the 2017 edition of NFPA 70, *National Electrical Code®* (TIA No. 1299).

| 17-12-7-a | Text of proposed TIA No. 1299. See Attachment 17-12-7-a |
| 17-12-7-b | Ballot results of TIA No. 1299. **(PASSED Panel)** ballot on both technical merit and emergency nature – 16 voting members/13 agree on technical merit/1 disagree/0 abstained/11 agree on emergency nature/2 disagree/1 abstained/2 ballots not returned and **PASSED CC** ballot on both correlation and emergency nature – 12 voting members/11 agree on correlation/1 disagree/0 abstained/10 agree on emergency nature/1 disagree/0 abstained/1 ballot not returned. See Attachment 17-12-7-b |
| 17-12-7-c | Three comments were received. See Attachment 17-12-7-c |

**17-12-8**  
Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Article 725.144(B) of the 2017 edition of NFPA 70, *National Electrical Code®* (TIA No. 1300).

| 17-12-8-a | Text of proposed TIA No. 1300. See Attachment 17-12-8-a |
| 17-12-8-b | Ballot results of TIA No.1300. **(PASSED Panel)** ballot on both technical merit and emergency nature – 16 voting members/14 agree on technical merit/0 disagree/0 abstained/12 agree on emergency nature/1 disagree/1 abstained/2 ballots not returned and **PASSED CC** ballot on both correlation and emergency nature – 12 voting members/9 agree on correlation/2 disagree/0 abstained/10 agree on emergency nature/1 disagree/0 abstained/1 ballot not returned. See Attachment 17-12-8-b |
| 17-12-8-c | No comments were received. No Attachment |

**17-12-9**  
Act on the issuance of proposed Tentative Interim Amendment (TIA) to add a new definition to 840.2 and to revise 840.160 of the 2017 edition of NFPA 70, *National Electrical Code®* (TIA No. 1301).

| 17-12-9-a | Text of proposed TIA No. 1301. See Attachment 17-12-9-a |
17-12-9-b  Ballot results of TIA No.1301. (PASSED Panel ballot on technical merit but FAILED Panel ballot on emergency nature – 17 voting members/13 agree on technical merit/3 disagree/0 abstained/10 agree on emergency nature/5 disagree/1 abstained/1 ballot not returned and PASSED CC ballot on correlation but FAILED CC ballot on emergency nature – 12 voting members/1 agree on correlation/0 disagree/0 abstained/7 agree on emergency nature/4 disagree/0 abstained/1 ballot not returned). See Attachment 17-12-9-b

17-12-9-c  Three comments were received. See Attachment 17-12-9-c

17-12-9-d  Consider the appeal of Joel Goergen of Cisco Corporation requesting the Council issue proposed TIA No. 1301, NFPA 70, National Electrical Code®. The TIA failed Panel ballot and CC ballot on emergency nature.

17-12-9-e  Comment received by T. Moore, Chair, Code Making Panel 16 on the appeal of J. Goergen. See Attachment 17-12-9-e

17-12-9-f  Two comments received on Appeal. See Attachment SA17-12-9-f

17-12-10  Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise 336.10(9) of the 2017 edition of NFPA 70, National Electrical Code® (TIA No. 1310).

17-12-10-a  Text of proposed TIA No. 1310. See Attachment 17-12-10-a

17-12-10-b  Ballot results of TIA No. 1310. (PASSED Panel ballot on both technical merit and emergency nature – 12 voting members/11 agree on technical merit/1 disagree/0 abstained/11 agree on emergency nature/1 disagree/0 abstained/0 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-10-b

17-12-10-c  No comments were received. No Attachment

17-12-11  Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Section 505.9(E)(2) of the 2017 edition of NFPA 70, National Electrical Code® (TIA No. 1338).

17-12-11-a  Text of proposed TIA No. 1338. See Attachment 17-12-11-a

17-12-11-b  Final Ballot results of TIA No. 1338. (PASSED Panel ballot on both technical merit and emergency nature – 17 voting members/15 agree on technical merit/0 disagree/0 abstained/14 agree on emergency nature/1 disagree/0 abstained/2 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-11-b  SA17-12-11-b

17-12-11-c  One comment was received. SA17-12-11-c


17-12-12-a  Text of proposed TIA No. 1318. See Attachment 17-12-12-a

17-12-12-b  Ballot results of TIA No. 1318. (PASSED TC ballot on both technical merit and emergency nature – 28 voting members/21 agree on technical merit/2 disagree/0 abstained/20 agree on emergency nature/3 disagree/0 abstained/5 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-12-b

17-12-12-c  No comments were received. No Attachment

17-12-13  Act on the issuance of proposed Tentative Interim Amendment (TIA) and add new sections 9.3.5 (new) and 9.11.4 to the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1322).
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<tr>
<th>Date</th>
<th>Description</th>
<th>Ballot Results</th>
<th>Notes</th>
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<tbody>
<tr>
<td>17-12-13-a</td>
<td>Text of proposed TIA No. 1322. See Attachment 17-12-13-a</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 28 voting members/21 agree on technical merit/1 disagree/0 abstained/22 agree on emergency nature/1 disagree/0 abstained/6 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned. See Attachment 17-12-13-b</td>
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<td>17-12-13-b</td>
<td>Ballot results of TIA No.1322.</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 28 voting members/21 agree on technical merit/1 disagree/0 abstained/22 agree on emergency nature/1 disagree/0 abstained/6 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-13-b</td>
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<td>17-12-13-c</td>
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<td>17-12-14</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise sections 14.7.6, 15.7.6 (new), 16.7.6 and 17.7.6 (new) of the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1326).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 23 voting members/18 agree on technical merit/2 disagree/0 abstained/17 agree on emergency nature/2 disagree/1 abstained/3 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-14-b</td>
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<td>17-12-14-a</td>
<td>Text of proposed TIA No. 1326. See Attachment 17-12-14-a</td>
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<td>17-12-14-b</td>
<td>Ballot results of TIA No.1326.</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 23 voting members/18 agree on technical merit/2 disagree/0 abstained/17 agree on emergency nature/2 disagree/1 abstained/3 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-14-b</td>
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<td>17-12-14-c</td>
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<td>17-12-15</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise section 11.8.9 of the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1328).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 24 voting members/20 agree on technical merit/1 disagree/0 abstained/19 agree on emergency nature/2 disagree/0 abstained/3 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-15-b</td>
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<td>17-12-15-a</td>
<td>Text of proposed TIA No. 1328. See Attachment 17-12-15-a</td>
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<td>17-12-15-b</td>
<td>Ballot results of TIA No.1328.</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 24 voting members/20 agree on technical merit/1 disagree/0 abstained/19 agree on emergency nature/2 disagree/0 abstained/3 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-15-b</td>
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<td>17-12-16</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise sections 18.7.10, 19.7.10, 20.7.10, and 21.7.10 of the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1330).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 30 voting members/29 agree on technical merit/1 disagree/0 abstained/29 agree on emergency nature/1 disagree/0 abstained/0 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-16-b</td>
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<td>17-12-16-a</td>
<td>Text of proposed TIA No. 1330. See Attachment 17-12-16-a</td>
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<td>17-12-16-b</td>
<td>Ballot results of TIA No.1330.</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 30 voting members/29 agree on technical merit/1 disagree/0 abstained/29 agree on emergency nature/1 disagree/0 abstained/0 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-16-b</td>
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<td>17-12-17</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise sections 40.7.4 and 42.9.4 of the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1332).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 30 voting members/24 agree on technical merit/2 disagree/0 abstained/24 agree on emergency nature/2 disagree/0 abstained/4 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-17-b</td>
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<td>Text of proposed TIA No. 1332. See Attachment 17-12-17-a</td>
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<td>17-12-17-b</td>
<td>Ballot results of TIA No.1332.</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 30 voting members/24 agree on technical merit/2 disagree/0 abstained/24 agree on emergency nature/2 disagree/0 abstained/4 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-17-b</td>
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<tr>
<td>Date</td>
<td>Action</td>
<td>Comments</td>
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<td>17-12-18</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise section 36.7.8, 37.7.8, 38.7(new), 39.7.8 and 39.4.2.4 of the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1334).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 26 voting members/23 agree on technical merit/1 disagree/0 abstained/21 agree on emergency nature/3 disagree/0 abstained/2 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-18-b</td>
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<td>17-12-18-a</td>
<td>Text of proposed TIA No. 1334. See Attachment 17-12-18-a</td>
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<td>17-12-18-b</td>
<td>Ballot results of TIA No.1334. (PASSED TC ballot on both technical merit and emergency nature – 26 voting members/23 agree on technical merit/1 disagree/0 abstained/21 agree on emergency nature/3 disagree/0 abstained/2 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-18-b</td>
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<td>17-12-18-c</td>
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<td>17-12-19</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) and add new section 26.7.2(new), 28.7.8(new), 30.7.4 and 31.7.4(new) to the 2018 edition of NFPA 101, Life Safety Code® (TIA No. 1336).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature – 30 voting members/24 agree on technical merit/2 disagree/0 abstained/23 agree on emergency nature/3 disagree/0 abstained/4 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-19-b</td>
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<td>17-12-19-a</td>
<td>Text of proposed TIA No. 1336. See Attachment 17-12-19-a</td>
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<td>17-12-19-b</td>
<td>Ballot results of TIA No.1336. (PASSED TC ballot on both technical merit and emergency nature – 30 voting members/24 agree on technical merit/2 disagree/0 abstained/23 agree on emergency nature/3 disagree/0 abstained/4 ballots not returned and PASSED CC ballot on both correlation and emergency nature – 12 voting members/10 agree on correlation/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-19-b</td>
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<td>17-12-20</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise section 5.1.10 of the 2017 edition of NFPA 407, Standard for Aircraft Fuel Servicing (TIA No. 1339).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature -28 voting members/17 agree on technical merit/1 disagree/0 abstained/17 agree on emergency nature/1 disagree/0 abstained/10 ballots not returned). See Attachment 17-12-20-b</td>
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<td>17-12-20-a</td>
<td>Text of proposed TIA No. 1339. See Attachment 17-12-20-a</td>
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<td>17-12-20-b</td>
<td>Ballot results of TIA No. 1339. (PASSED TC ballot on both technical merit and emergency nature -28 voting members/17 agree on technical merit/1 disagree/0 abstained/17 agree on emergency nature/1 disagree/0 abstained/10 ballots not returned. See Attachment 17-12-20-b</td>
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<td>17-12-21</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise section 8.2 of the 2017 edition of NFPA 1006, Standard for Technical Rescue Personnel Professional Qualifications (TIA No. 1305).</td>
<td>(PASSED TC ballot on both technical merit and emergency nature –30 voting members/22 agree on technical merit/0 disagree/0 abstained/22 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned and PASSED CC ballot on both correlation and emergency nature –20 voting members/18 agree on correlation/0 disagree/0 abstained/18 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-21-b</td>
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<td>17-12-21-a</td>
<td>Text of proposed TIA No. 1305. See Attachment 17-12-21-a</td>
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<td>17-12-21-b</td>
<td>Ballot results of TIA No.1305. (PASSED TC ballot on both technical merit and emergency nature –30 voting members/22 agree on technical merit/0 disagree/0 abstained/22 agree on emergency nature/0 disagree/0 abstained/8 ballots not returned and PASSED CC ballot on both correlation and emergency nature –20 voting members/18 agree on correlation/0 disagree/0 abstained/18 agree on emergency nature/0 disagree/0 abstained/2 ballots not returned). See Attachment 17-12-21-b</td>
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**17-12-22**

Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise sections 3.3.40 and add new section 3.3.41 of the 2016 edition of NFPA1126, *Standard for the Use of Pyrotechnics Before a Proximate Audience* (TIA No.1317).

**17-12-22-a**

Text of proposed TIA No.1317. See Attachment 17-12-22-a

**17-12-22-b**

Ballot results of TIA No.1317. *(PASSED TC) ballot on both technical merit and emergency nature -29 voting members/25 agree on technical merit/1 disagree/0 abstained/24 agree on emergency nature/1 disagree/1 abstained/3 ballots not returned* See Attachment 17-12-22-b

**17-12-22-c**

One comment was received. See Attachment 17-12-22-c

**17-12-23**

Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise sections 9.6.2.1.1.1 and 9.6.2.1.4 of the 2016 edition of NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications* (TIA No.1302).

**17-12-23-a**

Text of proposed TIA No.1302. See Attachment 17-12-23-a

**17-12-23-b**

Ballot results of TIA No.1302. *(PASSED TC) ballot on both technical merit and emergency nature -30 voting members/26 agree on technical merit/1 disagree/0 abstained/26 agree on emergency nature/0 disagree/1 abstained/3 ballots not returned* See Attachment 17-12-23-b

**17-12-23-c**

No comments were received. No Attachment

**17-12-24**

Act on the issuance of proposed Tentative Interim Amendment (TIA) to add new sections 4.3.23.1 and 4.3.23.1.1 to the 2018 edition of NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services* (TIA No.1341).

**17-12-24-a**

Text of proposed TIA No.1341. See Attachment 17-12-24-a

**17-12-24-b**

Ballot results of TIA No.1341. *(FAILED TC) ballot on both technical merit and emergency nature –34 voting members/15 agree on technical merit/10 disagree/3 abstained/15 agree on emergency nature/9 disagree/4 abstained/6 ballots not returned and FAILED CC ballot on both correlation and emergency nature –32 voting members/15 agree on correlation/11 disagree/3 abstained/16 agree on emergency nature/9 disagree/4 abstained/3 ballots not returned and FAILED CC ballot on both correlation and emergency nature –32 voting members/15 agree on correlation/11 disagree/3 abstained/16 agree on emergency nature/9 disagree/4 abstained/3 ballots not returned*). See Attachment 17-12-24-b

**17-12-24-c**

Twenty-three comments were received. See Attachment 17-12-24-c

**17-12-25**


**17-12-25-a**

Text of proposed TIA No.1340. See Attachment 17-12-25-a

**17-12-25-b**

Ballot results of TIA No.1340. *(PASSED TC) ballot on both technical merit and emergency nature –36 voting members/25 agree on technical merit/5 disagree/1 abstained/23 agree on emergency nature/5 disagree/3 abstained/5 ballots not returned and FAILED CC ballot on both correlation and emergency nature –32 voting members/13 agree on correlation/11 disagree/3 abstained/14 agree on emergency nature/9 disagree/4 abstained/5 ballots not returned*). See Attachment 17-12-25-b

**17-12-25-c**

Five comments were received. See Attachment 17-12-25-c

**17-12-25-d**

**APPEAL**

Consider the appeal of John Morris of Scott Safety requesting the Council not issue proposed TIA No. 1340, NFPA 1982, *Standard on Personal Alert Safety Systems (PASS)*. The TIA failed CC ballot on correlation and emergency nature. See Attachment 17-12-25-d *SA 17-12-25-d*

**17-12-26**


**17-12-26-a**

Text of proposed TIA No.1319. See Attachment 17-12-26-a

**17-12-26-b**

Ballot results of TIA No.1319. *(PASSED TC) ballot on both technical merit and emergency nature –28 voting members/19 agree on technical merit/1 disagree/0 abstained/18 agree on
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<th>Ballot Results</th>
<th>Attachment</th>
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<td>17-12-27</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to add new section 26.3.6 to the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code</em>® (TIA No.1321).</td>
<td><em>(PASSED TC) ballot on both technical merit and emergency nature – 22 voting members/16 agree on technical merit/0 disagree/0 abstained/20 agree on emergency nature/1 disagree/0 abstained/7 ballots not returned and <em>PASSED CC</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/14 agree on emergency nature/1 disagree/0 abstained/3 ballots not returned).</em></td>
<td>17-12-27-b</td>
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<td>17-12-27-c</td>
<td>No comments were received. No Attachment</td>
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<td>17-12-28</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to replace 55.1.4.2 and associated Annex A material with new 55.1.4.2 and new associated Annex A material of the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code</em>® (TIA No.1323).</td>
<td>*(PASSED TC) ballot on both technical merit and emergency nature – 28 voting members/20 agree on technical merit/1 disagree/0 abstained/20 agree on emergency nature/1 disagree/0 abstained/7 ballots not returned and <em>PASSED CC</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/14 agree on emergency nature/1 disagree/0 abstained/3 ballots not returned).</td>
<td>17-12-28-b</td>
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<td>17-12-29</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise section 21.3.9 of the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code</em>® (TIA No.1325).</td>
<td>*(PASSED TC) ballot on both technical merit and emergency nature – 16 voting members/10 agree on technical merit/0 disagree/0 abstained/10 agree on emergency nature/0 disagree/0 abstained/6 ballots not returned and <em>PASSED CC</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned).</td>
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<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise sections 17.3.8 and 18.3.8 of the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code</em>® (TIA No.1327).</td>
<td>*(PASSED TC) ballot on both technical merit and emergency nature – 23 voting members/18 agree on technical merit/2 disagree/0 abstained/17 agree on emergency nature/2 disagree/1 abstained/3 ballots not returned and <em>PASSED CC</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned).</td>
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<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to add new Section 33.3.9 to the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code®</em> (TIA No.1329).</td>
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<td>Text of proposed TIA No. 1329. See Attachment 17-12-31-a</td>
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<td>17-12-31-b</td>
<td>Ballot results of TIA No.1329. <em>(PASSED TC)</em> ballot on both technical merit and emergency nature – 24 voting members/17 agree on technical merit/1 disagree/0 abstained/16 agree on emergency nature/2 disagree/0 abstained/6 ballots not returned and <em>(PASSED CC)</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned). See Attachment 17-12-31-b</td>
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<td>17-12-32</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Section 19.3.4.6 and 20.3.4.5 of the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code®</em> (TIA No.1331).</td>
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<td>Ballot results of TIA No. 1331. <em>(PASSED TC)</em> ballot on both technical merit and emergency nature – 30 voting members/29 agree on technical merit/1 disagree/0 abstained/29 agree on emergency nature/1 disagree/0 abstained/0 ballots not returned and <em>(PASSED CC)</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned). See Attachment 17-12-32-b</td>
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<td>17-12-33</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Section 29.3.7, 30.3.7 and 34.2.7(new) of the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code®</em> (TIA No.1333).</td>
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<td>17-12-33-b</td>
<td>Ballot results of TIA No. 1333. <em>(PASSED TC)</em> ballot on both technical merit and emergency nature – 30 voting members/21 agree on technical merit/2 disagree/0 abstained/21 agree on emergency nature/2 disagree/0 abstained/7 ballots not returned and <em>(PASSED CC)</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned). See Attachment 17-12-33-b</td>
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<td>17-12-34</td>
<td>Act on the issuance of proposed Tentative Interim Amendment (TIA) to revise Section 27.3.8 and 28.3.8 of the 2018 edition of NFPA 5000, <em>Building Construction and Safety Code®</em> (TIA No.1335).</td>
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<td>Ballot results of TIA No. 1335. <em>(PASSED TC)</em> ballot on both technical merit and emergency nature – 26 voting members/20 agree on technical merit/1 disagree/0 abstained/19 agree on emergency nature/2 disagree/0 abstained/5 ballots not returned and <em>(PASSED CC)</em> ballot on both correlation and emergency nature – 18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned). See Attachment 17-12-34-b</td>
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17-12-35 Act on the issuance of proposed Tentative Interim Amendment (TIA) to add new Section 23.6(new), 24.5.5 and 25.5.5 to the 2018 edition of NFPA 5000, *Building Construction and Safety Code®* (TIA No.1337).

17-12-35-a Text of proposed TIA No. 1337. See Attachment 17-12-35-a

17-12-35-b Ballot results of TIA No. 1337. (PASSED TC ballot on both technical merit and emergency nature –30 voting members/24 agree on technical merit/1 disagree/0 abstained/23 agree on emergency nature/2 disagree/0 abstained/5 ballots not returned and PASSED CC ballot on both correlation and emergency nature –18 voting members/13 agree on correlation/1 disagree/0 abstained/13 agree on emergency nature/1 disagree/0 abstained/4 ballots not returned). See Attachment 17-12-35-b

17-12-35-c No comments were received. No Attachment


17-12-36-a Comment received by R. Athanas, Chair of the Technical Committee on Electronic Safety Equipment (NFPA 1982), on the appeal of B. Mauti. See Attachment 17-12-36-a

17-12-36-b Comment received by S. Hogg, Drager UK, in support of the appeal of B. Mauti. See Attachment 17-12-36-b

17-12-37 Consider requests from NFPA Committees to change revision cycles for the following documents:

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<td>F2021</td>
<td>F2021 to A2020</td>
<td>Permanent Move from 5 to 3</td>
<td>5 to 3 ½ rev cycle</td>
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<td>F2021</td>
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<td>A2018SDR to A2019SDR</td>
<td>One Time Move</td>
<td>5 to 7 yr rev cycle</td>
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See Attachment 17-12-37

17-12-38 Consider the request of Dr. Craig Beyer, Jensen Hughes, to develop a project addressing organization and operation of fire investigation units (FIUs). Fifty-one comments were received. Twenty-seven comments supported development of the project, twenty-four comments did not support the development of the project. Twenty of the commenters indicated an interest in participating if a Committee was developed. See Attachment 17-12-38

17-12-39 Consider the request of Dave Finger, National Volunteer Fire Council, to develop a project addressing professional qualifications for fire service support personnel. Ten comments were received. Seven comments supported development of the project, three comments did not support the development of the project. Four of the commenters indicated an interest in participating if a Committee was developed. See Attachment 17-12-39

17-12-40 Consider the request of Richard Davis and Dr. Dong Zeng, FM Global, to develop a project to addressing test methods for determining the flammability of interior/exterior wall panels. Four comments were received. Three comments supported development of the project, one comment did not support the development of the project. One of the commenters indicated an interest in participating if a Committee was developed. See Attachment 17-12-40
<table>
<thead>
<tr>
<th></th>
<th>Consider the request of the Technical Committee on Hybrid (Water and Inert Gas) Fire Extinguishing Systems to enter new document NFPA 770, <em>Standard on Hybrid (Water and Inert Gas) Fire-Extinguishing Systems</em>, into the Annual 2020 revision cycle. The Council approved the establishment of this proposed document at the October 2014 Council Meeting. See Attachment 17-12-41</th>
</tr>
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<tr>
<td>17-12-42</td>
<td>Consider the request of the Technical Committee on Electrical Inspection Practices to enter new documents, NFPA 78, <em>Guide on Electrical Inspections</em>, and NFPA 1078, <em>Standard for Electrical Inspector Profession Qualifications</em>, into a custom revision cycle with a public input closing date of February 14, 2018. The Council approved the establishment of these proposed documents at the April 2017 Council Meeting. See Attachment 17-12-4</td>
</tr>
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| 17-12-43 | At the August 2017 Standards Council meeting, the Council considered the request of Kenneth Linder, Chair, Automatic Sprinkler Systems Correlating Committee and NFPA Staff to merge NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems* into NFPA 11, *Standard for Low-Medium-, and High-Expansion Foam* at the start of the next revision cycle for NFPA 11.  

After a review of all information provided, the Council voted to take no action at that time. The Council requested NFPA Staff report back to the Council with additional information detailing which installations would be extracted from NFPA 13, *Standard for the Installation of Sprinkler Systems* and determine if the scope of NFPA 11 needs revisions to include the requested material. The Council also requested that a notice be published to seek comments from the public and the Committees affected by the merger of NFPA 16 into NFPA 11. One comment was received in opposition of the merger. See Attachment 17-12-43 |
| 17-12-44 | Consider the request of the Technical Committee on Road Tunnel and Highway Fire Protection to revise the Committee scope as follows:  

**CURRENT SCOPE:** This Committee shall have primary responsibility for documents on fire prevention and fire protection measures to reduce loss of life and property damage for road tunnels, air-right structures, bridges, and limited access highways. Excluded from this scope is the protection for facilities for the storage, repair, and parking of motor vehicles.  

**PROPOSED SCOPE:** This Committee shall have primary responsibility for documents on fire prevention and fire protection measures to reduce loss of life and property damage for limited access highways, road tunnels, air-right structures, bridges, and limited access highways, elevated highways, depressed highways, and roadways that are located beneath air-right structures. Excluded from this scope is the protection for facilities for the storage, repair, and parking of motor vehicles. See Attachment 17-12-44 |
| 17-12-45 | At the August 2017 Council meeting, the Council voted to approve a request from NFPA Staff to absorb the membership of the Technical Committee on Wildland Fire Fighting Professional Qualifications (PQU-WSP) into the membership of the Technical Committee on Wildland Fire Management (WFM-AAA) and to revise the scope of WFM-AAA to accommodate the merger.  

At this meeting, the members from the PQU-WSP will be moved to the WFM-AAA committee and the Council can officially disband the PQU-WSP Committee. See Attachment 17-12-45 |
<p>| 17-12-46 | Approve the revision cycle schedules for Fall 2020, Annual 2021, Fall 2021 and Annual 2022. See Attachment 17-12 |</p>
<table>
<thead>
<tr>
<th>17-12-47</th>
<th>Report of the Committee Membership Task Group (M. Snyder, Chair).</th>
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<tbody>
<tr>
<td>17-12-47-a</td>
<td>Act on pending applications for Committee Members. SA17-12-47-a</td>
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<tr>
<td>17-12-47-b</td>
<td>Annual reappointment of Committee Members. SA17-12-47-b</td>
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<tr>
<td>17-12-48</td>
<td>Report of the Policy and Procedures Task Group (D. O'Connor, Chair). No Attachment</td>
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<tr>
<td>17-12-49</td>
<td>Hear a report of the Recording Secretary on the August 2017 Minutes. No Attachment</td>
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<table>
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<tr>
<th>17-12-50</th>
<th>The Council will review the dates and locations of upcoming Council meetings, as follows:</th>
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<td>April 10-11, 2018</td>
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<td>August 13-15, 2018</td>
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<td>December xxx 2018</td>
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| 17-12-51 | Consider the request of the Technical Committee on Emergency Medical Services to enter new document NFPA 451, *Guide for Community Healthcare Programs*, into a custom revision cycle (public input closing date was November 16, 2017). The Council approved the establishment of this proposed document at the April 2015 Council Meeting. SA17-12-51 ADDITION |
TO: Linda Fuller
FROM: Gil Moniz
DATE: November 9, 2017
SUBJECT: NFPA 78 and NFPA 1078


The Committee also requests that these documents be entered into a custom revision cycle. The custom schedules are attached.
# NFPA 78 Custom Schedule

*Public Input Closing Dates may vary according to standards and schedules for Revision Cycles may change. Please check the NFPA Website for the most up-to-date information on Public Input Closing Dates and schedules at www.nfpa.org/document # (i.e. www.nfpa.org/101) and click on Next Edition tab.

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<th>Wks</th>
<th>Dates for TC with CC</th>
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| Tech Session Association Meeting for Standards with CAMs | 6/14-17/2020 | 6/14-17/2020 |

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**NFPA 1078 Custom Schedule**

*Public Input Closing Dates may vary according to standards and schedules for Revision Cycles may change. Please check the NFPA Website for the most up-to-date information on Public Input Closing Dates and schedules at www.nfpa.org/document # (i.e. www.nfpa.org/101) and click on Next Edition tab.*

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| Comment Stage (Second Draft) | Public Comment closing date | 10/31/2018 | 8 | 10/31/2018 | 3 |
| | Notice published on Consent Standards (Standards that receive No Comments). Note: Date varies and determined via TC ballot. | | |
| | Appeal Closing Date for Consent Standards (15 Days) (Standards That Received No Comments) | | |
| | Final date for TC Second Draft Meeting | 12/26/2018 | 8 | 11/21/2018 | 6 |
| | Posting of Second Draft and TC Ballot | 2/20/2019 | 2 | 1/2/2019 | 2 |
| | Final date for Receipt of TC Second Draft Ballot | 3/6/2019 | 1 | 1/16/2019 | 1 |
| | Final date for receipt of TC Second Draft ballot - recirc | 3/13/2019 | 8 | 1/23/2019 | 6 |
| | Posting of Second Draft for CC Mtg | 3/5/2019 | 2 |
| | Final date for CC Second Draft Meeting | 3/20/2019 | 2 |
| | Posting of Second Draft for CC Ballot | 4/3/2019 | 3 |
| | Final date for Receipt of CC Second Draft ballot | 4/24/2019 | 1 |
| | Final date for Receipt of CC Second Draft ballot - recirc | 5/1/2019 | 1 |

| Tech Session Preparation & Issuance | Notice of Intent to Make a Motion (NITMAM) Closing Date | 6/5/2019 | 6 | 6/5/2019 | 6 |
| | Posting of Certified Amending Motions (CAMs) and Consent Standards | 7/17/2019 | 15 days | 7/17/2019 | 15 days |
| | Appeal Closing Date for Consent Standards (15 Days after posting) | 8/1/2019 | 10 days | 8/1/2019 | 10 days |
| | SC Issuance Date for Consent Standards (10 Days) | 8/12/2019 | 8/12/2019 |

| Tech Session | Association Meeting for Standards with CAMs | 6/14-17/2020 | 6/14-17/2020 |

| Appeals and Issuance | Appeal Closing Date for Standards with CAMs (20 Days after ATM) | 7/7/2020 | 7/7/2020 |
| Council Issuance Date for Standards with CAMs* | 8/12-14/2020 | 8/12-14/2020 |
To the Technical Committee on Electrical Inspection Practices:

Attached, please find the Final results of the Technical Committee’s Preliminary Draft Release ballots on NFPA 78 and NFPA 1078.

Sincerely,

Yvonne Smith  
Project Administrator  
NFPA  
1 Batterymarch Park  
Quincy, MA 02169-7471  
Phone: 1-617-984-7489  
e-mail: ysmith@nfpa.org

National Fire Protection Association  
The leading information and knowledge resource on fire, electrical and related hazards.  
www.nfpa.org
MEMORANDUM

TO: Technical Committee on Electrical Inspection Practices
FROM: Yvonne Smith, Project Administrator
DATE: August 15, 2017
SUBJECT: NFPA 78 Preliminary Draft Release Final Ballot Results

According to the final ballot results, the Preliminary Draft Release ballot did receive the necessary affirmative votes to pass ballot.

9 Members Eligible to Vote
1 Members Not Returned (Young-Brungard)

8 Agree
0 Disagree
0 Abstentions

The criteria necessary to pass ballot is a simple majority of those eligible to vote. See Section 4.3.2.1(b) of the Regulations Governing the Development of NFPA Standards.
NFPA

78

Guide on Electrical Inspections

Preliminary Draft

August 8-9, 2017
Atlanta, GA
Chapter 1 Administration

1.1 Scope. This document covers minimum criteria to aid in organizing and conducting electrical inspections, which includes administration, plans review, and field inspection, for new electrical installations and modifications to existing electrical installations in conformance with the AHJ requirements.

1.2 Purpose. This document is designed to produce a systematic, working framework or outline by which an effective electrical inspection can be accomplished. It contains specific procedures to assist in the inspection process. These procedures represent the judgment developed from the NFPA consensus process system that, if followed, can improve the probability of protecting persons and property from the hazards arising from the use of electricity.

1.2.1 As every electrical inspection is in some way unique and different from any other, this document is not designed to encompass all the necessary components of a complete inspection of any one installation. The particular characteristics of the installation site, such as the occupancy use, construction type, structure design, and other related factors, should be considered during the electrical inspection.

1.2.2 Not every portion of this document may be applicable to every electrical inspection. It is within the purview of the electrical inspector, depending on their responsibility and the purpose and scope of the inspection, to apply the appropriate recommended procedures in this document to a particular inspection.

1.2.3 This document is intended to be used by designers, insurance inspectors, architects, installers, project managers, safety officers, and others who are involved with electrical inspections.

1.3 Application. This document applies to electrical inspections conducted to verify compliance with the AHJ requirements and is written to be compatible with the requirements of any jurisdiction.
Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this guide and should be considered part of the recommendations of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


2.3 Other Publications.


2.4 References for Extracts in Advisory Sections.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter apply to the terms used in this document. Where terms are not defined in this chapter or within another chapter, they should be defined using their ordinarily accepted meanings within the context in which they are used. Merriam-Webster’s Collegiate Dictionary, 11th edition, is the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3* Code. A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.

3.2.4 Guide. A document that is advisory or informative in nature and that contains only nonmandatory provisions. A guide may contain mandatory statements such as when a guide can be used, but the document as a whole is not suitable for adoption into law.

3.2.5* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the AHJ and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.6 Recommended Practice. A document that is similar in content and structure to a code or standard but that contains only nonmandatory provisions using the word “should” to indicate recommendations in the body of the text.

3.2.7 Shall. Indicates a mandatory requirement.

3.2.8 Should. Indicates a recommendation or that which is advised but not required.

3.2.9 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the

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term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Administration. The practice of managing the electrical inspection processes or activities.

3.3.2* AHJ Requirements. The codes and standards, product certification requirements, policies, and procedures that are adopted or approved by the authority having jurisdiction (AHJ). [1078:20XX]

3.3.3* Construction Documents. The plans, specifications, and other documents that describe the construction project. [3:2018]

3.3.4 Deficiency.

3.3.4.1* Administrative Deficiency. A procedural condition that prevents the completion of the electrical inspection process.

3.3.4.2* Critical Deficiency. A condition that does not conform to AHJ requirements and presents an imminent hazard to persons or property.

3.3.4.3* Noncritical Deficiency. A condition that does not conform to AHJ requirements and does not present an imminent hazard to persons or property.

3.3.5* Electrical Inspection. A process that includes administration, plans review, and field inspection to ensure that the workmanship and materials used in the installation, construction, and maintenance of electrical systems for an occupancy use comply with AHJ requirements. [1078:20XX]

3.3.6* Electrical Inspector. A person responsible and qualified to perform one or more functions of an electrical inspection, including administration, plans review, or field inspection. [1078:20XX]

3.3.7 Field Inspection. An onsite review and assessment to ensure the workmanship and materials used in the installation and maintenance of new or existing electrical systems comply with AHJ requirements. [1078:20XX]

3.3.8 Plans Review. A review and assessment of construction documents to ensure the design and layout of new or existing electrical systems complies with AHJ requirements. [1078:20XX]

3.3.9* Product Certification. A process to verify that a product meets the qualification criteria stipulated in a standard, contract, regulation, or specification. [1078:20XX]
Chapter 4 General Recommendations

4.1 Scope. This chapter establishes general recommendations for conducting an electrical inspection.

4.2 Qualifications. Before conducting an electrical inspection, the electrical inspector should meet the job performance requirements of NFPA 1078.

4.3* Ethics. The electrical inspection should be conducted in a fair, impartial, and professional manner.

4.4 Inspection Objective. The objective of the electrical inspection should be to verify compliance of the installation to AHJ requirements.

4.4.1* Electrical inspections should be conducted when the need is identified in accordance with AHJ requirements.

4.4.2 The fundamental concern of an electrical inspection should be the protection of persons and property from the hazards arising from electrical installations.

4.5* Enabling Authority. The basis for an electrical inspector to conduct electrical inspections should be established by the authority having jurisdiction.
Chapter 5 Electrical Inspection Administration

5.1 Scope. This chapter provides a framework to assist those with the administrative responsibility of electrical inspections in establishing and managing AHJ requirements.

5.2 AHJ Requirements.

5.2.1 Adopted Codes and Standards. Locally adopted codes and standards applicable to electrical installations should be identified, acquired, and provided to the electrical inspector.

5.2.2 Guides, Recommended Practices, and Other Technical References. Technical reference materials necessary to perform plans reviews and field inspections should be identified, acquired, and provided to the electrical inspector.

5.2.3* Maintenance of AHJ Requirements. AHJ requirements should be periodically reviewed and updated as needed.

5.3 Policies and Procedures.

5.3.1 Permitting Procedures.

5.3.1.1 The AHJ should communicate to the public the type and scope of electrical installation or electrical modification work that requires an electrical permit.

5.3.1.2 The AHJ should process an electrical permit application by evaluating the proposed electrical installation or electrical system modification for compliance with AHJ requirements.

5.3.1.3 The AHJ should identify the need for an electrical plans review based on the submitted electrical permit application.

5.3.1.4 The AHJ should enforce electrical permitting requirements based on a report of an electrical, life safety, or other compliance concern.

5.3.1.5 Where compliance with AHJ requirements is not attained, the AHJ should initiate administrative action based on the laws and rules governing the jurisdiction.

5.3.1.6* The AHJ should periodically update the permitting procedures.

5.3.2 Plans Review Submittal Procedures. The AHJ should process a plans review in accordance with AHJ requirements. (See Chapter 6 for submittal documentation requirements.)

5.3.3* Field Inspection Request Procedures. The AHJ should establish and make readily available to the public a procedure for requesting a field inspection. (See Chapter 7 for field inspection procedure details.)

5.3.4 Records Management Policy.
5.3.4.1* The AHJ should retain all electrical inspection documentation in a secure manner for a time period designated by the AHJ requirements.

5.3.4.2 The AHJ should make electrical inspection documentation readily available to the public in accordance with AHJ requirements.

5.4 Electrical Inspection Equipment.

5.4.1 Forms, Reports, Checklists, and Other Job AIDS.

5.4.1.1* The AHJ should develop and use forms, reports, checklists, and other job aids that support consistent, accurate, and thorough performance of electrical inspections.

5.4.1.2 Forms, reports, checklists, and other job aids should be updated, as necessary, to improve the performance of electrical inspections and to ensure accuracy, clarity, and consistency with AHJ requirements.

5.4.2* Personal Protective Equipment (PPE). The AHJ should identify, procure, provide, and implement procedures for the use of personal protective equipment necessary to conduct electrical inspections.

5.4.3* Plans Review Equipment. The AHJ should identify, procure, and provide the equipment necessary to conduct plans reviews.

5.4.4 Field Inspection Equipment.

5.4.4.1* The AHJ should identify, procure, and provide the equipment necessary to conduct field inspections.

5.4.4.2* Equipment supplied by others should be used in accordance with AHJ policies and procedures.

5.4.5 Care and Maintenance of Electrical Inspection Equipment.

5.4.5.1 All equipment used to conduct electrical inspections should be maintained in accordance with applicable standards, policies, and manufacturer’s instructions.

5.4.5.2 Defective or damaged equipment should not be used to conduct electrical inspections.

5.5 Appeals. The AHJ should establish and make available to the public the procedures for appealing AHJ decisions.
Chapter 6 Plans Review

6.1 Scope. This chapter provides a framework for performing a detailed review of construction documents for compliance with AHJ requirements.

6.2 Intended Outcome(s) of the Plans Review.

6.2.1* The AHJ should establish the intended outcome(s) of the plans review.

6.2.2* The AHJ should establish the scope and extent of the plans review.

6.2.3 The AHJ should establish a plans review time frame in accordance with the AHJ requirements.

6.3 Construction Document Submittals. The AHJ should conduct a preliminary review of the construction documents to verify that the submittal is complete, in accordance with AHJ requirements, and encompasses the full scope of the proposed work. (See A.3.3.3.)

6.4 Preparation for Plans Review.

6.4.1* The electrical inspector should identify the details of the project based on the construction documents, including all AHJ requirements for a plans review, prior to initiating the plans review process.

6.4.2 The electrical inspector should identify the codes, standards, and other technical references that are applicable to the project.

6.4.3 The electrical inspector should review any historical records for the property, including previous permits and past field inspections.

6.4.4 The electrical inspector should review any previously reviewed or approved construction documents on file.

6.4.5* The electrical inspector should identify the occupancy use and building construction classification.

6.4.6 The electrical inspector should verify the submitted construction documents are complete, in accordance with AHJ requirements, and encompass the full scope of the proposed work.

6.5 Classification of Deficiencies.

6.5.1 Deficiencies should be classified in accordance with the definitions in 3.3.3.

6.5.2 The electrical inspector should review the construction documents for administrative deficiencies.

6.5.3 The electrical inspector should review the construction documents for critical deficiencies.
6.5.4 The electrical inspector should review the construction documents for noncritical deficiencies.

6.6 Plans Review Procedures.

6.6.1 The electrical inspector should verify that the construction documents indicate the construction type and occupancy use.

6.6.2 The electrical inspector should verify that the construction documents comply with the AHJ requirements for the construction type and occupancy use.

6.6.3 The electrical inspector should verify the load calculations in the submitted construction documents.

6.6.4 The electrical inspector should verify compliance with general installation requirements.

6.6.5 The electrical inspector should verify compliance with the requirements for special occupancies, where applicable.

6.6.6 The electrical inspector should verify compliance with the requirements for special equipment, where applicable.

6.6.7 The electrical inspector should verify compliance with the requirements for special conditions, where applicable.

6.6.8 The electrical inspector should verify compliance with the requirements for communications systems, where applicable.

6.6.9 The electrical inspector should verify compliance with the requirements for equipment locations and clearances.

6.6.10 The electrical inspector should verify compliance with the requirements for wiring and protection.

6.6.11 The electrical inspector should verify compliance with the requirements for grounding and bonding.

6.6.12 The electrical inspector should verify compliance with the requirements for wiring methods and materials.

6.6.13 The electrical inspector should verify compliance with the requirements for equipment ratings.


6.7.1 The electrical inspector should document the results of the plans review.
6.7.2 The electrical inspector should prepare a written report that reflects the results of the plans review.

6.7.3 The electrical inspector should deliver the written report in accordance with AHJ requirements.

6.8 Plans Review Completion.

6.8.1 Where corrective action is needed, the electrical inspector should require revisions and resubmittal of the construction documents.

6.8.2 Where no corrective action is needed, the AHJ should perform the actions identified in the intended outcome(s). (See Section 6.2.)
Chapter 7 Field Inspection

7.1 Scope. This chapter provides a framework for performing field inspection of installed electrical equipment for compliance with the AHJ requirements.

7.2 Intended Outcome(s) of the Field Inspection.

7.2.1* The AHJ should establish the intended outcome(s) of the field inspection.

7.2.2* The AHJ should establish the scope and extent of the field inspection.

7.3 Construction Document Submittals. Document submittals should be reviewed in accordance with Chapter 5 and Chapter 6.

7.4 Preparation for Field Inspection.

7.4.1* The electrical inspector should identify the details of the project based on the construction documents, including all AHJ requirements for a field inspection, prior to initiating the inspection process.

7.4.2 The electrical inspector should identify the codes, standards, and other technical references that are applicable to the project.

7.4.3 The electrical inspector should review any historical records for the property, including previous permits and past field inspections.

7.4.4 The electrical inspector should review the approved construction documents on file.

7.4.5 The electrical inspector should identify the occupancy use and building construction classification.

7.4.6 The electrical inspector should review the archived construction documents and field inspection reports to determine if there are any outstanding requests or prior deficiencies.

7.4.7* The electrical inspector should plan the field inspection route and schedule.

7.4.8* The electrical inspector should assemble the required PPE and field inspection equipment.

7.5 Classification of Deficiencies.

Deficiencies should be classified in accordance with the definitions in 3.3.3.

7.6 Field Inspection Procedures.

7.6.1 On-site Review.

7.6.1.1 The electrical inspector should review approved construction documents.
7.6.1.2* The electrical inspector should verify site safety or other potential hazards that could prevent a safe field inspection.

7.6.2 General Practices.

7.6.2.1 The electrical inspector should recognize hazardous conditions associated with the use and operation of electrical equipment or conditions associated with the occupancy use that could impact equipment selection.

7.6.2.2 The electrical inspector should compare the approved construction documents to the installed electrical system to verify compliance and to identify, document, and report on any field modifications.

7.6.2.3 The electrical inspector should verify that the electrical systems are installed and tested to perform as described in the engineering documents, the operations and maintenance manual, and the manufacturer’s installation instructions.

7.6.2.4* The electrical inspector should verify any reports related to performance testing, in accordance with the AHJ requirements.

7.6.2.5* The electrical inspector should document the location of concealed portions of the installation.

7.6.3 Rough (Open Wall/Ceiling) Inspections.

7.6.3.1* The electrical inspector should verify compliance with general installation requirements.

7.6.3.2* The electrical inspector should verify compliance with the requirements for special occupancies, where applicable.

7.6.3.3* The electrical inspector should verify compliance with the requirements for special equipment, where applicable.

7.6.3.4* The electrical inspector should verify compliance with the requirements for special conditions, where applicable.

7.6.3.5* The electrical inspector should verify compliance with the requirements for communications systems, where applicable.

7.6.3.6* The electrical inspector should verify compliance with the requirements for equipment locations and clearances.

7.6.3.7* The electrical inspector should verify compliance with the requirements for wiring and protection.

7.6.3.8 The electrical inspector should verify compliance with the requirements for grounding and bonding. (See 7.6.5.)
7.6.3.9* The electrical inspector should verify compliance with the requirements for wiring methods and materials.

7.6.3.10* The electrical inspector should verify compliance with the requirements for equipment ratings.

7.6.3.11 The electrical inspector should verify compliance with the requirements for markings, labels, and circuit directory.

7.6.3.12* The electrical inspector should identify, document, and report electrical hazards or other unsafe conditions.

7.6.4 Service Inspections.

7.6.4.1* The electrical inspector should verify compliance with the requirements for equipment locations and clearances.

7.6.4.2* The electrical inspector should verify compliance with the requirements for wiring and protection.

7.6.4.3 The electrical inspector should verify compliance with the requirements for installation of overhead and/or underground service conductors.

7.6.4.4 The electrical inspector should verify compliance with the requirements for installation of service-entrance conductors.

7.6.4.5 The electrical inspector should verify compliance with the requirements for the service disconnecting means and overcurrent protection.

7.6.4.6 The electrical inspector should verify compliance with the requirements for required branch circuit and feeder disconnecting means and overcurrent protection.

7.6.4.7 The electrical inspector should verify compliance with the requirements for grounding and bonding requirements. *(See 7.6.5.)*

7.6.4.8 The electrical inspector should verify compliance with the requirements for installation of surge protective devices, where required.

7.6.4.9* The electrical inspector should verify compliance with the requirements for wiring methods and materials.

7.6.4.10* The electrical inspector should verify compliance with the requirements for equipment ratings.

7.6.4.11 The electrical inspector should verify compliance with the requirements for markings, labels, and circuit directory.

7.6.4.12* The electrical inspector should identify, document, and report electrical hazards or other unsafe conditions.
7.6.5 Grounding and Bonding Inspections.

7.6.5.1* The electrical inspector should verify grounding and bonding installations for compliance with the AHJ requirements.

7.6.5.2* The electrical inspector should identify all grounding electrodes present on the premises.

7.6.5.3 The electrical inspector should mark approved construction documents with the locations of approved grounding and bonding installations.

7.6.5.4* The electrical inspector should verify compliance with the requirements for wiring methods and materials.

7.6.5.5 The electrical inspector should verify compliance with the requirements for connecting grounding and bonding conductors.

7.6.6 Underground Inspections.

7.6.6.1 The electrical inspector should verify underground electrical installations for compliance with the AHJ requirements.

7.6.6.2* The electrical inspector should verify compliance with the requirements for wiring methods and materials.

7.6.6.3 The electrical inspector should verify compliance with the requirements for underground splices, joints, fittings, or other connections.

7.6.6.4 The electrical inspector should verify compliance with the requirements for grounding and bonding. (See 7.6.5.)

7.6.7 Final Inspections.

7.6.7.1* The electrical inspector should identify, document, and report electrical hazards or other unsafe conditions.

7.6.7.2 The electrical inspector should verify that all required installations have been completed.

7.6.7.3 The electrical inspector should verify compliance with the requirements for service installations. (See 7.6.4.)

7.6.7.4* The electrical inspector should verify compliance with general installation requirements.

7.6.7.5* The electrical inspector should verify compliance with the requirements for special occupancies, where applicable.
7.6.7.6* The electrical inspector should verify compliance with the requirements for special equipment, where applicable.

7.6.7.7* The electrical inspector should verify compliance with the requirements for special conditions, where applicable.

7.6.7.8* The electrical inspector should verify compliance with the requirements for communications systems, where applicable.

7.6.7.9 The electrical inspector should verify that all equipment for general use is suitable for use and is operational.

7.6.7.10* The electrical inspector should verify operation of the disconnecting means, switches, controls, or test devices.

7.6.7.11 The electrical inspector should verify operation of receptacle outlets at the rated voltage and configuration.

7.6.7.12 The electrical inspector should verify compliance with the requirements for grounding and bonding. *(See 7.6.5.)*

7.6.7.13 The electrical inspector should verify compliance with the requirements for markings, labels, and circuit directory.

7.6.7.14 The electrical inspector should verify compliance with the manufacturer’s installation instructions for installed electrical equipment and utilization equipment.

7.6.8 Inspection Report.

7.6.8.1 The electrical inspector should document all deficiencies and comments with reference to the applicable AHJ requirement(s).

7.6.8.2* The electrical inspector should prepare a written report that reflects the recorded observations.

7.6.8.3 The electrical inspector should deliver the written report in accordance with AHJ requirements.

7.7 Field Inspection Completion.

7.7.1 Where corrective action is needed, the electrical inspector should require an additional inspection, in accordance with the AHJ requirements.

7.7.2 Where no corrective action is needed, the AHJ should perform the actions identified in the intended outcome(s). *(See Section 7.2.)*
ANNEX A

Annex A is not a part of the recommendations of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.3 Code. The decision to designate a standard as a “code” is based on such factors as the size and scope of the document, its intended use and form of adoption, and whether it contains substantial enforcement and administrative provisions.

A.3.2.5 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

A.3.3.2 Examples of AHJ requirements include, but are not limited to, the following:

(1) Codes that are suitable for adoption into law independently of other codes and standards, such as NFPA 70
(2) Standards that contain mandatory provisions in a form generally suitable for mandatory reference by another standard or code or for adoption into law
(3) Recommended practices that contain only nonmandatory provisions
(4) Standard operating procedures

[1078:20XX]

A.3.3.3 Construction Documents. Construction documents could include, but are not limited to, the following:

(1) Cover letter
(2) Load calculations
(3) Short-circuit analysis
(4) Manufacturer’s applicable documents
(5) Complete set of drawings, which could include the following:
   (a) Floor layout, including equipment
   (b) Service or feeder riser diagram
   (c) Fixture schedule and luminaire layout
   (d) Location of emergency systems
   (e) Architectural drawings
   (f) Mechanical drawings
   (g) Structural drawings
   (h) Site drawings
   (i) Wiring methods and material

[1078:20XX]

A.3.3.4.1 Administrative Deficiency. Examples of administrative deficiencies include, but are not limited to, construction documents not on site, no access to the site for inspection, work not completed, failure to apply for a permit, or failure to provide complete construction documents.

A.3.3.4.2* Critical Deficiency. Examples of critical deficiencies include, but are not limited to, exposed energized conductors, conductors subject to physical damage, inadequate equipment ratings, undersized conductors, or noncompliant grounding or bonding.
A.3.3.4.3* Noncritical Deficiency. Examples of noncritical deficiencies include, but not limited to, unused openings not closed, equipment not firmly secured, receptacle spacing exceeded, or the maximum number of conductors or cables in conduit or tubing exceeded.

A.3.3.5 Electrical Inspection. Codes, standards, product certification requirements, policies, and procedures are used when determining whether a certain electrical installation is acceptable. An electrical inspection, or multiple inspections, could be included with an electrical permit required by the AHJ. [1078:20XX]

A.3.3.6 Electrical Inspector. This person should have knowledge of electrical system design and electrical material and uses, AHJ-adopted codes, standards, product certification requirements, policies, and procedures, installation and maintenance of electrical systems, occupancy uses and construction type classifications applicable to electrical construction, and safety hazards. This person should be able to read and interpret construction documents, work with the public and contractors, coordinate and prioritize work assignments, research and obtain necessary information based on recognized reference sources, evaluate site conditions that require code enforcement, use effective oral and written communication skills, and leverage technology to create documents, reports, and record-keeping inventories.

A.3.3.9 Product Certification. Qualified personnel could be required to perform evaluation, testing, and certification of products to ensure that they meet the requirements of both construction and general industry electrical standards. A listing mark signifies that the tested and certified product complies with the requirements of one or more appropriate product safety test standards. Product certification could include, but is not limited to, testing by a nationally recognized testing laboratory, analysis by a qualified engineer, self-declaration by the manufacturer, or assessment by an energy auditor. [1078:20XX]

A.4.3 Electrical inspector is an important and learned profession. As members of this profession, inspectors are expected to exhibit the highest standards of honesty and integrity. Inspectors have a direct and vital impact on the quality of life for all people. Accordingly, the services provided by inspectors require honesty, impartiality, fairness, and equity. The inspector must be dedicated to the protection of the public health, safety, and welfare. Inspectors must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

A.4.4.1 Electrical inspections could be conducted for many purposes, including, but not limited to, verifying compliance with AHJ requirements, determining efficiency and continuity of operation, performing preventive maintenance, determining power quality, and performing forensic investigations.
A.4.5 The authority to conduct an electrical inspection could be established through legal appointment, contractual assignment, or other means.

A.5.2.3 Maintenance of AHJ requirements could include, but is not limited to, the following actions:

1. Evaluate the impact of proposed codes, standards, product certification requirements, and policy or procedure modifications on the administration of the electrical permit application process, plans review, and field inspections
2. Provide recommended modifications to AHJ requirements
3. Identify code modifications
4. Update forms, publications, and web pages

A.5.3.1.6 The goal is to keep the permitting procedures, forms, and other documents up to date with the current AHJ requirements.

A.5.3.3 Procedures may include, but are not limited to, electronic request forms, automated phone systems, or direct contact with the AHJ.

A.5.3.4.1 Federal and state laws recognize the right of access to records maintained in the public domain. However, some areas are exempted from access, and guidelines should be developed by the AHJ to prevent the unnecessary and illegal disclosure of confidential information.

The retention of records can be a complicated and confusing subject since there are a variety of laws, regulations, ordinances, and standards that are applicable. These requirements will likely change from state to state or jurisdiction to jurisdiction. States or local jurisdictions require a records retention schedule that may or may not have to be filed with a local or state archives department. Legal counsel that has expertise in records retention, labor law, or public safety services should be consulted. A comprehensive records retention schedule should be adopted and then followed by the AHJ to avoid the image of impropriety should records be retained or destroyed inappropriately.

The process of backing up computerized records should be determined by the AHJ. The number of records routinely created in any given period should dictate the frequency of backups. Generally speaking, the more records created in a shorter period of time, the more often they should be backed up, which will reduce the number of records lost if a failure occurs between backups. It is also prudent to keep the backup files off site from the computer hosting the files. This will help avoid losing the computer files and the backup files in the event of a fire or other disaster.

A.5.4.1.1 The goal in documenting an electrical inspection is to make an accurate and consistent recording of the inspection using media that will allow the inspector to recall
and communicate their observations at a later date. Common methods of accomplishing this goal include, but are not limited to, the use of photographs, videos, diagrams, maps, overlays, audio recordings, laser surveys, notes, sketches, and reports. Thorough and consistent accurate documentation is critical, because compilation of factual data is necessary to support and verify compliant installations and cited deficiencies. There are a number of resources to assist the inspector in documenting the inspection.

A.5.4.2 The requirements of NFPA 70E or an equivalent safe work practices standard should be followed. Recommended personal protective equipment includes, but is not limited to, the following:

(1) Arc-rated PPE
(2) Eye protection
(3) Fall protection
(4) Gloves
(5) Hearing protection
(6) Helmet or hard hat
(7) Respiratory protection (type depending on exposure)
(8) Safety boots or shoes
(9) Shock protection PPE

A.5.4.3 Recommended equipment for plans reviews include, but are not limited to, the following:

(1) Calculator
(2) Computer
(3) Drafting scale
(4) Magnifying glass
(5) Workspace

A.5.4.4.1 Recommended equipment for field inspections includes, but is not limited to, the following:

(1) Calculator
(2) Camera
(3) Computer
(4) Drafting scale
(5) First-aid kit
(6) Flashlight
(7) Magnifying glass
(8) Mirror
(9) Tape measure
(10) Test instruments

A.5.4.4.2 Examples of equipment that could be supplied by others include, but are not limited to, the following:

(1) Fall protection harnesses and anchorage
(2) Ladders
(3) On-site transportation
(4) Platform lifts
(5) Staging, scaffolding

A.6.2.1 The intended outcome could be, but is not limited to, the issuance of a permit or a report of deficiencies.

A.6.2.2 Plans reviews can occur at different phases of the project life cycle, necessitating different expectations of compliance.

A.6.4.1 The details could include, but are not limited to, the type of work being reviewed (e.g., new or alteration), the construction type, and the occupancy use.

Prior to beginning the plans review, numerous events, facts, and circumstances that could impact the plans review should be identified for accuracy and consistency.

The electrical inspector should remain aware of his or her role, the scope of the plans review, and the areas of responsibility.

A.6.4.5 The electrical code could include requirements for specific occupancies in addition to those required in other AHJ requirements.

A.6.6.2 Construction type, occupancy use, process, and operation can impact wiring methods, materials, and equipment.

A.6.6.4 Examples of general installation requirements are those contained in Chapter 1 of NFPA 70.

A.6.6.5 Examples of special occupancy requirements are those contained in Chapter 5 of NFPA 70.
A.6.6.6 Examples of special equipment requirements are those contained in Chapter 6 of NFPA 70.

A.6.6.7 Examples of special conditions requirements are those contained in Chapter 7 of NFPA 70.

A.6.6.8 Examples of communications systems requirements are those contained in Chapter 8 of NFPA 70.

A.6.6.9 Examples of equipment location and clearance requirements include, but are not limited to, working space, dedicated equipment space, separation from combustible materials, and requirements for accessibility or egress.

A.6.6.10 This review could include, but is not limited to, identifying and confirming details for the following:

1. Services, feeders, and branch circuits wiring
2. Services, feeders, and branch circuits disconnecting means and overcurrent protection
3. Other equipment associated with services, feeders, and branch circuits
4. Other wiring systems and associated protection methods in accordance with AHJ requirements and Chapter 2 of NFPA 70

A.6.6.11 This review could include, but is not limited to, the system grounding and bonding, grounding electrode system, equipment grounding and bonding system, and the equipotential bonding system.

A.6.6.12 This review could include, but is not limited to, identifying the proposed raceway, cable assembly, conductor types, cabinets, cutout boxes, outlet, device, pull, junction boxes, conduit bodies, fittings, and handholes.

A.6.6.13 This review could include, but is not limited to, overcurrent ratings, terminal temperature ratings, voltage ratings, interrupting ratings, short-circuit current ratings, or other required ratings per the AHJ requirements.

A.6.7.1 Plans review results could include, but are not limited to, compliance, deficiencies, incomplete information, and comments.

A.7.2.1 The intended outcome could be, but is not limited to, approval of the inspected work, issuance of a report of deficiencies, or issuance of a certificate of occupancy (CO).

A.7.2.2 Field inspections can occur at different phases of the project life cycle, necessitating different expectations of compliance.
A.7.4.1 The details could include, but are not limited to, the type of work being reviewed (e.g., new or alterations), the construction type, and the occupancy use.

Prior to beginning the field inspection, numerous events, facts, and circumstances that could impact the field inspection should be identified for accuracy and consistency.

The electrical inspector should remain aware of his or her role, the scope of the field inspection, and the areas of responsibility.

A.7.4.7 It could be necessary to contact the appropriate site personnel to schedule the field inspection and to obtain access and consent to conduct the requested field inspection.

A.7.4.8 The electrical inspector should be equipped with appropriate safety equipment in accordance with NFPA 70E or equivalent safe work practices. The equipment identified in A.5.4.2, A.5.4.3, and A.5.4.4.1 might not be needed on every scene.

A.7.5 The electrical inspector should follow the procedures for classifying deficiencies and the policies for reinspection prior to the commencement of work.

A.7.6.1.2 This action could require investigating, recording, and resolving electrical technical and life safety compliance concerns or conditions prior to conducting the required field inspection(s).

A.7.6.2.4 This performance testing could include, but is not limited to, tightening torque, reconditioned equipment, series combination systems, grounding and bonding impedance, ground-fault protection systems, and other tests as required by the AHJ.

A.7.6.2.5 This could include, but is not limited to, underground installations and grounding and bonding installations. Marking the field-approved construction documents, photos, or video of the installation could be acceptable methods for documenting the location of concealed installations.

A.7.6.3.1 Examples of general installation requirements are those contained in Chapter 1 of NFPA 70.

A.7.6.3.2 Examples of special occupancy requirements are those contained in Chapter 5 of NFPA 70.

A.7.6.3.3 Examples of special equipment requirements are those contained in Chapter 6 of NFPA 70.

A.7.6.3.4 Examples of special conditions requirements are those contained in Chapter 7 of NFPA 70.

A.7.6.3.5 Examples of communications systems requirements are those contained in Chapter 8 of NFPA 70.
A.7.6.3.6 Examples of equipment location and clearance requirements include, but are not limited to, working space, dedicated equipment space, separation from combustible materials, and requirements for accessibility or egress.

A.7.6.3.7 This inspection could include, but is not limited to, identifying and confirming details for the following:

1. Services, feeders, and branch circuits wiring
2. Services, feeders, and branch circuits disconnecting means and overcurrent protection
3. Other equipment associated with services, feeders, and branch circuits
4. Other wiring systems and associated protection methods in accordance with AHJ requirements and Chapter 2 of NFPA 70

A.7.6.3.9 This inspection could include, but is not limited to, the following:

1. Raceway, cable assembly, and conductor types
2. Cabinets and cutout boxes
3. Outlet, device, pull, junction boxes, conduit bodies, fittings, and handholes
4. Terminations and connections
5. Connection of raceways, conductors, or cable assemblies
6. Other wiring methods and material requirements of the AHJ requirements and Chapter 3 of NFPA 70

A.7.6.3.10 This inspection could include, but is not limited to, overcurrent ratings, terminal temperature ratings, voltage ratings, interrupting ratings, short-circuit current ratings, or other required ratings per the AHJ requirements.

A.7.6.3.12 This inspection could include, but is not limited to, exposed conductors, open boxes, or deficiencies as defined in 3.3.3.

A.7.6.4.1 Examples of equipment location and clearance requirements include, but are not limited to, working space, dedicated equipment space, separation from combustible materials, and requirements for accessibility or egress.

A.7.6.4.2 This could include, but is not limited to, identifying and confirming details for the following:

1. Services, feeders, and branch circuits wiring
2. Services, feeders, and branch circuits disconnecting means and overcurrent protection
(3) Other equipment associated with services, feeders, and branch circuits

(4) Other wiring systems and associated protection methods in accordance with AHJ requirements and Chapter 2 of NFPA 70

A.7.6.4.9 This inspection could include, but is not limited to, identification of installed raceway, cable assembly, and/or conductor types, installation of cabinets and cutout boxes, installation of outlet, device, pull, junction boxes, conduit bodies, fittings, and handholes installed, terminations and connections, means for connection of raceways, conductors, or cable assemblies or other wiring methods and material requirements of the AHJ requirements and Chapter 3 of NFPA 70

A.7.6.4.10 This inspection could include, but is not limited to, overcurrent ratings, terminal temperature ratings, voltage ratings, interrupting ratings, short-circuit current ratings, or other required ratings per the AHJ requirements.

A.7.6.4.12 This inspection could include, but is not limited to, exposed conductors, open boxes, or deficiencies as defined in 3.3.3.

A.7.6.5.1 Grounding and bonding installations could include, but are not limited to, the system grounding and bonding, grounding electrode system, equipment grounding and bonding system, and the equipotential bonding system.

A.7.6.5.2 Grounding electrodes required by the AHJ requirements could be concealed by construction practices, such as concrete encasement or backfill.

A.7.6.5.4 This inspection could include, but is not limited to, the following:

(1) Raceway, cable assembly, and conductor types

(2) Cabinets and cutout boxes

(3) Outlet, device, pull, junction boxes, conduit bodies, fittings, and handholes

(4) Terminations and connections

(5) Connection of raceways, conductors, or cable assemblies

(6) Other wiring methods and material requirements of the AHJ requirements and Chapter 3 of NFPA 70

A.7.6.6.2 This inspection could include, but is not limited to, the following:

(1) Raceway and cable assembly

(2) Conductor types installed in underground installations, cover, and protection methods

(3) Terminations and connections
A.7.6.7.1 This inspection could include, but is not limited to, exposed conductors, open boxes, or deficiencies as defined in 3.3.3.

A.7.6.7.4 Examples of general installation requirements are those contained in Chapter 1 of NFPA 70.

A.7.6.7.5 Examples of special occupancy requirements are those contained in Chapter 5 of NFPA 70.

A.7.6.7.6 Examples of special equipment requirements are those contained in Chapter 6 of NFPA 70.

A.7.6.7.7 Examples of special conditions requirements are those contained in Chapter 7 of NFPA 70.

A.7.6.7.8 Examples of communications systems requirements are those contained in Chapter 8 of NFPA 70.

A.7.6.7.10 The electrical inspector should consider whether it is appropriate to operate the inspected devices. Verification could be performed by the owner or the installing contractor.

A.7.6.8.2 The use of photographs, video, or other media to document compliance, deficiencies, or other characteristics of the electrical installation is recommended.
Annex B Sample Electrical Inspection Worksheet (Reserved)
ANNEX C Informational References

C.1 Referenced Publications. The documents or portions thereof listed in this annex are referenced within the informational sections of this guide and are not advisory in nature unless also listed in Chapter 2 for other reasons.

C.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


C.1.2 Other Publications. (Reserved)

C.2 Informational References. (Reserved)

C.3 References for Extracts in Informational Sections.

MEMORANDUM

TO: Technical Committee on Electrical Inspection Practices
FROM: Yvonne Smith, Project Administrator
DATE: August 15, 2017
SUBJECT: NFPA 1078 Preliminary Draft Release Final Ballot Results

According to the final ballot results, the Preliminary Draft Release ballot did receive the necessary affirmative votes to pass ballot.

9 Members Eligible to Vote
1 Members Not Returned (Young-Brungard)

8 Agree
0 Disagree
0 Abstentions

The criteria necessary to pass ballot is a simple majority of those eligible to vote. See Section 4.3.2.1(b) of the Regulations Governing the Development of NFPA Standards.
1078

Standard for Electrical Inspector Professional Qualifications

Preliminary Draft

August 8-9, 2017
Atlanta, GA
Chapter 1 Administration

1.1* Scope. This standard identifies the minimum job performance requirements (JPRs) for electrical inspectors.

1.2 Purpose. The purpose of this standard is to specify the minimum JPRs for serving as an electrical inspector.

1.2.1 This standard shall define an electrical inspector.

1.2.2 The intent of this standard shall be to ensure that personnel serving as electrical inspectors are qualified.

1.2.3* This standard shall not address management responsibility.

1.2.4 It is not the intent of this standard to restrict any jurisdiction from exceeding or combining these minimum requirements.

1.2.5 JPRs for the position of electrical inspector are the tasks personnel shall be able to perform to carry out the job duties.

1.2.6* An electrical inspector shall remain current with the general knowledge, skills, and JPRs addressed for the position of qualification.

1.3 Application. The application of this standard is to specify which requirements within the document shall apply to an electrical inspector.

1.3.1 The JPRs shall be accomplished in accordance with recognized practices and procedures or as defined by law or by the requirements of the authority having jurisdiction (AHJ) and all applicable NFPA standards.

1.3.2 It shall not be required that the JPRs be mastered in the order in which they appear. The AHJ shall establish instructional priority and the training program content to prepare personnel to meet the JPRs of this standard.

1.3.3* Performance of each requirement of this standard shall be evaluated by personnel approved by the AHJ.

1.3.4 The JPRs for the position shall be completed in accordance with recognized practices and procedures or as defined by law or by the AHJ.

1.3.5 Personnel assigned the duties of electrical inspector shall meet all the requirements defined in Chapter 4 prior to being qualified as an electrical inspector.

1.3.6 The AHJ shall provide personal protective equipment (PPE) and the equipment necessary to conduct JPR evaluations.

1.3.7 JPRs involving exposure to safety hazards shall be performed in approved PPE.
1.3.8 Prior to training to meet the requirements of this standard, personnel shall meet the following requirements:

1. Educational requirements established by the AHJ
2. Age requirements established by the AHJ
3. Medical requirements established by the AHJ
4. Job-related physical performance requirements established by the AHJ

1.3.9 The electrical inspector shall comply with the following code of ethics:

1. Above all, preserve the safety, health, and welfare of the public
2. Only perform services in their areas of competence
3. Disseminate information only in an objective and truthful manner
4. Represent each employer or client as an honorable agent or trustee
5. Act in an honest and forthright manner
6. Promote the honor, reputation, and usefulness of the profession

1.3.10 Wherever in this standard the terms rules, regulations, policies, procedures, or equipment are used, it is implied that they are those of the AHJ.

1.3.11* The electrical inspector shall remain current with the origins and limits of their authority, electrical technology, electrical inspection practices and methods, and applicable codes, standards, product certification requirements, and policies.

1.3.12* The electrical inspector shall be provided with access to AHJ requirements.

1.3.13 The electrical inspector shall complete field inspections, plans reviews, and other related activities in an efficient and effective manner.
Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

2.3 Other Publications.  

2.4 References for Extracts in Mandatory Sections.  
Chapter 3 Definitions

3.1* General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster’s Collegiate Dictionary, 11th edition,* shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3* Code. A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.

3.2.4 Guide. A document that is advisory or informative in nature and that contains only nonmandatory provisions. A guide may contain mandatory statements such as when a guide can be used, but the document as a whole is not suitable for adoption into law.

3.2.5* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.6 Recommended Practice. A document that is similar in content and structure to a code or standard but that contains only nonmandatory provisions using the word “should” to indicate recommendations in the body of the text.

3.2.7 Shall. Indicates a mandatory requirement.

3.2.8 Should. Indicates a recommendation or that which is advised but not required.

3.2.9 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the
term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1* AHJ Requirements. The codes and standards, product certification requirements, policies, and procedures that are adopted or approved by the authority having jurisdiction (AHJ).

3.3.2* Construction Document. The plans, specifications, and other documents that describe the construction project. [3:2018]

3.3.3* Electrical Inspection. A process that includes administration, plans review, and field inspection to ensure that the workmanship and materials used in the installation, construction, and maintenance of electrical systems for an occupancy use complies with AHJ requirements.

3.3.5 Electrical Inspector. A person responsible and qualified to perform one or more functions of an electrical inspection, including administration, plans review, or field inspection.

3.3.6* Electrical Theory. The concepts of electricity and the relationship among them.

3.3.7 Field Inspection. An onsite review and assessment to ensure the workmanship and materials used in the installation and maintenance of new or existing electrical systems comply with AHJ requirements.

3.3.8 Plans Review. A review and assessment of construction documents to ensure the design and layout of new or existing electrical systems complies with AHJ requirements.

3.3.9 Job Performance Requirement (JPR). A statement that describes a specific job task, lists the items necessary to complete the task, and defines measurable and observable outcomes and evaluation areas for the specific task.

3.3.10 Personal Protective Equipment (PPE). Equipment for the electrical inspector's personal protection.

3.3.11* Product Certification. A process to verify that a product meets the qualification criteria stipulated in a standard, contract, regulation, or specification.

3.3.12 Requisite Knowledge. Fundamental knowledge one must have in order to perform a specific task.

3.3.13 Requisite Skills. The essential skills one must have in order to perform a specific task.

3.3.14 Task. A specific job behavior or activity.
Chapter 4 Electrical Inspector

4.1 General. For qualification as an electrical inspector, the electrical inspector shall meet the job performance requirements (JPRs) defined in Sections 4.2 through 4.4 of this standard.

4.1.1 General Prerequisite Knowledge. AHJ requirements for performing an electrical inspection, electrical theory, electrical installation, occupancy use, and building construction classifications.

4.1.2 General Prerequisite Skills. The ability to use interpersonal skills, oral and written communication skills, and office and managerial organizational skills.

4.2 Administration.

4.2.1* This duty shall involve administrative operations, permitting, documenting and reporting, and compliance issues.

4.2.2 Identify AHJ requirements for an electrical system, given an electrical compliance issue and AHJ requirements, so that the AHJ requirements are referenced based on the compliance requirement.

(A) Requisite Knowledge. AHJ requirements and electrical compliance requirements.

(B) Requisite Skills. The ability to identify electrical compliance issues and AHJ requirements and to use interpersonal skills and oral and written communication skills.

4.2.3 Propose technical reference material acquisition, given a scope of electrical plan review and field inspection processes responsibility and AHJ requirements related to compliance, so that reference materials identified are acquired.

(A) Requisite Knowledge. Types and sources of reference material and publications, including AHJ requirements and technical and life safety references.

(B) Requisite Skills. The ability to recognize the need for reference materials, identify industry recognized reference materials, calculate budget impact, and make decisions regarding priorities.

4.2.4 Evaluate the impact of proposed modifications to AHJ requirements, given draft modifications, the AHJ requirements, and possible ramifications based on the modifications, so that the impact of the proposed modification is documented and reported.

(A) Requisite Knowledge. Process for the development of AHJ requirements, impact of modification on AHJ requirements and stakeholders, provide information and technical and life safety assistance through the evaluation.
(B) **Requisite Skills.** The ability to recognize electrical technical and life safety compliance requirements and conditions, use interpersonal skills and oral and written communication skills, and identify risks and benefits through impact analysis.

4.2.5 Recommend modifications to AHJ requirements, given a technical or electrical safety requirement or condition and AHJ requirements, so that the technical or safety requirement or condition is modified in the AHJ requirements.

(A) **Requisite Knowledge.** Statutes or ordinances establishing or empowering the entity to adopt, enforce, and revise AHJ requirements, the legal process for establishing AHJ requirements, and the code development and adoption process.

(B) **Requisite Skills.** The ability to recognize electrical technical and life safety compliance requirements or conditions, collect and develop potential solutions, and identify benefits based on AHJ requirements.

4.2.6 Facilitate code adoption and modification processes, given AHJ requirements, so that the issue is resolved to address the identified electrical technical and life safety compliance requirement or condition.

(A) **Requisite Knowledge.** Development and adoption process for AHJ requirements.

(B) **Requisite Skills.** The ability to compose modifications to existing AHJ requirements and use interpersonal skills and oral and written communication skills.

4.2.7 Identify the AHJ-adopted policies and procedures for performing electrical inspections, given management objectives, so that the AHJ-adopted policies and procedures are in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** Legal precedence and the various systems of government that affect the performance of the electrical inspector’s duties and responsibilities, AHJ requirements for electrical plans review and the electrical field inspection process, and sources of detailed and technical and life safety information relative to electrical plans and specifications and field inspections.

(B) **Requisite Skills.** The ability to identify building construction types, occupancy use classifications, electrical technical and life safety compliance requirements and conditions, read and interpret a set of electrical and construction plans and specifications, use interpersonal skills and oral and written communication skills, research, make decisions, recognize and resolve electrical technical and life safety compliance requirements and conditions.

4.2.8 Recommend modifications to AHJ requirements for the delivery of electrical inspection services, given AHJ requirements and management objectives, so that electrical inspections are conducted in accordance with the AHJ requirements and due process of the law.
(A) **Requisite Knowledge.** AHJ requirements and sources of technical information relating to electrical inspection.

(B) **Requisite Skills.** The ability to identify electrical technical and life safety compliance requirements and conditions, read and interpret electrical plans and specifications, conduct research, make decisions, recognize problems, and resolve electrical technical and life safety compliance requirements and conditions.

4.2.9 Create forms, reports, checklists, and other job aids for electrical inspections, given AHJ requirements, so that the forms, reports, checklists, and other job aids developed address compliance and features relative to the type of services provided during electrical inspections per AHJ requirements.

(A) **Requisite Knowledge.** Construction document review elements required by AHJ requirements, occupancy use classifications, and building construction type.

(B) **Requisite Skills.** The ability to analyze the construction document review process to select the type of form, report, checklist, or other job aids based on the permit application request, use interpersonal skills and oral and written communication skills, and produce forms, reports, checklists, and other job aids based on AHJ requirements.

4.2.10 Recommend an electrical inspection program budget, given AHJ goals, budget guidelines, and needs, so that electrical inspection program needs are addressed.

(A) **Requisite Knowledge.** AHJ budget procedures, revenue sources, and funding mechanisms.

(B) **Requisite Skills.** The ability to recognize problems, measure cost and benefit, identify additional resources, and use interpersonal skills and oral and written communication skills.

4.2.11 Identify the type and scope of work for which a permit is required, given the type and scope of work, permitting process and procedures, and AHJ requirements, so that requirements for permits are communicated in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** AHJ permitting policies, and the type and scope of work for the permit.

(B) **Requisite Skills.** The ability to identify the types and scope of work when a permit is required and use interpersonal skills and oral and written communication skills.

4.2.12 Process an electrical permit application, given a specific request, so that the application is evaluated and a permit is issued or denied in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** Permit application process and AHJ requirements.
(B) **Requisite Skills.** The ability to describe and explain the permitting application process based on AHJ requirements and use interpersonal skills and oral and written communication skills.

4.2.13 Identify type and scope of work for which a plans review is required, given type and scope of work, plans review process and procedures, and AHJ requirements, so that requirements for a plans review are communicated in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** AHJ plans review policies and type and scope of the work for the plans review.

(B) **Requisite Skills.** The ability to identify the types and scope of work when a plans review is required and use interpersonal skills and oral and written communication skills.

4.2.14 Process an electrical plans review application, given a specific request, electrical plans review application, construction documents, and AHJ requirements, so that the application is reviewed and processed in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** Electrical plans review application process and AHJ requirements.

(B) **Requisite Skills.** The ability to describe and explain the plans review application process based on AHJ requirements and use interpersonal skills and oral and written communication skills.

4.2.15 Prepare electrical inspection reports, given AHJ requirements and observations from an electrical inspection, so that the report is clear and concise and reflects the findings of the electrical inspection in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** AHJ requirements, electrical inspection, and report writing.

(B) **Requisite Skills.** The ability to conduct an electrical inspection, apply AHJ requirements, and use interpersonal skills and oral and written communication skills.

4.2.16 Review electrical inspection reports, forms, checklists, and other job aids, given AHJ requirements, so that the information is determined to be accurate, clear, and concise.

(A) **Requisite Knowledge.** AHJ requirements, various sources for additional reference materials related to AHJ requirements, and policy enforcement.

(B) **Requisite Skills.** The ability to compare AHJ requirements with prepared reports, forms, checklists and other job aids, and provide accurate information.

4.2.17 Maintain electrical inspection documents and records, given AHJ requirements, record-keeping process and procedures, and electrical inspection activity, so that documents and records are maintained in a secure and effective manner.
(A) **Requisite Knowledge.** AHJ requirements, electrical inspection record-keeping process and procedures, laws affecting the security of documents and record retention laws, and public access.

(B) **Requisite Skills.** The ability to maintain and account for electrical inspection documents and records using an AHJ-adopted means for records management.

4.2.18 Investigate electrical technical and life safety compliance requirements or conditions, given an electrical technical and life safety compliance requirement or condition, so that electrical technical and life safety compliance requirements or conditions information is recorded, the investigation process is initiated, and the electrical technical and life safety compliance requirements or conditions are resolved in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** AHJ requirements related to electrical technical and life safety compliance requirements or conditions.

(B) **Requisite Skills.** The ability to interpret and apply AHJ requirements, recognize electrical technical and life safety compliance requirements or conditions, and use interpersonal skills and oral and written communication skills.

4.2.19 Enforce electrical permit regulations, given an electrical permit application or report of an electrical technical and life safety compliance requirement and condition and AHJ requirements, so that enforcement actions are in accordance with the AHJ requirements and the electrical technical and life safety compliance requirement and condition is mitigated.

(A) **Requisite Knowledge.** Legal authority for permit issuance and revocation and AHJ requirements.

(B) **Requisite Skills.** The ability to use interpersonal skills and oral and written communication skills, make decisions, and evaluate consequences.

4.2.20 Initiate legal action related to AHJ requirements based on an electrical technical and life safety compliance requirement and condition, given a description or observation of an electrical technical and life safety compliance requirement and condition and legal options, so that the action taken is in accordance with the AHJ requirements, and due process is followed.

(A) **Requisite Knowledge.** AHJ requirements, legal procedures, enforcement and authority.

(B) **Requisite Skills.** The ability to interpret AHJ requirements and legal options in accordance with the AHJ requirements and use interpersonal skills and oral and written communication skills.
4.2.21 Generate written correspondence related to the filing of appeals, given AHJ requirements, a request for an appeal, and the judgment based on the appeal, so that the correspondence addresses the appeal.

(A) **Requisite Knowledge.** Appeals procedure, AHJ requirements, and review process.

(B) **Requisite Skills.** The ability to interpret AHJ requirements, describe the appeals process, use interpersonal skills and oral and written communication skills, interpret reports and plans, and issue written findings based on AHJ requirements.

4.2.22 Participate in legal proceedings, including documentation and testimony based on an electrical technical or life safety compliance requirement or condition with direct relation to electrical inspection, given the findings of an electrical inspection, the electrical technical or life safety compliance requirement or condition, and consultation with AHJ legal counsel, so that all information is presented.

(A) **Requisite Knowledge.** The requirements pertaining to the types of legal proceedings and AHJ requirements.

(B) **Requisite Skills.** The ability to testify and provide documentation about the findings of the electrical inspection and the electrical technical and life safety compliance requirement or condition based on AHJ requirements and use interpersonal skills and oral and written communication skills.

4.3 Plans Review.

4.3.1* This duty shall involve plans review.

4.3.2 **General Prerequisite Knowledge.** General knowledge of codes, standards, policies, and procedures for reviewing electrical plans for an electrical inspection, electrical theory, electrical installation, occupancy use, and building construction classifications.

4.3.3 **General Prerequisite Skills.** The ability to use interpersonal skills, oral and written communication skills, and office and managerial organizational skills.

4.3.4 Process construction documents for permitting, given a set of construction documents, permitting policies, procedures, and process, so that required permits are issued in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** Construction document review and AHJ requirements.

(B) **Requisite Skills.** The ability to review construction documents for the permitting application process and use interpersonal skills and oral and written communication skills when conducting a construction document review during the permitting application process.
4.3.5 Verify the occupancy use of a building, given construction documents and a description of a building and occupancy use, so that the occupancy use is in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** Occupancy use, AHJ requirements, and potential electrical hazards presented by various occupancies.

(B) **Requisite Skills.** The ability to recognize differences in occupancy use as they relate to the AHJ requirements and read and comprehend a set of electrical plans.

4.3.6 Calculate the electrical load based on the intended occupancy use, given AHJ requirements and a set of construction documents, so that the electrical system capacity and occupancy use are in accordance with AHJ requirements.

(A) **Requisite Knowledge.** Occupancy use, AHJ requirements, operational features, and load calculation methods.

(B) **Requisite Skills.** The ability to apply load calculation methods to determine electrical system capacity based on occupancy use AHJ requirements and read and comprehend a set of electrical plans.

4.3.7 Verify compliance of the proposed electrical system capacity and equipment ratings, given AHJ requirements and construction documents, so that the electrical system capacity and equipment ratings are in accordance with AHJ requirements.

(A) **Requisite Knowledge.** AHJ requirements, operational features and electrical systems calculation methods.

(B) **Requisite Skills.** The ability to verify electrical systems calculation methods used to verify electrical system capacity and equipment ratings based on AHJ requirements and read and interpret construction documents.

4.3.8 Evaluate construction documents for electrical systems compliance, given the occupancy use, building construction type, AHJ requirements, and documenting and reporting procedures for construction documents review, so that construction documents meet the AHJ requirements and compliance is identified, documented, and reported.

(A) **Requisite Knowledge.** AHJ requirements for electrical systems, electrical theory, and hazards associated with electric system operation and implications, installation techniques, acceptance inspection, and testing and reporting of completed installations.

(B) **Requisite Skills.** The ability to identify electrical technical and life safety compliance requirements and conditions; read and interpret construction documents; conduct research; make decisions; recognize problems and resolve electrical technical and life safety compliance requirements and conditions; use codes, standards, product
certification requirements and policies, documenting and reporting procedures, interpersonal skills, and oral and written communication skills.

4.3.9 Evaluate construction documents for general requirements for the electrical system, given construction documents and AHJ requirements, so that the general requirements for the electrical system or operation are reviewed for compliance with AHJ requirements, and compliance is identified, documented, and reported.

(A) **Requisite Knowledge.** Electrical and other hazards, AHJ requirements for various electrical systems and operations to be used based on occupancy use requirements, building construction types, electrical theory and electrical technical and life safety requirements and conditions, and reference materials related to electrical and other hazard properties.

(B) **Requisite Skills.** The ability to read and comprehend construction documents and interpret AHJ requirements and use interpersonal skills and oral and written communication skills.

4.3.10 Evaluate construction documents based on a need or requirement for special occupancies, equipment, and conditions in accordance with AHJ requirements, given construction documents and AHJ requirements, so that the construction documents are reviewed and compliance is identified, documented, and reported.

(A) **Requisite Knowledge.** Properties and characteristics of AHJ requirements for special occupancies, equipment, and conditions, and electrical theory and electrical systems.

(B) **Requisite Skills.** The ability to recognize special occupancies, equipment, and conditions, and use AHJ requirements to assist in determining electrical compliance, and use interpersonal skills and oral and written communication skills.

4.3.11 Document the proposed installation of electrical systems, given construction documents for a process or operations, so that the construction documents are reviewed, and compliance is identified, documented, and reported.

(A) **Requisite Knowledge.** Proper selection, distribution, and location of electrical systems, methods used to evaluate the operational readiness of electrical systems, and evaluation of electrical systems based on AHJ requirements.

(B) **Requisite Skills.** The ability to read and comprehend construction documents, identify symbols and terminology used by the design professional and use interpersonal skills and oral and written communications skills.

4.3.12 Prepare a report on the construction document review, given a construction document review and AHJ requirements, so that the report is clear and concise and reflects the findings of the construction document review in accordance with AHJ requirements.

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(A) **Requisite Knowledge.** AHJ requirements and legal requirements for a construction document review report.

(B) **Requisite Skills.** The ability to conduct a construction document review, reference AHJ requirements, and use interpersonal skills and oral and written communication skills.

4.3.13 Deliver the construction document review report for electrical technical and life safety compliance requirements or conditions, given a set of construction documents and AHJ requirements, so that the electrical technical and life safety compliance requirements or conditions are identified, documented, and reported based on the construction documents submitted, and submitter’s noncompliance is identified, documented, and reported in accordance with the AHJ requirements.

(A) **Requisite Knowledge.** AHJ requirements, construction document review process, documenting and reporting process, and the appeals process.

(B) **Requisite Skills.** The ability to interpret, report, and identify electrical technical and life safety compliance requirements or conditions, reference AHJ requirements, explain the appeals process, and use interpersonal skills and oral and written communication skills.

4.4 **Field Inspection.**

4.4.1* This duty shall involve field inspection.

4.4.2 **General Prerequisite Knowledge.** Acceptance of codes, standards, policies, and procedures for conducting an electrical inspection, electrical theory, electrical installation, occupancy use, and building construction classifications.

4.4.3 **General Prerequisite Skills.** The ability to use interpersonal skills, oral and written communication skills, and office and managerial organizational skills.

4.4.4* Observe and recognize hazards associated with a building or area where a field inspection is required, given the building or area, safety hazard, electrical hazards, general construction hazards, and potential hazards based on occupancy use and processes, so that the hazard and potential hazards are recognized and approved PPE is provided and used, or action is taken to mitigate the hazard, including suspending the field inspection until the hazard is resolved.

(A) **Requisite Knowledge.** Hazards and potential hazards associated with the occupancy use and processes, electrical hazards, and general construction hazards, proper use of PPE, safe work practices, identifying policies and procedures for accessing or denying entry into a hazardous areas.
(B) Requisite Skills. The ability to observe and adjust or stop the field inspection until the scene is rendered safe or approved PPE is donned and use interpersonal skills and oral and written communication skills.

4.4.5 Recognize hazards and potential hazards associated with electrical equipment, given an occupancy or conditions associated with the occupancy and the electrical system, so that the electrical system is installed and operated in a manner and environment in accordance with AHJ requirements, and hazards are identified, documented, and reported.

(A) Requisite Knowledge. Methods and techniques of code compliance inspections, AHJ requirements, occupancy-related hazard conditions, electrical theory, recognition of hazards and potential hazard sources, and hazardous materials awareness and identification.

(B) Requisite Skills. The ability to inspect, document, and report on electrical systems hazards using AHJ requirements.

4.4.6 Review approved construction documents, given approved construction documents and AHJ requirements, so that the electrical installation is in compliance with the approved construction documents and AHJ requirements.

(A) Requisite Knowledge. Proper selection, distribution, and location of electrical systems, methods used to evaluate the operational readiness of electrical systems, and AHJ requirements.

(B) Requisite Skills. The ability to read and interpret construction documents, read and interpret symbols and terminology used by the design professional, and use interpersonal skills and oral and written communications skills.

4.4.7 Inspect general electrical system installations, given approved construction documents and AHJ requirements, so that the electrical system is installed in compliance with AHJ requirements, and compliance is identified, documented, and reported.

(A) Requisite Knowledge. AHJ requirements, proper use of PPE, and safe work practices.

(B) Requisite Skills. The ability to read and interpret construction documents and read and interpret symbols and terminology used by the design professional, the ability to recognize, document, and report compliance based on AHJ requirements and use interpersonal skills and oral and written communications skills.

4.4.8 Inspect special occupancies, equipment, and conditions for the electrical system installation, given approved construction documents and AHJ requirements, so that the electrical system is installed in compliance with AHJ requirements, and compliance is identified, documented, and reported.

(A) Requisite Knowledge. AHJ requirements, proper use of PPE, and safe work practices.
(B) Requisite Skills. The ability to read and interpret construction documents and read and interpret symbols and terminology used by the design professional, the ability to recognize, document, and report compliance based on AHJ requirements and use interpersonal skills and oral and written communications skills.

4.4.9 Compare an approved construction document to the installed electrical system, given an occupancy, an electrical system, approved construction documents, and AHJ requirements, so that installation of the electrical system correlates with the approved construction document, and any field modifications are documented and reported in accordance with the AHJ requirements.

(A) Requisite Knowledge. Construction documents, symbols, and terminology, AHJ requirements, and report procedures for as-built plans and modifications.

(B) Requisite Skills. The ability to compare construction documents to the electrical system installation, determine the need for the associated as-built and for modifications to a modified electrical system by observation, document and report findings based on AHJ requirements, and use interpersonal skills and oral and written communications skills.
Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.1.1 In developing this standard, the technical committee considered the various roles and duties of local, county, state, provincial, federal, and private sector electrical inspectors and plans reviewers. The committee was also aware that many times the electrical inspector is the only person in the organization and might be performing the specific requirements held by others in larger organizations.

A.1.2.3 Management responsibilities should be addressed by the agency or organization that the electrical inspector represents.

A.1.2.6 The committee recognizes the importance of formal and continuing education and training programs to maintain and update the necessary skills and knowledge for the level of qualification. Continuing education and training programs can be developed or administered by local, state, provincial, or federal agencies as well as by professional associations and accredited institutions of higher education. The methods of learning would include, but are not limited to, areas of technology, refresher training, skills practices, and knowledge application to standards. The subject matter should relate to the requirements of this standard.

A.1.3.3 It is recommended, where practical, that evaluators be individuals who were not directly involved as instructors for the requirement being evaluated.

A.1.3.11 Continuing education is necessary to ensure that electrical inspectors maintain and update their knowledge and skills in the evolving field of electrical safety. Attending or participating in workshops and seminars and in local, state, and national code development or professional organizations; achieving certification; and accessing professional publications, journals, and web sites are just a few of the many avenues available to increase electrical inspector competency.

A.1.3.12 In order for electrical inspectors to perform their jobs or to be evaluated on their performance of the job requirements of this standard, basic resource materials must be available for reference. These materials include those codes and standards applicable to that jurisdiction where the inspector is working or being evaluated. Policies and procedures that define and regulate the electrical inspector’s job should also be provided. This is of particular importance where electrical inspectors are being evaluated by an agency other than their employer. It is the intent of this standard to measure the electrical inspector’s ability to use AHJ-adopted codes and standards within the guidelines set by the policies and procedures of the AHJ. These skills should be transferable, regardless of the specific codes or standards or the editions being used.
A.3.1 Action verbs used in the job performance requirements in this document are based on the first definition of the verb found in Merriam-Webster’s Collegiate Dictionary, 11th edition.

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.3 Code. The decision to designate a standard as a “code” is based on such factors as the size and scope of the document, its intended use and form of adoption, and whether it contains substantial enforcement and administrative provisions.

A.3.2.5 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

A.3.3.1 Examples of AHJ requirements include, but are not limited to, the following:
1. Codes that are suitable for adoption into law independently of other codes and standards, such as NFPA 70
2. Standards that contain mandatory provisions in a form generally suitable for mandatory reference by another standard or code or for adoption into law
3. Recommended practices that contain only nonmandatory provisions
(4) Standard operating procedures

**A.3.3.2 Construction Documents.** Construction documents could include, but are not limited to, the following:

1. Cover letter
2. Load calculations
3. Short-circuit analysis
4. Manufacturer’s applicable documents
5. Complete set of drawings, which could include the following:
   a. Floor layout, including equipment
   b. Service or feeder riser diagram
   c. Fixture schedule and luminaire layout
   d. Location of emergency systems
   e. Architectural drawings
   f. Mechanical drawings
   g. Structural drawings
   h. Site drawings
   i. Wiring methods and material

**A.3.3.4 Electrical Inspection.** Codes, standards, product certification requirements, policies, and procedures are used when determining whether a certain electrical installation is acceptable. An electrical inspection, or multiple inspections, could be included with an electrical permit required by the AHJ.

**A.3.3.6 Electrical Theory.** The concepts of electricity include, but are not limited to, voltage, current, resistance, power, and frequency.

**A.3.3.11 Product Certification.** Qualified personnel could be required to perform evaluation, testing, and certification of products to ensure that they meet the requirements of both construction and general industry electrical standards. A listing mark signifies that the tested and certified product complies with the requirements of one or more appropriate product safety test standards. Product certification could include, but is not limited to, testing by a nationally recognized testing laboratory, analysis by a qualified engineer, self-declaration by the manufacturer, or assessment by an energy auditor.

**A.4.2.1** The tasks include, but are not limited to, the following:

1. Identify the type and scope of an electrical permit application
2. Process an electrical permit application
3. Identify the need for an electrical plans review
4. Process electrical plans review for approval
5. Enforce electrical permit regulations
(6) Prepare electrical reports reflective of field inspection observations, investigating, and recording

(7) Resolve electrical technical and life safety compliance requirements and conditions

(8) Recommend modifications of regulations on compliance issues

(9) Generate written correspondence related to appeals

(10) Initiate legal action

(11) Recommend modifications to regulations for code modifications

(12) Facilitate and evaluate code modifications

(13) Develop policies and procedures for administering plans review and field inspections

(14) Propose technical reference material acquisition

(15) Recommend and evaluate a department budget

(16) Demonstrate knowledge of AHJ requirements

A.4.3.1 The tasks include, but are not limited to, the following:

(1) Prepare plans review reports

(2) Initiate a plans review to determine compliance

(3) Process a plans review for permitting

(4) Create a plans review report, form, checklist, or other job aid

(5) Develop AHJ-adopted policies and procedures for administering the plans review process

(6) Classify and verify occupancy use classification

(7) Calculate and verify allowable electrical loads

(8) Review proposed installation of electrical systems

(9) Recommend modifications to AHJ requirements for plans review

(10) Participate in legal proceedings

(11) Evaluate construction documents for compliance

(12) Evaluate construction documents for process or operation requiring electricity

(13) Evaluate construction documents for hazardous materials and other hazards

(14) Evaluate construction documents for the installation of electrical systems

(15) Evaluate proposed electrical modifications for compliance

(16) Demonstrate knowledge of AHJ requirements

A.4.4.1 The tasks include, but are not limited to, the following:

(1) Identify the occupancy and building construction classification

(2) Inspect the electrical system based on occupancy use

(3) Recognize hazardous conditions associated with electrical equipment

(4) Compare an approved electrical plans review

(5) Calculate the allowable electrical load

(6) Evaluate electrical systems
(7) Verify compliance of the electrical system
(8) Evaluate the electrical system modifications
(9) Recommend criteria for developing an electrical inspection and plans review procedure
(10) Observe and evaluate an electrical field inspection

A.4.4.4 Hazards and potential hazards include those that are observable by sound, sight, or touch. Concerns include, but are not limited to, fire hazards, biohazards, hazardous materials storage or processing, confined spaces, laboratories.
Annex B Explanation of the Professional Qualifications Standards and Concepts of JPRs

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 Explanation of the Professional Qualifications Standards and Concepts of Job Performance Requirements (JPRs). The primary benefit of establishing national professional qualifications standards is to provide both public and private sectors with a framework of the job requirements for those performing electrical inspections. Other benefits include enhancement of the profession, individual as well as organizational growth and development, and standardization of practices.

NFPA professional qualifications standards identify the minimum job performance requirements (JPRs) for electrical inspections. The standards can be used for training design and evaluation, certification, measuring and critiquing on-the-job performance, defining hiring practices, and setting organizational policies, procedures, and goals.

Professional qualifications standards for specific jobs are organized by major areas of responsibility defined as duties. For example, the fire fighter’s duties might include fire department communications, fireground operations, and preparedness, and maintenance, whereas the fire educator’s duties might include education, and implementation, planning and development, and evaluation. Duties are major functional areas of responsibility within a specific job.

The professional qualifications standards are written as JPRs. JPRs describe the performance required for a specific job and are grouped according to the duties of the job. The complete list of JPRs for each duty defines what an individual must be able to do in order to perform and achieve that duty.

B.2 The Parts of a JPR.

B.2.1 Critical Components. The JPR comprises three critical components, which are as follows:

1. Task to be performed, partial description using an action verb
2. Tools, equipment, or materials that are to be provided to complete the task
3. Evaluation parameters and performance outcomes

Table B.2.1 gives an example of the critical components of a JPR.

Table B.2.1 Example of a JPR

<table>
<thead>
<tr>
<th>Component</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Task to be performed</td>
<td>(1) Prepare electrical inspection reports</td>
</tr>
</tbody>
</table>
(2) Tools, equipment, or materials
(2) given AHJ requirements and observations from an electrical inspection

(3) Evaluation parameters and performance outcomes
(3) so that the report is clear and concise and reflects the findings of the inspection in accordance with the AHJ accepted requirements

B.2.1.1 The Task to Be Performed. The first component is a concise statement of what the individual is required to do. A significant aspect of that phrase is the use of an action verb, which sets the expectation for what is to be accomplished.

B.2.1.2 Tools, Equipment, or Materials That Must Be Provided for Successful Completion of the Task. This component ensures that all individuals completing the task are given the same tools, equipment, or materials when they are being evaluated. Both the individual and the evaluator will know what will be provided in order for the individual to complete the task.

B.2.1.3 Evaluation Parameters and Performance Outcomes. This component defines — for both the performer and the evaluator — how well the individual must perform each task. The JPR guides performance toward successful completion by identifying evaluation parameters and performance outcomes. This portion of the JPR promotes consistency in evaluation by reducing the variables used to gauge performance.

B.2.2 Requisite Knowledge and Skills. In addition to these three components, the JPRs contain requisite knowledge and skills. Just as the term requisite suggests, these are the necessary knowledge and skills the individual must have prior to being able to perform the task. Requisite knowledge and skills are the foundation for task performance.

B.2.3 Examples. With the components and requisites combined, a JPR might read similar to the following two examples.

B.2.3.1 Example: Fire Fighter I. Perform overhaul at a fire scene, given approved PPE, attack line, hand tools, flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

(A) Requisite Knowledge. Knowledge of types of fire attack lines and water application devices for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, signs of area of origin or signs of arson, and reasons for protection of fire scene.

(B) Requisite Skills. The ability to deploy and operate an attack line; remove flooring, ceiling, and wall components to expose void spaces without compromising structural
integrity; apply water for maximum effectiveness; expose and extinguish hidden fires in walls, ceilings, and subfloor spaces; recognize and preserve signs of area of origin and arson; and evaluate for complete extinguishment.

B.2.3.2 Example: Fire and Life Safety Educator II. Prepare a written budget proposal for a specific program or activity, given budgetary guidelines, program needs, and delivery expense projections, so that all guidelines are followed and the budget identifies all program needs.

(A) Requisite Knowledge. Knowledge of budgetary process; governmental accounting procedures; federal, tribal, state, and local laws; organizational bidding process; and organization purchase requests.

(B) Requisite Skills. The ability to estimate project costs; complete budget forms; requisition/purchase orders; collect, organize, and format budgetary information; complete program budget proposal; and complete purchase requests.

B.3 Potential Uses for JPRs.
B.3.1 Certification. JPRs can be used to establish the evaluation criteria for certification at a specific job level. When used for certification, evaluation should be based on the successful completion of JPRs.

The evaluator would verify the attainment of requisite knowledge and skills prior to JPRs evaluation. Verification could be through documentation review or testing.

The individual seeking certification would be evaluated on completion of the JPRs. The individual would perform the task and be evaluated based on the evaluation parameters and/or performance outcomes. This performance-based evaluation is based on practical exercises for psychomotor skills and written examinations for cognitive skills.

Psychomotor skills are those physical skills that can be demonstrated or observed. Cognitive skills cannot be observed but rather are evaluated on how an individual completes the task (process-oriented) or the task outcome (product-oriented).

Performance evaluation requires that individuals be given the tools, equipment, or materials listed in the JPR in order to complete the task.

B.3.2 Curriculum Development and Training Design and Evaluation. The statements contained in this document that refer to job performance were designed and written as JPRs. Although a resemblance to instructional objectives might be present, these statements should not be used in a teaching situation until after they have been modified for instructional use.

JPRs state the behaviors required to perform specific skills on the job, as opposed to a learning situation. These statements should be converted into instructional objectives.
with behaviors, conditions, and degree to be measured within the educational environment.

While the differences between JPRs and instructional objectives are subtle in appearance, their purposes differ. JPRs state what is necessary to perform the job in practical and actual experience. Instructional objectives, on the other hand, are used to identify what students must do at the end of a training session and are stated in behavioral terms that are measurable in the training environment.

By converting JPRs into instructional objectives, instructors would be able to clarify performance expectations and avoid confusion caused by the use of statements designed for purposes other than teaching. Instructors would be able to add jurisdictional elements of performance into the learning objectives as intended by the developers.

Requisite skills and knowledge could be converted into enabling objectives that would help to define the course content. The course content would include each item of the requisite knowledge and skills ensuring that the course content supports the terminal objective.

**B.3.2.1 Example: Converting a Fire Fighter I JPR into an Instructional Objective.** The instructional objectives are just two of several instructional objectives that would be written to support the terminal objective based on the JPR.

*JPR:* Perform overhaul at a fire scene, given approved PPE, attack line, hand tools, flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

*Instructional Objective (Cognitive):* The Fire Fighter I will identify and describe five safety considerations associated with structural integrity compromise during overhaul as part of a written examination.

*Instructional Objective (Psychomotor):* The Fire Fighter I will demonstrate the designed use of tools and equipment during overhaul to locate and extinguish hidden fires without compromising structural integrity.

**B.3.2.2 Example: Converting a Fire and Life Safety Educator II JPR into an Instructional Objective.** The instructional objectives are just two of several instructional objectives that would be written to support the terminal objective based on the JPR.

*JPR:* Prepare a written budget proposal for a specific program or activity, or given budgetary guidelines, program needs, and delivery expense projections, so that all guidelines are followed and the budget identifies all program needs.

*Instructional Objective (Cognitive):* The Fire and Life Safety Educator II will list and describe the bidding process for the purchase of a published program using budgetary...
guidelines, program needs, and the guidelines established by local organizational procedures as part of a written examination.

**Instructional Objective (Psychomotor):** The Fire and Life Safety Educator II will lead in the purchase of a specific fire and life safety educational program by following the bidding process to completion, using local organizational guidelines, including budgetary procedures, program needs, and delivery expense projections.

**B.4 Other Uses for JPRs.** While the professional qualifications standards are used to establish minimum JPRs for qualification, they have been recognized as guides for the development of training and certification programs, as well as a number of other potential uses.

These areas might include the following:

1. **Employee Evaluation/Performance Critiquing.** The professional qualifications standards can be used as a guide by both the supervisor and the employee during an evaluation. The JPRs for a specific job define tasks that are essential to perform on the job, as well as the evaluation criteria to measure completion of the tasks.

2. **Establishing Hiring Criteria.** The professional qualifications standards can be helpful in a number of ways to further the establishment of hiring criteria. The authority having jurisdiction (AHJ) could simply require certification at a specific job level — for example, Fire Fighter I. The JPRs could also be used as the basis for pre-employment screening to establish essential minimal tasks and the related evaluation criteria. An added benefit is that individuals interested in employment can work toward the minimal hiring criteria at local colleges.

3. **Employee Development.** The professional qualifications standards can be practical for both the employee and the employer in developing a plan for the employee’s growth within the organization. The JPRs and the associated requisite knowledge and skills can be used as a guide to determine additional training and education required for the employee to master the job or profession.

4. **Succession Planning.** Succession planning addresses the efficient placement of individuals into jobs in response to current and anticipated future needs. A career development path can be established for targeted employees to prepare them for growth within the organization. The JPRs and requisite knowledge and skills could then be used to develop an educational path to aid in the employee’s advancement within the organization or profession.

5. **Establishing Organizational Policies, Procedures, and Goals.** The professional qualifications standards can be functional for incorporating policies, procedures, and goals into the organization or agency.
B.5 Bibliography.


Annex C An Overview of JPRs for Electrical Inspector

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

C.1 Electrical Inspector. Table C.1 provides the user of the standard with an overview of the JPRs and the progression of the various levels found in the document. The table is intended to assist the user with the implementation of the requirements and the development of training programs using the JPRs.

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHJ requirements</td>
<td>4.2.2 Identify AHJ requirements for an electrical system, given an electrical compliance issue and AHJ requirements, so that the AHJ requirements are referenced based on the compliance requirement.</td>
<td>4.2.3 Propose technical reference material acquisition, given a scope of electrical plan review and field inspection processes responsibility, budget limitations, and AHJ accepted requirements related compliance, so that reference material identified are acquired.</td>
<td></td>
</tr>
</tbody>
</table>
Table C.1  Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.2.4</strong> Evaluate the impact of proposed modifications to AHJ requirements, given draft modifications, the AHJ requirements, and possible ramifications based on the modifications, so that the impact of the proposed modification is documented and reported.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.2.5</strong> Recommend modifications to AHJ requirements, given a technical or electrical safety requirement or condition and AHJ requirements, so that the technical or safety requirement or condition is modified in the AHJ requirements.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.2.6</strong> Facilitate code adoption and modification processes, given AHJ requirements, so that the issue is resolved to address the</td>
<td></td>
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</tbody>
</table>
Table C.1  Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
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</thead>
<tbody>
<tr>
<td>identified electrical technical and life safety compliance requirement or condition.</td>
<td></td>
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</tr>
</tbody>
</table>

**4.2.7** Identify the AHJ-adopted policies and procedures for performing electrical inspections, given management objectives, so that the AHJ-adopted policies and procedures are in accordance with the AHJ requirements.

**4.2.8** Recommend modifications to AHJ-adopted policies and procedures for the delivery of electrical inspection services, given AHJ-adopted policies and procedures and management objectives, so that electrical inspections are conducted in accordance with the AHJ-adopted policies and procedures and due process of the law.
### Table C.1 Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports, forms, checklists and documentation</td>
<td>4.2.15 Prepare electrical inspection reports, given AHJ requirements and observations from an electrical inspection, so that the report is clear and concise and reflects the findings of the inspection in accordance with the adopted AHJ requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.2.16 Review electrical inspection reports, forms, and checklists, given AHJ requirements, so that the information is determined to be accurate, clear, and concise.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.2.17 Maintain electrical inspection documents and records, given AHJ requirements, record-keeping process and procedures, and electrical inspection activity, so that documents and records are maintained in a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table C.1 Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
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<tbody>
<tr>
<td>secure and</td>
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<td></td>
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<tr>
<td>effective</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>manner.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permits</td>
<td><strong>4.2.11</strong> Identify the type and scope of work for which a permit is required, given the type and scope of work, permitting process and procedures, and AHJ requirements, so that requirements for permits are communicated in accordance with the AHJ requirements.</td>
<td><strong>4.3.4</strong> Process construction documents for permitting, given a set of construction documents, permitting policies, procedures, and process, so that required permits are issued in accordance with the AHJ requirements.</td>
<td></td>
</tr>
<tr>
<td>4.2.12</td>
<td>Process an electrical permit application, given a specific request, so that the application is evaluated and a permit is issued or denied in accordance with the AHJ accepted requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plans review</td>
<td><strong>4.2.13</strong> Identify type and scope of work for which a plans review is required, given type and scope of work, plans review process and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td></td>
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</tbody>
</table>
Table C.1 Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>procedures, and AHJ requirements, so that requirements for a plans review are communicated in accordance with the AHJ requirements.</td>
<td>4.2.14 Process an electrical plans review application, given a specific request, electrical plans review application, construction documents, and AHJ requirements, so that the application is reviewed and, processed in accordance with the AHJ requirements.</td>
<td></td>
</tr>
<tr>
<td>Plans review</td>
<td>4.3.5 Verify the occupancy use of a building, given construction documents and a description of a building and occupancy use, so that the occupancy use is in accordance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The content reflects the original text with minor adjustments for readability and formatting consistency. The text is from the NFPA 1078 Standard for Electrical Inspector Professional Qualifications.
<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<td>with the AHJ requirements. <strong>4.3.6</strong> Calculate the electrical load based on the intended occupancy use, given AHJ requirements and a set of construction documents, so that the electrical system capacity and occupancy use are in accordance with AHJ requirements. <strong>4.3.7</strong> Verify compliance of the proposed electrical system capacity and equipment ratings, given AHJ requirements and the construction documents, so that the electrical system capacity and equipment ratings are in accordance with AHJ requirements.</td>
</tr>
<tr>
<td>Compliance</td>
<td><strong>4.2.18</strong> Investigate electrical technical and life safety</td>
<td><strong>4.3.8</strong> Evaluate construction documents for</td>
<td><strong>4.4.5</strong> Recognize hazards and potential hazards associated</td>
</tr>
</tbody>
</table>
Table C.1  Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
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<tbody>
<tr>
<td>compliance requirements or conditions, given an electrical technical and life safety compliance requirement or condition, so that electrical technical and life safety compliance requirements or conditions information is recorded, the investigation process is initiated, and the electrical technical and life safety compliance requirements or conditions are resolved in accordance with the AHJ requirements.</td>
<td>electrical systems compliance, given the occupancy use, building construction type, AHJ requirements, and documenting and reporting procedures for construction documents review, so that construction documents meet the AHJ requirements and compliance is identified, documented, and reported.</td>
<td>with electrical equipment, given an occupancy or conditions associated with the occupancy and the electrical system, so that the electrical system is installed and operated in a manner and environment in accordance with AHJ requirements, and hazards are identified, documented, and reported.</td>
<td>4.2.19 Enforce electrical permit regulations, given an electrical permit application or report of an electrical technical and life safety compliance requirement and compliance with electrical equipment, given an occupancy or conditions associated with the occupancy and the electrical system, so that the electrical system is installed and operated in a manner and environment in accordance with AHJ requirements, and hazards are identified, documented, and reported.</td>
</tr>
<tr>
<td>4.3.9 Evaluate construction documents for general requirements for the electrical system, given construction documents and AHJ requirements, so that the general requirements for the electrical system or operation are reviewed for compliance with AHJ requirements, and compliance is</td>
<td>4.4.6 Review approved construction documents, given approved construction documents and AHJ requirements, so that the electrical installation is in compliance with the approved construction documents and AHJ requirements.</td>
<td>4.4.7 Inspect general electrical system</td>
<td></td>
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</tbody>
</table>
### Table C.1 Overview of JPRs for Electrical Inspector

<table>
<thead>
<tr>
<th>JPR</th>
<th>Administration</th>
<th>Plans Review</th>
<th>Field Inspection</th>
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<tbody>
<tr>
<td></td>
<td>condition and AHJ requirements, so that enforcement actions are in accordance with the AHJ requirements and the electrical technical and life safety compliance requirement and condition is mitigated.</td>
<td>identified, documented, and reported.</td>
<td>installations, given approved construction documents and AHJ requirements, so that the electrical system is installed in compliance with AHJ requirements, and compliance is identified, documented, and reported.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>4.3.10</strong> Evaluate construction documents based on a need or requirement for special occupancies, equipment, and conditions in accordance with AHJ requirements, given construction documents and AHJ requirements, so that the construction documents are reviewed and compliance is identified, documented, and reported.</td>
<td></td>
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<td></td>
<td></td>
<td><strong>4.3.11</strong> Document the proposed installation of electrical systems, given construction documents for a process or operations, so that the construction documents are reviewed, and compliance is identified, documented, and reported.</td>
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<td></td>
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<td><strong>4.4.8</strong> Inspect special occupancies, equipment, and conditions for the electrical system installation, given approved construction documents and AHJ requirements, so that the electrical system is installed in compliance with AHJ requirements, and compliance is identified, documented, and reported.</td>
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<td><strong>4.4.9</strong> Compare an approved construction</td>
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</table>
### Table C.1 Overview of JPRs for Electrical Inspector

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<thead>
<tr>
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<th>Field Inspection</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>identified, documented, and reported.</td>
<td>document review to the installed electrical system, given an occupancy, an</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.3.12 Prepare a report on the construction document review, given a</td>
<td>electrical system, approved plans, documenting and reporting procedures, and AHJ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>construction document review and AHJ requirements, so that the report is</td>
<td>requirements, so that installation of the electrical system correlates with the</td>
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<tr>
<td></td>
<td></td>
<td>clear and concise and reflects the findings of the construction document</td>
<td>approved construction document review, and any field modifications are</td>
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<td>review in accordance with AHJ requirements.</td>
<td>documented and reported in accordance with the AHJ requirements.</td>
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<td></td>
<td>4.3.13 Deliver the construction document review report for electrical</td>
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<td></td>
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<td>technical and life safety compliance requirements or conditions, given a</td>
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<td>set of construction documents and AHJ requirements, so that the electrical</td>
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<td></td>
<td>technical and life safety compliance requirements or conditions are</td>
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<td></td>
<td></td>
<td>identified,</td>
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### Table C.1 Overview of JPRs for Electrical Inspector

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<th>Field Inspection</th>
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<tbody>
<tr>
<td></td>
<td>documented, and reported based on the construction documents submitted, and submitter’s noncompliance is identified, documented, and reported in accordance with the AHJ requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal</td>
<td>4.2.20 Initiate legal action related to AHJ requirements based on an electrical technical and life safety compliance requirement and condition, given a description or observation of an electrical technical and life safety compliance requirement and condition and legal options, so that the action taken is in accordance with the AHJ requirements, and due process is followed.</td>
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</table>
### Table C.1 Overview of JPRs for Electrical Inspector

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<th>Field Inspection</th>
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</thead>
<tbody>
<tr>
<td>4.2.21</td>
<td>Generate written correspondence related to the filing of appeals, given AHJ requirements, a request for an appeal, and the judgment based on the appeal, so that the correspondence addresses the appeal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.22</td>
<td>Participate in legal proceedings, including documentation and testimony based on an electrical technical or life safety compliance requirement or condition with direct relation to electrical inspection, given the findings of an electrical inspection, the electrical technical or life safety compliance requirement or condition, and consultation with AHJ legal counsel, so that</td>
<td></td>
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</tbody>
</table>
### Table C.1 Overview of JPRs for Electrical Inspector

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<thead>
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<th>JPR</th>
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<th>Plans Review</th>
<th>Field Inspection</th>
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</thead>
<tbody>
<tr>
<td>Budget</td>
<td>4.2.10 Recommend an electrical inspection program budget, given AHJ goals, budget guidelines, and needs, so that electrical inspection program needs are addressed.</td>
<td>4.4.4 Observe and recognize hazards associated with a building or area where a field inspection is required, given the building or area, safety hazard, electrical hazards, general construction hazards, and potential hazards based on occupancy use and processes, so that the hazard and potential hazards are recognized and approved PPE is provided and used, or action is taken to mitigate the hazard,</td>
<td></td>
</tr>
<tr>
<td>Hazard Recognition</td>
<td></td>
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</tbody>
</table>
Table C.1 Overview of JPRs for Electrical Inspector

<table>
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<td>including suspending the field inspection</td>
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<td></td>
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<td>until the hazard is resolved.</td>
</tr>
</tbody>
</table>

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November 27, 2017
Supplemental Agenda-December 5-6, 2017 Standards Council Meeting
Page 793 of 914
Annex D Sample Job Description for Electrical Inspector (Reserved)
Annex E Informational References

E.1 Referenced Publications. The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

E.1.1 NFPA Publications. (Reserved)


E.2 Informational References. (Reserved)

E.3 References for Extracts in Informational Sections. (Reserved)
In response to the Standards Council action on the proposed merger of NFPA 11 & 16, I am transmitting the requested information as shown below.

1. Extracts from NFPA 13 presently contained in NFPA 16 – see attachment #1
2. Proposed extracts from NFPA 13 to NFPA 16 as posted in the First Draft Report for Fall 2018 – see attachment #2
3. Ballot results from NFPA 11 & 16 – see attachment #3 & 4
4. Public Comments received to date – see attachment #5.

If it is determined by the Council that a scope modification is necessary, the following could be used:

***1.1* Scope.***

**1.1.1** This standard covers the design, installation, operation, testing, and maintenance of low-, medium-, and high-expansion, foam-water sprinkler, foam-water spray, and compressed air foam systems for fire protection.
6.2.4* Unless the requirements of 6.2.4.1 or 6.2.4.2 are met, the fire department connection(s) shall consist of two 2 1/2 in. (65 mm) NH internal threaded swivel fitting(s) with connections using “2.5-7.5 NH standard thread,” as specified in NFPA 1963. [13:6.8.1]

A.6.2.4 The purpose of the fire department connection is to supplement the water supply but not necessarily provide the entire sprinkler system demand. Fire department connections are not intended to deliver a specific volume of water. [13: A.6.8.1]

6.2.4.1 Where local fire department connections do not conform to NFPA 1963, the authority having jurisdiction shall be permitted to designate the connection to be used. [13:6.8.1.1]

6.2.4.2 The use of threadless couplings shall be permitted where required by the authority having jurisdiction and where listed for such use. [13:6.8.1.2]

6.2.4.3 Fire department connections shall be equipped with listed plugs or caps, properly secured and arranged for easy removal by fire departments. [13:6.8.2]

6.2.4.4 Fire department connections shall be of an approved type. [13:6.8.3]

7.4.1.5 For purposes of computing friction loss in piping, the C values shall be used for the Hazen-Williams formula in accordance with Table 7.4.1.5.

Table 7.4.1.5 Hazen-Williams C Values

<table>
<thead>
<tr>
<th>Pipe or Tube</th>
<th>C Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlined cast or ductile iron</td>
<td>100</td>
</tr>
<tr>
<td>Black steel (dry systems including preaction)</td>
<td>100</td>
</tr>
<tr>
<td>Black steel (wet systems including deluge)</td>
<td>120</td>
</tr>
<tr>
<td>Galvanized steel (dry systems including preaction)</td>
<td>100</td>
</tr>
<tr>
<td>Galvanized steel (wet systems including deluge)</td>
<td>120</td>
</tr>
<tr>
<td>Plastic (listed) all</td>
<td>150</td>
</tr>
<tr>
<td>Cement-lined cast or ductile iron</td>
<td>140</td>
</tr>
<tr>
<td>Copper tube or stainless steel</td>
<td>150</td>
</tr>
<tr>
<td>Asbestos cement</td>
<td>140</td>
</tr>
<tr>
<td>Concrete</td>
<td>140</td>
</tr>
</tbody>
</table>

*The authority having jurisdiction is permitted to allow other C values. [13: Table 23.4.4.7.1]
6.13 **Stock of Spare Sprinklers.** [13:16.2.7]

**6.13.1** A supply of at least six spare sprinklers shall be maintained on the premises so that any sprinklers that have operated or been damaged in any way can be promptly replaced. [13:16.2.7.1]

A.6.13.1 A minimum of two sprinklers of each type and temperature rating should be provided. [13:A.16.2.7.1]

**6.13.2** The sprinklers shall correspond to the types and temperature ratings of the sprinklers in the property. [13:16.2.7.2]

**6.13.3** The sprinklers shall be kept in a cabinet located where the temperature to which they are subjected will at no time exceed the maximum ceiling temperatures specified in Table 6.13.3 for each of the sprinklers within the cabinet. [13:16.2.7.3]

<table>
<thead>
<tr>
<th>Maximum Ceiling Temperature</th>
<th>Temperature Rating</th>
<th>Temperature Classification</th>
<th>Color Code</th>
<th>Glass Bulb Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>°F</td>
<td>°C</td>
<td>°F</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>38</td>
<td>135–170</td>
<td>57–77</td>
<td>Ordinary</td>
</tr>
<tr>
<td>150</td>
<td>66</td>
<td>175–225</td>
<td>79–107</td>
<td>Intermediate</td>
</tr>
<tr>
<td>225</td>
<td>107</td>
<td>250–300</td>
<td>121–149</td>
<td>High</td>
</tr>
<tr>
<td>300</td>
<td>149</td>
<td>325–375</td>
<td>163–191</td>
<td>Extra high</td>
</tr>
<tr>
<td>375</td>
<td>191</td>
<td>400–475</td>
<td>204–246</td>
<td>Very extra high</td>
</tr>
<tr>
<td>475</td>
<td>246</td>
<td>500–575</td>
<td>260–302</td>
<td>Ultra high</td>
</tr>
<tr>
<td>625</td>
<td>329</td>
<td>650</td>
<td>343</td>
<td>Ultra high</td>
</tr>
</tbody>
</table>

[13:Table 7.2.4.1]

**6.13.4** Where dry sprinklers of different lengths are installed, spare dry sprinklers shall not be required, provided that a means of returning the system to service is furnished. [13:16.2.7.4]

**6.1.5** The stock of spare sprinklers shall include all types and ratings installed and shall be as follows:

1. For protected facilities having under 300 sprinklers — no fewer than six sprinklers
2. For protected facilities having 300 to 1000 sprinklers — no fewer than 12 sprinklers
3. For protected facilities having over 1000 sprinklers — no fewer than 24 sprinklers

[13:16.2.7.5]

**6.13.6** One sprinkler wrench as specified by the sprinkler manufacturer shall be provided in the cabinet for each type of sprinkler installed to be used for the removal and installation of sprinklers in the system. [13:16.2.7.6]

A.6.13.6 One sprinkler wrench design can be appropriate for many types of sprinklers and should not require multiple wrenches of the same design. [13:A.16.2.7.6]

**6.13.7** A list of the sprinklers installed in the property shall be posted in the sprinkler cabinet. [13:16.2.7.7]

**6.13.7.1** The list shall include the following:
1. Sprinkler Identification Number (SIN) if equipped; or the manufacturer, model, K-factor, deflector type, thermal sensitivity, and pressure rating
2. General description
3. Quantity of each type to be contained in the cabinet
4. Issue or revision date of the list

A.6.13.7.1 The minimum information in the list contained in the spare sprinkler cabinet should be marked with the sprinkler identification; a general description of the sprinkler, including upright, pendent, residential, ESFR, and so forth; and the quantity of sprinklers that is to be maintained in the spare sprinkler cabinet. An example of the list is shown in Figure A.6.13.7.1.

Figure A.6.13.7.1 Sample List.

8.6* Hydraulic Design Information Sign.

A.8.6 See Figure A.8.6.

Figure A.8.6 Sample Hydraulic Design Information Sign.

8.6.1 The installing contractor shall identify a hydraulically designed sprinkler system with a permanently marked weatherproof metal or rigid plastic sign secured with corrosion-resistant wire, chain, or other approved means.

8.6.2 Such signs shall be placed at the alarm valve, dry pipe valve, preaction valve, or deluge valve supplying the corresponding hydraulically designed area.

8.6.3 The sign shall include the following information:

1. Location of the design area or areas
2. Discharge density over the design area or areas
3. Required flow and residual pressure of the most hydraulically demanding calculation
4. Required flow and pressure of the least hydraulically demanding calculation
5. Discharge duration of foam solution
6. Hose stream allowance included in addition to the sprinkler demand
7. The name of the installing contractor

8.7* General Information Sign.

A.8.7 See Figure A.8.7.

Figure A.8.7 Foam-Water Sprinkler System — General Information.

8.7.1 The installing contractor shall provide a general information sign used to determine system design basis and information relevant to the inspection, testing, and maintenance requirements required by NFPA 25.

8.7.1.1 Such general information shall be provided with a permanently marked weatherproof metal or rigid plastic sign, secured with corrosion-resistant wire, chain, or other acceptable means.

8.7.1.2 Such signs shall be placed at each system control riser and auxiliary system control valve.

8.7.2 The sign shall include the following information:
1. Name and location of the facility protected
2. Occupancy classification
3. Commodity classification
4. Presence of high-piled and/or rack storage
5. Maximum height of storage planned
6. Aisle width planned
7. Encapsulation of pallet loads
8. Presence of solid shelving
9. Flow test data
10. Presence of flammable/combustible liquids
11. Presence of hazardous materials
12. Presence of other special storage
13. Location of venting valve
14. Location of auxiliary drains and low point drains on dry pipe and preaction systems
15. Original results of main drain flow test
16. Original results of dry pipe and double interlock preaction valve test
17. Name of installing contractor or designer
18. Indication of presence and location of antifreeze or other auxiliary systems
19. Where injection systems are installed to treat MIC or corrosion, the type of chemical, concentration of the chemical, and where information can be found as to the proper disposal of the chemical
20. Foam concentrate type and percent concentration
MEMORANDUM

TO: Technical Committee on Foam

FROM: Elena Carroll, Project Administrator

DATE: October 31, 2017

SUBJECT: NFPA Letter Ballot on Merge of NFPA 11 and NFPA 16 TC FINAL Ballot Results

According to the final ballot results, the ballot item received the necessary affirmative votes to pass ballot.

29 Members Eligible to Vote
   6 Members Not Returned (Prather, Purvis, Quenneville, Shepard, Woycheese, Younis)

18 YES Votes (with comments- Back, Fisher, Fox, Hofman, Kidd, Leedy, Ramsden, Santerre, Westwood, Workman)
5 NO Votes (with comments- Benzenberg, Borowski, Coppola, Leong, Toney)

Attached are comments received on affirmative, negative, and abstaining votes, if applicable.

To pass ballot, a simple majority of those eligible to vote is required. See Sections 3.3.4.3.(c) and 4.3.10.1 of the Regulations Governing the Development of NFPA Standards.

**YES:**

I agree with the request to merge these two (2) standards.

**Comments:** Makes sense to have all foam systems covered under one document

---

**NO:**

I DO NOT agree with the request to merge these two (2) standards.

**Comments:**

---

**Signature**

**Gerd G. Back**
Name (Please Print)

**10/19/17**
Date

Please return the ballot on or before October 24, 2017.

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169
FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org

November 27, 2017
Supplemental Agenda-December 5-6, 2017 Standards Council Meeting
TECHNICAL COMMITTEE ON FOAM
LETTER BALLOT
(SC DECISION 17-8-49)


YES:
I agree with the request to merge these two (2) standards.

Comments: The overlap of material warrants this merger. If you have a tank farm with a loading rack, now you need two standards which seem inefficient. This will save travel for people on both technical committees.

NO:
I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature
Laurence E. Fisher
Name (Please Print)
11 October 2017
Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110   E-mail: ecarroll@nfpa.org
November 27, 2017
Supplemental Agenda-December 5-6, 2017 Standards Council Meeting
LETTER BALLOT
(SC DECISION 17-8-49)


**YES:**

I agree with the request to merge these two (2) standards.

**Comments:** I agree with this merger.

**NO:**

I DO NOT agree with the request to merge these two (2) standards.

**Comments:**

____________________________

Signature

Steven Fox
Name (Please Print)

10/18/17
Date

Please return the ballot on or before **October 24, 2017.**

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park

November 27, 2017 Supplemental Agenda-December 5-6, 2017 Standards Council Meeting

YES:

I agree with the request to merge these two (2) standards.

Comments: If Committee is expanded to accommodate members

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature

Name (Please Print)

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org
TECHNICAL COMMITTEE ON FOAM

LETTER BALLOT

(SC DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.

Comments: YES, THE FSSA would SUPPORT this merger of NFPA 11 & 16

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature

JEFF S. KIDD

Name (Please Print)

10/23/17

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:

Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org

Supplemental Agenda-December 5-6, 2017 Standards Council Meeting
November 27, 2017
Page 806 of 914

YES:

I agree with the request to merge these two (2) standards.

Comments: There is so much overlap in the foam proportioners, tanks, concentrate and solution piping, etc., that I believe this makes good sense.

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: 

Signature

JOAN M. LEEDY

Name (Please Print)

10/19/17

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169
FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org

November 27, 2017

YES: X

I agree with the request to merge these two (2) standards.

Comments: It makes sense to include this standard in NFPA 11- it has always been an anomaly in my mind and at some stages there have been some ambiguities between the two documents and possibly concerns about when each is applicable. Merging them should ensure consistency and consolidate all the foam system guidance in one document.

________________________________
Signature
Niall Ramsden
Name (Please Print)
11 October 2017

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org

YES:

I agree with the request to merge these two (2) standards.

Comments: ____________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: ____________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

__________________________
Signature

Gaston Gus Santure

Name (Please Print)

10-25-2017

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: eccarroll@nfpa.org

**YES:** √

I agree with the request to merge these two (2) standards.

**Comments:** I have no issue with merging the two standards as long as the question on scope change is addressed and agreed by the majority of the NFPA 11 committee.

________________________
Signature

KEVIN WESTWOOD
Name (Please Print)

10/10/2017
Date

Please return the ballot on or before **October 24, 2017.**

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110  E-mail: ecarroll@nfpa.org
TECHNICAL COMMITTEE ON FOAM

LETTER BALLOT
(SC DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.

Comments: This would help people who would normally use NFPA-16 but forget to reference NFPA-11 when they have to.

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: 

__________________________

Signature

__________________________

Name (Please Print)

__________________________

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:

Elena Carroll, Project Administrator

NFPA

1 Batterymarch Park

Quincy, MA 02169

FAX: (617) 984-7110

E-mail: gcarroll@nfpa.org

November 27, 2017

Supplemental Agenda-December 5-6, 2017 Standards Council Meeting

YES:
I agree with the request to merge these two (2) standards.

Comments:_________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

NO: XXX
I DO NOT agree with the request to merge these two (2) standards.

Comments:_________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
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___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
This is a sprinkler system that would be better served by staying with the sprinkler guys. __________

__________________________________________
Signature
Name (Please Print) Gene E Benzenberg

Date 10/25/2017

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org

YES:

I agree with the request to merge these two (2) standards.

Comments: 

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: No I do not agree on merging the two standards together. NFPA 16 is the minimum design criteria and installation for foam-water sprinkler systems. If any merger with in another NFPA guide it should be NFPA 13 as NFPA 16 follows the installation codes and standards of NFPA 13. The only item that NFPA 16 and NFPA 11 have in common NFPA 11 is foam-water sprinkler systems for loading rack and rail cars which tells you to follow NFPA 16. Instead of merging NFPA 16 to NFPA 11 take Loading rack/rail car system into NFPA 16.

_____________________________
Signature

Jerry Borowski

Name (Please Print)

10-16-2017
Date

Please return the ballot on or before **October 24, 2017**.

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org

**YES:**

I agree with the request to merge these two (2) standards.

Comments: __________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

**NO: XXXX**

I DO NOT agree with the request to merge these two (2) standards.

Comments: NFPA 16 currently falls under sprinkler correlating committee and NFPA 11 does not. I think it may not be a good combination.

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Signature

Richard A Coppola
Name (Please Print)

10-18-17
Date

Please return the ballot on or before **October 24, 2017**.

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org
LETTER BALLOT
(SC DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.

Comments:

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: I do not agree that the standards be merged because NFPA 11 is mostly used in the petrochemical industry due to the huge storage tanks, equipment etc., whereas NFPA 16, may derive some design densities from NFPA 30 but the design may use NFPA 13, and some of NFPA 11 for the foam proportioning, and mostly used for designs of warehouse storing flammable or combustible liquids. The protection is different because it then requires NFPA 13 sprinkler spacing, heights etc. Therefore, the users for NFPA 11 and 16 are different.

Signature

Bernard W. Leong - Chevron
Name (Please Print)

10/10/2017 Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org

**YES:**

I agree with the request to merge these two (2) standards.

**Comments:**

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

**NO:**

I DO NOT agree with the request to merge these two (2) standards.

**Comments:**

*It is not clear why the Correlating Committee wants to merge the standards. The current scope of each standard seems appropriate at this time. There are currently overlaps in scope and duplication between NFPA 16 and NFPA 11 which have not been addressed (and between NFPA 11 and NFPA 20 regarding foam pumps, etc.)*

__________________________________________________________________________

________________________________
Signature

John A. Toney
Name (Please Print)

10-23-17
Date

Please return the ballot on or before **October 24, 2017**.

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169
FAX: (617) 984-7110  E-mail: ecarroll@nfpa.org
MEMORANDUM

TO:   Technical Committee on Foam-Water Sprinklers

FROM:  Elena Carroll, Project Administrator

DATE:   October 31, 2017

SUBJECT:  NFPA Letter Ballot on Merge of NFPA 11 and NFPA 16 TC FINAL Ballot Results

According to the final ballot results, the ballot item received the necessary affirmative votes to pass ballot.

30 Members Eligible to Vote
4 Members Not Returned (Aaron, Fontana, Holcombe, III, Prather)

21 YES Votes (with comments- Bateman, Blackmon, Caputo, Gagnon, Hulett, Kolisch, Martorano, Morgan, Pilette, Sutton)
5 NO Votes (with comments- Carrier, Humbrecht, Victor, Wiegand)

Attached are comments received on affirmative, negative, and abstaining votes.

To pass ballot, a simple majority of those eligible to vote is required. See Sections 3.3.4.3.(c) and 4.3.10.1 of the Regulations Governing the Development of NFPA Standards.
YES:

I agree with the request to merge these two (2) standards.

Comments: \( ^{\text{I've been a member of both committees at various times over the years, I've used both as textbooks for engineering seminars. You will make a lot of users when you combine the two or reduce the duplication, then publish one for confusion.}} \)

Publish one comprehensive standard

I DO NOT agree with the request to merge these two (2) standards.

Comments: __

Name (Please Print) Frank Bateman

10-25-17

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org
TECHNICAL COMMITTEE ON FOAM-WATER SPROUTERS

LETTER BALLOT
(SC DECISION 17-8-49)


I agree with the request to merge these two (2) standards.

Comments: **COMBINING THESE STANDARDS WILL HELP THE END USERS BY SIMPLIFYING THE STANDARDS. TRYING TO APPLY BOTH STANDARDS CAN BE CONFUSING TO THE END USER**

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature

WILLIAM BLACKMON
Name (Please Print)

10/26/17
Date

Please return the ballot on or before **October 24, 2017**.

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org
LETTER BALLOT
(SC DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.


NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________
Signature

ROBERT G. CAPUTO
Name (Please Print)

10/18/2017
Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org
TECHNICAL COMMITTEE ON FOAM-WATER SPRINKLERS

LETTER BALLOT
(SC DECISION 17-8-49)


**YES:**

I agree with the request to merge these two (2) standards.

Comments: I agree

_______________________________
Robert M. Gagnon, PE, SET, FSFPE
Name (Please Print)

10/17/17
Date

Please return the ballot on or before **October 24, 2017.**

**PLEASE RETURN TO:**
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169   FAX: (617) 984-7110   E-mail: ecarroll@nfpa.org

-----Original Message-----
From: Carroll, Elena <ecarroll@nfpa.org>
To: Carroll, Elena <ecarroll@nfpa.org>
Cc: Hague, David <DHague@nfpa.org>; Duffy, Chad <CDuffy@nfpa.org>
Sent: Tue, Oct 17, 2017 1:32 pm
Subject: FW: Letter Ballot on Merge of NFPA 11 and NFPA 16

Technical Committee Members:
For those who have not yet returned your ballots, please do so by **Tuesday, October 24, 2017.**
Thank you.
Elena
YES:
I agree with the request to merge these two (2) standards.

Comments: The combination of these standards will simplify and help by removing the subtle differences that come up.

NO:
I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature

John Hulett

Name (Please Print)

10-13-17

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org
TECHNICAL COMMITTEE ON FOAM-WATER SPRINKLERS
LETTER BALLOT
(SC DECISION 17-8-49)

YES:

I agree with the request to merge these two (2) standards.

Comments: I am in favor of the merger of these two NFPA Standards (NFPA 11 & 16). Combining standards leads to more simplicity and straightforwardness. Having a single combined standard allows for ease of use by all parties from installers, to designers, to AHJ's.


NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:


Signature

Name (Please Print)

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org
YES:

I agree with the request to merge these two (2) standards.

Comments: I don’t believe NFPA 16 warrants a standalone standard at this point and support the merger of documents. In my opinion establishing one source for foam related information will benefit the user and help eliminate confusion between the documents.

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature

Scott Martorano  
Name (Please Print)

10/17/2017  
Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:  
Elena Carroll, Project Administrator
LETTER BALLOT
(SC DECISION 17-8-49)

YES:
I agree with the request to merge these two (2) standards.

Comments: I think it would be advantageous and less confusing to the industry if the two standards were combined.


NO:
I DO NOT agree with the request to merge these two (2) standards.

Comments:


Signature

Name (Please Print)
Bob O. Morgan

Date
10/17/17

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ccarroll@nfpao.org
LETTER BALLOT
(SC DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.

Comments:__________________________________________

[Signature]

Name (Please Print) MM Pilette

Date 10-17-17

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:__________________________________________

Signature

Name (Please Print) MM Pilette

Date 10-17-17

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org
TECHNICAL COMMITTEE ON FOAM-WATER SPRINKLERS

LETTER BALLOT
(SCR DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.

Comments: Comparing the two documents, there are enough similarities that it makes sense to merge the two documents.

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments:

Signature

Jeffery W. Sutton

Name (Please Print)

10/23/2017

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110
E-mail: ecarroll@nfpa.org
YES:

I agree with the request to merge these two (2) standards.

Comments:

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: I am not in favor of merging the two standards. I believe there are enough differences to keep the two separate.

Signature

Kevin Carrier

Name (Please Print)

October 26, 2017

Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:

Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110

E-mail: ecarroll@nfpa.org
TERMINAL COMMITTEE ON FOAM-WATER SPRINKLERS

LETTER BALLOT
(SC DECISION 17-8-49)


YES:

I agree with the request to merge these two (2) standards.

Comments: _____________________________________________________________

___________________________________________________________

NO:

I DO NOT agree with the request to merge these two (2) standards.

Comments: I DO NOT BELIEVE MERGING THESE TWO
STANDARDS WILL PROVIDE A BETTER STANDARD
FOR INSTALLATION OF FOAM-WATER SPRINKLERS.

___________________________________________________________

Signature

Name (Please Print)

Date

10/24/17

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7110 E-mail: ecarroll@nfpa.org

November 27, 2017
Supplemental Agenda-December 5-6, 2017 Standards Council Meeting
Page 830 of 914

**YES:**

I agree with the request to merge these two (2) standards.

Comments: 

**X NO:**

I **DO NOT** agree with the request to merge these two (2) standards.

Comments: Johnson Controls is not in favor of the merger of these two NFPA standards. Combining standards leads to more complexity. We are especially opposed to the merger if the merged document remains a stand-alone document without correlation to other important NFPA documents and without reference to NFPA 25. Because NFPA 11 is not a document under the *Automatic Sprinkler Systems (AUT-AAC)* and NFPA 11 does not reference NFPA 25 for the inspection, testing, and maintenance of water-based fire protection systems, NFPA 16 should not be merged into this document.

Terry Victor

Signature

October 16, 2017

Date

Please return the ballot on or before **October 24, 2017**.

**PLEASE RETURN TO:**

Elena Carroll, Project Administrator  
NFPA  
1 Batterymarch Park  
Quincy, MA 02169  
FAX: (617) 984-7110  
E-mail: ecarroll@nfpa.org
LETTER BALLOT
(Sc Decision 17-8-49)

YES:

I agree with the request to merge these two (2) standards.

Comments: 

NO: X

I DO NOT agree with the request to merge these two (2) standards.

Comments: I do not agree with the merger of the two standards. Currently NFPA 16 is under the ITM jurisdiction of NFPA 25. A merger of NFPA 16 into NFPA 11 would remove the contents of NFPA 16 from the jurisdiction of NFPA 25.

Signature

Karl Wiegand
Name (Please Print)

11/19/2017
Date

Please return the ballot on or before October 24, 2017.

PLEASE RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park
Quincy, MA 02169
FAX: (617) 984-7110 E-mail: ecarroll@nfpa.org
In response to the NFPA Standards Council request for comments on the possible merger of NFPA 16 and 11, Johnson Controls, Inc. has a strong opinions on the merger that we ask the Standards Council to consider. Johnson Controls is an industry leader in fire protection and is very active in the industries and the NFPA technical committees affected by this proposed merger:

- First, there are several Johnson Controls companies that provide products, devices, design, engineering, installation and service of the various foam systems covered by both standards, including Ansul, Chemguard, Williams Fire and Hazard Control, Tyco Fire Protection Products, and Grinnell Fire Protection Solutions. Johnson Controls is the industry leader in foam and foam-water fire protection solutions.
- Second, we are represented on the NFPA 16 technical committee. Terry Victor is a long time member since 1989 and Secretary of the technical committee. His alternate, Jason E. Vermeulen, is the Sr. Applications Specialist, Foam & Foam Hardware for Johnson Controls. We are also represented on the NFPA technical committees that are referenced by both NFPA 11 and 16, including NFPA 13, NFPA 15, NFPA 20, NFPA 24, NFPA 25, and NFPA 72.

While both documents are similar in their use of foam and foam-water solutions for fire protection, there are a couple of crucial differences that Johnson Controls wants to bring to the attention of the Standards Council before a final decision is made on the merger.

Both documents reference other NFPA standards for materials used, water supplies, fire pumps, underground piping installation, and electric supervision and controls. However, NFPA 11 is not a document under the Automatic Sprinkler Systems (AUT-AAC) and NFPA 11 does not reference NFPA 25 for the inspection, testing, and maintenance of water-based fire protection systems.

Therefore, Johnson Controls is not in favor of the merger of these two NFPA standards. Combining standards leads to more complexity. We are especially opposed to the merger if the merged document remains a stand-alone document without correlation to other important NFPA documents and without reference to NFPA 25.

IF the Standards Council decides to move forward with a merger despite objections from Johnson Controls, Johnson Controls strongly recommends that the merged document be correlated by the Automatic Sprinkler Systems (AUT-AAC) and that the merged document refer to and reference NFPA 25 for inspection, testing and maintenance.

Thank you for your consideration,

Terry Victor, Senior Manager of Industry Relations, Linthicum, MD
Mark Fessenden, Director Industry Relations, Marinette, WI
Tanya Barlow, Director Global Codes & Standards, QC, Canada
Manny Silva, Fellow, Engineering/Research and Development, Cranston, RI
Jason Vermeulen, Sr. Applications Specialist, Foam & Foam Hardware, Marinette, WI
Hi Linda,

At the NFPA 502 meeting, the committee requested a change in committee scope as follows:

“This Committee shall have primary responsibility for documents on fire prevention and fire protection measures to reduce loss of life and property damage for limited access highways, road tunnels, air right structures, bridges, and limited access highways, elevated highways, depressed highways, and roadways that are located beneath air-right structures. Excluded from this scope is the protection for facilities for the storage, repair, and parking of motor vehicles.”

As currently written, the committee scope does not include all types of highways and roadways that are addressed in NFPA 502. The committee requests that the scope be revised to include these items and to ensure that the document scope does not go beyond the committee scope.

Can this be included on the December Standards Council agenda?

Thank you,

Janna Shapiro
Fire Protection Engineer | NFPA
1 Batterymarch Park
Quincy, MA 02169-7471
jshapiro@nfpa.org
(Office) 617-984-7136
(Cell) 617-990-2827
www.nfpa.org

National Fire Protection Association
The leading information and knowledge resource on fire, electrical and related hazards.

IT’S A BIG WORLD. LET’S PROTECT IT TOGETHER.”

Important Notice: Any opinion expressed in this correspondence is the personal opinion of the author and does not necessarily represent the official position of the NFPA or its Technical Committees. In addition, this correspondence is neither intended, nor should it be relied upon, to provide professional consultation or services.

Confidentiality: This e-mail (including any attachments) may contain confidential, proprietary or privileged information, and unauthorized disclosure or use is prohibited. If you receive this e-mail in error, please notify the sender and delete this e-mail from your system.
TO: Ed Conlin
FROM: Linda Fuller
DATE: September 19, 2017
SUBJECT: Request to Absorb Membership of TC Wildland Fire Fighting Professional Qualifications into the Membership of the Technical Committee on Wildland Fire Management

I am transmitting to you herewith the following action of the Standards Council (August 15-16, 2017):

The Council received a request from NFPA Staff to absorb the membership of the Technical Committee on Wildland Fire Fighting Professional Qualifications (PQU-WSP) into the membership of the Technical Committee on Wildland Fire Management (WFM-AAA).

After a review of the material provided, the Council voted to approve the request to absorb the membership of the Technical Committee on Wildland Fire Fighting Professionals Qualifications (PQU-WSP) into the Technical Committee on Wildland Fire Management (WFM-AAA). The Council also approved a revised scope for the Committee as follows:

**APPROVED COMMITTEE SCOPE:** This Committee shall have the primary responsibility for documents on wildland fire management and professional qualifications for personnel engaged in wildland fire fighting.

c: D. Baio, D. Fleming, P. Foley

TC Wildland Fire Fighting Professional Qualifications (PQU-WSP)
TC Wildland Fire Management (WFM-AAA)

17-8-53-d
Date: May 18, 2017
To: Dawn Bellis, Secretary to Standards Council
From: Tom McGowan, Staff WUI documents
RE: Absorbing TC PQU-WSP into TC WFM-AAA

This is a request for approval by the Standards Council to absorbing the membership from PQU-WSP into WFM-AAA therefore abolishing PQU-WSP.

Over the past two revision cycles of NFPA 1051 Standard on Wildland Firefighting Personnel Professional Qualifications the number of members on PQU-AAA has not exceeded six (6) and less have actively participated in the meetings or at the ballot, typically 3-4 members. The balance of the TC is propositionally “way out of whack”. Its also concerning that efforts have been made to recruit members but response is lacking. Additionally, the discussion regarding revisions at meetings is narrowed by limited participation.

Within the past three to four years the Standards Council approved a recommendation to create two TC (WFM-AAA and WRP-AAA). TC WRP-AAA now has responsible for NFPA 1141, 1142 and 1144. These documents generally speaking focus on prevention and planning in the rural wildland interface. TC WFM-AAA now has responsibility for NFPA 1143 and 1145. These documents mostly center on wildland firefighting management and operations. Both TCs have responded well to the change and the documents reflect their work.

The Standards Council at their April meeting, approved Mr. Larry Sutton as chair to WFM-AAA after the retirement of the chair. The appointment was in part made in an effort to continue to engage NWCG in the NFPA process. Unfortunately the day the official announcement was made, Mr. Sutton responded that due to increased responsibilities with his job he would not be able to take on the chair’s responsibilities but asked to remain as a principal to the TC.

Presently, the chair of PQU-WSP (NFPA 1051), Mr. Jim Stumpf is also a principal in good standing on WFM-AAA.

NFPA 1051, NFPA 1143, and NFPA 1145 are interrelated to wildland firefighting management and operations.

It would be the recommendation of staff that Standards Council approve the combining of PQU-WSP and WFM-AAA to continue one TC under WFM-AAA, which would then be responsible for NFPA 1051, 1143 and 1145. By combining the two TCs several items are addressed:

1) NFPA 1051 membership issue is resolved by absorbing them into WFM-AAA and greater diverse conversation during the revision of NFPA 1051 (Fall 2019, PI closing date Jan 2018)
2) Chair issue is resolved with the naming of experienced chair from PQU-WSP and current principal to WFM-AAA
3) Increased cross-referencing between all wildland firefighting management and operations related documents

Both TCs discussed the matter and agree that this is a viable solution and endorse the recommendation. PFP Division Manager Ed Conlin has been briefed and agrees with the recommendation.

Should Standards Council have any questions or concerns, please contact me.
From: "McGowan, Thomas" <TMcGowan@nfpa.org>
Date: August 3, 2017 at 12:07:15 PM EDT
To: "Bellis, Dawn" <DBellis@nfpa.org>, "Fuller, Linda" <lfuller@NFPA.org>
Subject: Revision to WFM-AAA TC scope request

Dawn and Linda
Below is the recommended revision to the technical committee (WFM-AAA) scope to include professional qualifications:

Committee Scope: This committee shall have the primary responsibility for documents on wildland fire management and professional qualifications for personnel engaged in wildland fire fighting.

Regards Tom

Tom McGowan
Senior Specialist, Emergency Services
Public Fire Protection Division
National Fire Protection Association
One Batterymarch Park
Quincy, MA 02169-7471
Phone: (617) 984-7480
Fax: (617) 984-7056
tmcgowan@nfpa.org
www.nfpa.org
Chair
Jim Stumpf, Organizational Quality Associates, ID [SE]

Principal
Matthew C. Holm, South Metro Fire Rescue Authority, CO [L]

David K. Nelson, David K. Nelson Consultants, CA [SE]

Bill Slosson, Washington State Patrol, WA [E]

Rachel C. Smith, University of California, CA [SE]

Staff Liaison
Thomas McGowan

Scope
This Committee shall have primary responsibility for documents on professional qualifications for personnel engaged in wildland fire management.

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the front of this book.

This Technical Committee is responsible for NFPA 1051, Standard for Wildland Firefighting Personnel Professional Qualifications
This committee shall have the primary responsibility for documents on wildland fire management.

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the front of this book.
# 2020 FALL REVISION CYCLE

*Public Input Closing Dates may vary according to standards and schedules for Revision Cycles may change. Please check the NFPA Website for the most up-to-date information on Public Input Closing Dates and schedules at www.nfpa.org/document # (i.e. www.nfpa.org/101) and click on Next Edition tab.*

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|                                      | Notice published on Consent Standards (Standards that receive No Comments). Note: Date varies and determined via TC ballot. | | |
|                                      | Appeal Closing Date for Consent Standards (Standards That Received No Comments) | | |
|                                      | Final date for TC Second Draft Meeting             | 5/14/2020    | 2/6/2020              |
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|                                      | **Post Second Draft Report for NITMAM Review**     | 7/30/2020    | 7/30/2020             |

| **Tech Session Preparation (& Issuance)** | **Notice of Intent to Make a Motion (NITMAM) Closing Date** | 8/27/2020 | 8/27/2020 |
|                                          | **Posting of Certified Amending Motions (CAMs) and Consent Standards** | 10/8/2020 | 10/8/2020 |
|                                          | **Appeal Closing Date for Consent Standards**      | 10/23/2020  | 10/23/2020 |
|                                          | **SC Issuance Date for Consent Standards**         | 11/2/2020   | 11/2/2020   |

| **Tech Session**                        | **Association Meeting for Standards with CAMs**    | June 2021   | June 2021   |

| **Appeals and Issuance**                | **Appeal Closing Date for Standards with CAMs**    |                       |           |
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Note: Date varies and determined via TC ballot.

Tech Session Association Meeting for Standards with CAMs

Appeal Closing Date for Standards with CAMs

Council Issuance Date for Standards with CAMs*
# 2021 ANNUAL REVISION CYCLE

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# 2021 FALL REVISION CYCLE

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|                     | Posting of Second Draft and TC Ballot            | 7/1/2021     | 3/25/2021             |
|                     | Final date for Receipt of TC Second Draft Ballot | 7/22/2021    | 4/15/2021             |
|                     | Final date for receipt of TC Second Draft ballot - recirc | 7/29/2021 | 4/22/2021             |
|                     | Posting of Second Draft for CC Mtg               | 4/29/2021    |                       |
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|                     | **Post Second Draft Report for NITMAM Review**   | 8/5/2021     | 8/5/2021              |

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|----------------------|--------------------------------------------| |
|                      | Council Issuance Date for Standards with CAMs* | |
## 2022 ANNUAL REVISION CYCLE

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MEMORANDUM

TO: NFPA Technical Committee on Emergency Medical Services
FROM: Elena Carroll, Project Administrator
DATE: November 22, 2017
SUBJECT: NFPA 451 Draft Release TC Final Ballot

The Final Results of the NFPA 451 Draft Release Letter Ballot are as follows:

33 Members Eligible to Vote
8 Not Returned (Bell, Deardorff, Horton, MacKinnon, Jr., McGee, Robinson, Ungar, Ziegler)
24 Affirmative on All
0 Negatives
1 Abstention (McGinnis)

An affirmative vote of at least a simple majority of the total membership eligible to vote is required. This is the calculation for simple majority:

\[
[33 \text{ eligible} - 8 \text{ not returned} = 25 \div 2 = 12.5 \ (13)]
\]

Reasons for negative votes, etc. from alternate members are not included unless the ballot from the principal member was not received.
Technical Committee on Emergency Medical Systems
Letter Ballot to Release the Draft for NFPA 451
Guide for Community Health Care Programs

Please record me as voting:

______ AFFIRMATIVE   ______ NEGATIVE*   ______ X  ABSTAINING*

EXPLANATION OF VOTE - Please type or print your comments:
*An explanation must accompany a negative or abstaining vote.
I have been replaced in this activity, by NASEMSO, by James DeTienne but apparently the NFPA
cadence on such replacements does not jibe with our Association’s. I have not, therefore been able to
review the document with an eye toward voting responsibly on it.

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Kevin K. McGinnis
Signature

Kevin K. McGinnis______________________________
Name (Please Print)

11/21/17 ______________________________
Date

Please return your ballots not later than Tuesday, November 21, 2017.

RETURN TO:
Elena Carroll, Project Administrator
NFPA
1 Batterymarch Park, Quincy, MA 02169-7471
carroll@nfpa.org or FAX: (617-984-7110)
**NFPA 451 Custom Schedule**

*Public Input Closing Dates may vary according to standards and schedules for Revision Cycles may change. Please check the NFPA Website for the most up-to-date information on Public Input Closing Dates and schedules at www.nfpa.org/document # (i.e. www.nfpa.org/101) and click on Next Edition tab.*

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NFPA 451 Guide for Community Health Care Programs

Chapter 1 Administration

1.1 Scope.
The scope of this guide is to provide direction for planning, preparing, implementing, and evaluating community health care programs to agencies supporting the emergency medical services (EMS) mission in an effort to meet the changing needs of the communities they serve.

1.2 Purpose.
The purpose of this document is to provide a framework for the design and evaluation of comprehensive community health care programs based in local EMS systems that may include disparate elements of government and/or various disciplines of the private sector. The foundation of this document is based on multiple references, including NHTSA's publication, *Emergency Medical Services: Agenda for the Future*.

Chapter 2 Referenced Publications

2.1 General.
The documents or portions thereof listed in this chapter are referenced within this guide and should be considered part of the recommendations of this document.

2.2 NFPA Publications.
National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


2.3 Other Publications.

2.3.1 FEMA Publications.


National Fire Incident Reporting System (NFIRS), data from 2011.

2.3.2 NEMSIS Publications.

National Emergency Medical Services Information System, P.O. Box 581289, Salt Lake City, UT 84158-1289.

NEMSIS National Requisite Elements, data subsets from 2014.

2.3.3 NHTSA Publications.


2.3.4 NIH Publications.

National Institutes of Health, 9000 Rockville Pike, Bethesda, MD 20892.


2.3.5 U.S. Government Publications.


“Community Paramedicine: Evaluation Tool,” U.S. Department of Health and Human Services (DHHS) and Health Resources and Services Administration (HRSA), March 2012.


2.3.6 Other Publications.
Chapter 3 Definitions

3.1 General.

The definitions contained in this chapter apply to the terms used in this guide. Where terms are not defined in this chapter or within another chapter, they should be defined using their ordinarily accepted meanings within the context in which they are used. Merriam-Webster's Collegiate Dictionary, 11th edition, is the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved.

Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ).

An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Guide.

A document that is advisory or informative in nature and that contains only nonmandatory provisions. A guide may contain mandatory statements such as when a guide can be used, but the document as a whole is not suitable for adoption into law.

3.2.4 Should.

Indicates a recommendation or that which is advised but not required.
3.2.5 Standard.
An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.
3.3.1 Address.
A number or other code and the street name identifying a location.

3.3.2 Alarm.
A signal or message from a person or device indicating the existence of an emergency or other situation that requires immediate action.

3.3.3 Ambulance.
A vehicle designed, equipped, and operated by approved personnel trained in the treatment of the sick or injured that responds to urgent, unscheduled requests for aid and/or transport of sick or injured persons.

3.3.4 Ambulance Service.
An organization that utilizes approved personnel trained in the treatment and transportation (to an appropriate medical facility) of the sick or injured.

3.3.5 American College of Emergency Physicians (ACEP).
A national organization of emergency medical physicians.

3.3.6 Arrival.
The point at which a vehicle is stopped at the scene of a response destination or address.

3.3.7 Arrived at Destination.
The time that a responding unit arrived at the hospital or transfer point.

3.3.8 Automated Vehicle Locator (AVL).
A computerized mapping system used to track the location of vehicles.

3.3.9 Available for Service.
The time a unit is available for response.

3.3.10 Bloodborne Pathogens.
Microorganisms that are present in human blood and can cause diseases in humans.

3.3.11 Call.
A request for assistance to which equipment and personnel are deployed.

3.3.12 Call for Help.
The time that a third party or a patient first attempts to contact outside assistance.

3.3.13 Call Intake.
The procedure for answering the phone or other device that is used to receive a signal or message from a person or device indicating the need for medical assistance, learning the nature of the emergency, and verifying the address of the emergency.

3.3.14 Call Processing.
The interval from call intake by the unit-dispatching agency to the time of unit notification, including answering the phone (alarm), gathering vital information, and initiating a response by dispatching the appropriate unit(s).

3.3.15 Chain of Survival.
A metaphor to communicate the interdependence of a community's emergency response to cardiac arrest.

3.3.16 Compliance.
Adherence or conformance to laws, regulations, and standards.

3.3.17 Cross-Trained/Dual Role (CT/DR).
An emergency service that allows personnel trained in two service functions, such as fire suppression and emergency medical care, to function in either role.

3.3.18 Defibrillation.
The delivery of an electrical shock to the heart intended to reverse abnormal electrical activity.

3.3.19 Defibrillator.

3.3.19.1 Automated External Defibrillator (AED).
A device that administers an electric shock through the chest wall to the heart using built-in computers to assess the patient's heart rhythm and defibrillate as needed.

3.3.19.2 Manual Defibrillator.
A device requiring operation by trained medical personnel that delivers an electric shock through the chest wall to the heart.

3.3.20 Deployment.
The procedures by which resources are distributed throughout the service area.

3.3.21 Dispatch.
To send out emergency response resources promptly to an address or incident location for a specific purpose.

3.3.21.1 Computer-Aided Dispatch (CAD).
A dispatching method or process in which a computer and its associated terminal(s) are used to provide relative dispatch data to the concerned telecommunicator.

3.3.21.2 Emergency Medical Dispatch.
The receipt and management of requests for emergency medical assistance in the emergency medical services (EMS) system.
3.3.22 Dispatch Time.
A discrete time stamp that represents unit notification.

3.3.23 Documentation.
The process of gathering, classifying, and storing information.

3.3.24 Emergency.
A condition or situation in which a prudent layperson perceives a need for immediate response.

3.3.25 Emergency Medical Dispatcher (EMD).
Emergency medical services (EMS) personnel specifically trained and certified in interviewing techniques, pre-arrival instructions, and call prioritization.

3.3.26 Emergency Medical Services (EMS).
Providing patient services that might include the provision of assessment; treatment such as first aid, CPR, basic life support (BLS), and/or advanced life support (ALS); and other prehospital procedures, including ambulance transportation of patients.

3.3.27 Emergency Medical Services for Children (EMS-C).
A national initiative to reduce child and youth disability and death from severe illness or injury.

3.3.28 Emergency Medical Technician (EMT).
A term for any prehospital provider trained and certified at the EMT-Basic level or higher.

3.3.28.1 Emergency Medical Technician — Basic (EMT-B).
A prehospital basic life support (BLS) provider trained according to the National Highway Traffic Safety Administration (NHTSA) National Standard Curriculum.

3.3.28.2 Emergency Medical Technician — Intermediate (EMT-I).
A prehospital provider trained according to the National Highway Traffic Safety Administration (NHTSA) National Standard Curriculum to intermediate levels.

3.3.28.3 Emergency Medical Technician — Paramedic (EMT-P).
A prehospital provider trained according to National Highway Traffic Safety Administration (NHTSA) National Standard Curriculum to advanced levels.

3.3.29 Emergency Operations.
Activities of emergency responders relating to rescue, fire suppression, emergency medical care, and special operations.

3.3.30 Employee Assistance Program (EAP).
An EAP is an employer-sponsored service designed for personal or family problems, including mental health, substance abuse, various addictions, marital problems, parenting problems, emotional problems, or financial or legal concerns.

3.3.31 Employee Illness and Injury.
A work-related illness or injury requiring evaluation or medical follow-up.

3.3.32 Employee Turnover.
Termination of employment with the organization for any reason.

3.3.33 Fire Suppression.
The activities involved in controlling and extinguishing fires. [1500, 2018]

3.3.34 First Intervention Time.
The time that the first emergency medical services (EMS) skill intercession (e.g., starting an IV, defibrillation, CPR, or extrication) is begun.

3.3.35 First PSAP Call Time.
The time the telephone (or other notification device or mechanism) activates in the first public safety answering point (or other designated entity).

3.3.36 First Responder (EMS).
Functional provision of initial assessment (i.e., airway, breathing, and circulatory systems) and basic first-aid intervention, including CPR and automatic external defibrillator (AED) capability. [1710, 2020]

3.3.37 Governance.
All related federal, provincial, state, and local laws, regulations, administrative requirements, and policies.

3.3.38 GSA KKK Specifications.
A set of federal specifications issued by the General Services Administration (GSA) relating to purchasing requirements for ambulance design and manufacture.

3.3.39 Hazard.
A source of possible injury or damage to health. [79, 2018]

3.3.40 Hazardous Material.
A substance that presents an unusual danger to persons due to toxicity, chemical reactivity, decomposition, corrosiveness, explosion or detonation, etiological hazards, or similar properties.

3.3.41 Health Care Financing Administration (HCFA).
The former name of the Centers for Medicare and Medicaid Services (CMS).

3.3.42 Health Care Models.

3.3.42.1 Fee-for-Service (FFS) Models.
A model that financially rewards providers based on the volume of services provided.

3.3.42.2 Value-Based Models.
A model that financially rewards providers based on the value of the services they provide.

3.3.43 Health Maintenance Organization (HMO).
An organized system of health care that provides or arranges for a range of basic and supplemental health care services to a voluntarily enrolled group of persons under a prepayment plan.

3.3.44 Incident Location.
The address or other identifiable area of an event.

3.3.45  **Incident Management System.**

A system that defines the roles and responsibilities to be assumed by responders and the standard operating procedures to be used in the management and direction of emergency incidents and other functions. [1561, 2014]

3.3.46  **Incident or Onset Time.**

The time the incident occurred or the time that the symptoms developed.

3.3.47  **In-Service Utilization Ratio.**

An efficiency ratio that divides the cumulative unit-elapsed intervals by the total time that a unit is on duty.

3.3.48  **Interval.**

3.3.48.1  **Fractile Response Interval.**

A method of describing response intervals that uses frequency distribution as its basis for reporting.

3.3.48.2  **Turnout Interval.**

The time from when units acknowledge notification of the emergency to the beginning point of response time.

3.3.49*  **Interview Ends.**

The time that the public safety answering point (PSAP) telecommunicator completes the interview with the caller.

3.3.50  **Lead Agency.**

An organization assigned to organize the interagency oversight of the day-to-day conduct of policy related to a particular operation.

3.3.51  **Life Support.**

3.3.51.1  **Advanced Cardiac Life Support (ACLS).**

The American Heart Association’s nationally recognized curriculum to teach advanced methods of treatment for cardiac, stroke, and other emergencies.

3.3.51.2  **Advanced Life Support (ALS).**

Emergency medical treatment beyond basic life support level as defined by the medical authority having jurisdiction. [1500, 2018]

3.3.51.3  **Basic Life Support (BLS).**

Emergency medical treatment at a level as defined by the medical authority having jurisdiction. [1500, 2018]

3.3.52  **Management.**

3.3.52.1  **Critical Incident Stress Management (CISM).**

A program designed to reduce acute and chronic effects of stress related to job functions.

3.3.52.2  **Total Quality Management (TQM).**
A management system fostering continuously improving performance at every level of function and focusing on customer satisfaction.

3.3.53 Medical Direction.

The ordering of treatment, either through real-time communication or predetermined written protocols, by the appropriate medical command authority to approved clinical practitioners.

3.3.53.1 Off-Line (Indirect) Medical Direction.

The medical direction that consists of predetermined standing orders, training, protocol development, and supervision that are authorized by the medical director.

3.3.53.2 On-Line (Direct) Medical Direction.

The medical direction provided to out-of-hospital providers by the medical director or designee, generally in an emergency situation, either on-scene or by real-time communication.

3.3.54 Medical Director.

A physician trained in emergency medicine, designated as a medical director for the local emergency medical services (EMS) agency.

3.3.55 Medical Oversight.

The supervision, review, and administration of the medical aspects of an emergency medical services (EMS) system or agency and its providers.

3.3.56 Mobile Integrated Healthcare (MIH).

The provision of health care using patient-centered, mobile resources in the out-of-hospital environment, including, but not limited to, services such as providing telephone advice to 911 callers instead of resource dispatch; providing community paramedicine care, chronic disease management, preventive care, or post-discharge follow-up visits; or transport or referral to a broad spectrum of appropriate care not limited to hospital emergency departments.

3.3.57 Multiple Casualty.

Injury or death of more than one individual in an incident.

3.3.58 Mutual Aid.

Reciprocal assistance by emergency services under a prearranged plan. [402, 2019]

3.3.59 National Association of EMS Physicians (NAEMSP).

A national organization of emergency medical physicians and other professionals.

3.3.60 National EMS Information Systems (NEMSIS).

The national repository that will be used to potentially store emergency medical services (EMS) data from every state in the nation.

3.3.61 National Highway Traffic Safety Administration (NHTSA).

The agency under the United States Department of Transportation that is responsible for preventing motor vehicle injuries and deaths and provides national guidance on emergency medical services and systems.

3.3.62 National Institutes of Health (NIH).
An agency of the Public Health Service of the Department of Health and Human Services, responsible for promoting the nation's health and providing medical research.

3.3.63* **Non-Traditional Providers.**

Providers that may or may not be licensed/certified but who provide services necessary, such as social and health education, to meet patients’ needs.

3.3.64 **Outcome.**

The result, effects, or consequences of an emergency system encounter on the health status of the patient.

3.3.65 **Patient Contact.**

The time that responding personnel first arrived at the patient’s side.

3.3.66 **Phone “Off-Hook” (answered in first PSAP).**

The time that the telephone is answered in the first public safety answering point (PSAP) center.

3.3.67 **Protocol.**

Defines the prehospital care management of specific patient problems.

3.3.68 **Public Safety Answering Point (PSAP).**

A facility in which 911 or other emergency calls are answered, either directly or through rerouting.

3.3.69 **Quality Assurance (QA).**

The activities undertaken to establish confidence that the products or services available maintain the standard of excellence set for those products or services.

3.3.70 **Quality Improvement (QI).**

The activities undertaken to continuously examine and improve the products and services.

3.3.71 **Response.**

The deployment of an emergency service resource to an incident. [901, 2016]

3.3.72 **Response Resources Are Identified.**

The time that the public safety answering point (PSAP) telecommunicator, through computer-aided dispatch or other means, identifies the appropriate resources to send to the scene of the emergency.

3.3.73 **Secondary Dispatch Phone “Off-Hook” Answered (if appropriate).**

The time that the second public safety answering point (PSAP) or second dispatcher answers the phone, begins the interview, collects caller data, and begins pre-arrival instructions.

3.3.74 **Secondary Dispatch Phone Rings (if appropriate).**

The time the telephone begins to ring in the second public safety answering point (or the call screener).

3.3.75 **Staffing.**

The number and level of training of personnel deployed on an emergency call.
3.3.76 Standard Operating Procedure.
A written organizational directive that establishes or prescribes specific operational or
administrative methods to be followed routinely for the performance of designated operations
or actions. [1521, 2015]

3.3.77 Standing Orders.
A direction or instruction for delivering patient care without on-line medical oversight backed
by authority of the system medical director.

3.3.78 System.

3.3.78.1 EMS System.
A comprehensive, coordinated arrangement of resources and functions that are organized to
respond in a timely, staged manner to medical emergencies regardless of their cause.

3.3.78.2 Geographic Information System (GIS).
A system of computer software, hardware, data, and personnel to describe information tied
to a spatial location.

3.3.79 Telecommunicator.
The individual tasked by a public safety answering point (PSAP) agency or communications
center as the first of the first responders whose primary responsibility is to receive, process,
transmit, and/or dispatch emergency and nonemergency calls for law enforcement, fire,
emergency medical, and other public safety or public health services via telephone, radio, and
other communication devices.

3.3.80 Time of Discovery of Event.
The time that a third party or the patient becomes aware of the need for assistance.

3.3.81 Time of Result of First Intervention.
The time that the responder first identifies results of the first intervention (e.g., when
extrication was completed, when return of spontaneous circulation occurred).

3.3.82 Transfer of Care.
The time that responsibility for treatment is transferred from a prehospital provider to another
— when the hospital personnel physically take over care of a patient.

3.3.83 Turnout Activation.
Personnel preparation, boarding the vehicle, starting the vehicle, placing the vehicle in gear,
and moving the vehicle toward the emergency scene.

3.3.84 Unit.
A staffed and equipped emergency response vehicle.

3.3.85 Unit Acknowledgment.
The time that the response unit(s) acknowledges that they have received the notification.

3.3.86 Unit Arrived on Scene.
The time that the vehicle comes to a complete stop at the scene.

3.3.87 Unit en Route.
Chapter 4 System Governance

4.1 General.

This chapter outlines the core elements of an effective process for identifying, developing, and implementing community health care system governance. Governance ensures that community health care system components and oversight are clearly articulated and defined. Appropriate mechanisms should be instituted to ensure participation of system stakeholders in developing policies and regulations related to all community health care programs.

4.2 Governance.

In a similar fashion to other public safety and public health services, components of a community health care program may be regulated at the state or provincial level by the applicable AHJ. Entities seeking to create community health care programs should assess existing governance.

4.2.1

Community health care programs intending on using EMS and/or non-traditional providers for support should assess existing governance for ways to provide such a program with minimal changes to existing EMS and/or non-traditional provider operations.

4.2.2

In the absence of statutory oversight, community health care programs intending on engaging EMS and/or non-traditional providers should work with advocacy groups, labor unions, insurance companies, and other stakeholder groups to start the legislative process.

4.2.2.1

Health care stakeholders attempting to legislate community health care programs and licensure should engage other health care providers and their associations, as well as labor unions, in advance of contacting other stakeholders or legislators. It is possible that legislation may be denied without the support of these individuals and groups.

4.2.2.2

Health care stakeholders pursuing legislation to create community health care programs should consider mechanisms for receiving compensation from payers.

4.2.3

The AHJ should determine the qualifications of the providers supporting the program.

4.2.3.1

Programs supported by EMS and/or other health care providers may require licensing/certification as determined by the AHJ or by other regulations.
4.2.3.2
Programs supported by non-traditional providers may not require licensing/certification but may necessitate limited qualifications determined by the AHJ.

4.2.4
The AHJ should create a system that allows for the ability to create programs that meet the local need(s).

4.2.5
The AHJ should develop documentation validating the need for improved services for the populations served, including, but not limited to, the local need(s), the level of service to be provided, a plan for the operations of the program, and the mechanism to be used for evaluating quality.

4.2.6
The AHJ should identify the minimum roles, responsibilities, and education necessary to support a community health care program.

4.3 Local Governance.
Program administration should be responsible for community health care program oversight and should be empowered to implement plans.

4.3.1* Planning.
Program administration should design its community health care program, create a plan for service and operations, and ensure that the program design is based on a systematic planning process.

4.3.1.1 Service Levels.
As part of the planning process, program administration should identify service types and levels and develop performance guidelines and measures for each service level in the community.

4.3.1.1.1
Through a comprehensive system assessment, program administration should determine service levels, guidelines, and performance measures by considering factors consistent with local resources and needs, such as health care system capacity, reducing health care costs, community expectations, measurable patient outcomes, resource availability, and financial capability.

4.3.1.1.2
Program administration should use its data to identify specific needs that could be addressed with a community health care program.

4.3.1.1.3
Representatives of community health care user groups and EMS system stakeholders should be involved in designing expectations and developing policy.
4.3.1.4
Program administration should identify appropriate participants for program design and policy development, which can include, but are not limited to, the following:

(1) Consumers or users of community health care and/or EMS services
(2) Health care finance experts
(3) Health care providers
(4) Hospitals
(5) Public health agencies
(6) Nursing homes
(7) Special populations
(8) Educators
(9) Governmental officials
(10) Payers

4.3.1.5
Program administration should have the authority to convene subject matter expertise to assist in designing and implementing policies, procedures, and operations.

4.3.1.2 Roles and Responsibilities.
Program administration should establish and articulate roles and responsibilities for providers in the community health care program through a comprehensive system assessment.

4.3.1.3 Management Structure.

4.3.1.3.1
Program administration should have a clear management structure and clear lines of accountability. Although this structure is likely already in place, the existing management structure should be re-evaluated annually to determine if appropriate supervisory resources are available.

4.3.1.3.2
Each position within the program should be defined according to its role, responsibilities, and reporting relationships.

4.3.2 Evaluation.

4.3.2.1
Program administration should ensure that mechanisms are in place to continually evaluate and re-evaluate the components of the community health care program.

4.3.2.2
Program administration should develop a process to measure service components of the program, update and modify the requirements for those components, and develop policy and education that will enhance the components.

4.4 Patient Health Information Protection.

4.4.1
Because the community health care program will likely be required to coordinate with other health care providers, health care facilities, and/or social-oriented programs and organizations, program administration should ensure that appropriate policies and procedures are in place to protect patient and quality assurance records.

4.4.2

It is likely that a community health care program will receive and transmit referrals for service via internal as well as external sources, therefore program administration should have policies and procedures detailing how these referrals will be received, processed, and distributed.

4.5 Provider Health and Wellness.

Program administration should have policies in place to address provider health and wellness, including mental health and wellness.

4.6 Personnel Training Requirements.

4.6.1

Program administration should have policies in place that identify personnel to become community health care providers based on system needs, experience, interests, and their capabilities.

4.6.2

Program administration should have policies in place that prohibit the use of personnel who have not received the minimum training required by the organization and the state or province.

4.7 Plan Submittal.

Program administration should submit the comprehensive program governance plan to the responsible state or provincial agency as required by law, policy, or regulation.

Chapter 5 System and Community Needs Assessment

5.1 General.

This chapter outlines a systematic approach for evaluating and analyzing a jurisdiction's existing emergency medical services (EMS) system as a means of adding a community health care program.

5.2 Community Analysis.

5.2.1 System Planning.

While an EMS system is unique to the jurisdiction, a collaborative approach should be established for assessing local needs and meeting those needs with specific service elements.

5.2.2 Evaluation of Existing System.

For existing EMS systems, community needs and system components should be evaluated with specific attention paid to response data, patient care records, and other information, including, but not limited to, the following:

(1) Local demographics and their implications on service requirements for a range of constituency groups
(2) Age-related injuries and illnesses (e.g., pediatric, adolescent, or geriatric)
(3) Socioeconomic structure and associated injuries and illnesses, both acute and chronic
(e.g., poverty, violent crime rates, insufficient prenatal care, or neglect)
(4) Gender-related injuries and illnesses, both acute and chronic (e.g., disease rates and
treatment plans)
(5) Language, cultural diversity, and ethno-specific disease processes

5.3 Historical Patient Data, Call History, and Demand.
AHJs should identify potential prevention and management targets by assessing their
historical patient data and call history and analyzing call types and/or patients that place a
high demand on the system. This information will be helpful in ascertaining the initial target
population to be managed through a community health care program.

5.3.1 Distribution of Demand.

5.3.1.1
A geographic information system (GIS) may assist in identifying the distribution of calls in a
community.

5.3.1.2
The distribution of demand should also be assessed by periods of the day, as well as months
and seasons of the year, to determine the existence of any temporal trends.

5.3.2 Local Industry.
AHJs should consider assessing areas of commerce and industry that may have a high
occurrence of injuries and illnesses that have placed a demand on EMS resources (e.g.,
entertainment districts, exposure to hazardous materials, injuries from machinery).

5.3.3* Social Service and Health Care Facilities.
AHJs should consider areas that offer social services, such as shelters (faith-based, municipal,
or otherwise) that may place a demand on EMS resources.

5.3.4 Unique Local Geographical or Environmental Conditions and Demand.
AHJs should consider possible limitations in accessibility (e.g., special hazards, geographic
topography, land mass separations, waterway and marine boundaries) to the target
population that could affect service delivery.

5.3.5 Public Health.
AHJs should coordinate with the local public health department as a possible resource for
assessing the population for areas of concern that create a demand on the EMS system and
identifying possible gaps in access to health care and prevention.

5.3.6 Other Local Data Resources (as appropriate).
AHJs should identify and assess other local data sources that can provide them with insight
regarding demand on the EMS system, gaps in access to health care and prevention services,
and/or other injury and illness risks in the jurisdiction.

5.4 Comparable Organizations/Professionals.

5.4.1 Political/Regulatory Organizations.
AHJs should assess the political and regulatory environments to identify organizations
performing identical or similar work.

5.4.2 Other Health Care Professions or Professionals.
It is possible that other organizations or health care providers are already performing identical or similar work in the jurisdiction, and are doing so through legislative authority, past practice, or both. These organizations or health care workers may also have legislative influence that could delay or halt implementation of the AHJ’s program. AHJs should assess the existing health care environment for these groups and build relationships to help with implementation.

5.4.3 Legal Analysis.

5.4.3.1
AHJs should perform a legal analysis to ascertain if the proposed program is supported by state, provincial, or federal laws, rules, and regulations.

5.4.3.2
AHJs should consider connecting with resources within the confines of the law that are external to the system.

5.4.4* Stakeholder Engagement.

Once a plan for a community health care program has been created, AHJs should invite internal and external stakeholders to introduce the proposed plan and should be open to receiving their input and fostering partnerships for service.

5.4.5 Lack of Regulations.

AHJs that are operating in states or provinces that lack laws, rules, and regulations that allow EMS providers to perform community health care work should partner with EMS, public health, and public safety advocacy organizations and labor associations to lobby for change.

5.5 Determination of Prevention and Management Targets.

AHJs should identify vulnerable population groups or specific demand types that would benefit from prevention and management programs (e.g., age-related primary illness and injury prevention programs, chronic illness management programs).

5.5.1 Collaborative Process.

AHJs should develop a collaborative process with public health and the local health care community to identify what vulnerable population groups or specific demand types would benefit from prevention and management programs.

5.5.2* Selection of Initial Target(s).

Once populations of interest have been identified, the target groups should be ranked from highest to lowest based on the demand these targets place on the existing system. It should be noted that the initial target population may have mixed needs.

5.5.3 Prevention Efforts.

Illness and injury prevention and education efforts should be linked to community needs and resource availability.

5.6 Establish Program Goals and Objectives.

Program goals and objectives should determine service levels as a function of community needs identified through AHJ evaluation/analysis and community needs assessments.

5.7 Analysis of Existing System Resources.

AHJs should analyze the existing internal resources available to serve the needs of the initial target(s), including financial resources, equipment and facilities, providers, and patients in the system.
5.7.1 Community-Wide Health Care Resources.
The program analysis should consider the resources and accessibility of all health care resources available to the AHJs.

5.7.2 Required System Resources.
AHJs should assess the need for additional resources, including capital purchases, personnel, and partnerships, which may be necessary for operational success but are not currently part of the system or the system’s inventory.

5.7.3 Cost/Benefit.
The program should factor both the costs and benefits of service delivery options.

5.8 Program Design.
The program design should be dynamic and based on continual evaluation of the program according to defined indicators and performance measures.

5.8.1 Service Levels.
Service levels should be linked to community needs and expectations and be within the scope of practice for practitioners to provide said services.

5.8.2 Providers.
The AHJ should identify the roles, responsibilities, staffing requirements, and training levels of providers required for the community health care program to function.

5.8.3* Provider Resources.
EMS systems are composed of the personnel, vehicles, equipment, and facilities used to deliver emergency and nonemergency care to individuals outside a hospital. Key services of an EMS system include public access through a coordinated communications system, public safety, public health, EMS response, and patient transportation.

5.8.4* Service Types and Descriptions.
Each type of service within the program should be clearly defined and fully described in the program design.

5.8.4.1 Role Definition.
Based on the needs and wants of the community, several different types and levels of providers may be required. Roles and responsibilities for each type and level of provider should be identified in order to ensure that the desired level of care is delivered continually and effectively.

5.8.4.2 Community Health Care Provider.
The role of each community health care provider should be clearly defined by the AHJ.

5.8.4.3 Participant.
The program should identify the roles and responsibilities of each participant needed for the program to function.

5.8.4.4 Structure.
Providers may be supplied by a single organization or through the combined efforts of multiple organizations.

5.8.4.5* Telecommunicators.
Telecommunicators may be the initial point of contact for patients who may benefit from the
program. In addition to providing verification of the incident address, notification of the closest
provider, and pre-arrival instructions, telecommunicators may be required to perform
additional tasks.

5.9 Analysis of Program Barriers.

A community health care program is considered to be “in addition to” existing service
provision, therefore it cannot be accomplished by simply adding additional personnel and
capital purchases. EMS systems seeking to add such a program should assess the external
health care environment and identify regulatory barriers (e.g., laws, rules, and regulations
prohibiting EMS from performing work outside of the emergency setting) and operational
barriers (e.g., proposed system design that encroaches on other health care professionals’
work).

5.10 Provider Support.

The program should address and consider methods to support individual providers.

5.10.1 Provider Training.

Providers should receive training sufficient to meet local needs and access to support
programs in order to ensure their continued participation.

5.10.2 Provider Safety.

The following should be in place to reduce the amount and severity of injuries incurred by
providers:

1. Equipment safety programs
2. Training programs
3. Accountability systems
4. Information applicable to location and physical and/or environmental conditions,
   including neighborhood safety programs

5.10.3 Occupational Exposure to Atypically Stressful Events.

Programs designed to address the effects of exposure to atypically stressful events should be
established.

5.10.4 Wellness.

Health and wellness programs should be in place to monitor and support the overall wellness
of providers.

5.11 Finances.

5.11.1 Comprehensive Financial Analysis.

The financial status of the community and its capacity to support the program should be
evaluated and should include the financial status of all the entities within the program, based
on generally accepted accounting principles.

5.11.2 Solvency.

Each participating program entity should be financially solvent by maintaining the financial
resources sufficient to allow uninterrupted delivery of essential services.

5.11.3 Funding Stability.

Funding for each entity may be through a variety of sources, such as municipal budget/ taxes,
fee-for-services (FFS), subscription programs, grants, partnerships, or private donations.
5.11.4  **Budget.**
Each entity should develop a financial plan that reflects sound analysis and planning of short- and long-term operating need.

5.12  **Oversight.**

5.12.1  **Medical Oversight.**
Based on the community needs analysis, the program may require an additional medical director whose specialty is closely related to the needs of the target population.

5.12.2  **Program Administrative Oversight.**

5.12.2.1  **Dual-Role EMS Provider Program.**
The response and patient transportation system uses cross-trained/dual-role (CT/DR) fire fighters and will use the same for the provision of service.

5.12.2.2  **Single-Role EMS Provider Program.**
The response and patient transportation system uses single-role personnel who are not cross-trained as fire suppression personnel and will use the same for the provision of service.

5.12.3  **Participant Roles.**
The roles and responsibilities for each provider should be organized in a manner that ensures that every component contributes to the effectiveness of the program as a whole, without conflicts in roles and responsibilities.

5.13  **Continual Risk Assessment and Planning.**
The program should have a comprehensive process in place, articulated in a risk assessment plan and overall program design that provides continual analysis and mitigation of risk. The primary risk management processes include risk assessment (internal and external), risk elimination, risk avoidance and prevention, risk control, and loss control.

5.13.1*  **Internal Risks.**
Internal liabilities place individual entities or the program at risk, including, but not limited to, the following examples:

(1) Workplace accidents and violence  
(2) Financial improprieties  
(3) Discrimination  
(4) Hostile workplace environment  
(5) Harassment

5.13.2*  **External-Community Risks.**
External system liabilities place community members at risk, including, but not limited to, the following examples:

(1) Provider negligence  
(2) Inappropriate vehicle operation  
(3) Lack of compliance with training standards  
(4) Improper maintenance  
(5) Inadequate quality assurance (QA) processes

5.13.3  **Risk Control.**
Measures should be taken to guard against and protect personnel from potential exposures to risks.
5.13.4 Loss Control.
Measures to limit losses should be taken through processes such as early-return-to-work programs.

5.14 Program Design Analysis.

The program should be examined in detail over time using indicators set forth in existing industry standards, guidelines, or specific performance measures.

5.14.2 Data Sharing.
Program data should be shared, as legally appropriate, among agencies and medical facilities in the community.

5.15 Performance Measures as Program Design Features.

5.15.1 Performance Monitoring.

5.15.1.1 Program performance measures are designed to function as a framework for a new program design or as a tool through which a community may monitor the program. Several indicators serve as program design data collection points. Through the continuous measurement of a program's structure, processes, and outcomes using designated indicators and performance measures, program planners may identify areas of the program design that require modification or enhancement.

5.15.1.2 If subsequent data show that the original goals and objectives of the program are not being met, modification of the program design should be made. Data collection and evaluation is required to assess the program modification and ensure that the program continues to be effective.

5.15.2 Essential Program Analysis Components.
The nature of time presents a classic problem in semantics because the same term can have different meanings to different people. Additionally, traditional and unique EMS system designs have created a language of time incomparability. Consider creating a time template to differentiate clearly between discrete points of time versus intervals of time. The time template should represent the program's typical core points in time and common operational situations. It is not expected that every time stamp be reported. Depending on the program's complexity and level of technology, it is understood that a function interval may be long or instantaneous. However, when reporting program performance, these consensus terms should be used.

5.15.2.1 Discrete Time Stamp.
The term time stamp refers to the historical tradition in EMS during which call events were recorded by stamping a card that printed the hour and minute that was displayed at that moment on that clock. Today, times are often recorded automatically by computerized dispatch systems in hours, minutes, and seconds and are synchronized using the U.S. Naval Observatory's atomic clock. These time stamps define discrete moments at which certain events occur, recorded in hour:minute:second [hh:mm:ss] format. Discrete time stamps, collected in this way, allow the user to measure the interval between events. The system must have the ability to capture time stamps in a reliable, consistent, and accurate manner. Not all time stamps are available or collectible, while others are reported with varying degrees
of accuracy. Sharing time stamp data across system components and synchronizing time recording devices are critical to establishing an accurate and reliable measurement process.

5.15.2.2 Function Intervals.

An interval is the elapsed time between two discrete time stamps. Function intervals are the intervals between consecutive time stamps. The function interval describes task level activities. Function intervals allow analysis of each function that is taking place throughout the continuum of the event. Certain groups of consecutive functions describe processes.

5.15.2.3 Process Intervals.

A process interval is made up of multiple, consecutive function intervals. A process interval is used to describe the elapsed time required to complete the program’s objective. The process interval provides data for AHJs to evaluate program efficiency and efficacy.

5.15.2.4 Reporting Program Data.

When AHJs compare systems to benchmark performance, they must use consistent language and data to describe the function and process intervals. For example, the term response time is commonly used but not commonly defined, therefore caution must be exercised to ensure that the term describes the identical functions or processes. However, even when common definitions are used, response times may not be accurately compared. For example, some systems report “average” response times, which fail to adequately describe performance. Comparisons should therefore be based on “fractile” reporting, which, for example, may describe time performance with 90 percent reliability.

5.16 Program Expansion or Retraction.

After a time, it may be necessary or advantageous to expand or contract the program to appropriately meet the community’s changing needs or modify partnerships. As such, EMS systems that support a community health care program should have a plan for “scope and breadth review.” The plan for scope and breadth review should follow the same path described for initial program creation.

5.16.1 Program Assessment Cycle.

The program should employ an assessment cycle that includes the following components:

1. Data collection
2. Evaluation
3. Analysis
4. Proposing
5. Planning
6. Implementation

5.16.2 Current Conditions.

Program data should be used to identify current conditions and trends.

5.16.3 Changing Needs.

The data should consider the nature of a changing geography and infrastructure over time, population distribution and demographics, and the alteration of the transportation network.

5.16.4 Changing Political Boundaries.

The plan should include new annexations and the effect of such annexations on service provision or program financing.

5.16.5 Regional Changes.
Regional changes should be monitored, evaluated, and anticipated.

5.16.6 Changing Demographics.
The regular review should, at a minimum, re-evaluate the changing demographic trends in the system.

5.16.7 Short-Term Changes.
Individual events, such as concerts and sporting events or seasonal population shifts, may cause short-term demographic changes that require additional analysis and may require short-term program changes.

5.16.8 Long-Term Changes.
Long-term changes, such as an aging population, should be considered when re-evaluating the plan.

5.16.9 Changing Public Health Conditions.
The program should conduct external environmental scans to anticipate or identify new public health threats in order to prepare the program for response.

5.16.10 Unique Local Needs.
Unique features and hazards should be monitored when the program plan is updated.

5.16.11 Data Element/Collection/Analysis/Reporting.
Regular analysis of program component data should be conducted to determine dynamic needs.

5.16.12 Routine Re-Evaluation of Data.
Program performance measure data should be reviewed at least annually to evaluate the specific components within the program. Each component may need to be evaluated more often based on the original intent of the program and established goals.

5.16.13 Feedback Loop.
A feedback mechanism should be in place to ensure that proposed and implemented changes in the program result in the desired improvements and meet the goals and objectives identified by program planners.

5.17 Preparedness.
A community health care program should also be used as a means to enhance disaster preparedness and resilience in addition to its use as a tool to prevent illness and improve overall community health. By identifying and tracking vulnerable populations within a community, a program could better manage a catastrophic incident by prioritizing evacuation practices and staging resources.

5.17.1 Disasters.
The potential for disasters as a function of unique jurisdictional features, characteristics, and risks should be considered.

5.17.2 Resource Allotment.
Resources to manage target populations should be allocated appropriately within the program to manage victims who have been evacuated or sheltered in place.

5.17.3 Master Planning/Forecasting.
A master plan should be available that ensures the necessary resources are available to the program and will meet the needs of future requirements.

**5.17.4 Disaster/Catastrophe Planning.**
The program should ensure that a plan is available to manage overwhelming or catastrophic events, including coordinating activities between and among participating entities.

**5.18 Prevention.**

**5.18.1 Public Education and Injury/Illness Prevention.**
The program should include public education components designed to reduce injury and illness in the AHJ’s service area.

**5.18.2 Public Health.**
The AHJ should coordinate with public health programs to determine how its program can assist.

**5.18.3 Other Programs.**
The prevention and public education plan should include an analysis of the environment and an analysis of the need for special prevention programs.

**5.19 Quality.**
AHJs should have a system that evaluates how the program manages the needs of the target population, the provision of care, and its compliance with patient management plans.

**5.19.1 Patient Satisfaction Within the Program.**

**5.19.1.1**
If the program provides direct patient care, the AHJs should evaluate patient satisfaction.

**5.19.1.2**
Patient satisfaction assessments should be conducted by a third party to avoid the appearance of bias.

**Chapter 6 Financial Modeling**

**6.1 Introduction.**
Value-based models, shared risk contracting, and accountable care organizations (ACOs) are integral to financial modeling within the health care industry. An understanding of these concepts and application will be needed when developing a financial model for community paramedicine.

**6.2 Budgeting.**
The community health care program should have a preplanned budget that takes all costs and factors in its management into consideration, including other services provided by the managing AHJ and an understanding of how the program affects overall organizational operating budgets.

**6.2.1 Service Delivery Costs.**
Determining service delivery cost is necessary in order to examine possible alternative payment models.

**6.2.2 Dedicated/Enterprise Funds.**
Creating an enterprise fund is a formal way to fully account for the costs and revenue of a community health care program.

6.2.3* Tax Increment Financing (TIF) Funding.
Tax increment financing (TIF) is an available tool that allows the community health care program to promote economic development by earmarking property tax revenue from increases in assessed values within a designated TIF district (Dye and Merriman 2006).

6.2.4 Intergovernmental Transfer (IGT) Funding.

6.2.4.1* Variations of intergovernmental transfers (IGTs), which are transfers of funds from another government entity (e.g., county, city, or another state agency) to the state Medicaid agency, have been used to help cover the costs associated with traditional or enhanced EMS services, such as community health care programs. Understanding how these programs are structured, the applicable federal requirements, and the considerations and risks is important.

6.2.4.2 One variation of IGTs, the Ground Emergency Medical Transportation Services (GEMT) supplemental reimbursement program, is a Certified Public Expenditure (CPE)–based program that provides additional funding to eligible governmental entities that provide GEMT services to Medicaid beneficiaries (see 6.5.1 for more information on the GEMT program).

6.3 Economic Models.

6.3.1 The Value Concept.
Value in health care is dependent on the audience. Patients, providers, hospitals, elected officials, regulators, and medical directors may have different perspectives on what value means.

6.3.1.1* In today’s health care environment, hospitals may perceive keeping high-risk readmission patients out of the hospital as valuable because they are financially penalized for high readmission rates. The same is now true for physicians and home health and skilled nursing providers. Any of these providers may feel that readmission prevention programs are valuable.

6.3.1.2 Improved patient satisfaction scores through effective post–acute care transitions may be perceived as valuable because hospitals, physicians, and home health and skilled nursing providers are held financially accountable for these scores.

6.3.1.3 Payers typically view value through the expenditure lens. EMS agencies that can help reduce the cost of care for members of a specific payer group would be perceived as valuable. Collaborative development with these specific stakeholders is the best way for community health care programs to demonstrate their value to each group.

6.3.2 Pricing Models.
There are several common pricing models currently in place that can be used by community health care programs.

6.3.2.1 Patient Contact Fees.
Patient contact fees are fixed rates per patient contact for services.
6.3.2.2 Enrollment Fees.
Enrollment fees are fixed amounts for each patient enrolled in the program. There are no patient contact fees once the enrollment fee is paid, and the patient contacts required to achieve the desired outcome are a risk borne by the agency.

6.3.2.3 Population-Based Payments.
Population-based payments are fixed payments per member per month (PMPM) for all members of a defined population. For an insured group, this would be the amount paid to the agency for each member in the payer group.

6.3.2.4 Incentive-Based Payments.
Under this model, the agency would be paid an incentive based on achieving a desired outcome. For example, if the goal of the agency’s program is to reduce preventable emergency department visits by 10 percent in patients enrolled in the program, the agency would be eligible for an incentive payment once that goal is achieved.

6.3.2.5* Expenditure Avoidance.
This could be a combination of the shared-risk contracting and the incentive-based payment. Similar to participation in an ACO, the expenditure avoidance model pays the agency a percentage of the expenditure reduction, either per enrolled patient or across the population of enrolled patients.

6.4* Payment Regulation.

6.4.1 Medicaid Legislation and Regulation.
Currently, some states use Medicaid dollars to cover the cost of community health care services. Medicaid is generally a more flexible program because it is a state legislation–controlled entity.

6.4.2* Medicare Legislation and Regulation.
As of the writing of this guide, Medicare has only funded community health care programs in small trial batches.

6.5 Cost Reporting.

6.5.1* State Models for Reimbursement for Uncompensated Care.
A GEMT program is a CPE-based supplemental reimbursement program that provides additional funding to eligible governmental entities that provide GEMT services to Medicaid beneficiaries. GEMT service providers eligible to participate in this program will receive supplemental reimbursement payments by completing a CMS-approved cost report form annually. The supplemental reimbursement payment is based on claiming federal financial participation on CPEs that have already been incurred by the public provider. The supplemental reimbursement amount is determined by the methodology approved by CMS.

6.5.2* Developing Cost Reports.
To participate in GEMT reimbursement programs authorized by a state Medicaid office, each publicly owned or operated GEMT provider must submit the Centers for Medicare and Medicaid (CMS)–approved cost report to their state Medicaid office by the deadlines required by the state.

6.5.2.1*
Each GEMT provider should maintain fiscal and statistical records for the service period covered by the cost report.
6.5.2.2
Records should be accurate and sufficiently detailed to substantiate the cost report data.

6.5.2.3
Each GEMT provider should maintain fiscal and statistical records for the service period covered by the cost report.

6.5.2.4
Records should be accurate and sufficiently detailed to substantiate the cost report data.

6.5.2.5
Programs should retain necessary records for a minimum of three (3) years after the end of the quarter in which the provider submitted its cost reports to DHCS.

6.5.2.6
If an audit is in progress, all records relevant to the audit should be retained until the completion of the audit or the final resolution of all audit exceptions, deferrals, and/or disallowances.

Chapter 7 Medical Oversight

7.1 General.
Because the provision of community health care is a practice of medicine, the necessity and value of effective and engaged medical oversight cannot be overstated. Treatment modalities may include such things as medication administration, therefore the designated medical director must be an appropriately board-certified, licensed physician who understands how out-of-hospital medical care is delivered in the community and, ideally, has appropriate clinical oversight of the EMS system that is being utilized for the provision of nonemergency health care (e.g., online and off-line medical direction, evidence-based protocol development, clinical quality assurance and improvement, understanding of emergency operations, understanding of longitudinal health care objectives, field experience). There are documents available to assist those physicians who are involved in medical direction and oversight of out-of-hospital health care delivery systems.

7.2 Medical Authority.
The program should have a single medical authority (the medical director) or medical authority structure (with the medical director serving as its leader) in place that is responsible for patient care oversight and responsibility. Individual agencies in the system may have medical directors that provide agency-specific and/or program-specific oversight.

7.3 System Support of Medical Authority.

7.3.1
The EMS system seeking to establish a community health care program should ensure that the medical authority tasked with overseeing the program has an opportunity to provide input and direction in the initial planning, design, and implementation of the program.

7.3.2*
The system should ensure that the medical authority has the resources necessary to optimize obligation fulfillment.

7.4 Medical Authority Role.
7.4.1
The medical oversight physician for a community health care program typically also provides medical oversight for the fire/EMS system. Since every program is unique, however, medical authorities may be different physicians with subject matter expertise specific to the goals and objectives of their programs. In such instances, the physician medical director of the participating agency should ensure that medical care, whether emergency or nonemergency, provided by his or her crew members falls under the oversight of the single medical authority.

7.4.2
The role of the medical authority for the program should be clearly defined and should include the following responsibilities:

1. Recommending credentialing, re-credentialing, and de-credentialing of nonphysician community health care personnel to the appropriate credentialing agency
2. Establishing an advisory committee consisting of stakeholders to review community needs and the effectiveness, safety, and value of the community health care program
3. Providing direction and authorization for the development and revision of the program’s protocols; policies; standing orders; and procedures for all patient care activities, from enrollment into the program to scheduling of visits, dispatch of emergency/nonemergency resources (if necessary), and final disposition
4. Establishing criteria for providers to be trained and certified for community health care work, licensed (if applicable), and credentialed to function within the program
5. Establishing criteria for when a patient may unexpectedly meet emergency medical criteria requiring transport to a hospital or other medical facility
6. Ensuring that personnel who provide direct medical oversight to prehospital personnel (e.g., physicians, mid-level providers, nurses) are familiar with the out-of-hospital environment and capabilities of responders
7. Establishing the procedures or protocols under which online medical control is required
8. Providing direction and authorization for the education and testing of practitioners to ensure competency at providing extended and longitudinal nonemergency health care
9. Providing direction for, and participating in, an effective Quality Assurance (QA) and Continuous Quality Improvement (CQI) program
10. Ensuring patient-centered care
11. Establishing methods to coordinate applicable and appropriate stakeholders (e.g., medical home/primary care physicians, specialty care physicians, referring physicians, hospitals, pharmacists, nursing staff, home health, respiratory therapy, case managers, public health, legislators, government officials, payers)
12. Establishing criteria for enrollment of patients into the program, using input from the stakeholder advisory committee as a guide
13. Establishing criteria for equipment used in patient care (e.g., functional, effective, evidence-based)
14. Planning for certification of personnel and accreditation of the community health care program (as applicable by local or state requirements)

7.5 Medical Director Responsibilities.
7.5.1
The primary responsibilities of the program’s medical director should be ensuring quality patient care and overseeing all patient care activities, from access into the program to final disposition out of the program.

7.5.2
If the program medical director is different from the agency’s medical director, the physicians should work collaboratively to do the following:

1. Serve as patient advocates
2. Set and ensure compliance with patient care standards, including communication standards and medical protocols
3. Develop and implement the process for the provision of online medical oversight, if needed
4. Establish the appropriateness of initial qualifications of prehospital personnel involved in nontraditional, nonemergency patient care
5. Ensure maintenance of qualifications, education, training, and competency of prehospital personnel involved in patient care
6. Provide direction for QA and CQI, using outcomes to gauge successes or to highlight areas for additional training or intervention
7. Promote research and contributions to medical literature
8. Maintain liaison with stakeholders
9. Interact with local, regional, state, and federal authorities (as applicable) to ensure resources are optimized and all compliance and regulatory requirements are fulfilled
10. Plan and participate in regularly scheduled continuing education activities for the participating providers to help them maintain the highest levels of awareness, training, and education in medicine
11. Promote patient education to engage them as stakeholders in their own care
12. Maintain knowledge levels appropriate for a physician medical director through appropriate Continuing Medical Education (CME) activities
13. Actively participate in direct, on-scene medical care to bolster understanding of the program and the challenges inherent in the delivery of out-of-hospital care

7.6 Online and Off-Line (Direct and Indirect) Medical Direction.
Medical directors can provide direct and indirect (online and off-line) medical oversight.

7.6.1
During direct medical direction, the medical director (or designee) should provide voice, video, or other real-time communication to the practitioner.

7.6.2
Indirect medical oversight includes prospective and retrospective medical evaluation.

7.6.2.1
Prospective methods can include participating in the training, testing, and certification of providers; protocol development; operational policy and procedures development; and legislative activities.
7.6.2.2
Retrospective activities should include participation in a medical audit and review of care.

7.6.2.3
Various aspects of prospective and retrospective medical oversight can be handled by individuals or committees functioning under the medical director with representation from appropriate stakeholders, including medical and EMS personnel.

7.6.3
Standards should be established for the certification, training, and monitoring of other system physicians (if applicable).

7.7 Medical Director Qualifications.
To optimize medical oversight of community health care programs using prehospital fire and EMS personnel, physicians having medical oversight authority and a license to practice within the system’s boundaries should possess the following characteristics:

1. Familiarity with the design and operation of EMS care
2. Experience or training in longitudinal health care/chronic disease management
3. Experience or training in medical direction/oversight of prehospital personnel
4. An active practice of medicine in an emergency and/or hospital or office setting
5. Experience or training in the instruction of prehospital personnel
6. Experience or training in QA and CQI processes
7. Knowledge of laws and regulations pertaining to prehospital care providers
8. Knowledge of applicable local/state laws pertaining to the provision of community health care practices and principals
9. Knowledge of local medical resources and stakeholders key to the effective delivery of community health care programs
10. American Board of Medical Specialties (ABMS) certification in emergency medicine, EMS medicine, internal medicine, family practice, or any other applicable specialty required to meet the goals and objectives of the specified community health care program

Chapter 8 Quality Management/Quality Improvement

8.1 Quality Management Program.
A defined quality management program should be developed. The program should identify areas for improvement, evaluate system performance, prioritize development, establish system controls, monitor performance indicators, and re-evaluate system impact.

8.2 Performance Objectives.
A defined quality management program should establish performance objectives based on accepted industry standards and guidelines.

8.2.1
Patient care objectives should be developed systemwide based on community needs and expectations, desired patient outcomes, and local resources. Appropriate medical destinations should be incorporated as part of the patient care objectives. Compliance with established protocols should be monitored. Customer satisfaction and feedback should be incorporated into the system.

8.2.2

System evaluation should be integrated into the quality management program.

8.2.2.1

Performance measures should be established and sufficient, applicable data should be collected.

8.2.2.2

The system evaluation should measure both resources and availability for the following:

1. Staffing availability
2. Ancillary resources
3. Number of clients
4. Unit availability by type

8.2.2.3

Staffing and deployment objectives should be monitored and, based on the evaluation, appropriate for the system.

8.2.2.4

Standard operating procedures and guidelines should be established, periodically reviewed, and updated.

8.2.2.5

Training should be evaluated for continuity and content based on industry guidelines and desired system performance.

8.2.2.6

Staff turnover should be evaluated for causes and effects.

8.2.2.7

Equipment maintenance should be monitored and appropriate for the system.

8.2.2.8

System design and changes should be evaluated using a cost/benefit analysis.

8.2.2.9

The communications system should be evaluated based on program needs and industry performance guidelines.

8.2.2.10
Interagency relationships and agreements should be reviewed periodically for effectiveness and system needs.

8.2.3

The system should use uniform data element definitions and identify and capture appropriate data points. A uniform prehospital patient care record should be used throughout the EMS system. A method should be in place to capture and review data at the system, agency, and individual provider level.

8.2.3.1*

The system should use a uniform dataset.

8.2.3.2

The data should be available for inclusion in a national EMS data clearinghouse and be incorporated into local/region health information exchanges (HIEs) for bi-directional information flow.

8.3 Public Health Outcome Parameters.

Public health outcome parameters should be developed for each performance objective through the use of benchmarking, if possible.

8.3.1

Standardized outcome measures should be specified based on contemporary professional standards and development of these measures should be incorporated with, and complimentary to, local/region population health efforts.

8.3.2

U.S. Public Health Service outcome models, which include the measurement of the reduction of discomfort, disability, death, destitution, dissatisfaction, and disease, should be referenced.

8.3.3

A system should be in place to share information between system participants, including patient care facilities, and to obtain information from outside databases, preferably through established HIEs, to include the following components:

(1) Hospital patient care records
(2) Transport registry reports
(3) Discharge data, especially diagnoses and patient care plans
(4) Other appropriate databases

8.4 Physician Participation.

A quality management program should include physician participation and should be reviewed and approved by the program medical director.

8.5 Patient Confidentiality.

All data management programs should maintain patient confidentiality, at a minimum in accordance with federal, state, and local regulations.
8.6 Injury/Illness Reduction and Prevention.
The quality management program should incorporate standards directed at reducing injuries and illnesses in the community based on the system data.

8.7 Complaints.
A comprehensive, consistent process should be in place to address complaints and should include a mechanism to assure problem/complaint resolution and feedback processes.

8.8 Participation in Studies and Research.
The system participants may develop relationships with academic institutions and/or researchers to take an active role in studies and research using system data as follows:

1. Establish credible data collection processes
2. Identify research issues
3. Provide linkage (to other studies)
4. Identify research funding sources
5. Publish study results in recognized peer-reviewed journals

8.9 System Review.
All quality management systems should be reviewed on a regular basis for effectiveness.

8.10 Documentation.
The AHJ should be able to provide documentation of its quality management program, including quality assessment and improvement methods, training for providers, prevention strategies, and system performance measures.

8.11 Dispatch.
An emergency medical dispatch agency should implement a dispatch quality assurance program and ensure that it is reviewed, approved, and overseen by the program’s medical director.

8.11.1
A certified medical dispatch agency should utilize an emergency medical dispatch priority reference system that is published by an AHJ and region- or state-approved source and that is used by licensed emergency medical dispatchers (EMDs).

8.11.2
A medical dispatch agency should utilize only licensed EMDs for emergency medical dispatch.

Chapter 9 Stakeholder Relations
9.1 General.

9.1.1
The organizations operating a community health care program should create a collaborative communications network between its management personnel and impacted organizations.

9.1.2
For purposes of this document, stakeholder groups are divided into four categories: internal, external, regulatory, and payers. Program management should identify and work collaboratively with all stakeholders in these groups to ensure that the needs of the community are met.

9.2 Community Health Care Provider Goals.
The AHJ implementing the community health care program should assess the needs of the community, identify gaps in care and services, and develop a draft for the types of services needed. Ideally, this should be done in a collaborative community forum, especially including primary care physicians and local/regional hospitals.

9.3* Internal Stakeholder Relations.
Before development of a community health care program begins, internal stakeholders should be committed to the program.

9.4* External Stakeholder Relations.
External stakeholders include entities outside of the program’s participants that are impacted by, or could impact, the success or failure of the program.

9.5* Regulatory Stakeholders Relations.
Engaging early with regulatory agencies is essential in the program’s success. The AHJ needs to determine under which state or local authority the program is to operate.

9.6 Payer Stakeholder Relations.
Potential payers should be included in the planning and development stages of the program as early as possible in order to build valuable partnerships that yield sustainable revenue.

9.6.1 Grants.

9.6.1.1*
AHJs should explore the payment and reimbursement options offered through public and/or private grants.

9.6.1.2
The following two challenges with grant funding should be considered:

(1) There are often restrictions and reporting requirements for the grantee that may take significant time to manage.

(2) Once potential funding partners have received services free of charge up front, it can be difficult to convince them to pay.

9.6.2 Hospitals.

9.6.2.1*
Hospitals are under increasing financial pressure to reduce utilization for specific patient populations. AHJs should consider partnering with hospitals to help reduce such utilization and reduce hospitals’ overall expenses.

9.6.2.2
The AHJ should identify the possible motivation and level of interest for hospitals to participate in funding programs for specific patient populations.

9.6.3* Other Health Care Provider Agencies.
Additional entities that provide health care to the community should be contacted and included to identify gaps and needs.

9.6.4* Third-Party Payers.
Third-party payers, such as commercial insurers, Medicare, and Medicaid, have significant motivation to improve patient outcomes and reduce costs. The AHJ should be proactive in attempts to collaboratively work with these payers.

9.6.5 Taxpayer-Funded City/County Department Budgets.
In some cases, taxpayer funds are used for community health care programs or EMS systems. If applicable, AHJs should explore these opportunities for funding or consider combining programs in order to leverage funds.

9.7 Achieving Stakeholder Relations Success.
AHJs should focus on the following objectives in order to be successful in obtaining and maintaining relationships with stakeholders:

1. Engage all stakeholders early in the process.
2. Engage internal stakeholders first.
3. Keep program sustainability in mind from the start.
4. Consider regulatory agencies as partners, not competitors.
5. Always keep the patients at the center of the program.

Chapter 10 Health Information Technology (HIT) and Communications Technology


10.1.1 General.
Programs should incorporate integration with multiple patient care systems, or "interoperability." Interoperability in the health care industry is the ability of health information technology (HIT) systems of various health care providers, facilities, organizations, and ancillary services (e.g., laboratories, pharmacies) to seamlessly collaborate and share information in order to advance the effective delivery of health care for individuals and communities.

10.1.2 Interoperability Types.
There are three levels of HIT interoperability — foundational, structural, and semantic — that are discussed in 10.1.2 through 10.1.4.

10.1.2.1 Foundational Interoperability.
Foundational interoperability allows data exchange from one HIT system to be received by another and does not require the ability for the receiving HIT system to interpret the data.

10.1.2.2 Structural Interoperability.

10.1.2.2.1 Structural interoperability is an intermediate level that defines the syntax (i.e., structure or format) of data exchange where there is uniform movement of health care data from one HIT
system to another such that the clinical or operational purpose and meaning of the data is preserved and unaltered.

10.1.2.2

Structural interoperability ensures that data exchanges between HIT systems can be interpreted at the data field level.

10.1.2.3 Semantic Interoperability.

10.1.2.3.1

Semantic interoperability is a high level that allows two or more systems or elements to exchange and use information by taking advantage of both the structuring of the data exchange and the codification of the data (including vocabulary) so that the receiving HIT system can interpret the data.

10.1.2.3.2

Semantic interoperability supports the electronic exchange of patient summary information among caregivers and other authorized parties via potentially disparate electronic health record (EHR) systems and other systems and improves quality, safety, efficiency, and efficacy of health care delivery.

10.2 Patient Care Record Accessibility.

10.2.1

Programs should be able to access and utilize electronic HIT systems, such as the following:

1. Electronic medical records (EMR)
2. Electronic health records (EHR)
3. Electronic Patient Care Record (ePCR)

10.2.2.1*

EHRs, which can help providers make decisions about a patient’s care when accessed, automate and streamline provider workflow and can contain the following information:

1. Medical history
2. Diagnoses
3. Medications
4. Treatment plans
5. Immunization dates
6. Allergies
7. Imaging (e.g., radiology)
8. Laboratory and other test results

10.2.2

EMRs, ePCRs, and EHRs should be integrated and interchangeable. This will allow providers to access the most up-to-date information and reduce duplication of efforts and treatments.

10.3 Data Security.
10.3.1
Data security should be addressed, with privacy protections in place and current cyber security methods and systems provided.

10.3.2
Topics to be addressed should include the following:

(1) Privacy risks and controls
(2) Data security risks, including a risk assessment
(3) Security controls
(4) HIPAA protections
(5) General standards for data protection in telehealth
(6) Primary authority for telehealth privacy and security oversight

10.4 Communications.

10.4.1
The organization should conduct an assessment to determine their communications needs.

10.4.2
Dispatch system protocols for mobile health technologies should address the following:

(1) Dispatching systems
(2) Nonemergency systems
(3) Nurse lines
(4) Insurance referrals
(5) Primary care physicians
(6) Scheduling systems

10.4.3
Communications methods should ensure patients are able to be connected with physicians and/or specialty services and able to be prioritized according to their needs utilizing remote methods. There should be a triage component to assist the AHJ in determining the appropriate response.

10.5 Biometric Systems.

Patient biometric data should be remotely captured for a physician to reference for follow-up care.

10.6* Biometric Monitoring.

10.6.1
Biometric monitoring of vital signs and other physiologic parameters provides EMS personnel with data that guides their responses and follow-up care without patient intervention or connection with providers. This type of monitoring has become more common and will eventually be the standard of care for community health care programs and remote health care.

10.6.3
Multiple data transmission and integration schemes have been developed and deployed. A regular feature is local (in-home) data storage included for redundancy, local data analytics, and permitting periodic transmissions rather than requiring a consistent and continuous transmission of data.

10.7 Delivering HIT.

Organizations should investigate emerging and existing technologies and determine the best options for transmitting HIT in various forms (e.g., voice, data, video). Options for transmitting HIT data include, but are not limited to, the following:

(1) Land mobile radio
(2) Commercial wireless technology (Wi-Fi)
(3) Satellite technology

10.7.1 Wireless Technology (Wi-Fi).

Wireless technology, also known as "Wi-Fi," is the ability to connect from one wireless device to another through the use of satellite connection and is helpful in making information mobile and widely accessible.

10.7.1.1

One concern with Wi-Fi is the hacking of security systems through wireless networks and/or systems and obtaining patient health or personal identification information, which can be used for identify theft.

10.7.1.2

Intelligence organizations and other government agencies are reluctant to use Wi-Fi due to the lack of firewall protection required to safeguard employees’ health and identifiable information.

10.7.2 First Responder Network Authority (FirstNet).

The Middle Class Tax Relief and Job Creation Act of 2012 created the First Responder Network Authority (FirstNet) as an independent authority within the U.S. Department of Commerce’s National Telecommunications and Information Administration (NTIA) to provide emergency responders with the first nationwide, high-speed, broadband network dedicated to public safety. FirstNet’s mission grew out of the public safety community’s commitment to and advocacy for a dedicated network to address communications challenges they faced on 9/11, during Hurricane Katrina, and during similar incidents and events in their communities.

10.8* Telemedicine.

Telemedicine utilizes technology to link a treating or consulting physician with a patient in real time, which is especially helpful and potentially even life-saving if the patient is in a remote location. Telemedicine can include, but is not limited to, remote biometric monitoring of blood pressure, heart rate, rhythm, respiratory rate, temperature, and fetal heart rate.

10.9* Telehealth.

The term "telehealth" is often used interchangeably with telemedicine. While telemedicine refers to the practice of medicine over a distance using communications technologies, telehealth refers to health-related activities such as continuing education for health care
providers, the administration of health care service, medical and bio-scientific research, and public health activities.

Chapter 11 Human Resources

11.1 Introduction.
Human resources are important to both individual agencies and the broader EMS system. While community health care program planners and regulators should ensure that minimum standards exist in the organization for monitoring, managing, and ensuring appropriate staff performance, they also should ensure that individual agencies have appropriate personnel management structures in place.

11.2 Recruitment.
The AHJ should recruit according to its needs, as determined by program analysis, design, and planning.

11.2.1 Selection.
The AHJ should have a candidate selection procedure for hiring or membership that includes, but is not limited to, the following steps:

(1) Appropriate background checks
(2) Aptitude assessment for the type of practitioner(s) needed for the program
(3) Verification of necessary qualifications and competencies

11.2.2 Wages and Benefits.
A plan for compensation should be clearly spelled out in organizational documents.

11.3 Training, Certification, and Education.
The AHJ should ensure that employees maintain required certification and/or licensure.

11.3.1 Training Program.

11.3.1.1
A comprehensive training program that provides uniform curricula based on established standards should be available.

11.3.1.2
The training program and instructors should be regularly monitored and evaluated.

11.3.1.3
The training program should continually re-assess current and emerging trends in community health care to enhance the community health care program.

11.3.2 Certification.
Certification standards should be appropriate and uniform throughout the program based on provider qualifications.

11.3.2.1
AHJ requirements for recertification should be disseminated to providers.

11.3.2.2
The AHJ should include the capability to track individual certification/licensure and the need for renewal thereof.
11.3.2.3
The AHJ should ensure that the training programs necessary for certification and recertification are available.

11.3.3 Educational Opportunities.
Educational opportunities should be made available to providers in the program.

11.3.4 Training/Education Records.
Personnel training and/or education records should be maintained by program administrators.

11.4 Retention.

11.4.1
The AHJ should take steps to encourage continued participation of personnel.

11.4.2
Retention programs should be appropriate to the local area and may include, but are not limited to, the following:

   (1) Length-of-service award programs (LOSAPs)
   (2) Incentive plans
   (3) Recognition plans
   (4) Educational and/or training opportunities
   (5) Job advancement opportunity programs
   (6) Provider support
   (7) Performance bonus plans
   (8) Retirement plans

11.5 Personnel.

11.5.1 Processes.
The AHJ should have one or more processes in place to ensure effective working relationships between working groups and agencies involved in the program.

11.5.2 Employees/Members.

11.5.2.1
The AHJ should ensure that a regularly scheduled, objective personnel evaluation process is in place.

11.5.2.2
Job specifications should be clearly defined.

11.5.2.3
Individualized levels of training should be appropriate to meet the program’s needs.

11.5.2.4
The AHJ should ensure the following:

   (1) Appropriate staffing and scheduling for adequate delivery of services, based on the needs assessment
   (2) Quality assurance and improvement programs in place for each program

11.5.2.5
The AHJ should ensure that employees/members have agency- and provider-level identification.

11.6 Rules and Regulations.

Rules and regulations should be structured to provide for uniform management of the AHJ’s personnel.

11.6.1
The AHJ should have established rules and regulations for acceptable behavior, activities, and actions.

11.6.2
The AHJ should have established operational policies and guidelines.

11.6.3
The AHJ should have a process in place to manage discipline, appeals, grievances, and other personnel actions.

11.6.4
The AHJ should have a process in place to ensure compliance with occupational safety regulations.

11.7 Health and Safety.

The AHJ should implement a written comprehensive health and safety plan.

11.7.1
Appropriate personal protective equipment (PPE) should be available to all personnel and should be used according to AHJ policy, applicable standards, and manufacturer recommendations.

11.7.2
Health and wellness programs should be in place to prevent participant illness and injury.

11.7.3
A peer support team and program should be provided to employees.

11.7.4
An employee assistance program (EAP) should be in place.

Chapter 12 Equipment and Facilities

12.1 General.

12.1.1
The community health care program should have a method to determine the equipment and related specifications needed for all participants.

12.1.2
The selection and specification of vehicles and equipment should be made based on an assessment of the program’s needs.

12.2* Vehicles.
The AHJ should create specifications for the vehicle(s) used within the community health care program.

12.3 Vehicle Maintenance.

12.3.1 The AHJ should have requirements in place that provide routine scheduling for preventative maintenance.

12.3.2 The AHJ should include a replacement schedule and maintain reserve vehicles for use during repair periods.

12.4 Vehicle Licenses.
The AHJ’s vehicles should be licensed in accordance with local or state emergency medical regulations.

12.5 Maintenance of Personnel Driving Licenses.
Periodic record checks should be conducted to ensure that licenses are not expired, suspended, and/or revoked.

12.6 Operator Training.

12.6.1 All personnel should receive the training necessary to ensure that they can effectively operate program vehicles.

12.6.2 In addition to driver training, the training courses should include basic inspection requirements for ambulances and other emergency vehicles meeting the requirements of NFPA 1451, where applicable.

12.7 Operator Assessment.
The AHJ should develop measures to ensure safe vehicle operations.

12.8 Medical Equipment.
Medical equipment should be well-maintained, properly configured, and functional.

12.8.1 The AHJ should identify and utilize medical equipment based on the program’s needs.

12.8.2 The AHJ should create a method to identify specifications for selecting, maintaining, and replacing medical equipment used in the program.

12.9 Biomedical Equipment.
The AHJ should create specifications for evaluating and selecting biomedical equipment, based on the program’s needs.

12.10 Durable Equipment.
The AHJ should create specifications for evaluating and selecting durable medical equipment, based on the program’s needs.

12.11 Disposable Equipment.

The AHJ should create specifications for evaluating and selecting disposable equipment, based on the program’s needs.

12.12 Diagnostic Equipment.

The AHJ should create specifications for evaluating and selecting diagnostic equipment, based on the program’s needs.

12.13 Technology-Based Equipment.

The AHJ should create specifications for evaluating and selecting technology (hardware and software) used within the program.

12.14 Communications Equipment.

12.14.1

The AHJ should create specifications for evaluating communications equipment used within the program.

12.14.2

The communications system should allow communication between providers in all operating environments.

12.15 Medications.

The AHJ should create specifications for evaluating medications used within the program based on the scope of practice and medical director’s input.

12.16 Inspecting Medical Equipment and Medications.

The AHJ should develop plans for inspecting medical equipment and inventory carried aboard response vehicles.

12.16.1

Regular inspections of medical equipment should be conducted daily, weekly, and monthly by providers.

12.16.2

Program administrators should conduct announced and unannounced inspections of medical equipment on a regular basis.

12.16.3

Medical equipment inspection lists should be developed based on manufacturers’ recommendations and/or governmental regulations.

12.17 Planned Maintenance.

12.17.1

A planned maintenance program should be developed at the time the equipment is purchased, based on the specifications of the manufacturer.

12.17.2
The AHJ should adopt policies to ensure that maintenance personnel are appropriately trained (see NFPA 1071).

12.18 Replacement Plan.
A replacement plan should be developed at the time the equipment is purchased, based on the life expectancy of each equipment type.

The program should provide patient education and training based on patients’ needs.

12.20 Facilities.
Program facilities should be located in a way consistent with the AHJ’s demands and the community’s needs.

Chapter 13 Delivery Model(s)

13.1 Community Health Care Program Implementation into EMS System Design (Operations).
EMS system operations include the coordination of multiple system elements, therefore each component should be considered not only in the context of its operational application but also in its relationship to other factors within the system.

13.2 System Preparation.
Community health care operations should be implemented based on EMS system planning, analysis, and financial capability.

13.3 Communications Coordination.
Communications should be coordinated based on EMS system design and available local resources.

13.4 Service Coordination.
Plans for first or initial response, ambulance response transport, provision of community health care services, and alternative methods of transport should be in place as determined by EMS system analysis and planning, including the availability of additional resources as required by system demands.

13.5 Incident Management.
The function of incident management should meet the requirements of NFPA 450 in the overall management and coordination of, and accountability for, all responding personnel and resources.

13.6 Treatment Guidelines.
Treatment guidelines should meet the requirements of medical direction in Chapter 7.

13.6.1
Providers should only treat within their state/regional approved scope of practice.

13.6.2
Guidelines should be developed to meet the needs of the system as defined in the assessment.
13.7 Patient (Transport).
As determined by the scope of practice and treatment plan, a plan for alternative patient transport should be in place.

13.8 Functional Capabilities of Health Care Facilities.
The EMS system and community health care program agency, in concert with the local medical community, should create standards for functional capabilities of health care facilities and determine the types of patients who should be delivered to those facilities.

13.8.1
The functional information should be disseminated to emergency care personnel. The system should have a plan in place to provide the information to emergency personnel, and the plan should be monitored to ensure that patients are transported to the appropriate facility.

13.8.2
The system should define medical center capabilities for the following:

(1) Primary, secondary, and tertiary medical facilities
(2) Alternative health care facilities
(3) Hospice
(4) Specialized care facilities (e.g., trauma, burn, pediatric, cardiac, hyperbaric, psychiatric, obstetric, spinal cord, and sexual assault)
(5) Other facilities appropriate to the local system

13.8.3
The prehospital triage program and destination policies should provide for transport to appropriate facilities.

13.10 Quality Management/Documentation.
All EMS activities including patient care, transport, training, and research documentation should be included in the implementation of a quality management program as outlined in Chapter 8.

13.11 Logistics.
Systemwide supply and equipment programs — which may include, but are not limited to, the following — should be implemented to standardize equipment selection and to facilitate interagency supply and equipment use and sharing:

(1) Restocking of materials, disposables, and consumables
(2) Decontamination of equipment and vehicles
(3) Equipment repair and replacement
(4) Data collection and management
(5) Support for extended duration incident operations

13.12 Staff Management.
Staff should meet the requirements of Chapter 11.

13.13 Public Information, Education, and Relations.
A program should be in place to allow for an information interface with the community, including EMS access information, public education, system public relations, and incident information management.

13.14 Regulatory Compliance.

The system should ensure that systemwide operations comply with local, state, and federal regulations and laws, including, but not limited to, the following:

1. State-mandated reporting
2. Federal health and safety regulations
3. Certification requirements
4. Financial reporting
5. Communicable disease reporting
6. Communications component authorization, as outlined in Chapter 4

13.15 Training.

13.15.1 Community health care programs should establish training requirements and should develop and utilize a training program based on an assessment of the community’s needs.

13.15.2 The training plan should be a coordinated interagency effort, and appropriate agencies should have regular interaction.

13.16 Research and Development.

The system should participate in research-based evaluation of all components and should use objective criteria to evaluate, develop, and purchase equipment as outlined in Chapter 12.

Chapter 14 Program Implementation

14.1 Purpose.

Once the planning phase is completed and the stakeholders have come to a consensus on the scope of the program, it is critical that a written plan detailing the components of the program and a schedule for its implementation be developed, reviewed, and, if necessary, approved to communicate and operationalize the program.

14.2 Management Oversight.

Program management and oversight should be maintained throughout the life of the program.

14.3 Establishing an Implementation Plan.

14.3.1 Considerations in the plan should include the following:

1. Program overview
2. Statement of the intended outcomes, based on the system assessment
3. Demographic to be served
4. Strategies

14.3.2*
Programs should set operational parameters.

14.4 Communications.

14.4.1
An internal/external communications plan should be established and documented prior to commencing program operations.

14.4.2
Program organizations’ communications should include the following:

1. An understanding of the political/medical community’s informational needs
2. Shared access to program organizations’ information
3. Internal communications among program organizations
4. Communications to external stakeholder groups

14.5 Marketing Strategies.
Marketing strategies could include internal/external marketing, community education, stakeholder marketing, stakeholder education, and patient education materials.

14.6 Financial Considerations.
Program finance and budget should be outlined and planned for in accordance with the guidance provided in Chapter 6.

14.7 Data Collection.
Data collection procedures should be documented in accordance with the guidance provided in Chapter 10.

14.7.1
Measureable markers should include the following:

1. Customer survey
2. Outcomes
3. Quality assurance/quality improvement (QA/QI)

14.7.2
Methods for evaluating the program should be documented.

14.7.3
Program improvements should be made based on evaluation measures.

14.8 Plan Review.
The implementation plan should be reviewed annually and should include the following:

1. Data as described in 14.7.1
2. Performance analysis to determine if stated objectives have been achieved
3. Identified barriers and opportunities for program enhancements/improvements
4. Review of financial and budgeting considerations
Annex A Explanatory Material

Annex A is not a part of the recommendations of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.3.2.1 Approved.

The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ).

The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.3.49 Interview Ends.

This time stamp can occur before or after resources are identified, dispatched, or arrive on the scene.

A.4.1

See the document published by the U.S. Department of Health and Human Services (DHHS) and Health Resources and Services Administration (HRSA), “Community Paramedicine: Evaluation Tool,” for more information on policies and regulations.

A.4.2.2.2

The AHJ should coordinate with the state Medicaid office to determine the reimbursement of services if such reimbursement has been approved.

In the United States, the Centers for Medicare and Medicaid Services (CMS) provides guidance and oversight to state Medicaid programs. State Medicaid programs are required to submit a Medicaid State Plan describing their plan and assuring compliance with federal rules and regulations (42 USC 1396a, “State Plans for Medical Assistance”).
States seeking to permit payment for community health care as part of their Medicaid State Plan should submit a State Plan Amendment (SPA) for review and approval, which can be viewed online at www.medicaid.gov/state-resource-center/medicaid-state-plan-amendments/medicaid-state-plan-amendments.html.

A.4.3.1
While planning processes may vary significantly between AHJs, steps should be taken ensure that the process occurs in a manner consistent with identified needs.

A.5.1
Virtually all communities have some form of EMS system. For any one community, the components of the system and the level of service should be tailored to the needs and wants of that community. While an EMS system is unique to the jurisdiction, the industry recognizes a standard approach to assessing local needs and meeting those needs with specific service elements. A steadily increasing demand on EMS resources has made it necessary for EMS systems to find a means of better managing it.

NHTSA’s publication, *Emergency Medical Services: Agenda for the Future*, shares the following vision: “Emergency Medical Services (EMS) of the future will be community-based health management that is fully integrated with the overall health care system. It will have the ability to identify and modify illness and injury risks, provide acute illness and injury care and follow-up, and contribute to treatment of chronic conditions and community health monitoring. This new entity will be developed from redistribution of existing health care resources and will be integrated with other health care providers and public health and public safety agencies. It will improve community health and result in more appropriate use of acute health care resources. EMS will remain the public’s emergency medical safety net.”

The following was specified in T. R. Delbridge’s publication: “Before creating an EMS system or implementing any EMS system design changes, a community should conduct a comprehensive community analysis that considers available resources, customers, geography, demographics, political conditions, and other unique and special needs of the system. This analysis should focus on these areas, identifying their potential impact on the effectiveness of EMS system components including human resources, medical direction, legislation and regulation, education systems, public education, training, communications, transportation, prevention, public access, communications systems, clinical care, information systems (data collection), and evaluation.”

A.5.3.3
Long-term, rehabilitative, and other special health care facilities — such as dialysis centers — usually add demand on EMS services and should be considered.

A.5.4.4
Stakeholder engagement will help to reduce, and potentially overcome, barriers to program implementation.

A.5.5.2
For example, the target population may be people who frequently request assistance through the 911 system. In an instance such as this, the specific individual needs of the patient base may be varied and will require additional analysis and planning.

A.5.8.3
Resources of other nonconventional agencies such as nonemergency ambulance and municipal mass transportation services should be considered.

A.5.8.4

For example, the response service may be different from the transportation service.

A.5.8.4.5

AHJs should consider if their program would benefit from additional questionnaires or from a nurse triage program. Patients may contact the providers directly through phone or other electronic communications. Telecommunicators may schedule appointments with patients.

A.6.1

Many concepts such as value-based models, shared risk contracting, and ACOs are resulting in economic shifts in economic models within the health care industry. Health care parties are transitioning away from fee-for-service (FFS) models that financially reward providers based on the volume of services provided, to value-based models that financially reward providers based on the value of the services they provide.

A.6.2.1

Service Delivery Cost

In order to obtain the service delivery cost, the first step is to determine the staffing requirements. The goal is to obtain the number of employees needed to cover one “seat” — or one position on the vehicle — for every hour of operation required by the community health care program.

Example:

One seat on a vehicle is required by the program to be covered for every hour of every day of the year. One year is equal to 8,760 hours.

A 56-hour/week employee would work 2,920 \([365/(7 \times 56)]\) hours per year, without leave (e.g., sick time, vacation). However, most employees would take leave of some kind. Since the average leave used by an employee is 448 hours per year, the number of annual hours that each employee is actually in their seat is reduced from 2,920 hours to 2,472 hours.

To calculate the number of employees needed to cover one seat for every hour of every day of one year involves dividing 8,760 by the 2,472 hours actually worked — equaling a total of 3.54 people per seat.

See Table A.6.2.1 for a sample cost budget for a community health care program.

<table>
<thead>
<tr>
<th>Title</th>
<th>Rate ($/hr)</th>
<th>RHE</th>
<th>Wages ($)</th>
<th>Benefits ($)</th>
<th>Subtotal ($)</th>
<th>FTEs</th>
<th>Total ($)</th>
<th>Utilization (%)</th>
<th>Allocation ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>911 Triage Nurse (new)</td>
<td>37</td>
<td>2080</td>
<td>76,960</td>
<td>15,392</td>
<td>92,352</td>
<td>1</td>
<td>92,352</td>
<td>100</td>
<td>92,352</td>
</tr>
<tr>
<td>MHP (new)</td>
<td>26</td>
<td>2288</td>
<td>54,392</td>
<td>10,878</td>
<td>65,270</td>
<td>1</td>
<td>65,270</td>
<td>100</td>
<td>65,270</td>
</tr>
<tr>
<td>CCP (new)</td>
<td>30</td>
<td>2288</td>
<td>68,640</td>
<td>13,728</td>
<td>82,368</td>
<td>1</td>
<td>82,368</td>
<td>100</td>
<td>82,368</td>
</tr>
<tr>
<td>Title</td>
<td>Quantity</td>
<td>Salary</td>
<td>Hours</td>
<td>Base 30</td>
<td>Base 120</td>
<td>Salary Base %</td>
<td>Allocation ($)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>----------</td>
<td>---------</td>
<td>-------</td>
<td>---------</td>
<td>---------</td>
<td>---------------</td>
<td>----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Case Manager</td>
<td>40</td>
<td>2080</td>
<td>16,640</td>
<td>99,840</td>
<td>99,840</td>
<td>1</td>
<td>19,968</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative Assistant</td>
<td>20</td>
<td>2080</td>
<td>8,320</td>
<td>49,920</td>
<td>24,960</td>
<td>0.5</td>
<td>12,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor</td>
<td>28</td>
<td>2288</td>
<td>11,710</td>
<td>70,262</td>
<td>35,131</td>
<td>0.5</td>
<td>7,026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>37</td>
<td>2080</td>
<td>15,392</td>
<td>92,352</td>
<td>46,176</td>
<td>0.5</td>
<td>9,235</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billing and Reconciliation Specialist</td>
<td>17</td>
<td>2080</td>
<td>7,072</td>
<td>42,432</td>
<td>42,432</td>
<td>1</td>
<td>42,432</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel Subtotal</td>
<td></td>
<td></td>
<td>6.5</td>
<td>488,530</td>
<td></td>
<td></td>
<td>331,132</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OTHER EXPENSES**

<table>
<thead>
<tr>
<th>Expense Item</th>
<th>Additional Information</th>
<th>Allocation ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS staff education and training</td>
<td>Wages for field and communications personnel classes</td>
<td>33,600</td>
</tr>
<tr>
<td>Member education</td>
<td></td>
<td>25,000</td>
</tr>
<tr>
<td>Medical equipment and supplies</td>
<td>For two vehicles amortized over 4 years [e.g., i-STAT (blood analyzer), MRX (cardiac monitor/defibrillator)]</td>
<td>26,750</td>
</tr>
<tr>
<td>Alternative transportation</td>
<td>10 trips per day, $60 per round trip, 365 days per year</td>
<td>219,000</td>
</tr>
<tr>
<td>Medical oversight/quality assessment (QA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle(s) and vehicle equipment</td>
<td>For two vehicles amortized over 5 years (e.g., radios)</td>
<td>13,600</td>
</tr>
<tr>
<td>IT and phone lines</td>
<td>Two PSAP lines, two Surface Pro computers, two iPhones, one additional PSIAM license</td>
<td>30,000</td>
</tr>
<tr>
<td>Other Expenses Subtotal</td>
<td></td>
<td>422,950</td>
</tr>
<tr>
<td><strong>TOTAL PROGRAM COST</strong></td>
<td></td>
<td>754,082</td>
</tr>
</tbody>
</table>

**A.6.2.2**

An enterprise fund is defined in the Municipal Securities Rulemaking Board (MSRB) glossary as “a fund established by a governmental entity to account for operations of an enterprise activity. Enterprise funds generally are segregated as to purpose and use from other funds and accounts of the governmental entity with the intent that revenues generated by the enterprise activity and deposited to the enterprise fund will be devoted principally to funding all operations of the enterprise activity, including payment of debt service on securities issued to finance such activity.”

The use of an enterprise fund may be applicable for a community health care program, but likely not appropriate for the entire EMS system function. Many agencies have avoided setting up an enterprise fund, even for ambulance services within the EMS system.

**A.6.2.3**
Proponents point to evidence that assessed property value within TIF districts generally grows much faster than in the rest of the municipality and infer that TIF benefits the entire municipality (Dye and Merriman 2006).

A.6.2.4.1

The ability of a state to use IGTs to fund their Medicaid program is recognized in 42 U.S.C 1396b, “Payment to States,” and 42 CFR 433.51, “Public Funds as the State Share of Financial Participation.” Medicaid has been a joint financing partnership between the states and the federal government since 1965, which provides a guarantee that the federal government will match funds for state expenditures on health and long-term care services for the low-income population.

A.6.3.1.1

For example, for a hospital seeking to reduce preventable readmissions, a measure that compares the readmission rate for patients in the community health care program’s readmission prevention program would demonstrate value to the hospital. Similarly, for payers that are concerned about high expenditures for recurrent, nonemergency use of the high-dollar emergency department, a community health care program that demonstrates a reduction in emergency department use by the patients enrolled in the program should certainly demonstrate value.

A.6.3.2.5

A variation of this model can be used internally by measuring the agency’s cost reduction related to the traditional EMS service delivery. For example, if the agency measures the cost of an unreimbursed EMS call as $500, avoiding 30 of these calls could theoretically save the agency $15,000. Caution should be observed with this model, however, as loss of the typical revenue associated with these types of calls would need to be calculated as well and built into the model.

A.6.4

The key to Medicaid reimbursement is demonstrating to elected and appointed officials that payment for mobile integrated healthcare (MIH) services saves the state money. Most states have significant market penetration of Managed Medicaid, meaning the program will likely work closely with the Managed Medicaid payers to lobby for Medicaid coverage of MIH services.

A.6.4.2

As with Medicaid, market penetration of Managed Medicare programs is significant, and programs may find payers who are more than willing to cover the cost of services to Managed Medicare patients as a way to reduce their expenditures.

A.6.5.1

A presentation by AP Triton, LLC, with further information on GEMT programs can be downloaded from NFPA’s website (http://www.nfpa.org/~/media/files/membership/member-sections/metro-chiefs/2015-conference/ap-triton-gemt-igt-western-fire-chiefs.pptx?as=1&iar=1&la=en).

A.6.5.2

It’s important to note that the GEMT reimbursement is only for services provided to Medicaid recipients. It does not include costs or uncompensated care for services to non-Medicaid patients.

A.6.5.2.1
An example of a cost report can be downloaded from the California Department of Health Care Services (DHCS) website at www.dhcs.ca.gov/ provgovpart/Documents/GEMT/GEMT_Cost_Rpt_08-17.xls.

A.7.3.2

Examples of such resources include, but are not limited to, physical infrastructure, authorization and support of the agency’s command staff, clerical and staff support, communications, malpractice insurance, and liability coverage.

A.8.2.3.1

Examples of data sets are available through the National Highway Traffic Safety Administration (NHTSA), National Fire Incident Reporting System (NFIRS), National Ems Information System (NEMSIS), and others.

A.9.3

Presenting information and potential benefits specific to each stakeholder group will help them understand how the program could not only improve patient care, but help them achieve their own goals.

See Table A.9.3 for information on likely major internal stakeholders, including the significant role they would play in the development and implementation of the program and the expected outcomes from their participation.

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Role</th>
<th>Participation Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command Staff/Management</td>
<td>Provide direction to the agency</td>
<td>Benefits to patients served</td>
</tr>
<tr>
<td></td>
<td>Approve resources</td>
<td>Benefits of increased value in health care system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benefits of enhanced public image</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential revenue stream from contracted services</td>
</tr>
<tr>
<td>Agency Communications Center</td>
<td>Coordinate dispatches and calls</td>
<td>Benefits to patients served</td>
</tr>
<tr>
<td></td>
<td>Address flagging of enrolled patients</td>
<td>Benefits of increased value in health care system</td>
</tr>
<tr>
<td></td>
<td>Allocate additional resources</td>
<td>Benefits of enhanced public image</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential revenue stream from contracted services</td>
</tr>
<tr>
<td>Medical Director</td>
<td>Develop/approve medical protocols</td>
<td>Benefits to patients served</td>
</tr>
<tr>
<td></td>
<td>Interface with health care community</td>
<td>Benefits of increased value in health care system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benefits of enhanced public image</td>
</tr>
</tbody>
</table>
Ensure quality assurance and improvement

<table>
<thead>
<tr>
<th>Labor Union/Workforce</th>
<th>Politically support implementation</th>
<th>Benefits to patients served</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engage workforce</td>
<td>Potential for enhanced staffing and union positions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential reduction in workload for line staff through reduced frequent flyer utilization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced community perception of the labor union for supporting project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City/County or District Board/Local Leadership</th>
<th>Politically support implementation</th>
<th>Benefits to patients served</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engage workforce</td>
<td>Potential reduction in workload for response system through reduced frequent flyer utilization</td>
</tr>
<tr>
<td></td>
<td>Approve program mission and vision</td>
<td>Enhanced community perception of the labor union for supporting project</td>
</tr>
<tr>
<td></td>
<td>Approve budget</td>
<td></td>
</tr>
</tbody>
</table>

### A.9.4

Examples of external stakeholders include, but are not limited to, hospitals, social service organizations, home health agencies, nursing associations, emergency physician groups, skilled nursing centers, hospice organizations, senior care organizations, public health, and primary care physicians. These stakeholders share goals and seek opportunities to work collaboratively with organizations in your community.

See Table A.9.4 for information on likely major external stakeholders, including the significant role they would play in the development and implementation of the program and the expected outcomes from their participation.

#### Table A.9.4 External Stakeholders

<table>
<thead>
<tr>
<th>Agency</th>
<th>Role</th>
<th>Participation Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Service Agencies</td>
<td>Connect enrolled patients to necessary services</td>
<td>Relationship built as a referral source for nonmedical needs</td>
</tr>
<tr>
<td></td>
<td>Deliver services to the enrolled patients</td>
<td>Development of access to services through county or private social service agencies (e.g., Council on Aging, United Way) or similar organizations</td>
</tr>
<tr>
<td><strong>Hospitals</strong></td>
<td><strong>Out-of-Hospital Health Care</strong></td>
<td><strong>Other Medical Professionals</strong></td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Provide primary health care to community</td>
<td>Provide home health nursing, skilled nursing facilities, home hospice agencies, and assisted living facilities</td>
<td>Provide emergency care, primary care, outpatient clinic care, independent practice care, behavioral health resources, and addiction recovery resources</td>
</tr>
<tr>
<td>Provide care for common patients</td>
<td>Consist of accountable care organizations</td>
<td></td>
</tr>
<tr>
<td>Provide clinical education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potentially fund program</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration in developing patient care strategies and protocols</td>
<td>Defined boundaries of service</td>
<td>Identification of opportunities and threats</td>
</tr>
<tr>
<td>Leveraged financial incentive for hospitals to reduce visits and readmissions</td>
<td>Development of referral patterns that are mutually supportive</td>
<td>Development of referral patterns</td>
</tr>
<tr>
<td>Quality care improvement measures</td>
<td></td>
<td>Access to training resources and opportunities to improve care</td>
</tr>
</tbody>
</table>

**A.9.5**

Steps may need to be taken to define this new class of providers and address regulatory barriers to community health care initiatives. It is imperative to engage regulatory agencies and providers at the beginning and throughout the process as a way to clarify roles, address concerns, and develop strategies that make optimal use of all provider types. Scope of practice regulations impact the ability of EMS personnel to deliver nontraditional health care services. A lack of formal recognition of this class of EMS personnel has created concerns about their scope of practice and the oversight system for ensuring patient safety.
See Table A.9.5 for information on likely major regulatory stakeholders, including the significant role they would play in the development and implementation of the program and the expected outcomes from their participation.

Table A.9.5 Regulatory Stakeholders

<table>
<thead>
<tr>
<th>Agency</th>
<th>Role</th>
<th>Participation Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Department of Health</td>
<td>Provide regulatory framework</td>
<td>Development of a regulatory framework that provides oversight</td>
</tr>
<tr>
<td></td>
<td>Provide educational and training requirements</td>
<td>Enforcement of state regulations and standards</td>
</tr>
<tr>
<td>State Office of EMS</td>
<td>Provide agency direction</td>
<td>Development and implementation of strategies governing medical training and scope of practice</td>
</tr>
<tr>
<td></td>
<td>Develop/approve medical protocols</td>
<td>Enforcement of approved medical policies and protocols</td>
</tr>
<tr>
<td></td>
<td>Provide educational and training requirements</td>
<td>Training according to state standards</td>
</tr>
<tr>
<td></td>
<td>Interface with the health care community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide quality assurance and improvement</td>
<td></td>
</tr>
<tr>
<td>Local or Regional EMS Authority</td>
<td>Provide direction to the AHJ</td>
<td>Development and implementation of strategies governing medical training and scope of practice</td>
</tr>
<tr>
<td></td>
<td>Develop/approve medical protocols</td>
<td>Enforcement of approved medical policies and protocols</td>
</tr>
<tr>
<td></td>
<td>Establish educational and training requirements</td>
<td>Training according to state standards</td>
</tr>
<tr>
<td>Local or Regional Public Health Agencies</td>
<td>Provide direction to the AHJ direction</td>
<td>Development and implementation of strategies to integrate with public health</td>
</tr>
<tr>
<td></td>
<td>Integrate with public health role and goals</td>
<td>Access to resources and integration</td>
</tr>
<tr>
<td></td>
<td>Establish educational and training requirements</td>
<td>Training according to state standards</td>
</tr>
</tbody>
</table>

A.9.6.1.1

Most communities have various grant organizations that may be patient or health care focused. Most hospitals also have foundations that may be interested in funding projects that benefit patients, the hospital, and the community.

A.9.6.1

The specific patient populations typically include unfunded patients, patients who are part of a shared risk arrangement with payers, patients at risk for preventable readmissions, and patients who have no payer source.
A.9.6.3
Like hospitals, other health care providers may also have a financial interest in reducing preventable ambulance trips, emergency department visits, and hospitalizations. These providers could include home health agencies, hospice agencies, physician group practices, and post–acute care management agencies. Identifying these agencies in the community and learning what level of interest they may have in funding the program could be valuable.

A.9.6.4
While it is logical for third-party payers to be funders for these programs, most programs to date have been challenged in connecting with these stakeholders. Insurers typically have a labyrinth of processes that can make it difficult to connect to the right decision makers. Some may have statutory or regulatory restrictions that hamper or even prohibit direct funding of community health care programs. One of the best ways to identify potential partners is to analyze which payers represent the largest portion of the AHJ’s payments. While Medicare and Medicaid may factor heavily into those payments, the AHJ will also find insurers such as Blue Cross/Blue Shield, Aetna, United Healthcare, or Cigna among the other significant payment sources. The AHJ can use the amount of money these insurers are paying to transport patients to high-cost care settings as a compelling reason to engage in discussions.

A.10.1
Further information on interoperability and integration with multiple patient care systems can be found on the Healthcare Information and Management Systems Society (HIMSS) website at www.himss.org/library/interoperability-standards/what-is-interoperability. Additionally, interoperability roadmaps are available in downloadable PDF format at www.healthit.gov/policy-researchers-implementers/interoperability.

A.10.2.2.1
One of the key features of an EHR is that health information can be created and managed by authorized providers in a digital format capable of being shared with other providers across more than one health care organization. EHRs are built to share information with other providers and organizations — including laboratories, specialists, medical imaging facilities, pharmacies, emergency facilities, and school and workplace clinics — and contain information from all clinicians involved in a patient’s care.

A.10.6
Some biometric sensors provide data analytic capabilities — for instance, they notice changes in a person’s gait and thereby provide fall prediction/detection. Local data analytics and decision support can provide directed care and can minimize the impact and workload of health care providers.

A.10.8
For more information on telehealth, see the Journal of Telemedicine and e-Health’s “An Information Technology Framework for Strengthening Telehealthcare Service Delivery.”

A.10.9
For more information on telemedicine, see the American Telemedicine Association’s website at www.americantelemed.org. Also, see The Review of Litigation’s “Telemedicine Liability: Texas and Other States Delve into the Uncertainties of Health Care Delivery Via Advanced Communications Technology.”

A.12.2
Specifications may include allowing individual agencies to make purchasing decisions within the restrictions established by the EMS specifications or by state or national standards, such as NFPA 1917.

A.14.3.2
This should include, but not be limited to, hours of operations, radio designation, scope of work, staffing, and scheduling.

Annex B  Informational References

B.1  Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this guide and are not advisory in nature unless also listed in Chapter 2 for other reasons.

B.1.1  NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


B.1.2  Other Publications.

B.1.2.1  NHTSA Publications.


Emergency Medical Services: Agenda for the Future, August 1996.

B.1.2.2  U.S. Government Publications.


“Community Paramedicine: Evaluation Tool,” U.S. Department of Health and Human Services (DHHS) and Health Resources and Services Administration (HRSA), March 2012.


Title 42, Code of Federal Regulations, Part 433.51, “Public Funds as the State Share of Financial Participation.”

Title 42, United States Code, Part 1396a, “State Plans for Medical Assistance.”

Title 42, United States Code, Part 1396b, “Payment to States.”

B.1.2.3  Other Publications.


“GEMT” PowerPoint Presentation, 2015 Metro Chiefs Conference, AP Triton, LLC, 5500 Dry Creek Road, Napa, CA 94558.


**B.2 Informational References.**

The following documents or portions thereof are listed here as informational resources only. They are not directly referenced in this guide.

**B.2.1 ASTM Publications.**

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.


**B.2.2 U.S. Government Publications.**


Florida State Statute Section 401.265(2).


NIH/NHLBI, No. 93-3304.


**B.2.3 Other Publications.**


American Red Cross, States With Health and Safety Regulations for Specific Occupations (Chart), December 1997.


Communications for Coordinated Assistance and Response to Emergencies (ComCARE Alliance), ComCARE Principles, ComCARE Alliance, Washington, DC, April 1998.


Goldstein, A., EMS and the Law, Brady, Bowie, MD, 1983.


Institute of Medicine, Emergency Medical Services at the Crossroads, 2006.


States with Mandated or Recommended School CPR Instruction Programs (Chart). Lexis-Nexis Search, October 1998.


Stoto, M., George Washington University, School of Public Health and Health Services, Epidemiology Department, Chair. Interview, September 28, 1998.


http://www.naemt.org/MIH-CP/mih-cp-toolkit
https://healthforce.ucsf.edu/publications/evaluation-california-s-community-paramedicine-pilot-program


http://www.naemsp.org/Pages/2017MIHCP.aspx


B.3 References for Extracts in Informational Sections. (Reserved)