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MEMORANDUM

To: NFPA Technical Correlating Committee on Fire and Emergency Services
Protective Clothing and Equipment

From: Stacey Van Zandt

Date: January 26, 2011

Subject: NFPA 1801 Proposed Tentative Interim Amendment (TIA) No.1018

The Technical Committee on Electronic Safety Equipment has been balloted on proposed TIA 1018, submitted by Robert Athanas and Francine Amon. A copy of the proposed TIA and the final results of the TC balloting are attached.

This proposed TIA is now being submitted to you for letter ballot. In addition to being balloted on the **correlating issues** of the proposed TIA, the Committee is also being balloted on whether or not this matter is of an **emergency nature**. Disagreeing votes are limited to subjects within the purview of the TCC. Opposition on a strictly technical basis is not sufficient grounds for substantiating a disagreement vote. If you do have correlation issues please identify and describe your concerns. Please see Section 5 (copy enclosed) regarding the processing of TIAs from the NFPA Regulations Governing Committee Projects.

Please complete and return the attached letter ballot to Stacey Van Zandt either via email to svanzandt@nfpa.org or via fax to 617-984-7056. **Ballots are due by Thursday, February 3, 2011, 5:00 PM ET.**

This proposed TIA 1018 has been published for public comment in the January 7, 2011 issue of *NFPA News* with a Public Comment Closing Date of February 11, 2011. Any public comments received will be circulated to the committee. The Standards Council will consider the issuance of this TIA at their February 28-March 1 meeting.

Note: Please remember that the return of ballots and attendance at committee meetings are required in accordance with the NFPA Regulations Governing Committee Projects.

Attachments

Section 5 Tentative Interim Amendments.

5.1 Preliminary Determination of Compliance.

A Tentative Interim Amendment (TIA) to any Document may be processed if the Council Secretary determines, after a preliminary review, and consultation with the appropriate Chair, that the Amendment appears to be of an emergency nature requiring prompt action and has the endorsement of at least two Members of the involved TC or TCC. If processed, the question of emergency nature shall be considered by the TC and TCC. The text of a proposed Tentative Interim Amendment may be processed as submitted or may be changed, but only with the approval of the submitter.

5.2 Evaluation of Emergency Nature. Determination of an emergency nature shall include but not be limited to one or more of the following factors:

- (a) The document contains an error or an omission that was overlooked during a regular revision process.
- (b) The document contains a conflict within the document or with another NFPA document.
- (c) The proposed TIA intends to correct a previously unknown existing hazard.
- (d) The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.
- (e) The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public.
- (f) The proposed TIA intends to correct a circumstance in which the revised document has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process, or was without adequate technical (safety) justification for the action.

5.3 Publication of Proposed Tentative Interim Amendment.

A proposed Tentative Interim Amendment that meets the provisions of 5.1 shall be published by the Association in appropriate media with a notice that the proposed Tentative Interim Amendment has been forwarded to the responsible TC and TCC for processing and that anyone interested may comment on the proposed Tentative Interim Amendment within the time period established and published.

5.4 Technical Committee and Technical Correlating Committee Action.

(a) The proposed Tentative Interim Amendment shall be submitted for ballot and comment of the TC in accordance with 3.3.4. The TC shall be separately balloted on both the technical merits of the amendment and whether the amendment involves an issue of an emergency nature. Such balloting shall be completed concurrently with the public review period. Any public comments inconsistent with the vote of any TC Member shall be circulated to the TC to allow votes to be changed. A recommendation for approval shall be established if three-fourths of the voting Members calculated in accordance with 3.3.4.5 have voted in favor of the Tentative Interim Amendment.

(b) The proposed Tentative Interim Amendment shall be submitted for ballot and comment of the TCC, if any, which shall make a recommendation to the Council with respect to the disposition of the Tentative Interim Amendment. The TCC shall be separately balloted on both the merits of the amendment (as it relates to the TCC authority and

responsibilities in accordance with 3.4.2 and 3.4.3) and whether the amendment involves an issue of an emergency nature. Any public comments inconsistent with the vote of any TC or TCC Member shall be circulated to the 28 TCC to allow votes to be changed. A recommendation for approval shall be established if three-fourths of the voting Members calculated in accordance with 3.3.4.5 have voted in favor of the Tentative Interim Amendment.

(c) All public comments, ballots, and comments on ballot on the proposed Tentative Interim Amendment shall be summarized in a staff report and forwarded to the Council for action in accordance with 5.5.

5.5 Action of the Council. The Council shall review the material submitted in accordance with 5.4(c), together with the record on any Appeals (see 1.6, 1.6.1), and shall take one of the following actions:

- (a) Issue the proposed Tentative Interim Amendment
- (b) Issue the proposed Tentative Interim Amendment as amended by the Council
- (c) Where acted on concurrently with the issuance of a new edition of the Document to which it relates, issue the Tentative Interim Amendment as part of the new edition;
- (d) Reject the proposed Tentative Interim Amendment
- (e) Return the proposed Tentative Interim Amendment to the TC with appropriate instruction
- (f) Direct a different action

5.6 Effective Date of Amendment. Tentative Interim Amendments shall become effective 20 days after Council issuance unless the President determines, within his or her discretion, that the effective date shall be delayed pending the consideration of a Petition to the Board of Directors (see 1.7). The President may also, within his or her discretion, refer the matter of a delay in the effective date of the TIA to the Executive Committee of the Board of Directors or to the Board of Directors.

5.7 Publication of Amendment. The Association shall publish in one of its publications sent or accessible to all Members notice of the issuance of each Tentative Interim Amendment and may, as appropriate, issue a news release to applicable and interested technical journals. The notice and any news release shall indicate the tentative character of the Tentative Interim Amendment. In any subsequent distribution of the Document to which the Tentative Interim Amendment applies, the text of the Tentative Interim Amendment shall be included in a manner judged most feasible to accomplish the desired objectives.

5.8 Applicability. Tentative Interim Amendments shall apply to the document existing at the time of issuance. Tentative Interim Amendments issued after the proposal closing date shall also apply, where the text of the existing document remains unchanged, to the next edition of the Document. Tentative Interim Amendments issued concurrently with the issuance of a new edition shall apply to both the existing and new edition.

5.9 Subsequent Processing. TC responsible for the Document or part of the Document affected shall process the subject matter of any Tentative Interim Amendment as a proposal for the next edition of the Document (see 3.3).

5.10 Exception. When the Council authorizes other procedures for the processing and/or issuance of Tentative Interim Amendments, the provisions of this Section shall not apply.

TECHNICAL CORRELATING COMMITTEE
LETTER BALLOT
PROPOSED TENTATIVE INTERIM AMENDMENT LOG NO. 1018
To Revise Text on the 2010 Edition of NFPA 1801
Standard on Thermal Imagers for the Fire Service

Question 1: I agree that there are no correlation issues in accordance with 3.4.2 and 3.4.3 (copy enclosed) of the NFPA Regs.

_____ **AGREE** _____ **DISAGREE*** _____ **ABSTAIN***

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a disagreement or abstaining position. If disagreeing, cite relevant section(s)/paragraph(s) of the correlation issue and describe.

Question 2: I agree that the subject of this TIA is of an **EMERGENCY NATURE**.

_____ **AGREE** _____ **DISAGREE*** _____ **ABSTAIN***

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a negative/disagreement or abstaining position.

Signature

Name (Please Print)

Date

Please return the ballot on or before **Thursday, February 3, 2011 at 5:00 PM ET.**

PLEASE RETURN TO:

Stacey Van Zandt, Project Administrative Supervisor

NFPA

1 Batterymarch Park

Quincy, MA 02169

FAX: (617) 984-7056

E-mail: svanzandt@nfpa.org

3.4.2 Authority. A TCC shall direct the activities of the TCs that have primary responsibility for the development and revision of Documents assigned to them. The TCC shall be responsible for resolving conflicts, achieving correlation among the recommendations of the TCs, correcting errors and omissions, and ensuring that the Committee activities have been conducted in accordance with these Regulations and any approved Supplemental Operating Procedures (see 3.3.8). The TCC shall have the authority to choose between alternatives presented by the TCs and to write text, but only as necessary for correlation, consistency, and the correction of errors and omissions.

3.4.3 Responsibilities. The responsibilities of a TCC are:

- (a) Resolving conflicts within or between Documents
- (b) Recommending the resolution of conflicts between, and overlapping functions in TC Scopes
- (c) Recommending the establishment of new or the discharging of existing TCs and proposing new Scopes or changes to existing Scopes of TCs
- (d) Recommending changes in membership to obtain or improve representation on a TC
- (e) Correlating the scheduling of the Reports from the TCs operating under its responsibility
- (f) Notifying a TC of its failure to comply with these Regulations or the Manual of Style
- (g) Determining whether or not the TC has given due consideration to all evidence presented to it in connection with the preparation of its Report including all comments relating to negative votes
- (h) Establishing Supplemental Operating Procedures, if desired (see 3.3.8)
- (i) Performing such other or different duties as the Council may from time to time assign

NFPA 1801-2010

Standard on Thermal Imagers for the Fire Service

TIA Log No.: 1018

Reference: Various

Comment Closing Date: February 11, 2011

Submitter: Robert J. Athanas, FDNY/SAFE-IR, Inc. and Francine K. Amon, National Institute of Standards & Technology

1. *Insert a new 6.6.4.4.3 to read as follows:*

6.6.4.4.3 The internal electronics overheat indicator shall be a flashing indicator consisting of a solid red thermometer-shaped image within a transparent equilateral triangle having a red border as shown in Figure 6.6.4.

2. *Revise 6.6.4.7.2 to read as follows:*

6.6.4.7.2 ~~The temperature measurement zone~~ The TI BASIC PLUS operational format indicator shall be an indicator consisting of an solid green “plus sign” (+) enclosed in a transparent square box with a green border as shown in Figure 6.6.4. box or box corners and shall be displayed in the viewing screen. The temperature measurement zone box or box corners shall be the color green.

3. *Revise 7.1.4 to read as follows:*

7.1.4 Thermal imagers shall be tested for effective temperature range as specified in Section 8.10, Image Color and Effective Temperature Range Test, and shall have all P_{IQ} values be greater than or equal to 0.80. ~~mean pixel intensity of the hot region of interest at 550°C (1022°F), μ_{550} , shall be greater than the sum of the mean pixel intensity of the hot region of interest at 500°C (932°F), μ_{500} , and the standard deviation of the pixel intensities of the hot region of interest at 500°C (932°F), σ_{500} .~~

4. *Delete 8.1.4.2.1 and 8.1.4.2.2 in their entirety and renumber remaining paragraphs.*

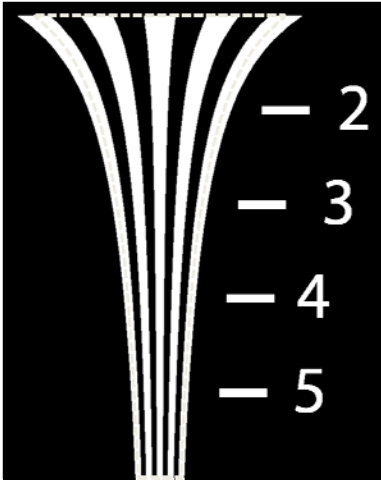
5. *Revise 8.1.6.7 to read as follows:*

8.1.6.7 A minimum of 10 uncompressed color images at a minimum bit depth of 16 bits shall be captured from the visible spectrum camera at a rate of one image every 3 seconds, ± 0.1 second, ~~at each nominal measurement temperature. The image having the lowest contrast shall be excluded.~~

6. *Revise 8.1.6.11.1 to read as follows:*

8.1.6.11.1 The pixels selected to calculate C_i , CTF_i , and μ_i shall be located along a baseline that is perpendicular to the centerline of the converging lines of the stencil pattern, as shown in Figure 8.1.6.11.1(a) and (b). Along these lines, all pixels between the maxima of the leftmost and rightmost lines of the stencil pattern shall be used.

Insert new Figure 8.1.6.11.1 (a), and renumber existing Figure 8.1.6.11.1 as Figure 8.1.6.11.1(b).



7. Revise 8.1.6.12 to read as follows:

8.1.6.12 CTF_i shall be calculated at least at each indexed baseline as specified in Equation 8.1.6.12, where I_{max} and I_{min} are the averaged maximum and minimum pixel intensity values, respectively, for each of the hot and cold regions along the baseline. CTF_1 shall be defined as the maximum CTF value calculated between indices 1 and 2, inclusive.

8. Revise text in 8.1.6.19 to read as follows, equation remains unchanged:

8.1.6.19 The image quality probability (P_{IQ}) shall be calculated for the spatial resolution procedure as specified in Equation 8.1.6.19, where C is the ~~CTF1 value~~ average of the CTF_i 's from both sets of lines calculated ~~at index 1~~ in 8.1.6.13, B is the average brightness calculated in 8.1.6.14, SR is the spatial resolution calculated in 8.1.6.18, and NU is the $NU(30)$ value calculated in 8.1.5.16.

9. Revise 8.10.4.3.1 to read as follows:

8.10.4.3.1 The surface labeled T_{hot} shall range in temperature from ambient to 550°C (1022°F) and shall fill at least 50 percent of the FOV. The radiation source producing the T_{hot} surface shall be a blackbody and shall have an emissivity of 0.95, ± 0.03 . The ~~source-target~~ blackbody shall be calibrated at least every 6 months. ~~The nonuniformity of the blackbody shall not exceed 0.02.~~ The blackbody temperature accuracy shall be $\pm 0.05^\circ\text{C}$ ($\pm 1^\circ\text{F}$). The stability of the emitting surface ~~blackbody~~ temperatures shall ~~be not exceed~~ not exceed 0.15°C. The nonuniformity of the ~~emitting surface~~ blackbody shall not exceed 0.02 using the method in 8.1.5.134 as ~~su~~applied to temperature measurements of the emitting surface of the blackbody.

10. Revise 8.10.5.8 to read as follows:

8.10.5.8 The image capturing software and hardware shall permit 16-bit uncompressed color images to be downloaded from the visible spectrum camera to a computer or memory at a rate of one image every ~~3 seconds, ± 0.1 second,~~ $2^\circ\text{C} \pm 0.1^\circ\text{C}$ ($3.6^\circ\text{F} \pm 0.2^\circ\text{F}$) as T_{hot} increases from ambient to 550 °C (1022 °F) at a rate of ~~not greater than~~ not greater than 15 °C (27 °F) per minute.

11. Revise 8.10.6.7 to read as follows:

8.10.6.7 The color yellow shall be defined as having a hue between 45 and 69 degrees, a luminosity between 0.5 and ~~0.7~~ 0.9, and a color saturation greater than 0.2.

12. Revise 8.10.6.8 to read as follows:

8.10.6.8 The color orange shall be defined as having a hue between 24 and 32 degrees, a luminosity between 0.5 and ~~0.7~~ 0.9, and a color saturation greater than 0.1.

13. Revise 8.10.6.9 to read as follows:

8.10.6.9 The color red shall be defined as having a hue between 344 and 15 degrees, a luminosity between 0.5 and ~~0.7~~ 0.9, and a color saturation ~~between 0.1 and 0.4~~ greater than 0.4.

14. Revise 8.10.6.10 to read as follows:

8.10.6.10 The color dark red shall be defined as having a hue between 344 and 15 degrees, a luminosity between 0.5 and 0.7, and a color saturation ~~greater than 0.4~~ between 0.1 and 0.4.

15. Delete 8.10.7.7 in its entirety

16. Revise 8.10.8 to read as follows:

8.10.8 Report. T_Y , T_O , T_R , and P_{IQ} shall be reported and recorded.

17. Revise 8.12.4.6 to read as follows (this information is found in 8.12.4.7):

8.12.4.6 The emitting surface of the source targets shall be equal in size, ± 10 percent, as viewed on the thermal imager's display. ~~The combined area of the emitting surfaces of the source targets shall fill at least 40 percent of the thermal imager's FOV.~~

Submitter's Substantiation: 6.6.4.4.3 refers to the internal electronics heat indicator. There is no description of the indicator in the current document however it exists in the current document in Figure 6.6.4. It was proposed to be deleted as per ROP-54 submitted by Kovac whose recommendation was to delete the entire symbol. The committee action on ROP-54 was accepted in principal as it included many items in one submission. As a result the internal electronics overheat indicator remains in the current edition of NFPA 1801-2010, but is not described.

6.6.4.7.2 There is no written description of the TI BASIC PLUS operational format indicator in the standard as it is currently written. This change is requested to remain consistent with the written descriptions of all other icons and indicators that exist in the standard as pictured in Figures 6.6.3 and 6.6.4. Also, 6.6.4.7.1 indicates that the TI BASIC PLUS operational format indicator is a requirement, 6.6.4.7.4 indicates when the TI BASIC PLUS operational format indicator shall be displayed, and TI BASIC PLUS operational format indicator is pictured in figures 6.6.3 and 6.6.4

7.1.4 The parts of the Effective Temperature Range Test that involve testing for pixel saturation should be removed because they result in erroneous information.

8.1.6.7 This test is only done at one temperature so the text is not relevant.

8.1.6.10.1 More exact definition of the pixels to be used to calculate the parameters C_i , CTF_i , and μ . Necessary to give reproducible results. Figure 8.1.6.10.1(a) was added to give a visual representation of the description in 8.1.6.10.1

8.1.6.12 The meaning of CTF_1 should be included in this paragraph to provide additional relevant information.

8.1.6.19 The meaning of the C value should be included in this paragraph to provide additional relevant information.

8.10.4.3.1 The apparatus for the effective temperature range test requires that the stability of the blackbody temperatures shall not exceed the specified temperature.

8.10.5.8 The procedure for testing image capturing software and hardware requires a download rate as specified.

8.10.6.7, 8.10.6.8, 8.10.6.9, 8.10.6.10 In the image color procedure this color is defined as having a luminosity as specified.

8.10.7.7 and 8.10.8 The parts of the Effective Temperature Range Test that involve testing for pixel saturation should be removed because they result in erroneous information.

8.12.4.6 The reference to the combined area of the emitting surface is incorrect, and should be deleted.

Emergency Nature: Lack of consistency in terminology is resulting in misinterpretation, confusion, and no standardization which is affecting the design requirements of the product.



NFPA

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MEMORANDUM

TO: NFPA Technical Committee on Electronic Safety Equipment

FROM: Stacey Van Zandt

DATE: January 26, 2011

SUBJ: NFPA 1801 Proposed TIA No. 1018 FINAL TC BALLOT RESULTS

According to 5.4 in the NFPA Regs, the final results show this TIA HAS achieved the $\frac{3}{4}$ majority vote needed on both Question 1 (Technical Merit) and Question 2 (Emergency Nature).

21 Eligible to Vote
4 Not Returned (Bryner, Morris, Parkulo, and Roche)

Technical Merit:

1 Abstentions (Nyberg)
16 Agree (Agree with comment - Feely)
0 Disagree

Emergency Nature:

1 Abstentions (Nyberg)
16 Agree (if any, w/comment)
0 Disagree (names, if any)

There are two criteria necessary to pass ballot [(1) affirmative $\frac{3}{4}$ vote and (2) simple majority].

- (1) The number of affirmative votes needed for the report to be published is 12.
(21 eligible to vote - 4 not returned - 1 abstentions = $16 \times 0.75 = 12$)
- (2) In all cases, 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:
[21 eligible \div 2 = 10.5 = (11)]

Final ballot comments are attached for your review. Ballots received from alternate members are not included, unless the ballot from the principal member was not received.

Attachments

Subject:

FW: Comment on TIA Log Number 1018 for NFPA 1801-2010

C#001

From: Landon Borders [mailto:landon_borders@bullard.com]

Sent: Thursday, January 20, 2011 9:32 AM

To: TIAs

Cc: Trebisacci, Dave; bhvarner@cox.net

Subject: Comment on TIA Log Number 1018 for NFPA 1801-2010

Dear Standards Council,

It is my understanding that there is no formal method for commenting on a TIA. I wish to comment on TIA Log Number 1018 for NFPA 1801. The proposed language for section 8.10.4.3.1 in the TIA is as follows:

8.10.4.3.1 The surface labeled T_{hot} shall range in temperature from ~~ambient~~ to 550°C (1022°F) and shall fill at least 50 percent of the FOV. The radiation source producing the T_{hot} surface shall be a blackbody and shall have an emissivity of 0.95, ± 0.03. The ~~source target blackbody~~ shall be calibrated at least every 6 months. ~~The nonuniformity of the blackbody shall not exceed 0.02.~~ The blackbody temperature accuracy shall be ± ~~0.05°C~~ (± 1°F). The stability of the ~~emitting surface blackbody~~ temperatures shall ~~be not exceed~~ not exceed 0.15°C. The nonuniformity of the ~~emitting surface blackbody~~ shall not exceed 0.02 using the method in 8.1.5.134 ~~as supplied~~ to temperature measurements of the emitting surface of the blackbody.

I propose to strike 'ambient' (highlighted above) and replace it with '50°C', and to strike the '0' from tenths position of '0.05°C' (highlighted above) such that it reads '0.5°C'.

Best Regards,

Landon Borders
Bullard
1898 Safety Way
Cynthiana, KY 41031
859-234-6616

TECHNICAL COMMITTEE LETTER BALLOT
PROPOSED TENTATIVE INTERIM AMENDMENT LOG NO. 1018
To Revise text on the 2010 Edition of NFPA 1801
Standard on Thermal Imagers for the Fire Service

Question 1: I agree with the **TECHNICAL MERITS** of the Proposed TIA to revise text on the 2010 Edition of NFPA 1801

_____ **AGREE** _____ **DISAGREE*** **X** **ABSTAIN***

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a disagreement or abstaining position.

My organization is not an active participant in this product category. I support the action of the committee.

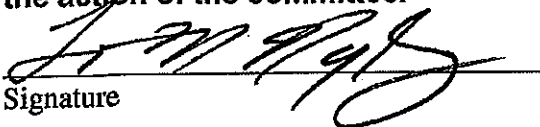
Question 2: I agree that the subject is of an **EMERGENCY NATURE**.

_____ **AGREE** _____ **DISAGREE*** **X** **ABSTAIN***

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a disagreement or abstaining position.

My organization is not an active participant in this product category. I support the action of the committee.



Signature

Lawrence M Nyberg
Name (Please Print)

January 20, 2011
Date

Please return the ballot on or before **Thursday, January 20, 2011 (Revised date)**

PLEASE RETURN TO:

Stacey Van Zandt, Project Administrative Supervisor
NFPA
1 Batterymarch Park
Quincy, MA 02169

FAX: (617) 984-7056

E-mail: svanzandt@nfpa.org

TECHNICAL COMMITTEE LETTER BALLOT
PROPOSED TENTATIVE INTERIM AMENDMENT LOG NO. 1018
 To Revise text on the 2010 Edition of NFPA 1801
Standard on Thermal Imagers for the Fire Service

Question 1: I agree with the **TECHNICAL MERITS** of the Proposed TIA to revise text on the 2010 Edition of NFPA 1801

 AGREE **DISAGREE*** **ABSTAIN***

EXPLANATION OF VOTE - Please type or print your comments:

TIA item # 2

The original language in 6.6.4.7.2 should remain in the document and be renumbered. The current 6.6.4.7.3 incorrectly references the location of the temperature measurement zone icon.

TIA item # 4

No substantiation given for these changes.

Question 2: I agree that the subject is of an **EMERGENCY NATURE**.

 AGREE **DISAGREE*** **ABSTAIN***

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a disagreement or abstaining position.

Michael Feely
Signature

Michael Feely
Name (Please Print)

Jan 18, 2011
Date

Please return the ballot on or before **Friday, January 28, 2011**

PLEASE RETURN TO:

Stacey Van Zandt, Project Administrative Supervisor
 NFPA
 1 Batterymarch Park
 Quincy, MA 02169

FAX: (617) 984-7056

E-mail: svanzandt@nfpa.org