



National Fire Protection Association

1 Batterymarch Park, Quincy, MA 02169-7471
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MEMORANDUM

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

FROM: Stacey Van Zandt

DATE: July 18, 2011

SUBJECT: NFPA 1991 ROC TCC FINAL Ballot Results (F2011)

The Final Results of the NFPA 1991 ROC TCC Letter Ballot are as follows:

20 Members Eligible to Vote
3 Not Returned (Bain, Baker, and Neilson)

PART 1 (TCC Comment Log #34)

17 Affirmative
0 Negatives
0 Abstentions

PART 2 (TCC Notes)

14 Affirmative
3 Negatives (Duffy, Stull and Young)
0 Abstentions

PART 3 (Release of ROC)

15 Affirmative
2 Negatives (Duffy and Stull)
0 Abstentions

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 comment to pass is 14.
(20 eligible to vote - 2 not returned - 0 abstentions = $18 \times 0.75 = 13.5$)
- (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:
[20 eligible $\div 2 = 10 + 1 = (11)$]

Reasons for negative votes, etc. are attached for your review. Ballots received from alternate members are not included unless the ballot from the principal member was not received.

According to the final ballot results, all ballot items received the necessary $\frac{3}{4}$ required affirmative votes to pass ballot.

Technical Correlating Committee on
Fire and Emergency Services Protective Clothing and Equipment

Ballot on the NFPA 1991 Report on Comments (F2011)

Part 1: Letter Ballot on the Technical Correlating Committee Comment (Log #34) please record me as voting:

AFFIRMATIVE NEGATIVE* ABSTAINING*

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a negative or abstaining vote.

Part 2: Letter Ballot on the Technical Correlating Committee Amendments to the ROC (TCC Notes), please record me as voting:

AFFIRMATIVE NEGATIVE* ABSTAINING*

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a negative or abstaining vote.

See Attached

Part 3: Letter Ballot Authorizing the Release of the ROC (This is an Informational Letter Ballot only), please record me as voting:

AFFIRMATIVE NEGATIVE* ABSTAINING*

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a negative or abstaining vote.

Same as Page 2 - See Attached

If you have correlating issues on any of these parts, please describe below (include section/paragraph and the issue):

Signature

Richard M. Duffy

Name (Please Print)

7-6-11

Date

Please return the ballot as soon as possible but not later than July 7, 2011.

PLEASE RETURN TO: Stacey Van Zandt, NFPA, 1 Batterymarch Park, Quincy, MA 02169

FAX: 617-984-7056 /Email: svanzandt@nfpa.org

**TCC Ballot on NFPA 1991 Report on Comments (F2011)
Explanation of Vote for Parts 2 and 3**

Richard M. Duffy
International Association of Fire Fighters (IAFF)

The IAFF believes that the TCC's rejection for establishing an "all hazards" designation in place of "CBRN" as a reversal its previous October 2010 decision is short sighted and detrimental to the future of fire service's ability to secure Federal funding for PPE. Further, I believe this reversal will put fire fighters at risk, especially in view of reduced federal funding. The TCC should reverse the actions on Comments 1971-1 and 1971-10. The IAFF had proposed the following definition of All Hazards to be substituted for CBRN terminology:

3.3.X All Hazards. Hazards to emergency response personnel that potentially include thermal, chemical, biological, radiological, nuclear, explosive and physical which are caused by an unintentional act or omission, or are the result of deliberate, malicious actions with the intention to kill, sicken and/or disrupt society, and can include the psychological effect of an incident that has a major impact on the population not exposed to the hazard itself.

A.3.3.X All Hazards. The all-hazard environment that emergency response personnel must consider include a broad spectrum of threats and hazards that are caused by natural conditions or human actions. These situations include: fires (structural, transportation, and wildland), emergency medical incidents (single, multiple, or mass casualty), hazardous material incidents (spills or active releases), natural events (flooding, earthquakes, tornadoes, hurricanes, tsunamis), transportation incidents (truck, rail, waterway, pipeline), loss of vital services (electrical, water, sanitary sewer), and disruption to the information technology infrastructure. The situations may occur individually, or there may be a combination of them during an incident, creating a synergistic effect.

The actual hazards to emergency response personnel include thermal, chemical, biological, radiological, nuclear, explosive and physical. These may be caused by an unintentional act or omission, or they may be the result of deliberate, malicious actions with the intention to kill, sicken and/or disrupt society. In addition, the psychological effect of an incident may have a major impact on the population not exposed to the hazard itself.

An important feature of all hazards protection is the testing and certification of the entire ensemble for protective performance. A systems approach is employed to establish broad protection of the individual responder for the threats and hazards in the all-hazard environment.

The all-hazard environments are not limited to the large, high-profile national incidents, but can occur on a smaller scale. They include any situation in which emergency responders encounter hazards that present an imminent threat to the lives of all present and property.

Emergency response system capability must also be comprehensive, risk-based, all hazard. The onset of an emergency creates a need for time-sensitive actions to save lives and property, as well as for action to stop the event and begin stabilizing the situation. Such response actions include fire suppression, hazardous material containment and other immediate measures necessary to stop or minimize the escalation of the event. Additional interventions will include

warning and evacuating the population in the threat area, rescuing individuals and providing medical treatment and transport.

Technical Correlating Committee on
Fire and Emergency Services Protective Clothing and Equipment

Ballot on the NFPA 1991 Report on Comments (F2011)

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Part 2: Letter Ballot on the Technical Correlating Committee Amendments to the ROC (TCC Notes), please record me as voting:

AFFIRMATIVE NEGATIVE* ABSTAINING*

EXPLANATION OF VOTE - Please type or print your comments:

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(see attached)

Part 3: Letter Ballot Authorizing the Release of the ROC (This is an Informational Letter Ballot only), please record me as voting:

AFFIRMATIVE NEGATIVE* ABSTAINING*

EXPLANATION OF VOTE - Please type or print your comments:

*An explanation must accompany a negative or abstaining vote.

(see attached)

If you have correlating issues on any of these parts, please describe below (include section/paragraph and the issue):

Signature

Name (Please Print)

Date

[Handwritten Signature]
Stacey V. Zandt
7/7/2011

Please return the ballot as soon as possible but not later than July 7, 2011.

PLEASE RETURN TO: Stacey Van Zandt, NFPA, 1 Batterymarch Park, Quincy, MA 02169

FAX: 617-984-7056 /Email: svanzandt@nfpa.org

Stull Vote on TCC Ballot on NFPA 1991 Report on Comments (F2011)***Part 2***

The TCC should have acted to provide language in NFPA 1991 to accommodate the transition from CBRN to "All Hazards." While the current criteria have been designed for some parts of the CBRN mission, they by no means are all inclusive. The overall industry is shifting to a vernacular of "all hazards" and it is a serious mistake for the TCC not to act now for making this change since the standard will not come up for revision for another 5 years. During this time, it is expected that Federal funds provided through the Fire Act and other sources will continue to diminish along with municipal budgets for procuring PPE. The nomenclature used in describing PPE will be important in how first responder organizations will be able to justify expenditures for PPE. PPE that can be used in a multitude of missions, as that designed for CBRN capabilities, will stand a greater change of being funding that the narrow interpretation currently provided for CBRN. CBRN requirements are the only requirements in the project that dictate complete ensembles.

I do not agree with the criticisms that the implementation of an "all hazards" approach conveys any false sense of protection or increases the product liability of the manufacturers. The standards clearly define the levels of performance and manufacturers through user information guides are able to describe in detail the limitations of their clothing ensembles.

I do believe that the TCC has acted responsibly for the number of changes and decisions that is had undertaken for the correction and correlation of different test methods in this standard.

Part 3

The response provided above is also the basis for my vote on this part.

**Technical Correlating Committee on
Fire and Emergency Services Protective Clothing and Equipment**

Ballot on the NFPA 1991 Report on Comments (F2011)

Part 1: Letter Ballot on the Technical Correlating Committee Comment (Log #34) please record me as voting:

AFFIRMATIVE **NEGATIVE*** **ABSTAINING***

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Part 2: Letter Ballot on the Technical Correlating Committee Amendments to the ROC (TCC Notes), please record me as voting:

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Signature

Name (Please Print)


Date

Please return the ballot as soon as possible but not later than July 7, 2011.

PLEASE RETURN TO: Stacey Van Zandt, NFPA, 1 Batterymarch Park, Quincy, MA 02169

FAX: 617-984-7056 /Email: svanzandt@nfpa.org

R Young Lotus Notes

 Richard H Young/AE/DuPont
07/07/2011 02:05 PMTo
cc Richard H Young/AE/DuPont@DuPont
bcc

Subject NFPA 1991 Part 2 Negative Comments

Vote negative on 1991-21 Log #13 FAE-HAZ

TCC ACTION: *The TCC directs the Technical Committee on Hazardous Materials Protective Clothing and Equipment to change the action from reject to accept in Comment 1991-21 (Log #13) for correlation purposes for the optional flash fire requirements. Introduction of a new method was not considered in NFPA 1992. Adding this method to NFPA 1991 would result in a lack of correlation. The TCC also believes that there was a lack of technical input to support the change. The TC should also consider this method for future revisions to the standard if the application is validated.*

Reason for Negative Vote: The fact that the TC failed to recognize that the proposed addition of the ASTM F1930 test method should have also been made to NFPA 1992 is not a valid reason to remove it from NFPA 1991. The TC discussed at length the benefits of adding this test requirement in order to measure predicted body burn level for an option promoting "flash fire" performance. In order to improve correlation between NFPA 1991 and NFPA 1992, a TIA should be developed by the TC to add the same new flash fire option requirements to NFPA 1992 that were accepted by the TC for NFPA 1991. It is unclear the basis for the TCC statement that it "believes that there was a lack of technical input to support the change." The TC did discuss this log in the March 2011 meeting and voted to reject it.

Vote negative on 1991-15 Log #32 FAE-HAZ

TCC ACTION: *The TCC directs the Technical Committee on Hazardous Materials Protective Clothing and Equipment to do the following for the purposes of correlation with other standards in the project:*

- 1. Correct the permeation language to test acrylonitrile and acrolein as liquid TICs in Chapter 7 and Chapter 8 as indicated in the text provided below.*
- 2. Correct the permeation test method to reflect updates made by the CBRN task group for permeation of the CWAs and TICs as indicated in the text provided below.*
- 3. Address the issues of ammonia and chlorine to be tested twice, once as an industrial chemical and once as a TIC.*
- 4. Address the issue of how industrial chemicals, TICs and warfare agents endpoints are evaluated (cumulative permeation vs breakthrough times).*

Note: Items 3 and 4 should be addressed by the TC with the objective of submitting a concurrent TIA at the time of publication of the 2012 edition of NFPA 1991.

With this direction, the TCC has harmonized the permeation resistance performance criteria and test method among each of the standards specifying CBRN requirements. In the case of NFPA 1991, this has been accomplished by establishing the criteria in separate paragraphs and using a separate second permeation test method to address chemical warfare agents and toxic industrial chemicals to reduce confusion as to which test methods apply to which chemicals. In addition, the error of requiring acrolein and acrylonitrile testing as 99% gases has been corrected by specifying that these chemicals be tested as neat liquids. The redundancy for testing ammonia and chlorine both as industrial chemicals and toxic industrial chemicals using both methods has been retained to create an incentive for the Technical Committee to resolve issues regarding those chemicals that should be tested for breakthrough time and those that chemicals that should be tested for cumulative permeation mass.

Note: The following changes override those made in the committee actions on Proposal 1991-29 (Log #1) with the exception that the change for 7.1.4 (repositioning of SF6 integrity test criteria) still applies. The changes are indicated relative to NFPA 1991-2005.

R Young Lotus Notes

Reason for Negative Vote: Directing the TC to re-evaluate the use of cumulative vs breakthrough time permeation criteria is not appropriate. The TC in its March 2011 meeting discussed this proposal at length and voted to reject it. It was not because there was confusion about what was being proposed. Testing some chemicals using cumulative permeation and others using breakthrough time is not necessarily an issue. For some chemicals there is peer reviewed data for cumulative skin dosage to provide a basis for a pass / fail criteria based on known health impacts to wearers of NFPA 1991 certified ensembles. But that data is not currently available for most hazardous chemicals included in the NFPA 1991 list.

Also, the challenge chemicals listed in NFPA 1991 are not the only hazards that might be encountered in a hazmat situation by wearers of NFPA 1991 certified garments. That list was not intended to represent all of the possible hazards since it is impossible to list all chemicals that might be encountered in a hazmat incident. The list in ASTM F 1001 represents many chemical classes. Requiring barrier properties against this broad range of chemical classes increases the likelihood that the material will have barrier against most other chemicals that might be encountered in a hazmat incident.

There is no need to correlate the exact list of chemicals nor means of testing these chemicals between NFPA 1991, 1992, and 1994. They are different standards for different types of PPE. A cumulative permeation requirement does not address possible skin damaging due to a short term peak exposure. Spiking is addressed with the current breakthrough permeation testing criteria. Lastly, peer reviewed data for cumulative skin dosage values is not available for the specific chemicals listed in ASTM F1001, yet alone for all of the chemicals that these items were chosen to represent by their use in NFPA 1991. While an argument has been made that the current normalized breakthrough time permeation requirements are too stringent, there are no demonstrated / accepted limits to move to with cumulative permeation criteria. At the normalized breakthrough time permeation requirement levels currently set in NFPA 1991, the TC is unaware of any reports of skin exposure injuries with NFPA 1991 certified ensembles. Isn't that the main intent of this standard, to protect the wearers from hazardous chemicals?