



Amy Beasley Cronin  
Secretary, Standards Council

18 November 2010

To: Interested Parties

Subject:

Standards Council Decision (Final):	<b>D#10-24 (Corrected)</b>
Standards Council Agenda Item:	<b>SC #10-10-19</b>
Date of Decision*:	20 October 2010
Request of the TC on Pyrotechnics to Process Two New Draft Standards: <i>Standard Method of Fire Test for Flame Breaks and Standard Method of Fire Test for Covered Fuse on Consumer Fireworks</i>	

Dear Interested Parties:

At its meeting of 19-20 October 2010, the Standards Council considered an appeal on the above referenced matter. On November 8, 2010 NFPA issued the Council's decision on the appeal in the form of a "Short Decision" which briefly stated the outcome of the appeal and which indicated that a full decision on the appeal would be issued in due course and sent to all interested parties as soon as it became available.

The Council's full decision is now available and is attached herewith.

Sincerely,

A handwritten signature in black ink that reads "Amy Beasley Cronin".

Amy Beasley Cronin  
Secretary, NFPA Standards Council

- c: D. Berry, M. Brodoff, L. Fuller, G. Colonna, G. Harrington, J. Moreau-Correia, T. Golinveaux  
Members, TC on Pyrotechnics (PYR-AAA), Members, TC on Fire Code (FCC-AAA)  
Members, TC Fire Tests (FIZ-AAA)  
Members, NFPA Standards Council (AAD-AAA)  
Individuals Providing Appeal Commentary



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**SUMMARY ACTION:** The Council has voted to approve the Technical Committee's request to initiate standards development activities for developing fire test standards for flame breaks and covered fuses. Specifically, the Technical Committee is granted permission to enter the draft standards entitled *Standard Method of Fire Test for Flame Breaks* and *Standard Method of Fire Test for Covered Fuse on Consumer Fireworks*, previously submitted to the Council Secretary, into the Annual 2012 revision cycle.

At its meeting of October 19-20, 2010, the Standards Council gave further consideration to a request of the Technical Committee on Pyrotechnics (Technical Committee) to process two new draft standards on covered fuses and flame breaks, respectively. Both proposed standards are intended for use in connection with the retail sale of consumer fireworks and the related NFPA Standard, NFPA 1124, *Code for the Manufacture, Transportation, Storage and Retail Sales of Fireworks and Pyrotechnic Articles*. The request to develop these two new standards, along with a third standard on packaging not relevant to the present request, were first considered by the Council in 2005 and 2006. See Standards Council Agenda Item #05-10-2 (October 27, 2005); and Standards Council Decision No. 06-04 (SC #06-3-11, March 22, 2006). At that time, the Council agreed to expand the scope of the Technical Committee to include the development of fire test standards applicable to the packaging, covered fuses and flame breaks used in retail sales displays of consumer fireworks. The Council, however, expressed its concern that "little if any research or testing was produced to support the draft standards and there is no clear prospect that the standards development process, once begun, would be supported by adequate technical substantiation." See, Standards Council Decision No. 06-04. Based on this concern, the Council denied the request to enter the draft standards into the next available revision cycle. Instead, the Council directed that, before making a renewed request to enter drafts of any of the fire test method standards into a revision cycle, the Technical Committee should present evidence of the following to the Council for its review: (1) that the draft document clearly states the performance criteria which the test method is designed to measure; (2) that the performance criteria and test method in the draft document are clearly related to actual use conditions as demonstrated by full-scale testing; and (3) that a credible independent third-party review has been conducted to review and confirm the validity of the test method.

In order to provide evidence related to these three criteria, the American Fireworks Standards Laboratory (AFSL) sponsored a test program conducted by Southwest

Research Institute (SwRI), an independent, nonprofit applied research and development organization. The results of this testing has been submitted to the Council along with a memorandum, dated July 7, 2010, authored by Barry Badders, P.E., on behalf of SwRI (the SwRI Memorandum). The SwRI Memorandum summarizes the third-party testing conducted by SwRI and comments on the draft test methods for covered fuses and flame breaks, and on the three criteria enumerated in the Standards Council's decision. In addition to submitting the Memorandum, Mr. Badders, along with representatives of AFSL appeared before the Standards Council at its October meeting in order to present and discuss the SwRI findings.

After a review of the entire record before it, including the submissions from SwRI, the Council has voted to approve the Technical Committee's request to initiate standards development activities for developing fire test standards for flame breaks and covered fuses. Specifically, the Technical Committee is granted permission to enter the draft standards entitled *Standard Method of Fire Test for Flame Breaks* and *Standard Method of Fire Test for Covered Fuse on Consumer Fireworks*, previously submitted to the Council Secretary, into the Annual 2012 revision cycle.

In making this decision, the Council emphasizes that it has not drawn any definitive conclusions concerning whether the draft test methods meet the three criteria set forth previously by the Council. Nor does the SwRI Memorandum provide responses concerning these criteria in all respects. The Memorandum, for example, is careful to note important limitations and qualifications concerning the test results that may have a bearing on the content of any standards that may eventually emerge from the standards development process. The Council understands and respects, moreover, SwRI investigator, Mr. Badders' view, expressed at the Council meeting, that consensus standards are generally validated by the consensus process itself as it incorporates consensus-based judgments concerning minimum acceptable levels of safety into standards. Those consensus judgments, however, must have some reasonable basis, and the Council's concern when it outlined the criteria on which it requested evidence, was that, before standards activities would begin, there would be some reasonable basis on which to begin the process and reach consensus judgments. The Council has concluded that the record does now provide this minimum basis on which to begin standards development activities.

In so concluding, however, the Council reiterates that its assessment of the testing presented to it and the technical validity of the draft standards has been limited. The Council has not attempted to draw definitive conclusions concerning the technical validity of the draft standards, the adequacy of the SwRI testing to address all technical issues, or the appropriateness of issuing any final standards that may emerge from the standards development process. Rather, it is the consensus standards development process, with its participation by a variety of relevant interests and expertise, which is the usual means by which the content of standards and any issues of technical validity are considered and addressed. That should continue to be the case here, and by allowing standards activities to begin, the Council is not prejudging any issue concerning the ultimate validity or content of any standards. In developing these standards, therefore, the Technical Committee should carefully review and critically assess the SwRI test results and other information available to it and provide appropriate technical

substantiation in support of its standards development activities. As part of its activities, it should identify any further research needs that may be needed to support standards development activities.

Without limiting in any way the review and assessment of the testing and other information to be conducted by the Technical Committee, the Council notes the SwRI Memorandum carefully identifies limitations and qualifications on the testing that was conducted. For example, the SwRI Memorandum emphasizes that, “based on the limited number of full-scale fire tests conducted, it appears that the results presented in the SwRI test report is valid specifically to the materials tested, in the manner tested, but not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.” See SwRI Memorandum at p. 1-2. This would indicate, at a minimum, that the Technical Committee, as it develops the next edition of NFPA 1124 and the fire test standards, should carefully consider such issues as whether the fire test scenarios in the SwRI testing are representative of actual field conditions for consumer retail sale of fireworks; whether the protective measures, arrangements, material and scenarios in NFPA 1124 correspond with the protective measures, arrangements, material and scenarios used in the fire tests; and whether the requirements for flame breaks, including any minimum flame break ratings required in NFPA 1124, are adequately supported by the SwRI testing. Additionally, with respect to the flame break test method criteria described in the draft flame break standard, the SwRI Memorandum cites a rating criterion that reads: “The test sample begins to deflect toward the furnace immediately prior to collapsing or disintegrating”. The Memorandum opines that “[t]his criterion is ambiguous and subjective as the amount of allowable deflection is not quantified nor is the actual time quantified for ‘immediately prior to’.” The Technical Committee should give consideration to clarifying this criterion as it processes the standard. Further, with respect to the draft covered fuses test method, the SwRI Memorandum identifies ambiguity with respect to the test duration criterion. Attention should be paid to this as well as standards development proceeds. To reemphasize, these comments are not meant to limit the review of the Technical Committee, and the Technical Committee should conduct its own independent review of the SwRI Memorandum, test reports and other information available to it as it proceeds.

Finally, the Council is also directing, that during the processing of these two proposed standards, review and input should continue to be solicited from the Technical Committee on Fire Tests, and this Committee’s input should be appropriately documented. It is also noted, as the Council has previously stated (see Standards Council Minute Item #09-10-24, October 27, 2009), that the issuance of these test standards will only be considered in concert with the successful completion of Chapter 7 of NFPA 1124, which, in turn, is dependent upon meeting the nine criteria outlined in Standards Council Decision No. 08-19 (Standards Council Agenda Item #08-7-38, July 24, 2008).