NATIONAL FIRE SPRINKLER ASSOCIATION, INC.

Tuesday e-Tech Alert
February 28, 2006

Unpublished NFPA 13 and NFPA 25 Errors

Proposed changes for the 2007 edition of NFPA 13 – *Installation of Sprinkler Systems* will be presented to the NFPA membership at the NFPA's meeting in Orlando June 4-8, 2006. Proposed changes for the 2007 edition of NFPA 25 – *Inspection, Testing and Maintenance of Water-Based Fire Protection Systems* are in cycle six months behind NFPA 13, and have been published for public review until this coming Friday, March 3, 2006. In the case of both standards, many efforts go into producing documents that are free of errors. However, errata are often issued to standards and can be found on the www.nfpa.org website. This edition of the NFSA e-Tech Alert focuses on some additional errors in the current editions of those standards that were never published in official errata but will hopefully be corrected in the 2007 editions. A number of such unpublished errors were previously highlighted in the June 14, 2005 edition of e-Tech Alert. The legitimacy of these additional errors, although not officially recognized, can be established through previous editions and the lack of documented changes to the intent.

NFPA 13 Error – Ceiling Densities for Uncartoned Nonexpanded Plastics with In-Rack Sprinklers

Section 12.3.5.1 in the 2002 edition of NFPA 13 addresses control mode density-area protection criteria for rack storage of plastics over 25 ft in height. Section 12.3.5.1.1 appears to limit the use of Table 12.3.5.1.1 ceiling sprinkler densities to cartoned Group A plastics (expanded or unexpanded) despite the fact that some of the in-rack sprinkler criteria are permitted for uncartoned unexpanded plastics. Older editions of NFPA 13 indicate that the original rules for plastics stored this high only applied to plastics in cartons (expanded or unexpanded). These original rules are now found in Table 12.3.5.1.1 and Figures 12.3.5.1.2(a) and (b) and Figures 12.3.5.1.2.1(a) through (c).

When Figures 12.3.5.4.1.3(a) through (f) were put into the standard, the intent was to allow them to be used for uncartoned unexpanded plastics (as indicated in the title), but the submitter neglected to propose changes to Section 12.3.5.1.1 to allow the same table to be used for ceiling sprinkler demands.

The way to fix this problem is for the Committee to add uncartoned unexpanded plastic to section 12.3.5.1.1 so that Table 12.3.5.1.1 can be used for ceiling sprinkler densities for protecting uncartoned unexpanded plastics with in-rack sprinklers as shown in Figures 12.3.5.4.1.3(a) through (f).

Special caution must be used with the criteria of 12.3.5.4.1.4. It clearly is also intended to be used for uncartoned unexpanded plastic, but has its own ceiling sprinkler criteria, which is different from Table 12.3.5.1.1. It does not permit the use of a 0.3 density when the storage over the in-rack sprinklers is 5 ft or less. Section 12.3.5.4.1.4 specifically requires the 0.45 density regardless of the storage height over the top in-rack sprinklers.

NFPA 13 Error – ESFR Sprinkler In-Rack Sprinkler Demands

For the ESFR rack storage protection rules for storage over 25 ft in height, the in-rack sprinkler rules are clear. Sections 12.3.4.3.4 and 12.3.5.3.4 correctly give the rules for in-rack sprinklers with ESFR sprinklers at the ceiling. But for storage 25 ft or less in height, the corresponding sections seem to be missing. Tables 12.3.2.3.1 and 12.3.3.3.1 require in-rack sprinklers with ESFR sprinklers at the ceiling when the ceiling height gets up to 45 ft (for K-14 and K-16.8 ESFR sprinklers). But there is no

corresponding section telling the user how many levels of in-rack sprinklers to install, what kind of sprinklers, or how far apart they should be. Without any specific information, AHJs are sometimes asking for the same number of in-rack sprinklers and spacing as spray sprinklers at the ceiling would require. Sections 12.3.4.3.4 and 12.3.5.3.4 should have been repeated for the lower storage.

NFPA 13 Error – Horizontal Barriers

In Table 12.3.4.1.1 there are two protection scenarios that include horizontal barriers. One scenario is at the bottom of the Class I, II, and III commodity options and the other is at the bottom of the Class I, II, III, and IV commodity options. In both places, the sentence "vertical intervals – two lines of sprinklers under barriers – maximum horizontal spacing 10 ft (3.1 m) staggered" needs to be in the face sprinkler column, not the longitudinal flue sprinkler column. This can be seen in Figures (g) and (j), and the table text requires correction. In the former NFPA 231C standard, the source of the material, the text was spread across both the longitudinal and face sprinkler columns, probably so that the user did not think that the barrier had to be only over the longitudinal flue. But when the table was redrawn for clarity, the material was inadvertently bunched up into the longitudinal flue column, which is incorrect.

NFPA 13 Error – Pipe Size for Direct Attachment of Large Drop Sprinklers

Subsection 1 of Section 8.11.5.2.2 states that large drop sprinklers can be installed directly on top of branch lines less than 2 inches in diameter. Parts 3 and 4 give directions for riser nipples if the branch line piping is 2½ or 3 inch in size. This leaves the question of what to do with 2-inch pipe. The answer, based on historical review, is that sprinklers are permitted to be installed directly on 2-inch pipe without the use of a riser nipple. The first subsection should refer to "branch lines less than or equal to 2 inches in diameter."

NFPA 25 Error - Testing Pumps

The current 2002 edition of NFPA 25 contains an unfortunate additional typographical error in annex section 8.3.3 that has not been published by the NFPA. Commenting on the three methods used for testing pumps, it states that the "method described in 8.3.3.1.2.1 is not considered as complete as those in 8.3.3.1.2.2 and 8.3.3.1.2.3, because it does not test the adequacy of the water supply for compliance with the requirements of 8.1.3 at the suction flange."

The method that is not considered as complete as the others is actually the method of 8.3.3.1.2.3, which is the method of closed-loop metering. Section 8.3.3.1.2.1 involves testing the pump discharge through hose streams, which does test the adequacy of the water supply. It is not known how this typo crept into the NFPA 25 standard, since the annex section correctly identified the closed-loop method as the weak option in previous editions.

Upcoming NFSA Technical Tuesday Online Seminar

Topic: Residential Sprinklers
Instructor: Victoria B. Valentine, P.E., NFSA Manager of Product Standards
Date: March 7, 2006

Residential sprinklers have been on the market for over two decades. These sprinklers are listed to a separate standard by the laboratories and have unique installation criteria. This seminar will review some of the criteria for listing and installation. In addition, the seminar will present recent research results that address the interaction of residential sprinklers with sloped ceilings and obstructions that could interfere with either the operation of the sprinkler or the proper discharge pattern, including ceiling fans.

Information and registration for this seminar is available at www.nfsa.org.

Are You Aware of CPFST?

There are more than a hundred students currently enrolled in the NFSA's Certificate Program for Fire Sprinkler Technicians (CPFST). This 2-year program, initiated in 2004, has become the industry standard for technician training. It starts with the NFSA's two-week basic technician training seminar, and continues with a planned sequence of proctored on-the-job training, online training, chat rooms, and advanced training. The program includes periodic testing to monitor progress, and a certificate is awarded to recognize successful completion of the program. There are two "entry points" to the program each year, with the next entry point coming up in February/March of 2006. More information is available at the NFSA website or by contacting Ken Isman at isman@nfsa.org.

2006 Basic and Advanced Technician Training, NICET Inspection Seminars

The NFSA is the only organization that offers two-week basic technician training seminars, 3-day advanced technician training seminars, and NICET-oriented inspection and testing review seminars at various locations across the United States. The 2006 schedule has been set for the following dates and locations:

2-week Basic Technician Training

March 6-17, 2006 – Chicago, IL
August 14-25, 2006 – Seattle, WA
October 16-27, 2006 – Philadelphia, PA

3-day Advanced Technician Training

April 18-20, 2006 – Chicago, IL
May 16-18, 2006 – TBD
October 3-5, 2006 – Minneapolis, MN

3-day NICET Inspection and Testing Certification Review

May 9-11 – Spokane, WA
July 11-13, 2006 - Edwards, CO
November 14-16, 2006 - Anchorage, AK

For more information, contact Nicole Sprague using Sprague@nfsa.org

Headquartered in Patterson, New York, the National Fire Sprinkler Association has regional operations offices throughout the country.