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## **Conflicting Opinions on Water Curtain as an Isolated Hazardous Area**

Layout and detail technicians working for NFSA member contractors should be aware of a current disagreement between NFSA and NFPA staff as to whether a few sprinklers protecting glass windows can be taken from the domestic supply in accordance with the NFPA 101 Life Safety Code® allowance for “isolated hazardous areas.” The NFSA, through its Expert of the Day (EOD) program, was asked if Section 9.7.1.2 of NFPA 101 could be used to supply six sprinklers being used to provide a fire rating for some glass windows, as an alternative to a lengthy run back to a fire protection supply main. The NFSA EOD response was that it could, and also pointed out that the rules for use of the domestic supply differ between the NFPA 101 Life Safety Code® and the International Building Code (IBC):

*The answer to your question is yes, but the requirements are different depending on whether you are following NFPA 101 or the IBC. NFPA 101, 2009 Edition, Section 9.7.1.2 allows up to six sprinklers to be attached to the domestic line provided they can provide a 0.15 density and there is an automatic shutoff to the domestic system. The 2009 IBC Section 903.3.5.1.1 says that fewer than 20 sprinklers can be fed off of the domestic line provided that the water supply is strong enough to supply the sprinklers and the domestic water supply or there is an automatic shutoff to the domestic system and the water supply is strong enough to supply the sprinklers.*

Because the NFSA EOD program provides a copy of all its opinions to the staff liaison of the affected NFPA technical committee, NFPA’s Principal Life Safety Engineer Ron Coté was able to respond with his view to the contrary:

*I do not agree that NFPA 101 9.7.1.2 can be used to protect glass windows via sprinklers fed from domestic water. The provision of 9.7.1.2 is offered for use only in the protection of isolated hazardous areas. That means it works in conjunction with the provisions of Section 8.7- Special Hazard Protection. Section 8.7 recognizes two forms of protection: (1) enclosure via 1-hr fire barriers and (2) area/room protection via automatic sprinklers. The concept of protecting glass with sprinkler protection is not discussed. Therefore, the use of domestic water to supply not more than six sprinklers relates only to hazardous area/room sprinklering.*

Ken Isman, NFSA’s Vice President of Engineering, in turn responded to Mr. Coté, respectfully disagreeing on the basis of NFSA’s long participation in the development of the NFPA 101 code:

*The way that Section 9.7.1.2 is used every day in the field is quite different than what you have described. There is no linkage between Sections 9.7.1.2 and 8.7 in the Code. In fact, they use different terms. Section 9.7.1.2 says that you can use up to 6 sprinklers off of the domestic line to protect “isolated hazardous areas” while Section 8.7 talks about protecting “special hazards”. Lacking any formal reference, different terminology implies different subjects.*

*The term “special hazards” is not defined. The term “isolated hazardous areas” is also not specifically defined in the Life Safety Code, but the term “hazardous area” is defined in section 3.3.19.4 as any area of a structure that poses a degree of hazard greater than the normal situation for the building. When a “hazardous area” exists, the Code has the right to ask for extra protection (like sprinklers) and Section 9.7.1.2 has always been used to say that if the number of sprinklers is 6 or less, you could supply these sprinklers from the domestic water supply rather than run a full sprinkler system into the space.*

*There is nothing in the Code that actually says that a hazardous area has to be a “special hazard in accordance with Section 8.7” in order to use 9.7.1.2. If the Code requires glass to be wetted by sprinkler spray in some application, this could meet the definition of a “hazardous area” under section 3.3.19.4 because all glass is not required to be protected, so there is something about this glass that is more hazardous than normal. As such, Section 9.7.1.2 could be used to supply the sprinklers wetting this glass as long as no more than 6 sprinklers were used.*

*I think that it would be good for the whole committee to discuss this and clarify it for the next cycle of the standard.*

This dialogue provides an excellent example of how there can be honest disagreements in the interpretation of codes and standards. As they work to provide assistance, staff members of both NFSA and NFPA apply their best judgment and experience, but ultimately only the responsible technical committee can issue a final opinion as to the intent. This is through the formal interpretation process of NFPA, which can take several months and in some cases is unable to answer questions prior to their consideration in the next standards change cycle.

## **2011 Technical Tuesday Onlines Announced**

The NFSA has released its schedule of “Technical Tuesday” online seminars for the first half of 2011. As in the past, a 30% discount is available by signing up for all ten seminars in the series.

January 18, 2011

### **Antifreeze Systems – Russell P. Fleming, P.E.**

Antifreeze systems generated more controversy than any other fire sprinkler topic during 2010. With the dust settled, this seminar will discuss the current requirements relative to both new and existing systems. It will explore design alternatives, including the status of dry residential sprinkler systems and new candidate antifreeze solutions. It will also address contractor obligations with regard to the evaluation of existing systems.

February 1, 2011

### **FM Data Sheets – Kenneth E. Isman, P.E.**

In March of 2010, the Factory Mutual Insurance Company (FM) released a new set of data sheets regarding how they would like their clients to design and install fire sprinkler systems in the properties they insure. These new data sheets represent a significant change in philosophy for FM. Rather than follow the format of NFPA standards, showing the text of the NFPA standards and then showing where they have different requirements, FM has written their own criteria from scratch, which sometimes contradicts the NFPA standards. The seminar will review the major differences between the FM standards and the NFPA standards and discuss strategies for dealing with the use of FM standards when NFPA standards are referenced by law.

February 15, 2011

**Paint Spray Booths (NFPA 33) – Victoria B. Valentine, P.E.**

NFPA 33 notes that paint spray booths should be treated as an extra hazard group 2 occupancy for their fire sprinkler protection. However, there are many additional requirements that get pulled into the layout of the system and the hydraulic calculations because of the hazard classification. Different arrangements for paint spray booths will be reviewed for application of the extra hazard occupancy. In addition, the water supply demand for these booths will be discussed.

March 1, 2011

**IRC/NFPA 13D Prescriptive Pipe Sizing (P2904) – Jeff Hugo, CBO**

This seminar will discuss the alternative to designing residential sprinklers according to the criteria listed in Section P2904 of the 2009 IRC and Section 8.4.10 of the 2010 NFPA 13D. The prescriptive method of designing versus the traditional methods used and the familiarity of this method may decrease design time and training hours for new personnel. Other critical sections of the IRC pertinent to the sprinkler designer and contractor will be highlighted and discussed. Residential fire sprinkler mandates are on the rise throughout the country, and attending this seminar will give your company the newest in sprinkler design and enable flexibility in relaying this information to your local AHJ.

March 22, 2011

**Plastic Pallets – Karl Wiegand, E.I.T.**

Plastic pallets are used in many storage facilities. The presence of plastic pallets in these facilities can greatly affect the design requirements for the sprinkler systems that protect them. NFPA 13 provides all of these requirements. However, they are separated throughout the standard. This seminar will bring together the different protection requirements of plastic pallets in NFPA 13 to assist in the proper use of the regulations.

April 12, 2011

**The New NFPA 25 – Russell P. Fleming, P.E.**

The 2011 edition of NFPA 25 includes some changes intended to enhance enforcement of the standard and others aimed at making system maintenance more economical. New recognition that not all deficiencies are equal will permit AHJs to implement a multi-colored tagging system following system inspections. The new standard continues the trend of separating owner responsibilities from those of the inspecting party, and the criteria for the 5-year internal inspections have been reworked.

April 26, 2011

**Pipe Stands – Victoria B. Valentine, P.E.**

Pipe stands can be used to support water-based fire protection system piping where it cannot be hung. Some criteria have been in NFPA 15 for the past few editions. The guidelines have been modified for the next edition. These rules can also be applied to sprinkler system piping where it may need to be supported from the floor.

May 10, 2011

**What Happens During Plan Review? – Jeff Hugo, CBO**

You just dropped off your shop drawings at City Hall. Questions arise in your mind: Who scrutinizes my plans? What will this do for me? Why is this necessary? When will they be done? Where can I learn more to avoid correction letters and costly delays? This seminar will answer what should be done on the plans prior to their delivery to City Hall and discuss the fire sprinkler plan review process performed by the AHJ. This program outlines NFSA's newest "Plan Review Guide" and the associated check lists to provide the necessary information to cut your review time down and the project moving. Contractors, layout technicians, architects, building and fire officials, and plan reviewers should attend.

May 24, 2011

**Storage Occupancies: Ceiling Slopes and Clearances – Kenneth E. Isman, P.E.**

Storage occupancies represent much more difficult and challenging fires for sprinklers to control or suppress. These challenging fire situations become even more difficult to control or suppress when the ceiling is sloped or there is a vast vertical distance between the top of the storage array and the sprinklers at the ceiling. Criteria in NFPA 13 has evolved over the last 10 years to place more stringent rules on how the sprinkler system needs to be designed to protect these occupancies. The seminar will begin with a review of fire dynamics and will then cover the rules of NFPA 13 and potential scenarios for meeting those rules.

June 7, 2011

**High Velocity Low Speed (HVLS) Fans – Karl Wiegand, E.I.T.**

HVLS fans first came to market in 1995 and since that time have become popular for ventilating large warehouse facilities. In 2007 XL Gaps did a full scale fire test to see how these fans affected sprinkler operation. The test had poor results and a multiphase full-scale testing plan was implemented. Phase 1 of the testing was completed in 2008 and 2009. Phase 2 of the testing was completed in 2010. This seminar will address the test results of the phase 2 testing as well as strategies for installing HVLS fans in a manner in which they will not greatly affect the sprinkler system performance.

*These seminars qualify for continuing education as required by NICET, and meet mandatory Continuing Education Requirements for Businesses and Authorities Having Jurisdiction.*

**To register or for more information on any of the above seminars, click [HERE](#) or contact Michael Repko at (845) 878-4207 or e-mail to [seminars@nfsa.org](mailto:seminars@nfsa.org).**

**Upcoming In-Class Training Seminars**

The NFSA training department also offers in-class training on a variety of subjects at locations across the country. Here are some seminars scheduled for 2011:

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| Feb 1 | Poughkeepsie, NY     | Sprinkler Protection for Special Storage   |
| Feb 1 | Howland Township, OH | Inspection, Testing & Maintenance          |
| Feb 2 | Poughkeepsie, NY     | Sprinklers for Dwellings                   |
| Feb 2 | Howland Township, OH | Sprinkler Protection for General Storage   |
| Feb 3 | Poughkeepsie, NY     | Residential Sprinklers: Homes to High-Rise |
| Feb 3 | Howland Township, OH | Underground Piping (1/2 day a.m.)          |
| Feb 3 | Howland Township, OH | Fire Pump Layout & Sizing (1/2 day p.m.)   |

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*NFSA Tuesday eTechAlert is c. 2010 National Fire Sprinkler Association, and is distributed to NFSA members on Tuesdays for which no NFSA Technical Tuesday Online Seminar is scheduled. Statements and conclusions are based on the best judgment of the NFSA Engineering staff, and are not the official position of the NFPA or its technical committees or those of other organizations except as noted. Opinions expressed herein are not intended, and should not be relied upon, to provide professional consultation or services. Please send comments to Russell P. Fleming, P.E. [fleming@nfsa.org](mailto:fleming@nfsa.org).*

***About the National Fire Sprinkler Association***

*Established in 1905, the National Fire Sprinkler Association (NFSA) is the voice of the fire sprinkler industry. NFSA leads the drive to get life-saving and property protecting fire sprinklers into all buildings; provides support and resources for its members – fire sprinkler contractors, manufacturers and suppliers; and educates authorities having jurisdiction on fire protection issues. Headquartered in Patterson, N.Y., NFSA has regional operations offices throughout the country. [www.nfsa.org](http://www.nfsa.org).*