JAN/FEB 2011 / No. 164

Journal of the
National Fire Sprinkler
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SQ

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contents

January - February 2011 • no. 164

SQ

ON THE COVER:
A highlight of the 2011 Annual Seminar & Exhibition in Baltimore will be the Top Tech Competition where design technicians from all over North America will be vying for the title. Be sure to be there as the champs are crowned.

IN THIS ISSUE

FEATURES

DEPARTMENTS

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SQ (ISSN 1050-4958) (USPS 524-010) is published six times a year (February - April - June - August - October - December) by the National Fire Sprinkler Association, Inc., 40 Jon Barrett Road, Patterson, NY 12563.

Telephone: (845) 878-4200. Subscription free to all NFSA members and member companies.

Second-Class postage paid at Mahopac, NY.

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Flashback: 1982

John Viniello

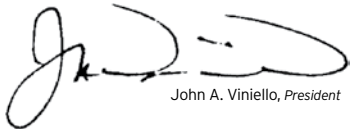
"An Old Idea with a New Technology," that was the title of an article I wrote back in 1982 when I was Manager of Residential Fire Protection for Grinnell Fire Protection Systems Company. It's a time when quick response technology was in its infancy and the first sprinklers we now call "residential" had obtained laboratory listing just the year before. The age of residential fire sprinkler protection had begun, sparking an irreversible revolution to bring tried and proven technology to bear on a nation's tragic history with fire. While the struggle has really been more of a slow but steady evolutionary process, great strides have been made in the battle to get life saving fire sprinklers into places where people are most vulnerable – residential occupancies. Ironically, these are the places where people feel safest.

So how did this residential sprinkler revolution come about? What was the impetus? For over 100 years fire sprinklers had enjoyed an enviable record. There had never been a multiple death fire in a completely sprinklered building where the system was properly maintained. Up until the early to mid '70s, though, most sprinkler installations were for property protection, not necessarily for life safety. By the end of the decade and into the early '80s, that philosophy would begin to change.

The National Commission on Fire Prevention and Control had conducted volumes of fire research leading up to publishing "America Burning," resulting in Congress forming the U.S. Fire Administration. The administration's immediate charge was to reduce fire deaths by 50 percent before the '90's. At the time, over 7,500 people each year were falling victim to fires, most in residential occupancies. Working in cooperation with the U.S. Fire Administration, Factory Mutual had already conducted residential fire tests using existing sprinkler technology, but found response times and spray characteristics unsuitable for the unique fires expected in residential occupancies. There'd have to be another solution.

While Grinnell was working on the first residential sprinkler prototypes, NFPA was in the process of adopting the first edition of NFPA 13D, Standard for the Installation of Fire Sprinkler Systems in One- and Two-Family Dwellings and Mobile Homes. Everything was beginning to come together. In May of 1981 the first residential sprinklers were being listed and a standard providing direction on how these new residential sprinkler systems were to be installed was in place. An old idea utilizing a new technology whose time had come was now a reality. That's the short version of how I saw it back in 1982.

Editor's note: This article is based on a report written by the author in 1982 entitled "An Old Idea with a New Technology." You can read the article in its entirety by visiting the NFSA website at www.nfsa.org. Go to the Sprinkler Toolbox and search for "An Old Idea with a New Technology".



John A. Viniello, *President*

EVENTS OF INTEREST TO NFSA MEMBERS

calendar

January 18, 2011	*ON-LINE*	Antifreeze Systems
February 1, 2011	*ON-LINE*	FM Data Sheets
February 1, 2011	*Howland Township/Warren, OH*	ITM for Water Based Fire Protection*
February 2, 2011	*Howland Township/Warren, OH*	Sprinkler Protection for General Storage*
February 3, 2011	*Howland Township/Warren, OH*	Fire Pump Layout & Sizing*
February 3, 2011	*Howland Township/Warren, OH*	Underground Piping for Fire Protection*
February 15, 2011	*ON-LINE*	Paint Spray Booths (NFPA 33)
March 1, 2011	*ON-LINE*	IRC/NFPA 13D Prescriptive Pipe Sizing (P2904)
March 22, 2011	*ON-LINE*	Plastic Pallets
April 12, 2011	*ON-LINE*	The New NFPA 25
April 26, 2011	*ON-LINE*	Pipe Stands
May 10, 2011	*ON-LINE*	What Happens During Plan Review?
May 24, 2011	*ON-LINE*	Storage Occupancies: Ceiling Slopes and Clearances
Jun 7, 2011	*ON-LINE*	High Velocity Low Speed (HVLS) Fans

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Where Does Leadership Begin?

Gregg Huennekens

Everybody has their own idea of what leadership is, what it means. If you ask 100 people for their definition, you'll invariably get 100 different answers. It's just one of those broad terms that leaves a lot of room for interpretation. When putting my definition of leadership into context, I think of a team highly motivated to influence others with a well articulated strategy to meet industry goals while positively raising the organization's profile. But where does leadership begin? Let's take a closer look.

Last year, as a result of two fires in which antifreeze used in fire sprinkler systems was found to be a contributing factor in causing serious personal injuries and catastrophic property loss, justifiably, the use of antifreeze in residential fire sprinkler systems came under heavy scrutiny by the fire protection community, with some calling for the immediate discontinued use of antifreeze solutions altogether in fire sprinkler systems, even in existing systems. This was an obvious "kneejerk" reaction requiring immediate intervention by fire sprinkler industry experts. Enter NFSA. After all, the use of antifreeze in fire sprinkler systems in unheated spaces has been an accepted practice for many years.

In the wake of these events, the summer of 2010 found NFSA submitting Tentative Interim Amendments (TIAs) through the NFPA standards-making process that would allow for continued use of low concentration antifreeze solutions. While awaiting results of NFSA-sponsored research through the Fire Protection Research Foundation – details from which are far too technical to address here, but believe me when I tell you they were very comprehensive – in August, NFSA testified before the Standards Council in support of these TIAs. Later in the month, at a meeting of NFSA's Engineering and Standards Committee that took place after the research results were made available, new TIA's were drafted to be consistent with the research findings. Those TIAs were in turn circulated to virtually every NFPA committee and served as the basis for discussions on the pros and cons of NFSA's proposed approach to minimize risks associated with use of antifreeze solutions in fire sprinkler systems.

Subsequently, through ongoing efforts by NFSA, the latest TIAs have become the basis for the work of NFPA task groups charged with finding a solution to the antifreeze dilemma. Sought out as experts in the field, NFSA staff members have been assigned to these various tasks groups who, through a consensus process, will find a solution to the problem. Since NFPA was expecting TIAs to be delivered to their Standards Council by October 29, 2010, the only work available to them from which to base a decision will be the TIAs developed by NFSA's Engineering and Standards Committee.

Preferring to work aggressively by whatever means necessary, as a solution for this issue of vital importance to the fire sprinkler industry is found, NFSA will continue to be a stalwart serving as the impetus to fire sprinkler industry gains. Though complicated, this is only one of many industry-defining issues NFSA tackles on a regular basis. Simply put, it is what NFSA does.

Now, reflecting back to my definition of leadership and how when put into context with NFSA, using the antifreeze issue as a basis, the organization really is a highly motivated team who are very successful at influencing others through a well articulated strategy. Achieving goals common to the entire fire sprinkler industry and raising the organization's profile in a positive manner have been and will continue to be by-products of these sharply-honed skills. By my measure, leaders don't stand by and let things happen. That's the role of the casual observer, the spectator. Leaders choose to make a difference, to make things happen. And to make things happen you have to get into the trenches and take a strong position. That's where leadership begins.

Gregg Huennekens, *Chairman*

The Voice of the Fire Sprinkler Industry

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Passing Insurance Costs to Subcontractors

by Stuart Zisholtz

Editor's Note: Stuart Zisholtz comments on New York State Law.

In another twist to try and burden the subcontractors with as much of the expense necessary to build a project, owners and general contractors have come up with a new scheme to try and pass the burden of all insurance costs to subcontractors.

Recently, a new Target store was built in the Bronx, New York. Target instituted an owner-controlled insurance program which allowed all contractors and subcontractors working on the project to be insured. In exchange for the insurance coverage provided to them by this program, contractors and subcontractors were required to include in their contracts and subcontracts credits or deductions of amounts to be withheld from the sums due to them in order to offset the costs of their proportionate share of the program.

During the course of the project, as the construction advanced, the scope of the work expanded. As a result, the general contractor began withholding from the subcontractors certain funds to offset the increased insurance costs. Upon completion of the store, when the general contractor finally paid the subcontractors, the general contractor held significantly greater sums to offset the additional costs of the insurance programs.

A subcontractor commenced an action to recover the sums due and owing. The general contractor asserted to defenses that the withholding of the various funds was proper and it was permitted to increase the amounts charged back to the subcontractor to reflect the increased costs of the program.

The Supreme Court denied the subcontractor's motion for summary judgment. The appellate Division, Second Department, reversed and awarded judgment in favor of the subcontractor and dismissed all of the defenses.

The basis for the decision by the Appellate Division was that the insurance program violated New York State's insurance law. Owners and general contractors are prohibited from demanding that a subcontractor, on a non-public construction project, pay a premium or related charges for an insurance policy.

An owner or general contractor may provide a policy without reimbursement from the contractor or subcontractor and may require that the subcontractor provide a credit in its bid reflecting the amount the subcontractor would otherwise incorporate for insurance if it was required to obtain its own insurance. However, provisions in a program which require post-completion adjustments for insurance premiums are illegal and violate the insurance law. Unlike a credit in a subcontract when initially bid, the adjustments require a subcontractor to reimburse the general contractor for the costs of insurance.

This decision is important because it is another example of an owner and general contractor seeking to pass all costs onto the subcontractors. Thankfully, the Court was able to see through the scheme orchestrated by the owner and the general contractor and awarded judgment in favor of the subcontractor.

Remember, never let your lien time run out!

For a free copy of a pamphlet pertaining to payment bond claims and mechanic's liens, please contact Stuart Zisholtz at Zisholtz & Zisholtz, LLP, 170 Old Country Rd. Suite 300, Mineola, NY 11501 tel: 516.741.2200 fax: 516.746.1024.

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Standpipe Connection Requirements

By Bob Treiber

Requirements for standpipe systems have been in building and fire codes for years. During the 1940s, various state regulations and building codes started to expand the requirements for standpipe systems. With the advent of bigger and taller buildings and some significant fires, the increased requirements for standpipe systems occurred in the United States. In the 1940s the construction of larger grocery stores began, thus the term "supermarket". The early supermarkets were approximately 10,000 to 15,000 square feet, which seems very small compared to today's big box stores. Because sprinkler systems were not required in early supermarkets, there were some very significant fires. Because of the difficulty to extinguish these fires, we saw the requirements developed for limited domestic plumbing standpipe systems, which consisted of pre-connected 1 ½ inch hose lines supplied from the domestic plumbing that could be used by the occupants or fire department personnel. These limited domestic plumbing standpipe systems also appeared in many school buildings. In most cases, the early systems did not have a fire department connection.

Today, most of these systems have been removed or at least have removed the fire hoses, as most fire departments do not want the occupants fighting fire with small hose lines. Fire departments are concerned that this can cause a delay in notifying the fire department in the event of a fire and that there is the potential for occupants to be injured fighting the fire. Today the International Building Code (IBC) and NFPA 5000 directly reference NFPA 14. Other countries such as Canada also reference NFPA 14. The major philosophy used in the IBC and NFPA 5000 is to reference NFPA 14 Class I and III standpipe systems which are predominantly intended for fire department use. The IBC only makes one reference to Class II standpipe systems (occupants and trained fire brigade personnel) and that is for stages that exceed 1,000 square feet (normally larger theaters with scenery). This requirement and Class III standpipe systems in non-sprinklered buildings will be the only time you will normally find fire hose provided.

Several years ago, when the United States had three model building codes, each had a different approach, but all of them based concepts and requirements on NFPA 14. In the late 1980s an organization called BCMC (Board for Coordination of Model Codes), which consisted of the three model building code organizations, met to develop unified requirements for standpipe systems. This involved fire and building department officials and design professionals from across the country. This concept continues in present building codes for requirements with direct reference to NFPA 14 for installation practices.

NFPA 14 normally requires hose valves to be located at exits and normally inside the exit stairway at intermediate landings where provided when required by the AHJ. This is done to provide a safe location for firefighters to hookup the fire hose. Other countries such as Canada, Brazil, and Mexico use a different concept and require the 1 ½ (40 mm) hose cabinets on the floors and, in some cases, hose connections in exit stairways.

NFPA 14, Section 7.3 provides requirements for hose connection locations. Hose connection (valves) shall be located as follows:

Mounting Height: Hose connections and hose stations shall not be obstructed and shall be mounted at least 3 feet (0.9m) from the floor and not over 5 feet (1.5m) above the floor.

Obstructions: Hose connections shall not be obstructed by closed or open doors or other objects on the landing.

Class I Systems (7.3.2): Class I systems shall be provided with a 2 ½ inch (65 mm) hose valve in the following locations:

- At the main floor landing in the exit stairwell (each level) see exception for intermediate landing below (7.3.2.1)
- On each side of the wall adjacent to the exit openings of horizontal exits (normally a fire wall separation, be careful the hose connection does not get blocked by the doors which generally open in both directions, this is not a common construction method, but is usually found in larger buildings such as hospitals)

>> CONTINUED ON PAGE 13

Bob Treiber

Based in Centerville, Ohio, Bob is NFSA's Director of Training & Education.

Technical Tuesday 2011 Onlines

January to June 2011

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9:30AM Central/
8:30AM Mountain/
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JANUARY 18, 2011

Antifreeze Systems

Intermediate – 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

Intermediate - 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)

Advanced – 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)

Basic/Intermediate – 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

IntermediateKarl 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

Intermediate – 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

Intermediate – 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?

Basic/Intermediate – 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

Intermediate - 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

Basic/Intermediate – 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.

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- (Very Large buildings) In other than covered mall buildings, in each exit passage way at the entrance from the building areas into the passageway (very large buildings such as factories or warehouses)

- (Malls) In covered mall buildings, at the entrance to each exit passageway or exit corridor, and at the interior side of public entrances from the exterior to the mall.

- At the highest landing of stairways with stairway access to a roof, or on roofs with a slope of less than 4 in 12 where the stairways do not provide access to the roof (If the stairway has a sufficient size roof hatch this can be considered access to the roof. It does not necessarily mean the stairway is extended to the roof).

- (Long exit travel distances from exits) On floors where the most remote portion of the nonsprinklered building is in excess of 150 feet (45.7m) of travel distance from a required exit (i.e. exit stairway door) or the most remote portion of a sprinklered floor is located in excess of 200 feet (61m) of travel distance from a required exit, the additional hose connections shall be provided in approved locations where required by the local fire department.

- Hose connections shall be permitted to be located at the highest intermediate landings between floor levels in exit stairways where required by the AHJ.

Class II Systems (7.3.3)

Class II systems shall be provided with 1 ½ inch (40mm) hose stations (Fire hose) so that all portions of each floor level of the building (where required) are within 130 feet (39.7m) of the hose connection provided with 1 ½ inch (40mm) hose or within 120 feet (36.6m) of a hose connection provided with less than 1 ½ inch (40mm) hose. Distances shall be measured along a path of travel originating at the hose connection (actual path of travel not a straight path)

Class III Systems (7.3.4)

Class III systems shall be provided with hose connections as required for both Class I and Class II systems)

(Class II Hose Exception) Where the building is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13 or NFPA 13R Class II hose stations shall not be required, subject to the approval of the local fire department and AHJ, provided that each Class I (2 ½) hose connection is equipped with 2 ½ inch x 1 ½ inch (65mm x 40mm) reducer and a cap attached with a chain. The 130 feet (39.7m) travel distance limitation shall not apply to the Class III system)

Number of Standpipes (7.4) Separate standpipes shall be provided in each stairway

Standpipe systems are an important part of a building's fire protection. In buildings that are not protected by automatic sprinklers, the standpipe system is a very critical tool for the fire department. It is the means that is used to suppress a fire and rescue people. Standpipe systems need to be properly designed, installed and maintained. Failure to do so can lead to death, serious injury and extensive fire loss. Even in sprinklered buildings, standpipe systems provide for redundancy and are also an important tool for completing extinguishment.

I hope this information has been helpful. This was just a brief and partial overview of NFPA 14 Standard for the Installation of Standpipe and Hose Systems (2010). If you would like to learn more, attend the NFSA ½ day seminar on Standpipe Systems by going to www.nfsa.org and clicking on the training block that will allow you to select any training seminar you desire and also register on line or by calling 845.878.4207.

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Antifreeze Alternatives – Tenting of Insulation

By Kenneth E. Isman, P.E.

Unless you've been hiding under a rock lately, you've heard that antifreeze solutions can pose problems for fire sprinkler systems. At certain concentrations, and in certain conditions, the antifreeze can contribute to the combustion of a fire, which is the opposite of the intent of a fire sprinkler system.

The NFSA has been keeping its membership informed regarding the antifreeze solutions that can be used through its Sprinkler TechNotes newsletter and E-Tech Alert bulletins. This article will not address the use of antifreeze in fire sprinkler systems. For more information on that subject, see the NFSA newsletters and electronic bulletins. Instead, this article will focus on the alternatives to antifreeze so that sprinkler systems can be installed without fear of the water in the piping freezing.

There are several potential alternatives to antifreeze including: the use of dry-pipe and preaction systems, tenting of insulation over pipe in an attic, use of dry type sprinklers to extend protection from a warm space into a freezing space, heat tracing, and the installation of pipe in interior walls with sidewall sprinklers protecting into the rooms.

Several of these topics will be covered in other articles in this same edition of SQ in an effort to concentrate the information in one easy to use location. This article will focus on the tenting of insulation over pipes in an attic space in order to keep them from freezing. The topic of heat tracing was covered in a previous edition of SQ magazine (see Technically Speaking in the July/August 2010 issue (No. 161) pages 15-16).

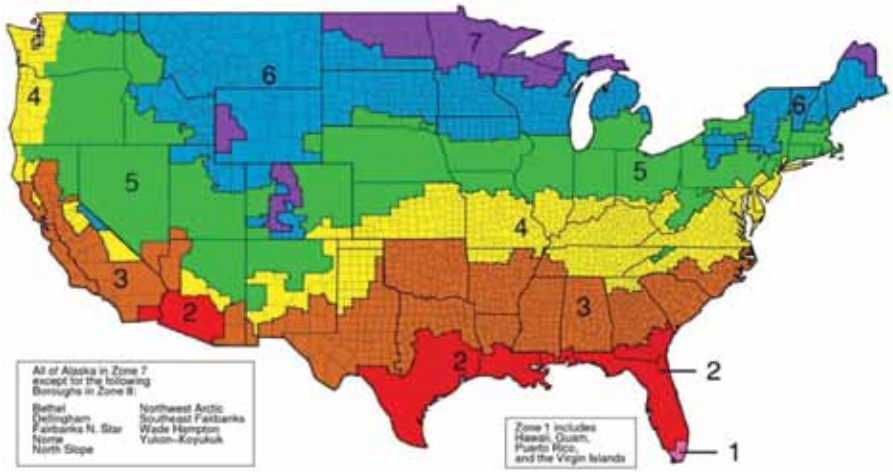

Figure 1 - Climate Zones for Insulation Thickness

What is "Tenting Insulation"?

The process of tenting insulation over pipe is the procedure of laying sufficient insulation on top of pipe to trap the heat coming up from the room below to keep the water in the pipe warm enough to prevent it from freezing. It is important to keep the insulation above the pipe, and to make sure that the insulation does not get under the pipe. If insulation gets under the pipe it actually prevents the warmth from getting to the pipe and the water in the pipe may freeze.

Typically, tenting of insulation is used for the pipe in an attic that is delivering water to pendent sprinklers protecting the story below the attic. Similar concepts would apply to piping being installed in exterior walls, where the insulation would need to be between the exterior of the building and the sprinkler pipe. If the attic space itself needs to be protected with sprinklers, tenting of insulation is generally not sufficient protection because the piping leading to the sprinklers protecting the attic generally cannot be kept in a warm enough space.

The determination of how much insulation needs to be used above the pipe depends on the ambient temperature that will occur in the attic. The United States Department of Energy has divided the country into eight zones in order to recommend insulation thickness. Figure

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Kenneth E. Isman, P.E.

Vice President, Engineering for NFSA. Ken represents NFSA on the NFPA Technical Committee on Sprinkler System Discharge Criteria

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1 shows these zones and Table 1 shows the insulation thickness that is needed in each zone for insulation in an attic. For batt insulation, the thickness of the insulation can be found by dividing the R-value by 3.2. This map can be downloaded from the Department of Energy website at: http://www.ornl.gov/sci/roofs+walls/insulation/ins_05.html.

Zone	Attic Insulation Recommendation	Batt Thickness
1	R30 to R49	9.375 to 15.3
2, 3	R30 to R60	9.375 to 18.75
4, 5	R38 to R60	11.875 to 18.75
6, 7, 8	R49 to R60	15.3 to 18.75

Table 1 - Insulation Recommendations from the Department of Energy

Is Tenting Insulation Effective?

In order for tenting of insulation to be effective, the insulation needs to be laid continuously over the pipe without any gaps. If this is accomplished, and the correct thickness is used, the insulation can protect the pipe extremely well (as long as the insulation is above the pipe and not below the pipe). Of course, the assumption that is being made is that the heat will stay on in the room below the pipe. This assumption is not unreasonable given the fact that all wet pipe systems rely on this assumption. Without this assumption, wet pipe systems would never be installed.

In 1999, the NFSA contacted the Owens Corning corporation in an attempt to get them to make some statements on the record as to the effectiveness of tenting insulation over sprinkler pipe. Unfortunately, the engineers at Owens Corning were uncomfortable with their knowledge of fire sprinkler systems and did not want to make definitive statements regarding the temperatures to which sprinkler piping could be protected. But they did state confidently that as long as the following conditions were met, there would be no problem with the insulation protecting the pipe from freezing:

1. Keep the insulation over the pipe and not under it. Note that an air gap around the pipe is not necessary.
2. Do not allow gaps in the insulation, cover all pipe.
3. Keep the insulation in place. Do not allow wind or movement of the insulation off of the pipe.
4. A substantial amount of pipe needs to be in contact with the ceiling so that the heat from the room below can prevent the pipe from freezing.

Many fire sprinkler systems have been installed utilizing these basic common sense rules with wet piping adequately protected from freezing by simply tenting the insulation over the pipe. Where the building contractor is going to use blown in insulation, many sprinkler contractors prefer to use batt insulation over the sprinkler pipe, and then allow the blown in insulation to go over the batt insulation. In this manner the batt insulation protects the sprinkler pipe from freezing, even if the blown in insulation gets moved in the attic. Other sprinkler contractors put plastic sheeting down over the sprinkler pipe prior to the blown-in insulation being installed to make sure that the blown-in insulation does not get under the piping. If this is done, some method of keeping the insulation in place might be needed and other contractors on the job need to be made aware of the importance of keeping the insulation in-tact.

There is no question that tenting of insulation requires more coordination on the part of the fire sprinkler contractor. But the simple design of the wet pipe sprinkler system, and the ability to use this simple system, makes up for the extra time and effort. In some cases, sprinkler contractors have decided to also become insulation contractors in order to ensure that the work gets done correctly (and to make a little extra money in the process).

At What Temperatures is Tenting Effective?

Tenting of insulation over sprinkler piping in an attic can be effectively done in almost any climate. Unfortunately, proving this with exact mathematical calculations can be a challenge. As stated earlier in the article, engineers from Owens Corning did not want to commit themselves to precise numbers regarding the freezing temperatures that sprinkler piping can be protected from. The heat transfer calculations contain difficult variables in order to make them precise.

However, in order to prove that the method can be effective, precise calculations do not need to be performed. Instead, simplifications can be made and conservative estimates can be used to prove that the temperature around the pipe will not get to freezing.

In order to explore this concept more completely, Figure 2 shows an attic space where some basic heat transfer calculations will be performed. This is a typical attic space with wood joists (16 inches on center), a gypsum board ceiling attached to the bottom of the joists, and insulation in the channels between joists. A 2 inch air gap will be left between the gypsum board ceiling and the batt insulation. The temperature in this air gap will be calculated to determine if sprinkler piping in such a space would be subjected to freezing temperatures. In reality, such a large air gap would not be necessary for the sprinkler piping, but this simplification makes the calculations easier and the temperature situation would be even better with the insulation not only above the sprinkler pipe but on both sides as well.

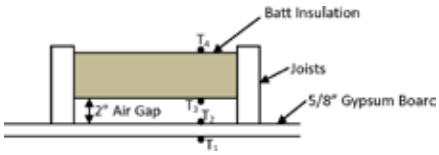

Figure 2
Joist Channel with Air Gap for Calculation Purposes

In order to simplify the heat transfer calculations, the temperatures at four points will be considered. The first point will be the underside of the gypsum ceiling (T_1), which will be the temperature in the heated room below the attic. The second temperature will be on top of the gypsum ceiling just inside the air gap (T_2). This is the temperature that the sprinkler piping would be in contact with if it were installed in the air gap. The third temperature is at the top of the air gap in contact with the bottom of the batt insulation (T_3). This is the temperature which would be in contact with the top of the sprinkler piping. The fourth temperature is on top of the batt insulation (T_4), which would be the temperature in the attic.

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Using this simplified model of a joist channel, the heat transfer from T_1 to T_4 can be calculated using the following formula:

$$q = \frac{T_4 - T_1}{R_{Total}}$$

In the equation above, "q" is the heat transfer rate in watts while R_{Total} is a variable that describes the material properties of the gypsum board, wood joists, batt insulation, and air gap. The R_{Total} variable is a bit tricky to calculate because the heat transfer is occurring in series through the gypsum board, air gap, and batt insulation, while it is occurring in parallel through the gypsum board and wood joists. Given this information R_{Total} can be calculated as follows:

$$R_{Total} = R_A + \left(\frac{1}{\frac{1}{R_B} + \frac{1}{R_C + R_D}} \right)$$

Where:

R_A = properties of gypsum board
$= x_A*(k_A*A_A)$

R_B = properties of wood joists
$= x_B/(k_B*A_B)$

R_C = properties of insulation
$= x_C/(k_C*A_C)$

R_D = properties of air
$= x_D/(k_D*A_D)$

x_A = thickness of gypsum board in meters = 0.015 for the initial calculation (5/8 inch)

x_B = height of wood joists in meters = 0.2 for the initial calculation (8 inches)

x_C = thickness of batt insulation in meters = 0.15 for the initial calculation (6 inches)

x_D = thickness of the air gap in meters = 0.05 for the initial calculation (2 inches)

k_A = conduction constant for gypsum board = 0.48

k_B = conduction constant for wood joists = 0.14

k_C = conduction constant for batt insulation = 0.04

k_D = conduction constant for air = 0.025

A note for those of you following the math carefully here, for all of the "R" calculations, an area (A_A, A_B, A_C, and A_D) is needed. For the initial calculations, I picked a nominal length of 3m (118 inches) in the direction in and out of the plane showed in Figure 2. However, since this length is common to all elements in the calculations, it cancels out and makes no difference. Also note that all calculations have been performed in metric units and then converted back to traditional ft-lb units for the convenience of the readers.

Taking all of these variables into account, RTotal is found for the initial conditions described above to be about 3.7. Plugging this value to the equation for the heat transfer, and assuming that we can keep the room below heated to 50°F (10°C) and that the attic be subjected to a low temperature of -20°F (-28.9°C), we find that the heat transfer is a modest -10.5 Watts, calculated as follows:

$$q = \frac{T_4 - T_1}{R_{Total}} = \frac{-28.9 - 10}{3.7} = -10.5$$

Now that we know the overall heat transfer through the assembly, we can use this to calculate other temperatures within the assembly. The temperature at the interface between the air gap and the gypsum ceiling (T_2) can be calculated to be 9.7°C (49.5°F) as follows:

$$T_2 = qR_A + T_1 = -10.5 * 0.027 + 10 = 9.7$$

This calculation shows us that the gypsum board is not a very significant insulator, and most of the heat from the room below is getting up into the air gap. However this is not the temperature throughout the entire air gap, it is only the temperature at the upper surface of the gypsum board. We also need to start from the top (T_4) and calculate down to the underside of the bat insulation at the top of the air gap (T_3). The following formula shows that calculation:

$$T_3 = T_4 - q\left(\frac{1}{\frac{1}{R_B} + \frac{1}{R_C}} \right) = -30 - (-10.5)\left(\frac{1}{\frac{1}{11.9} + \frac{1}{3.4}} \right) = \cdot$$

In this case the temperature at the underside of the batt insulation is -0.7°C (30.7°F). This temperature is just under the freezing condition. However, this does not mean that the water in the piping would freeze. Remember that the piping is also in contact with the temperature of 49.5°F directly below. Still, this might be too close for some authorities, and this condition may not be permitted.

The good news is that this calculation was done with only 6 inches of batt insulation and an initial assumption of a temperature of -20°F in the attic. In reality such a combination would not occur. In portions of the country where the temperature in the attic was expected to be -20°F, the insulation would be thicker and have a greater R value. In fact, NFPA 13 contains a map of 48 of the states in the United States (and parts of Canada) and the lowest one-day mean temperature experienced in those states in Figure A.10.5.1. According to this figure, portions of the United States that are expected to be exposed to temperatures of -20°F would need a minimum of R49 (15.3 inches) of insulation in accordance with the Department of Energy map that is Figure 1 in this article.

If the calculations were redone with half this amount of insulation (7.6 inches), the temperature at the top of the gypsum board would still be 49.5°F while the temperature at the underside of the batt insulation would be 33.6°F which would insure that the water in the pipe would never freeze. In fact, the average temperature in the space would be 41.6°F, which is above the limit of 40°F set by NFPA 13.

Table 2 has been developed with a computer program that follows the procedures outlined in this article. By making different assumptions about the temperatures in the heated room, temperatures in the attic, and thicknesses of insulation, different conditions can be

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proven to maintain suitable conditions in the air gap for sprinkler pipe. This computer program can be made available to NFSA members upon request.

Insulation Thickness	Attic Temp	Room Temp	Temp Above Gypsum Board	Temp Below Batt Insulation	Average Temp in Air Gap
6 inches	-20°F	50°F	49.5°F	30.7°F	40.1°F
6 inches	-20°F	52°F	51.5°F	32.2°F	41.8°F
6 inches	-15°F	50°F	49.6°F	32.1°F	40.9°F
9 inches	-20°F	50°F	49.6°F	36.0°F	42.8°F
9 inches	-15°F	50°F	49.7°F	37.0°F	43.3°F
9 inches	-30°F	50°F	49.6°F	34.0°F	41.8°F

Table 2
Temperatures in the Air Gap for a Variety of Conditions

As Table 2 shows, the temperature of the air gap for all of these conditions will be sufficient to keep the piping from freezing, and the average temperature in the air gap is above the 40°F limit set by NFPA 13. Note that all of the temperatures calculated in this table utilize far less insulation than what is required for the zones discussed in Figure 1. If the right amount of insulation were used even greater freeze protection would be provided by the tenting of the insulation.

Does NFPA 13 Permit Tenting to Protect Wet Pipe?

NFPA 13 does not directly address the use of insulation to protect wet piping. However, this does not mean that the tenting of insulation is prohibited. Section 8.16.4.1 of NFPA 13 requires that water filled piping be installed in spaces that are reliably heated to at least 40°F. As the calculations earlier in this article have shown, tenting of insulation can easily meet this requirement. Therefore the use of insulation to keep wet piping freezing when it is run in an attic space is permitted by NFPA 13.

Of course, in order to be used in such a manner, the insulation needs to be installed as discussed previously in this article in order to insure that the piping remains protected from freezing.

Do NFPA 13R and NFPA 13D Permit Tenting to Protect Wet Pipe?

NFPA 13R and NFPA 13D both directly address the tenting of insulation over wet piping in an attic. Section 5.4.2 of NFPA 13R contains basic criteria for keeping water filled piping in a space reliably maintained at 40°F. An annex note to this section specifically addresses the tenting of insulation over pipe, and five diagrams are included in the standard to show how to properly lay batt insulation over the sprinkler piping.

A similar situation occurs in NFPA 13D. Section 8.3.1 requires water filled piping to be in a space reliably maintained at 40°F. An annex note to that section contains the same five diagrams as those in NFPA 13 R, showing how to properly lay the batt insulation over the sprinkler piping.

Summary

As this article has shown, batt insulation can be effectively used in an attic space to protect sprinkler piping from freezing without the need of antifreeze solutions. The procedures for laying the insulation in the attic space need to be carefully controlled, but the end result is an inexpensive and effective fire protection system well worth the extra coordination cost of working with the insulation contractor.

Dry Sprinkler Installation

By Jeff Hugo, CBO

In several cases, sprinkler protection needs to be extended into spaces subject to freezing and a complete, separate, dry pipe or anti-freeze system is cost-prohibitive to install. Balconies, decks, freezers and small loading docks are locations where perhaps only a small number of sprinklers are needed. The most common example, besides freezers in a grocery store, is the requirement that stems from the International Building Code (IBC). The IBC, in Section 903.3.1.2.1, requires that all structures protected by NFPA 13R having residential balconies, decks, and patios attached or used by a dwelling unit are required to have sprinkler protection in Type V (combustible) construction. This requirement has been in the IBC for several editions (and overrides the statement about balconies not needing sprinklers in NFPA 13R). Note that in the 2009 edition, the section has changed to permit sprinklers to be omitted when a roof or deck is not above the balcony.

The dry sprinkler connected to the wet system is the ideal device to cover small areas that are subject to freezing temperatures. The dry sprinkler is a device that has a typical sprinkler attached to an extended barrel that attaches to the wet system. The barrel is a hollow tube with a sealed end that stops water from entering until the sprinkler fuses. The mechanics of these barrels vary from manufacturer to manufacturer, and the lengths vary depending on the distance needed to extend from the freezing area to the conditioned space containing the wet pipe system. Dry sprinklers are available as dry-pendent, dry-upright, and dry-sidewall sprinklers to meet a variety of different needs.

The length of that barrel is often called into question. At times the barrel length has been too short, resulting in freezing of the wet pipe system. This is related to a couple of design oversights by either the architect not providing the space needed to extend the barrel into the heated space, poor sealing around the dry sprinkler at the exterior wall, poor insulation, or the installation of a barrel that is too short. It seems the most common scenario of these mishaps are in dwelling units (single family homes, condos, timeshares) where the owner departs for warmer climates in the winter or property managers who turn down the heat in units that are not sold or rented.

NFPA 13, Section 8.4.9.1, states that where dry sprinklers are installed, they must comply with the manufacturer's requirements on the length of the dry barrel sprinkler. However, not all manufacturers publish consistent barrel length installation criteria. Presently, NFPA 13 does not have any further direction (besides the requirement for the penetration at the exterior wall to be sealed) applicable to all dry sprinkler barrel lengths, but that will hopefully change with the 2013 edition.

From the research data of the UL/FM/NFSA Liaison Group (a combination of representatives from the manufacturers and the listing labs organized by the NFSA to standardize requirements) that studied the issue, the NFSA's Engineering and Standards (E&S) Committee is submitting a proposal to the 2013 edition of NFPA 13 to clarify and standardize the installation of dry barrel sprinklers. The proposed text allows the user to coordinate the exterior ambient temperature to the interior ambient temperature to come up with a correct minimum barrel length.

The user must first identify the coldest ambient temperature that the sprinkler will be exposed to. For sprinklers on the exterior of a building, this will be the coldest expected outside temperature. One reasonable way to determine the coldest outside temperature is to use the lowest one-day mean temperature as determined by the U.S. Weather Service. This information is shown in Figure 1 for parts of the United States and Canada and is also printed in NFPA 13 as Figure A.10.5.1.

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Jeff is NFSA's Manager of Codes

Jeff Hugo, CBO

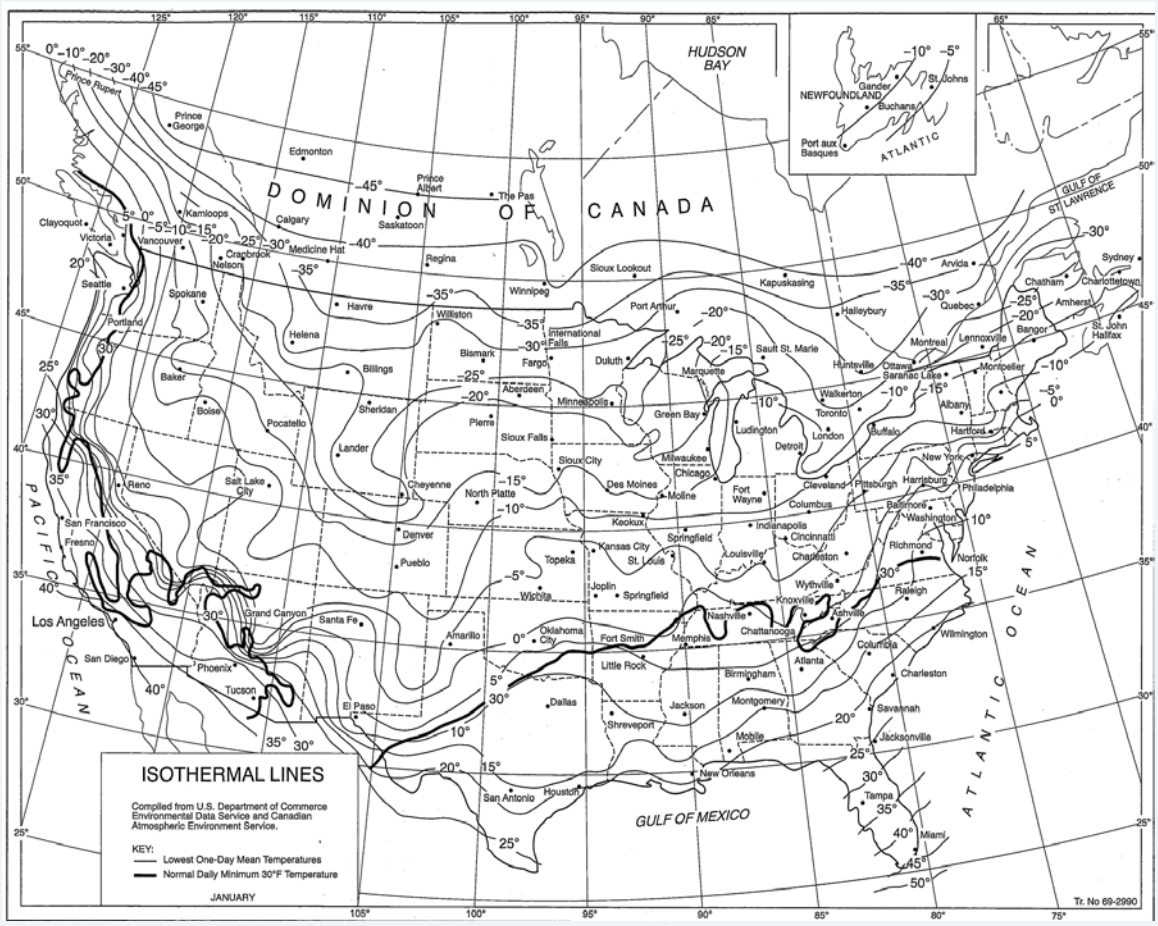

Figure 1 Lowest One-Day Mean Temperatures

Ambient Temperature Exposed to Discharge End of Sprinkler (°F)	Minimum Exposed Barrel Length when Exposed to 40°F (inches)	Minimum Exposed Barrel Length when Exposed to 50°F (inches)	Minimum Exposed Barrel Length when Exposed to 60°F (inches)
40	0	0	0
30	0	0	0
20	4	0	0
10	8	1	0
0	12	3	0
-10	14	4	1
-20	14	6	3
-30	16	8	4
-40	18	8	4
-50	20	10	6
-60	20	10	6

Table 1 Minimum Exposed Barrel Length (ft-lb units)

Ambient Temperature Exposed to Discharge End of Sprinkler (°C)	Minimum Exposed Barrel Length when Exposed to 4.4°C (mm)	Minimum Exposed Barrel Length when Exposed to 10°C (mm)	Minimum Exposed Barrel Length when Exposed to 15.6°C (mm)
4.4	0	0	0
-1	0	0	0
-6.7	102	0	0
-12.2	203	25	0
-17.8	305	76	0
-23.3	356	102	25
-28.9	356	152	76
-34.4	406	203	102
-40	457	203	102
-45.6	508	254	152
-51.1	508	254	152

Table 2 Minimum Exposed Barrel Length (metric units)

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Once the coldest ambient temperature is determined, use a table prepared by the UL/FM/NFSA Liaison group and endorsed by the E&S Committee (there are actually two tables: one in metric units and one in traditional ft-lb units). Even though this is just a proposal for the 2013 edition of NFPA 13, it has been agreed to by all of the sprinkler manufacturers and the listing labs. Since the current editions of NFPA 13 reference the manufacturer's instructions for this information, and since the manufacturers have all adopted these tables, we do not need to wait for the next edition of the standard to start using them. The tables are shown here as Table 1 and Table 2.

As you can see from the tables, the user is given a choice of minimum barrel lengths based on the interior ambient temperature that the barrel will be exposed to (which will be a function of the temperature inside the building). There are three columns to choose from for the Minimum Exposed Barrel Length depending on whether the barrel is exposed to 40°F (4.4°C), 50°F (10°C), or 60°F (15.6°C). Determining the interior warm temperature to which the barrel will be exposed will need some advance knowledge of how the space will be used. For example, building codes require the heating appliance in a dwelling unit to be capable of a minimum of 68° F in habitable spaces. This might lead the designer to choose a barrel length from the 60° F column. However, if the owner vacates in the winter, then the owner may turn down the heat to around 50° F, which would make the barrel length too short and risk freezing.

The tables provide the minimum barrel length that must be exposed to this minimum temperature. This portion of the barrel is measured from the interior face of the conditioned space to the fitting of the wet pipe system. In order to get the total barrel length, you need to add the minimum exposed barrel length to the thickness of the insulation and the thickness of the exterior (or freezer) wall (or ceiling). An example of the minimum barrel length measurement is found in Figure 2.

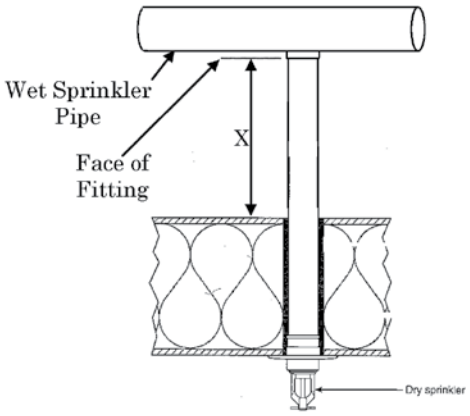

Figure 2 Measurement of Exposed Barrel Length for Dry-Pendent Sprinkler

Consider the example of an ice cream freezer maintained at 0°F in an existing Des Moines, Iowa supermarket. The ambient temperature of the freezer would be the actual lowest temperature of the freezer itself being 0° F. The air above the freezer is relatively warm due to the compressors, but the roof insulation is poor, so the designers take the middle column, doubting that 40° would ever be reached since more than the wet pipe system is at risk above the freezers and 60° in this application is much too high for Iowa winters when the roof insulation is taken into account. According to Table 1, the correct barrel length would be 3 inches from the top of the freezer to the wet pipe connection. The 3 inches would then be added to the actual thickness of the freezer ceiling to order from the manufacturer.

The tables may be interpolated. Taking the same scenario above, what if the customer buying the ice cream from the Des Moines supermarket lives in a second floor apartment with a balcony? From Figure 1, we see that the Des Moines outside ambient temperature is -15° F. The designers of her building may choose the same 50° F inside barrel length column if the space containing the wet sprinkler piping is below another occupied floor which would retain more heat than if exposed to an attic. The table does not have a -15°F row, so interpolating is necessary, which would result in a dry sidewall with an exposed barrel length of 5 inches (again, adding in the thickness of the exterior wall and any insulation for a total length to order).

To conclude, this NFSA E&S Committee proposal to NFPA 13 is mutually consented to by all sprinkler manufacturers and is definitely long-awaited and welcomed in the code text.

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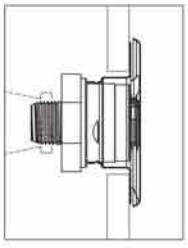

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The NFSA Annual Seminar & Exhibition's Got Something for Everyone

Have you booked yet?

By Joanne Genadio

One of the best perks of being an NFSA member is the Annual Seminar & Exhibition. Whether you are a SAM, Contractor, Professional, Subscriber or Friend of the Industry Member, there is something at the seminar that you will find useful, entertaining and memorable. This year's exhibition will take place at The Hilton in beautiful, downtown Baltimore, Maryland, April 7–9. Registration materials are available at **www.nfsa.org**.

Let's take a look at what's available, what's invaluable and what's just plain fun.

SAM Members

Three words for you: exhibit, exhibit, exhibit. The following are excerpts from *"Ten Trade Show Exhibit Best Practices"* by Darrell Zahorsky.

- ***Focus on quality.*** *Invest in shows that reach the key decision-makers of your target market.* The NFSA Annual Seminar & Exhibition is known throughout the industry as the premier, "not to be missed" exhibition. There's no better place to reach your target market.

- ***Never exhibit at a new trade show.*** *New trade shows are untested venues. Businesses have limited time and money to experiment on unknowns. Save your cash for the regular, proven shows in your industry.* NFSA has been doing an annual seminar since its inception in 1905. Attendance has grown and continues to grow as our reputation for excellence has spread throughout the industry. We pride ourselves on providing cutting edge information, entertainment and networking for all attendees, making our Annual Seminar & Exhibition the place to be and be seen. Especially in this economy, it's wise to exhibit with a proven leader, and that's NFSA.

- ***Create a buzz.*** *Months prior to the trade show, spend time informing existing clients and your market of the upcoming show. Use the show as a platform for a new product or service launch.* We help create the buzz for you. We heavily promote our Seminar & Exhibition through direct mail, email, advertising and social networks. We pride ourselves on setting attendance records at every exhibit.

Adding to your exposure, SQ's Buyer's Guide issue will be given out at the exhibition. In this issue you will find a SAM Buyer's Guide Information form. Fill it out and get it in by the due date to insure your free listing.

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"I didn't know that!" That's the phrase we guarantee you'll say at least once after attending one of our informative workshops and plenary sessions. Industry experts are available to inform and enlighten you on issues ranging from *Seismic Protection to Issues with Antifreeze* and everything in between. Topics are always selected to provide fire sprinkler contractors with maximum value and the ability to stay at least one ahead of the competition. Stroll through the exhibition and visit the booths. You'll see new products, talk shop with knowledgeable industry representatives and find new ways to make your business more productive and profitable. Let NFSA's Annual Seminar & Exhibition give you the edge that's vital in today's economic climate.

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>>CONTINUED ON PAGE 24

Joanne Genadio

NFSA's Advertising and Communications Coordinator

>> CONTINUED FROM PAGE 23

what's new with your company and your products and services. Who knows, you may go home with a few new customers!

The Fun Stuff

Back by popular demand is NFSA's **Top Tech Competition**. The purpose of this competition is to find out which region in the U.S. has the best Fire Sprinkler Technicians."Team Northeast" won the bragging rights at the last competition in Orlando, Florida and are ready to defend their title as the "Top Techs" in the industry. This is an exciting competition that takes place during the exhibit, adding a thrilling element to the atmosphere of the exhibit hall.

What would an NFSA Annual Seminar & Exhibition be without a chance to play on one of the best golf clubs in the area? This time it's Waverly Woods Golf course, designed by Arthur Hills. Waverly Woods reflects world-class golf course architecture at its best. 535 golf course rating panelists for Golf Digest magazine ranked Arthur Hills as one of their Top Five "Favorite Present Day Architects." There will be a scramble on Wednesday, April 6th for full registrants only.

On Friday, April 8th join us for a tailgate party at The Warehouse at Camden Yards, the signature feature of Camden Yards. No ballpark built in the modern era has been able to incorporate such a striking feature. The beloved B&O Warehouse, which was originally going to be torn down to make way for the ballpark, was preserved and assimilated into the design of Camden Yards. In addition to its aesthetic beauty, The Warehouse is visible from anywhere inside of the ballpark and is a great place for a tailgate party. Then it's on the game as the Baltimore Orioles vs. the Texas Rangers.

After a half day of closing day activities on Saturday, April 9th, we're giving you the afternoon off to explore all Baltimore's historic downtown has to offer. Baltimore's Inner Harbor is one of the most photographed and visited areas of the city. It's within walking distance of the Hilton and has a water taxi that connects to Fells Point, Canton and Fort McHenry. Try some famous crab cakes at one of Baltimore's great local restaurants, walk down Antique Row and do some treasure hunting, visit Stiles Street, Baltimore's Little Italy and play some Bocce Ball. There's something for everyone and every taste.

That evening, we invite all full registrants to our closing banquet and awards ceremony. We'll be sure to enjoy a delicious meal in good company. There's nothing more that we'd like than to make sure you are a part of it.

In a world of websites, emails, and voice mails, the NFSA Annual Seminar & Exhibition offers one of the true opportunities to build industry relationships with face-to-face contact. Something every business can use a little more of.

Membership Photos

Uponor's Jayson Drake (ctr) and Eric Skare (r) accept a 10-year anniversary plaque from NFSA Illinois Regional Manager Bob Kleinheinz

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Central Regional Manager Chris Gaut (l) presents Cliftene and James Lewis of American Fire Sprinkler in Mission, Kansas an NFSA 25-year anniversary plaque.

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By Victoria B. Valentine, P.E.

Don't Forget the Dry System

With all the buzz of antifreeze systems in the past months, alternatives are being sought to protect fire sprinkler systems from cold temperatures. The dry pipe sprinkler system should not be overlooked as it can adequately protect many arrangements. Dry pipe systems have been used for decades with great success of controlling fires in areas subject to temperatures less than 40°F (4°C).

Dry pipe sprinkler systems are used in a wide variety of areas. For example, loading docks, attics, freezers, canopies, outside walkways, and more recently even residential spaces can be protected with a dry sprinkler system. This article will be split into residential and non-residential applications of dry pipe sprinkler systems. Unless otherwise noted throughout this article, section references for NFPA 13, NFPA 13R, and NFPA 13D are based on the 2010 editions.

Residential System Applications

With dwelling units as the focus of the TIAs issued on NFPA 13, NFPA 13R and NFPA 13D on August 5, 2010, residential systems will be discussed first. It is important to note that all three sprinkler installation standards can apply to residential occupancies. The differences between them related to dry residential sprinkler systems will be noted as they come up in this article. Within the subject of dry residential sprinkler systems, there are a few main topics to discuss. These are residential sprinklers, dry pipe valves, water delivery time, and hydraulic calculations.

Residential sprinklers used in a dry system application must be listed specifically for dry systems. This means they have passed the standard residential sprinkler criteria and a fire test with a 15-second water delay to simulate the expected delay in water arrival from a dry pipe sprinkler system. Special listings do come with special requirements that need to be followed to ensure the product is used appropriately. The current residential sprinklers listed for dry residential systems on the market are available from only one manufacturer and require that a specific package for that application is used. This package includes the control panel, system gauges, compressor and dry pipe valve. The installation instructions for the package refer to NFPA 13D, which is the intended application for the package.

If the system is installed under NFPA 13, residential sprinklers are only an option for protection. This means that quick response standard spray sprinklers could be used in the area subject to low temperatures. The rules for standard spray sprinklers would apply for spacing, obstructions, and hydraulic calculations. This would also mean that any listed dry pipe valve could be used for the system. For the use of dry systems in NFPA 13R, the user is referred to the requirements of NFPA 13 so the same guidelines would apply.

Dry pipe valves are a necessary component in the dry pipe sprinkler system. When following NFPA 13, or NFPA 13R, there are dry pipe valves readily available from 1 ½ inch through 8-inch diameters. They operate on the differential of air versus water pressure, above and below the dry pipe valve clapper respectively. When the air pressure releases through one or more open sprinkler the valve can open and water will flow into the system.

The time it takes water to arrive at a sprinkler is comprised of two pieces. The first is the "trip" time. This is the time from the sprinkler operation while enough air evacuates the piping until the dry pipe valve opens allowing water to flow into the system. The second piece is "transit" time. This is the time it takes water to travel from the dry pipe valve to the open sprinkler(s). For dry residential systems the total water delivery time (trip + transit) is limited to 15 seconds for dwelling units. This small value will in turn help to keep the dry system size small and water delivery quick.

In residential occupancies there can be areas outside the dwelling unit that still need fire sprinkler protection and may need to be protected from low temperatures. For NFPA 13 and NFPA 13R, areas that are outside a dwelling unit would apply the requirements in NFPA 13. This means fast response sprinklers, other than residential types, could be used to protect the space. When the area is out-

>> CONTINUED ON PAGE 27

NFSA's Director of Product Standards

Victoria B. Valentine, P.E.

>> CONTINUED FROM PAGE 26

side a dwelling unit the water delivery requirements will also change. There are options, based on the size of the system and the hazard it protects, that correlate to the water delivery in a dry system.

The water delivery time is really a practical limitation on the system size so that the application of water on a fire is fast. There are two requirements that allow for a dry pipe system to deliver water to the inspector's test connection (ITC) without a limit. The first is a dry pipe system that is 500 gallons (1893 L) or less. The second is to keep the system to 750 gallons (2839 L) or less and use a quick-opening device on the system. The quick-opening device is either an accelerator or an exhauster. Both of these devices are intended to assist in removing air from the system so that the dry pipe valve will trip faster and allow water into the piping sooner. However, Section 7.2.3.1.1 prohibits systems that protect dwelling units to use these sizes and limitations, but they can be used if the system is only protecting areas other than the dwelling unit(s).

If the two cases above do not apply, then the base requirement is for water to be delivered to the ITC in 60 seconds or less. This value has long been used by NFPA 13. Yet now there are two other options instead of the 60-second rule. Both alternatives rely on a delivery time in accordance with the values shown in Table 1 (similar information is provided in Table 7.2.3.6.1 of NFPA 13). The values in the table allow for more than one sprinkler to be open in higher hazards where it is typical to find more than one sprinkler open in that type of fire scenario based on the anticipated heat release rates. The first method to achieve the water delivery time is to use a listed calculation program and method. The system layout is input into the program and the calculation run to provide a water delivery time. The second method is to build a manifold outlet to simulate the appropriate number of sprinklers (and arrangement of the sprinklers detailed in Section 7.2.3.7) open for the hazard the system is protecting. With the system at normal air pressure the manifold is opened and water delivery is timed.

Table 1: Alternative Dry System Water Delivery Times

Hazard Classification	Number of Open Sprinklers	Maximum Permitted Water Delivery Times
Residential	1	15 seconds
Light	1	60 seconds
Ordinary	2	50 seconds
Extra	4	45 seconds
High Piled	4	40 seconds

For areas protected with a dry pipe residential sprinkler system including dwelling units, the number of sprinklers that need to be hydraulically calculated will vary with which installation standard is being used. Starting with NFPA 13D, the standard calculation is up to two (2) sprinklers in a compartment (Section 8.1.2). The annex cautions against scenarios that were not specifically considered in the listing process. However, it is silent on needing additional sprinklers for a dry system arrangement. This leads to the manufacturer's cut sheets for dry residential sprinklers. Those currently on the market do not require additional sprinklers to be added to the calculation. It is important to note that under the dry residential sprinkler listing the flows may be slightly larger as a larger fire is expected by the time water arrives to the sprinkler. If a residential sprinkler has been listed for both wet and dry applications, then it is vital to make sure the correct flow is selected for the dry system calculations.

Next, NFPA 13R refers the user to NFPA 13 for dry systems so the calculations will be the same for both documents. If the system uses residential sprinklers, then a four-sprinkler calculation is necessary. The flow rate will be either the listed value or 0.1 gpm/ft^2 (4.1 mm/min), whichever is greater. If the manufacturer's installation criteria indicate more sprinklers need to be calculated that would govern. Yet those currently listed do not require additional sprinklers for the calculations.

When areas outside the dwelling unit(s) are calculated for the water supply of a dry system under NFPA 13 or NFPA 13R, the calculation procedure is that discussed in the "Non-Residential System Application" portion of this article.

Non-Residential System Applications

When using a dry pipe system for occupancies other than residential, the same topics are important. The types of sprinklers used, the system valve, the water delivery time, and hydraulic calculations all need to be discussed. For this section, only NFPA 13 applies as this is non-residential applications for dry sprinkler systems.

Starting with the types of sprinklers for a dry system, the use of pendent sprinklers is limited. This is for two reasons. First, through the life of the system, sediment, rocks, scale and other debris could collect in these drops. Second, if the area reaches freezing temperatures, ice plugs could form. Either of these situations could be detrimental to the correct operation of the fire sprinkler system. Return bends are an option for using pendent sprinklers where the sprinkler and return bend are kept in a heated area.

Another option for a pendent sprinkler is to use a listed dry pendent. A dry type of sprinkler is connected to a wet pipe system but has a barrel that remains dry to transition to the colder space. These are also available in sidewall styles. The length needed is specified when the sprinkler is ordered, based on the lengths needed for penetration of the physical barriers and/or

>> CONTINUED ON PAGE 28

>> CONTINUED FROM PAGE 27

to maintain the appropriate temperatures. Because each one is prepared to order, the cost for dry sprinklers is significantly higher than traditional models. Therefore, these sprinklers are used when a majority of the building can be protected with a wet system and specific areas utilize the dry sprinklers, such as a walk-in cooler or freezer that needs a single sprinkler for protection and the remainder of the building is protected with a wet system.

When the area is not residential, typical upright and sidewall sprinklers are used on a dry system. There is no special listing required, just the standard testing that is required of all sprinklers. The ease of upright and sidewall sprinklers to be drained to the dry condition simply allows for them to be used without changes from the common models.

A dry pipe valve is necessary to hold the water back from entering the system until it is needed. These valves are listed. As noted earlier, those on the market range in size from 1 ½ inch diameters through 8-inch diameters. The area where the valve is installed must be heated so that the water below the valve remains liquid.

Water delivery time is just as important a characteristic for systems in non-residential occupancies as those of residences. However, the requirements explained above for areas that are outside the dwelling units are the same for non-residential occupancies. There are the five options for sizing the system. Two of which allow open ended delivery times based on the system volume. The remaining three options have limitations based on the time for water to reach the ITC either by calculation or physical test.

The hydraulics of a dry system that does not include dwelling units has two options. The first is the room design method. Section 11.2.3.3 details the requirements for using the room design method. The basic concept is all of the sprinklers in a compartment are calculated. This is the same whether the system is wet or dry. The second method is the density/area method covered in Section 11.2.3.2. When applying this method to a dry system, the area must be increased by 30 percent (Section 11.2.3.2.5). This means that if the selected area from the density/area figure was 1500 ft^2 (139 m^2) it would be increased by 30 percent to 1950 ft^2 (181 m^2), then the 1950 ft^2 (181 m^2) area would actually be calculated.

Summary

In general, dry sprinkler systems are a great way to protect the system from freezing conditions. Although the water arrival to the fire is delayed, it can still control a fire when adequately designed under the dry system criteria. The extension to use dry systems in dwelling units does need special attention, but can be done. In some cases, sprinklers have additional criteria that needs to be followed as they are listed for special scenarios, such as dry pendent sprinklers or dry residential sprinklers.

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By Ed Comeau

Engaging Students in Fire Safety

Today's college students are an active group, whether it be academically, socially or in their communities. Getting their attention and trying to teach them about a topic that is not on their radar screen – such as fire safety – is difficult given how everyone is vying for their attention.

In September 2010 the Minger Foundation took a new direction when it came to trying to reach out to today's Millennial Generation and an untapped area is community service. According to the Corporation for National and Community Service in a 2006 study, the number of students volunteering from September 2001 had increased from 27 percent to over 30 percent, exceeding the volunteer rate for the general population. Furthermore, the rate for college students volunteering is twice the rate of those of their peers that are not enrolled in higher education.

"The volunteer enthusiasm expressed by today's college students could have long-lasting benefits," said Robert Grimm, Jr., director of research and policy development for the Corporation for National and Community Service in a prepared statement. "Just as the Greatest Generation was shaped by WWII and the Great Depression, the tragic events of 9/11 coupled with growing university and K-12 support for volunteering and service-learning have translated into more college students mentoring, tutoring , and engaging in their community in ways that could produce a lifetime habit."

The Minger Foundation was awarded a DHS Fire Prevention and Safety grant to develop a series of campus fire safety community service projects. "Rather than just talking with them about campus fire safety, by having them doing fire safety they will have the opportunity to learn, first hand, the importance of fire safety," said Gail Minger, president of the Michael H. Minger Foundation. Gail lost her son, Michael, in an arson fire in a residence hall at Murray State University in Kentucky. Since that time she has become a strong advocate for fire safety on our nation's campuses, particularly for students with disabilities.

There are several benefits to this program. By having the students work directly with their local fire departments they learn about fire safety. This also provides the fire department, where many fire prevention functions are being cut under the budget knife, a new resource to help them in reaching out to the community. Finally, and most importantly, the residents in each community are receiving fire prevention information and resources that otherwise may not have been available to them.

The grant was awarded in June 2010 which did not leave much time to get it organized and it was decided that it would be done in two stages with the program in 2010 being done in a smaller area and serving as a pilot for the national launch which would be done in 2011. Fortunately, a group of schools and communities in North Carolina expressed a strong interest in being involved. A team of representatives from the communities and schools along with representatives from the Minger Foundation was quickly assembled to begin work on this project.

Involved in this project were the campuses of the University of North Carolina and fire departments in Chapel Hill, Charlotte and Greensboro; the Winston-Salem Fire Department, the Raleigh Fire Department and Winston-Salem State University, North Carolina State University and Shaw University. Each developed programs that would work best in their community and address pressing fire safety problems. For example, in Greensboro, a specific area of the community was having a large number of fires and in Chapel Hill, it was off-campus student housing that needed a special focus. In Winston-Salem it was cooking fires. Charlotte focused on students needing more awareness and reaching the community through home fire safety visits with their meals on wheels program. Raleigh looked to help reduce the risk in a low-income part of its community.

>> CONTINUED ON PAGE 30

Ed Comeau
Publisher of "Campus Firewatch"

Speaking at the launch were (l to r) Chapel Hill Fire Chief Dan Jones, Bonnie Woodruff, Governor Bev Perdue, Gail Minger and Kinsey Pilkington.

>> CONTINUED FROM PAGE 29

Designing a program

Meetings were held in Chapel Hill and later in Greensboro with all of the school and community representatives to help design the program. An overarching theme was developed with the slogan, "Help Save a Life...Get on the Truck" to help create interest. A logo was designed that incorporated the idea of students "getting on the truck" to promote fire safety in their community and this became a part of the T-shirts, donated by System Sensor, that were given to everyone involved in the project.

A number of the communities decided to have the students install smoke alarms alongside the fire fighters. The Minger Foundation was able to get a donation of 300 photoelectric smoke alarms from First Alert and an additional 200 were purchased by the Foundation and distributed to each of the communities to use. Domino's Pizza donated hundreds of gift cards that were used as thank-you's that were given to the occupants when the home visits were done.

Launch

The project was launched at the site of the tragic fire in 1996 that claimed the life of five students at the Phi Gamma Delta fraternity at the University of North Carolina Chapel Hill. At a press conference in front of the rebuilt fraternity, North Carolina Governor Bev Perdue spoke of that fateful day, a day she remembers well because her son was a member of the fraternity. She received a call from the school that morning because they were reaching out to all of the parents and, fortunately, her son was safe. However, this was not the case for five students, including Ben Woodruff, whose mother, Bonnie, spoke as well, along with Kinsey Pilkington whose brother was killed in an off-campus fire at North Carolina State in Raleigh, North Carolina. Chapel Hill Fire Chief Dan Jones recounted his memory of that day and the impact it made upon the community and the school.

Gail Minger, president of the Michael H. Minger Foundation, spoke of the importance of fire safety and what was being done in Chapel Hill that day. "Getting students involved is so important to making them realize the role that fire safety plays in their lives and those of others," said Minger. "If we can engage them in doing it themselves and in helping others, we all win."

Reaching Students

Today's students are connected more than any generation before them by the tools and resources available to them

>> CONTINUED ON PAGE 31

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on the Internet and on their cell phones. Facebook, Twitter, instant messaging, text messaging – these are all means of communications that can be used in making them aware of programs such as these. But how to tap into this network?

Mike Rupert, a social media expert with extensive experience in reaching out to students, was brought on board to help. Some of his successful projects have included This Should be Illegal *(www.ThisShouldBeIllegal.com)*, a web site for Washington, DC, that informs students about their rights as tenants and what the landlord is required, by code, to provide them in their apartments. He has also used both Facebook and Twitter very successfully in promoting this project and actually getting students and others more informed about codes and ordinances. Imagine…people reacting to code violations and actually reporting them to the AHJ for inspection and correction!

Rupert used a variety of tools available to him such as targeted advertising through Facebook® and Google. He also identified key people in the communities, what he refers to as "influencers," who are very active in the social media networks to reach out to and ask them to help spread the message about these projects. Twitter was also another tool that provided him with the ability to expand the reach even more.

However, social media is not a "silver bullet" and it is also important to use traditional media as well. Rupert developed a social media press release (this is an online version of a press release that incorporates video, photographs, sound bites and much more in addition to the "traditional" press release) and pitched the project and the launch extensively to the North Carolina media.

What did the communities do?

Chapel Hill was the site of the tragic fire in 1996 that claimed five lives in the Phi Gamma Delta fraternity. Since that time, both the university and the community has had a much greater awareness about the dangers of fire and has taken a number of steps to make sure that such a tragedy is not repeated. For example, following the fire, a mandatory sprinkler retrofit ordinance for all Greek housing was passed. In addition, each fraternity and sorority has one student that is the designated fire marshal and this person was an integral part of this community service program.

Each fire marshal was tasked with finding three friends who live in off-campus housing that the fire department could come in an inspect. With over 30 Greek houses, this came to approximately 100 inspections that were done by teams of students and Chapel Hill Fire Department personnel. According to Deputy Fire Chief Matt Lawrence, "it was a ton of work but it went really well. We put the referrals into a Google map and then assigned them to teams." Over the course of three days, students and fire fighters visited these rental properties and installed smoke alarms.

Not only did the students involved learn something, but the inspectors did as well. "Even the inspectors were amazed at some of the places the students are living in," said Lawrence. There were a number of occupancies that were "underground" apartments that will now be added to the list of occupancies to be inspected annually, which is required in Chapel Hill. "We have a better understanding of where the students are laying their heads at night."

One of the benefits was having the students involved instead of just fire fighters. The peer-to-peer communication was a big help. "We weren't perceived as being from the government," observed Lawrence.

Charlotte Fire Department worked with students from the university's Fire Safety Engineering Technology program and did a side-by-side burn of mockups of student rooms, one sprinklered and one unsprinklered. As with all of these demonstrations, they have a powerful impact on the students. "Most students don't get it," said John Rudisill, senior fire and life safety educator for the Charlotte Fire Department. "It is important for us to make sure they do. They say a picture is worth a thousand words, well this was worth 10,000."

"It got across to a lot of people how deadly fire is and how sprinklers can contain a fire," said Sara Savage, a senior at UNC Charlotte and president of the Fire and Safety Technology group. "The reaction from a bunch of people was that they wanted to live in the sprinklered room!" They are hoping to do another demonstration around Christmas to show the dangers of Christmas trees and they are hoping to get involved with some of the other campuses as well.

This project really brought together a number of different people to make it happen, said Director of Risk Management and Business Continuity Beverly Setz. "Quality Sprinklers donated the sprinkler and the piping, UNC Charlotte Housing and Residence Life provided the furniture for the burns, Lowe's gave us a 20% discount on the materials for the props."

In addition to the demonstration burns, students from FAST will be going with the Charlotte Fire Department on home fire safety visits. The fire department has a program where they regularly go with the community's meals on wheels program, called Friendship Trays, and use this as an opportunity to do a home fire safety inspection. The students will be going with the fire department personnel on these visits to help and learn, first hand, about how to educate the public about fire safety.

The Raleigh Fire Department worked with students from Shaw University and North Carolina State on doing home fire safety inspections. Raleigh was the site of the fire in 2005 that claimed the life of Cody Pilkington, a student at North Carolina State, and his brother, Kinsey, took part in both the launch at UNC Chapel Hill and with the home fire safety visits.

"We went door-to-door in teams of students and fire fighters," said Kinsey, "asking if we could come in an check their smoke alarms.

His team was able to visit about 20 apartments and they would either check the batteries in the smoke alarms and replace them or install new ones where needed. "The majority of the people we encountered did not speak English," reported Kinsey. "I spoke some high-school Spanish and was able to sometimes say enough to help out."

"All together we knocked on 50 doors," reported Ronald Campbell, deputy fire

>> CONTINUED ON PAGE 32

North Carolina Governor Bev Perdue spoke at the launch of the Help Save a Life... Get on the Truck campaign. This launch was held at the Phi Gamma Delta fraternity on the University of North Carolina Chapel Hill Campus where five students were killed in a fire in 1996.

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marshal for the Raleigh Fire Department, "and we were able to get into 36 homes."

"The students really enjoyed it," said Campbell. "They got a good understanding that there are folks that are not as fortunate as they are and got to see a different side of Raleigh that they don't usually see. They were able to see, first hand, the lack of fire prevention knowledge and protection and learned a lot from doing it in person."

The Greensboro Fire Department mapped out a part of town where there were a large number of these fires. Working with the university, the department developed a program where students and fire department members handed out flyers at a community center. These flyers explained that the fire department was going to be doing home fire safety visits and would be installing free smoke alarms. They also took part in a safety fair at the community center where people had the opportunity to do fire extinguisher training and they could register for the home fire safety visits.

On a Saturday, teams of students and fire fighters went to these homes. "The people couldn't believe we were doing this and were very happy to let us in," said Patty Strickland, a graduate student at UNC Greensboro. "In one place the woman said the smoke alarm had never worked and when we pulled it down, there were no batteries in it. There were six kids living in that apartment, some of them new-born babies." This kind of experience made Strickland realize the importance of what she was doing.

A number of hard-wired smoke alarms with batteries had been torn down and when the occupants were asked why, the common response is because they would not stop chirping. The teams replaced these with single-station smoke alarms to give them protection and explain that they had to be replaced with the proper smoke alarms as soon as possible.

While a number of the homes were in good shape, there were others that were life-lessons for the students, reported Greensboro Fire Captain Alvin Robinson. "One house in particular, in a very low income area, had a woman and four kids living in the home with her dog with a lot of clothing and pillows scattered throughout and extension cords from the play areas back into the bedrooms. She did allow us to install a smoke alarm and we were able to do some education as we did it."

"The students learned a lot and had a lot of fun with the project," explained UNC Greensboro Fire and Life Safety Manger Jill DeMuth, "especially when we did the hands-on with the fire extinguishers. I taught them how to do it and then they had to teach it back to others while we

>> CONTINUED ON PAGE 33

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supervised. They pick up on things really fast."

In Winston-Salem, cooking fires are a serious problem. Students from Winston-Salem State University and Salem College teamed up to develop a cooking fire safety skit that they put on for the local Boys and Girls Club. "We showed the kids what could happen if you do not pay attention when you are cooking or if you do not pay attention to your mothers," explained Freshman Myiesha Speight from Winston-Salem State University. It was a play involving role playing where one of the older sisters died in the fire and it had a dramatic impact upon the kids.

But what about the college students? What did they learn?

"I learned that when I am cooking to not get distracted by Facebook and the Internet," said Speight. "I learned the importance of fire safety and how deadly fires can be."

Going forward

Everyone definitely said that they are either going to continue the program going or do it again in the future. Greensboro is going to do it again in the spring and focus on off-campus housing. Chapel Hill is going to continue and expand upon the program as are the other communities that are involved, along with the Minger Foundation.

"This was our launch and I couldn't be more pleased with how it was accepted and how everyone gave it their all," said Minger. "We are planning on taking it into other states and nationwide. My hope is that other schools will follow and make it available for their students as well and continue year after year."

Another facet of the program is to involve students in installing sprinklers in Habitat for Humanity homes that the Minger Foundation is looking towards for the future. "We did talk a lot with the students about the importance of sprinklers and, if they have a choice, residing in buildings that are sprinklered," explained Minger. "We made that point time and again."

Seeing another world

The common reaction among the students was that in addition to learning about fire safety by providing it, they saw another world that they had not seen before. "Some places I realized how blessed I was that I didn't have to live in them," said Strickland. "One place had the oil furnace in the living room and the walls were black.

"It was really an eye-opening experience for me and the other students on my team," said Kinsey Many of the apartments that they went into were in rough shape and when the students saw the living conditions, "we were shocked. It was pretty intense."

This same sentiment was echoed by Minger who went with the students on some of the home visits. "They looked like regular homes from the outside," said Minger, "but when you get inside it was amazing to me looking at the serious fire safety problems. Some of the folks were elderly people that could barely get around and their smoke alarms were not working. They were pulled from the ceiling or had no batteries. They were at great risk and it was unsettling. It taught me a lot about people. They were very welcoming and grateful.

"It made a great impression on the students and me. They were shown a part of society that they often don't see and they realized how important it is to have fire safety knowledge and share it with others and help others that aren't able to help themselves."

Why this project?

"We did this project because we really wanted to look at the possibilities of how we could get students engaged more in campus fire safety issues," explained Minger. "This seemed like an outstanding way to get the students involved in the communities, get community fire service experience and learn fire safety from these experiences."

It looks like the students not only learned about fire safety, but a lot more that they will carry with them for the rest of their lives.

Ed Comeau is the publisher of Campus Firewatch (www.campus-firewatch.com) and is the project coordinator for the Help Save a Life...Get on the Truck project. He is the former chief fire investigator for the National Fire Protection Association and founded the non-profit Center for Campus Fire Safety. He can be reached at ecomeau@campus-firewatch.com or 413-323-6002.

SQ Magazine Wins Prestigious MarCom Gold Award

NFSA is proud to announce that **SQ** has been named a MarCom Gold Award winner by the Association of Marketing & Communication Professionals (AMCP). There were almost 5,000 entries from throughout the United States, Canada and several other countries in the 2010 competition.

AMCP, an international organization, consists of several thousand creative professionals. The Association oversees the MarCom Awards, provides judges and sets standards for excellence.

Judges are industry professionals who look for companies and individuals whose talent exceed a high standard of excellence and whose work serves as a benchmark for the industry.

David Vandeyar, NFSA Director of Membership & Communications and **SQ** Editor said, *"Being recognized by MarCom with their Gold Award in the category of Association Magazine is a tremendous honor. It's very competitive and so few receive this most prestigious award. This recognition is extremely gratifying and is a direct reflection of the hard work and long hours put in by a dedicated team of fire sprinkler industry professionals committed to achieving the industry's highest standard. All of us at NFSA are justifiably proud of this achievement."*

Winners were selected from over 200 categories in seven forms of media and communication efforts- marketing, publications, marketing/promotion, public service/probono, creativity and electronic/interactive. Only 18% of the entries received were named Gold Award recipients.

"We at NFSA wish to congratulate everyone who contributes, designs, edits, proofreads, prints and advertises in SQ Magazine," said Joanne Genadio, **SQ** Advertising and Publications Coordinator. *"You've all had a hand in making SQ the award-winner that it is!"*

NFSA also acknowledges the work of **SQ**'s designer, John Sullivan of Sullivan Design, and its printer, Mike Lotrecchiano of Graphic Management Partners.

Shipping Rates Increasing– Take Advantage of NFSA Discount Shipping Program

RATE INCREASES

FedEx Corp. (NYSE: FDX) and UPS (NYSE: UPS) will increase envelope and small package shipping rates for 2011.

Effective January 3, 2011, the cost to ship an overnight envelope with FedEx Express will increase by a net average of 3.9%. Also effective January 3, 2011, the cost to ship with UPS ground and express services will increase by a net average 4.9% for U.S. domestic and U.S. export services.

Details of dimensional weight charges and additional changes that will be made to other FedEx Express surcharges can be found at www.fedex.com/us/2011rates. Updated UPS rate and service information can be found on www.ups.com/rates. On Jan. 3, 2011, when the new rates take effect, customers can download the 2011 Rate and Service Guide.

HOW WE CAN LIGHTEN THE LOAD

The NFSA Discount Shipping Program, managed by PartnerShip, was started to help NFSA Members save on all of their shipping expenses. The program discounts continue to help small- to medium-sized businesses save on their small package, express, and LTL shipping. The discounts are vital to help counter the annual carrier rate increases, allowing members to recoup at least a portion of their shipping dollar that would otherwise be lost.

Because of your membership in NFSA, PartnerShip offers you its specialized service of helping you understand the complexity of shipping rates, accessorial charges, dimensional weighting and other shipping intricacies. PartnerShip will consult with you to help you get the most for your shipping dollar. Call PartnerShip today at 800-599-2902 to speak with a shipping logistics professional for expert advice, or visit www.partnership.com/55NFSA for more information on the NFSA Discount Shipping Program.

Technical Committee for Accreditation Program

A technical committee of approximately 18 stakeholder organizations, including the National Fire Sprinkler Association, is being formed to establish the accreditation criteria of the new Fire Sprinkler Contractor Accreditation program created by the Center for Public Excellence (CPSE). CPSE has secured the services of Ronny Coleman to facilitate the first meeting of the technical advisory committee to help CPSE determine the competencies, eligibility, and process for an accreditation model based upon the CPSE model customized for this specific program.

NFSA Invites You to Become a Friend of the Industry Member

Do you have an interest in promoting the good works of the fire sprinkler industry, but are not directly involved? Here's your opportunity to show your support! Join NFSA as a Friend of the Industry member! Go to **www.nfsa.org** and join today!

REGIONAL ROUNDUP

NEW ENGLAND REGION

Tim Travers, Regional Manager

Massachusetts Public Hearing Regarding IRC Adoption to be held in November

The Massachusetts Board of Building Regulations & Standards (BBRS) staff has recommended that a public hearing on the 2009 IRC adoption be scheduled for their November Public Hearing and meeting. A residential fire sprinkler coalition has been formed and meets monthly in Massachusetts to support the 2009 IRC adoption with the sprinkler requirement intact. This is an open public meeting and all are welcome.

Portland, Maine Adopts the 2009 Edition of NFPA 1 And 101

On August 16th, the city of Portland, Maine adopted the 2009 edition of NFPA 1 and 101, with the one- and two-family sprinkler requirements intact. The vote was 8-0 and took effect 30 days from date of passage. Both codes require all new one- and two-family dwellings to have fire sprinkler systems. Portland is the largest city in the state of Maine. Westbrook and Rockland are two other Maine towns in the state that have also adopted NFPA 101 in its entirety. Congratulations to these progressive-thinking Maine cities and all who worked so hard to get the requirements passed!

Tim Travers is the NFSA Regional Manager for the New England region. He can be reached at travers@nfsa.org or 751 Washington Street, Whitman, MA 02382, Phone 845.661.5876, Fax 781.524.1026

NEW YORK REGION

Dominick Kasmauskas, Associate Director of Regional Operations – North

NFSA Empire Chapter News

A discussion with Russ Fleming, NFSA Executive Vice President, entitled "Antifreeze in Fire was well attended by fire sprinkler contractors, SAMs, PEs, and Code Enforcement Officials from all across New York State. Everyone came away with information needed to understand what NFPA had published as well as how it affects fire sprinkler systems in our state.

The tentative interim agreement (TIA) issued by the NFPA address only the 2010 editions of 13, 13R, and 13D. In 13, the TIA only affects anti-freeze systems in the residential portions of buildings with a full 13 system. New York State is not using the 2010 edition yet.

There is no requirement to change anything in an anti-freeze fire sprinkler system until an AHJ makes that directive. In our case, (excluding New York City) New York Department of State, Codes Administration and Enforcement is the AHJ for New York State Codes.

Be prepared for misinformation to abound. Please direct any questions or concerns to Dom Kasmauskas.

Dominick Kasmauskas is the NFSA's Associate Director of Regional Operations-North and Regional Manager for the New York Region. He can be reached at Kasmauskas@nfsa.org or1436 Altamont Ave. Suite 147 Rotterdam, New York 12303, Phone 914.414.3337, Fax 518.836.0210.

MID-ATLANTIC

Raymond W. Lonabaugh, Regional Manager

Media Event Features Residential Fire Sprinkler Installation in Firefighter's Home

Chris Krout is a Lieutenant in the Wright Township (Volunteer) Fire Department of Mountain Top, Pennsylvania. Chris had the misfortune of being a fire victim. He lost his home and all of his personal belongings. Chris is now in the process of building a new home on his property and he decided his new home will have automatic fire sprinkler protection.

As a residential fire sprinkler advocate, Chris is using his misfortune as a learning experience for others. On Tuesday October 26th five newspaper reporters, photographers and a TV crew were on hand to interview, take pictures, and film Chris and the sprinkler installation taking place in his new home. The media event was coordinated by Joe Ferrary of NFSA's public relations firm, R&J. The sprinkler installation was performed by NFSA Contractor Member Rowe Sprinkler of Middleburg, Pennsylvania.

Raymond W. Lonabaugh is the NFSA

>> CONTINUED ON PAGE 36

REGIONAL ROUNDUP

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Regional Manager for the Mid Atlantic Region. He can be reached at: lonabaugh@nfsa.org or P.O. Box 126, Ridley Park, Pennsylvania, 19078. Phone: 610.521.4768.

SOUTHEAST REGION

Wayne Waggoner, Regional Manager

North Carolina Does Away With Sprinklers in New Townhomes

The North Carolina Building Code Council voted Tuesday September 14th not to require sprinklers in new townhomes, according to Greensboro Fire Marshal and Assistant Fire Chief David Douglas. Douglas stated that the decision goes against an international code that would have gone into effect in North Carolina in 2012. Currently, fire sprinklers are required in apartment and commercial buildings.

Dalton Worthington, a builder who has built townhomes, was not aware of Tuesday's vote, but said cost is one reason he thinks it should be up to the client whether to put in sprinklers. He said the rules should be no different than a single family residence.

Some firefighters disagree. In March, a fire occurred at the Crowne Garden Apartments, Douglas credits sprinklers with limiting damage at Crowne Garden. Williamson shares a wall with neighbors and her townhouse does not have sprinklers Douglas argues sprinklers save property and lives and he would like to see the code require sprinklers not only in new townhomes, but single family homes too. Douglas said the cost of sprinklers is new home construction is about a $1.43 a square foot. According to a 2008 U.S. Fire Administration report, homeowners with sprinklers received discounts of five to fifteen percent on their insurance. The international building code that will be adopted in North Carolina in 2015 requires all single-family homes to have sprinklers, but North Carolina has the ability to adopt a less-strict code, such as happened at the Building Code Council vote with the townhome sprinkler code.

Wayne Waggoner is the NFSA Regional Manager for the Southeast Region. He can be reached at: Waggoner@nfsa.org or PO Box 9, Andersonville, Tennessee 27705, Phone 865.755.2956, Fax 865.381.0597.

FLORIDA REGION

David Bowman Ph.D., Associate Director of Regional Operations – South

FFSA Board Approves Side-by-Side Demonstration Budget

At the September Florida Fire Sprinkler Association Quarterly Board of Director's Meeting, a budget was overwhelmingly approved to support current efforts to organize the side-by-side fire sprinkler burn demonstration program. The Board had an in-depth discussion of the benefits that all industry stakeholders see in the program and agreed to provide further financial support.

As of this writing, multiple side-by-side burn demonstrations are planned for all regions of Florida including: three in the Panhandle, two in Tallahassee, two in Jacksonville, two in Orlando, one in Tampa, three in Ft. Myers, and three in South Florida.

If you are interested in becoming a part of this vibrant Association, contact Dave Bowman and he'll get you involved. This side-by-side burn demonstration initiative is just one of the ways we are making a difference in the industry.

David Bowman is the NFSA's Associate Director of Regional Operations-South and Regional Manager for the Florida Region. He can be reached at Bowman@nfsa.org or 6572 SE 173rd, Court Ocklawaha, Florida 32179, Phone 845.519.7648, Fax 661.455.3968.

GREAT LAKES

Ron Brown, Regional Manager

Indiana Fire and Life Safety Coalition News

The Indiana Fire and Life Safety Coalition held three informational meetings across the state of Indiana in August 2010. The meetings were held in Fort Wayne, Indianapolis and Evansville. The purpose of the meetings was to bring members up to speed on the Coalition's Activities. A major accomplishment of these gatherings was the establishing of a Board of Directors coupled with a decision to pursue a Coalition management method that will help accomplish Coalition goals and at the same time do a better job of communicating with and soliciting ideas from the members.

The new Board is made up of the following individuals, Chairman, Mark Riffey, Ryan Fire Protection, Vice Chairman Eric Flora, Brenneco Fire Protection Inc. and Regional Representatives Bruce Agan, US Automatic Sprinkler Protection (Central), Carmel IN, Chris Evans, VFP – Fort Wayne (North) and Walt Howard, Tri-State Fire Protection. Evansville (South). A special thanks to these individuals for stepping up to the plate and taking on the responsibility of getting the Coalition in a better position to influence active fire protection in the future of Indiana.

A follow-up Board meeting was held on September 23rd. The Board met to discuss the possibility of hiring a professional management organization to help take care of administrative functions. The Board seems to agree at this point that such an arrangement would be beneficial in many ways including the possibility of finding alternative funding sources which would allow for an adjustment in member fees. The Board is also considering the inclusion of meaningful training opportunities at future regional meetings so those attending the meetings will receive greater value for the time they invest.

Ron Brown is the NFSA Regional Manager for the Great Lakes Region. He can be reached at Brown@nfsa.org or 1615 Cypress Spring Drive, Fort Wayne, Indiana 46814, Phone 845.661.6534; Fax 260.625.4478

ILLINOIS/ NORTH CENTRAL REGION

Bob Kleinheinz, Regional Manager

Fire Safety Demo at University of Illinois

Fire Factor started off the Fire Prevention Month activities at the University of Illinois on September 25th. This year's events were held at one of the high-rise dorms on campus, instead of the IFSI training facilities. Having the event at an actual dorm gave the students a much greater hands-on experience as they learned about fire safety

>> CONTINUED ON PAGE 37

REGIONAL ROUNDUP

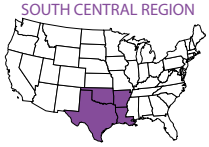
>> CONTINUED FROM PAGE 36

in the dorms. With assistance from F.E. Moran, we presented a side-by-side fire sprinkler demonstration to the students and staff. The Urbana Fire Department provided the crews to extinguish the fire on the unsprinklered side while the sprinkler side was extinguished by the sprinkler and the fire crew pulled out the furniture.

Bob Kleinheinz is the NFSA Regional Manager for the Illinois/North Central Region. He can be reached at Kleinheinz@nfsa.org or 509 Dawes Street, Libertyville, Illinois 60048, Phone 914.671.1975.

SOUTH CENTRAL

Dave Bowman, Regional Manager



Side-By-Side Burn Demo in Sulphur Springs, Texas

In September, NFSA, in conjunction with Zurn Corporation, conducted a side-by-side fire sprinkler demonstration at the North East Texas Fire and EMS Training Academy in Sulphur Springs, Texas. The burn cells were constructed by Zurn and the sprinklers were supplied by their Pex System.

The burn was attended by numerous local fire departments and some local county board members. This side-by-side demonstration showed the impact that residential sprinklers had versus not having them in the home. The unsprinklered side went to complete flashover within two minutes while the sprinkler activated in just over 30 seconds and completely extinguished the fire. The audience was amazed at the difference and numerous people said that seeing it for the first time made them believers in residential sprinklers.

David Bowman is the NFSA's Associate Director of Regional Operations-South. He can be reached at Bowman@nfsa.org or 6572 SE 173rd, Court Ocklawaha, Florida 32179, Phone 845.519.7648, Fax 661.455.3968.

CENTRAL REGION

Chris Gaut, Regional Manager

Kirkwood, Missouri Fire Department Holds Fire Safety Demonstration

The Kirkwood Fire Department presented a fire safety demonstration on Sept. 18 at the Greentree Fire Safety Event.

The event included a side-by-side demonstration of two sample rooms that each had a small fire in a trash can. This is similar to incidents that occur every day throughout the U.S. and several times per year in Kirkwood. Statistics show that on average there are 4,000 fire related

One sample room had an automatic fire sprinkler installed. This fire was extinguished in approximately 18 seconds. The damage to the room was minimal and any occupant inside the room could have escaped easily.

The fire grew rapidly in the unsprinklered room and reached flashover in less than two minutes. Kirkwood firefighters then moved in to extinguish the fire. No one, including a firefighter in full protective gear, can survive flashover conditions.

Many of the observers of the fire safety demonstration remarked on how quickly the small trash can fire grew to engulf and consume the whole room. The thick black smoke filled the room and spilled into the air. It was obvious that it would have been impossible for a victim to see through the smoke to escape and deadly to breathe if trapped in the room.

Thanks go out to the Kirkwood Fire Department for holding this demonstration to educate the public about the life- and property-saving attributes of fire sprinkler systems.

Chris Gaut is the NFSA Regional Manager for the Central Region. He can be reached at gaut@nfsa.org or NFSA Central Region Office, 237 E. Fifth St. #135, Eureka, MO 63025, Phone 845.803.6426, Fax 636.410.7700.

GREAT PLAINS

Terry Phillips, Regional Manager

Clinch Named Chairman of Montana Fire Sprinkler Coalition

Montana State Deputy Fire Marshal Pat Clinch has agreed to be the chairman of the Montana Fire Sprinkler Coalition.

>> CONTINUED ON PAGE 38

REGIONAL ROUNDUP

>> CONTINUED FROM PAGE 37

Pat is a great choice for this position and will be a great resource for the Montana Coalition. He represents that State Fire Marshal's Office, which is committed to residential sprinklers, he knows the legislative process, and combined with his background and speaking skills, he will represent the interests of the Montana Fire Service very well.

Terry Phillips is the NFSA Regional Manager for the Great Plains Region. He can be reached at: Phillips@nfsa.org or Phone 914.525.4396, Fax 307.514.0406.

SOUTHWEST

Doyle Sutton, Regional Manager

Avondale, Arizona Sprinkler Save

A fire-sprinkler system has been credited with saving an Avondale house that caught fire while the homeowner was away. The owner, Derek Etheridge, said the fire broke out in an upstairs bedroom and a single sprinkler in the ceiling was activated, extinguishing the blaze. Etheridge said he was glad that his house and all of his belongings were saved. Wednesday during clean-up work at the house. Etheridge, 26, an educator, said the heat and fire damage to the home was minimal. He admitted that things could have been a lot worse and said he never thought much about the sprinkler system when he bought the house, but now realizes its value.

Avondale firefighters were called after neighbors reported smoke coming from a two-story, single-family house and that the sprinkler was going off, Avondale Fire Marshal Roger Parker said. The blaze easily could have gone undiscovered until it would have been too late to save the house, thus demonstrating the value of a home sprinkler, he said.

Of the thousands of homes in Avondale, Etheridge's house is one of about 700 equipped with fire sprinkler, Parker said. In January 2005, the Avondale City Council adopted an ordinance-requiring sprinkler in all new houses. However, voters overturned the measure in November 2005 after Home Builders Association of Central Arizona led a successful repeal campaign.

In March 2006, the Avondale City Council approved an ordinance-requiring builder to install fire sprinkler in new houses if buyers want them.

Doyle Sutton is the NFSA Regional Manager for the Southwest Region. He can be reached at: Sutton@nfsa.org or Phone 303.854.8677, Fax 303.496.7501.

WEST REGION

Bruce Lecair, Regional Manager

Begins Discussions Toward Residential Fire Sprinkler Adoption

Hawaii Stakeholders conducted the first investigative committee meeting on residential fire sprinklers on October 4, 2010 and received presentations and reports from the International Code Council and the National Fire Protection Association. The discussions centered on the process for preparing and planning for the adoption of a State of Hawaii International Residential Code Adoption and the implementation of a statewide residential fire sprinkler ordinance and identifying issues that may affect the statewide adoption process.

At the meeting, members identified resources, organizations and coalitions that could assist in the process which resulted in an invitation to NFSA Regional Manager Bruce Lecair to deliver a 2 ½ hour presentation to members of the Hawaii stakeholders on November 8th. The presentation was based on the IRC Preparation Classes taught throughout California and the issues and recommendations from the IRC Phase I, II, III and final report to the Office of the State Fire Marshal.

The Stakeholder Committee also identified the Home Fire Sprinkler Coalition as an important resource and invited NFSA Director of Public Fire Protection Shane Ray and Associate Director of Fire Protection Vickie Pritchett to attend the Hawaii Fire Chiefs Conference on the Island of Kauai in November. At the Conference, Ray and Pritchett conducted an informational presentation on residential fire sprinkler systems in breakout sessions and informal meetings and discussion.

County of Oahu Battalion Chief and Fire Marshal Socrates Bratakos is charged with organizing the Hawaii State Building Code Council's investigative committee on residential fire sprinklers and may be contacted at the Oahu Fire Prevention Bureau, Honolulu Fire Department (808) 723-7151; sbratakos@honolulu.gov.

Bruce Lecair is the NFSA Regional Manager for the West Region. He can be reached at: lecair@nfsa.org or Phone: 951.277.3517, Fax: 951.277.3199.

PACIFIC NORTHWEST

TBA

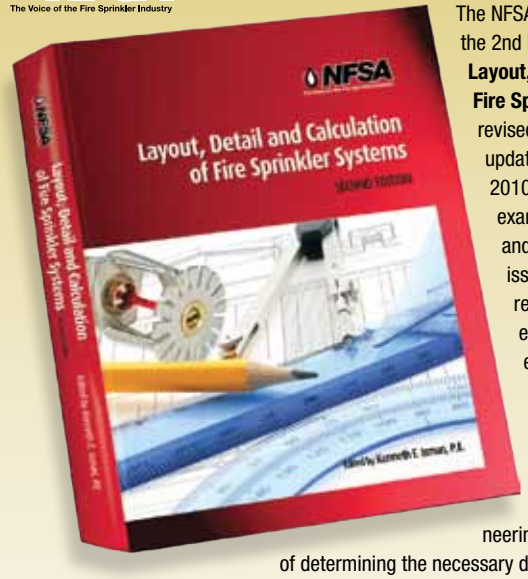
Edmonds, Washington City Council Votes to Require Fire Sprinkler Systems in Residential Construction

On November 16, after a significant amount of discussion and a number of failed motions and amendments, the Edmonds City Council approved an ordinance that requires installation of residential fire sprinkler systems in new construction of one-family and two-family homes and townhouses that are 3,000 square feet or larger in size. The council's Public Safety Committee had been meeting since April with representatives of various groups with an interest in the change, including fire officials, builders, real estate agents and sprinkler system installers.

Edmonds Fire Marshal John Westfall set the stage with a presentation to council members on the value of such sprinklers in terms of saving lives and property. "Home fire sprinklers in combination with smoke alarms reduce the risk of deaths in homes by fire by 82 percent relative to having neither," Westfall said. Compared to smoke detectors, sprinklers "provide an entirely different level of protection to people," he noted, adding that smoke detectors alert people to fire but sprinklers give them a chance to get out safely by limiting smoke and fire damage.

2nd Edition of Layout, Detailing and Calculation of Fire Sprinkler Systems Now Available

NFSA
The Voice of the Fire Sprinkler Industry



The NFSA announces the publication of the 2nd Edition of its popular textbook, **Layout, Detailing and Calculation of Fire Sprinkler Systems**. This newly revised hardcover textbook has been updated to reference the 2007 and 2010 editions of NFPA 13 with more examples and student exercises and new chapters on contract issues and stocklisting. This text remains the most complete book ever written for the fire sprinkler engineering technician and it's available now!

Written by the NFSA Engineering Department staff and edited by **Kenneth E. Isman**, P.E., Vice President of Engineering, this text covers every aspect of determining the necessary details for a fire sprinkler system including: hazard classifications, sprinkler spacing, hanger and brace requirements, hydraulic calculations, water supplies, pumps and tanks. The text also contains a review of basic math and physical science that is helpful in understanding the scientific principles behind the requirements that need to be followed.

This text makes an excellent self-study guide for the NICET Automatic Sprinkler Layout and Detail certification program and covers all of the work elements necessary to achieve Level 2 certification and many of the elements needed to achieve Level 3 and Level 4 certification. Even if you are not studying for a NICET exam, this text makes an excellent self-study guide for anyone wanting to know more about fire sprinkler systems.

The text retails for $95 *(plus S&H)* to members of the NFSA and $145 for non-members *(plus S&H)*. However, as an extra added bonus, to reward the people that purchased the first edition of the book, if you clip Ken Isman's picture out of the 1st Edition back cover flap and send it back to us with your order *(mail orders only, no fax orders for this offer)*, then you can take another $10 off the price of a single book *($70 + S&H for members and $120 for non-members)*. To get your book, fill out the following form and return it with your payment.

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PEOPLE

Carmine Schiavone New V.P., Ops of SimplexGrinnell Eastern Region

Carmine Schiavone, General Manager, Americas, Tyco Fire Suppression & Building Products (TFS&BP) has accepted the position of Vice President, Operations – Eastern Region for SimplexGrinnell, reporting to Bob Chauvin, President, SimplexGrinnell. In this new role, Carmine will be responsible for the business operations in the eastern North America region of the SimplexGrinnell business unit.

Carmine has twenty years of experience in the fire protection industry having held several roles in operations, sales, business development, marketing and communications. He also was awarded the Tyco Chairman's Award for Integrity in 2007 and again for Teamwork in 2009. Externally, he is a founding board member of the International Residential Sprinkler Coalition, and a current member of the board of directors for the Home Safety Council and National Fire Sprinkler Association.

Uponor's McCulloch Appointed to ICC Committee for Fire Sprinkler Exam

Paul McCulloch, technical support supervisor for Fire Safety at Uponor, was recently appointed to the Residential Fire Sprinkler Design and Installation Exam Development Committee by the International Code Council® (ICC) Board for International Professional Standards (BIPS). The appointment is a three-year term from Sept. 2, 2010, through Dec. 31, 2013.

McCulloch, who started with Uponor in 2003, has been designing, installing and training on residential fire sprinkler systems for more than 12 years. Through his time at Uponor, he has moved from designer to lead designer and now supervisor on the company's multipurpose plumbing and fire sprinkler system, called AquaSAFE™, quickly becoming Uponor's premier expert on residential fire sprinkler systems as well as U.S. and Canadian building and fire codes.

SPRINKLING OF NEWS

Common Voices Promotes Fire Sprinklers with Introduction of New PSAs

Common Voices, an advocates' coalition determined to create a fire-safe America, released a series of six new Public Service Announcements (PSA) that tell the stories of women who have lost family members in fires and explain the need for fire sprinklers in homes. Each PSA has a personal message from Common Voices advocates.

Through these women's advocacy efforts, Common Voices hopes that their stories and the statistics proving the need for residential fire sprinklers can make a difference and encourage people to get involved with residential fire sprinkler advocacy.

The complete media kit, which is free thanks to the Department of Homeland Security Assistance to Firefighters Act fire prevention grant, is available by visiting www.fireadvocates.org and will also be mailed to fire safety advocacy organizations nationwide to help promote the use of residential fire sprinklers.

The National Fire Sprinkler Association was instrumental in the formation of Common Voices, with a focus group meeting in February of 2007 providing the opportunity for the ladies to meet and work together. Once organized, the coalition became its own entity, with plans to open up membership opportunities in April of 2011.

Normal Fire Department Hosts 300th Side-by-Side Fire Sprinkler Demonstration in Illinois

Orland Park, IL (October 7, 2010) – As part of its National Fire Prevention Week activities, the Normal Fire Department hosted a fire sprinkler demonstration on October 6 that was recognized as being the 300th side-by-side fire sprinkler demonstration in Illinois.

The demonstration included two similarly furnished rooms – one equipped with fire sprinklers and the other not. More than 300 attendees at the event were able to see the dramatic difference of the life-saving fire sprinklers controlling the fire in one room versus the deadly fire in the unsprinklered room.

"Many people do not realize how quickly a fire can become deadly. It takes as little as three minutes," says Tom Lia, Executive Director of the Northern Illinois Fire Sprinkler Advisory Board. "That's why the Normal Fire Department and hundreds before them have chosen to use side-by-side fire sprinkler demonstrations as the most effective way to demonstrate the value that fire sprinklers add to a home."

Lia would be one to know how effective the demonstrations can be. In fact, demonstration performed by the Normal Fire Department marked the 300th side-by-side that Lia and NIFSAB have assisted with since they began the program in 2001. According to Lia, the demonstrations were developed as a way to educate elected officials and community members on the importance of home fire sprinklers.

According to Lia the success of the side-by-side fire sprinkler demonstrations is entirely due to the efforts of the fire service in Illinois. "This program has really been driven by the motivation of the fire service to provide the public with the most dramatic and realistic educational opportunity available," he says. "Without them, NIFSAB could have neither reached this milestone nor the thousands of people that have viewed the demonstrations."

The demonstration in Normal was also special because it was part of the Home Fire Sprinkler Coalition's "Built for Life Fire Department" program funded through a Fire Prevention and Safety Grant awarded by the Grant Programs Directorate of FEMA. This demo was the first of 12 being conducted nationwide to help increase awareness about the life-saving benefits of home fire sprinklers.

The side-by-side fire sprinkler demonstration in Normal came at an important time a few months after the town's adoption of the 2009 International Residential Code, which includes requirements for fire sprinklers in one- and two-family homes.

"Fire officials in Normal are doing all they can to educate the public about the benefits of home fire sprinklers before the enactment date of January 1, 2012," says Lia. "With all their proactive fire sprinkler education efforts, NIFSAB couldn't think of any better town to spotlight with its 300th side-by-side fire sprinkler demonstration."

L to R: Jeff Feid, State Farm, Peg Paul, HFSC, Tom Lia, NIFSAB, Chief Humer, Assistant Chief Grussing, and Public Educator Matt Swaney of the Normal Fire Dept,

Uponor Sponsors Safety Open House

To help mark National Fire Prevention Week, the Excelsior Fire District hosted a side-by-side demonstration of two room fires – one equipped with fire sprinklers and the other without – as part of its Fire Prevention Open House and Safety Fair, sponsored by Uponor, Inc. on Oct. 7, 2010. More than 1,200 local residents attended the event.

The Open House event culminated with firefighters simultaneously lighting fires in two similarly sized and furnished rooms. In the first demonstration room, the fire spread rapidly, causing smoke and heat damage and possibly threatening the lives of the homeowners. The firefighters who were present extinguished the blaze after the flashover.

In the second demonstration room, the heat of the fire activated the overhead sprinkler once the room temperature reached 155˚F, extinguishing the blaze in approximately 45 seconds. By activating while a fire is still small, a sprinkler controls the blaze, slowing the spread of poisonous smoke and deadly heat.

In response to growing concerns about fatalities caused by household fires and irrefutable fire-loss economic data, the nation's building codes are changing to incorporate this life-saving technology. Minnesota is one of many states now studying whether to adopt the International Code Council mandate that requires sprinklers in all new one- and two-family dwellings.

For more information, visit www.uponor-usa.com or call (800) 321-4739.

Viega Forms Strategic Alliance with Reliable

Viega LLC of Wichita, Kansas and The Reliable Automatic Sprinkler Co. Inc. of Elmsford, New York have formed a strategic alliance in order to provide expanded options for residential fire sprinkler applications (NFPA 13D).

The relationship will capitalize on Viega's UL-listed PureFlow® PEX piping system and Reliable's new line of low-lead sprinklers (patent pending) that meet NSF/ANSI 61 annex G standards of lead content less than 0.25 percent. This alliance is intended to provide customers with the best compliance options for the 2011 International Residential Code requirements for residential fire sprinkler systems.

Together, Viega and Reliable will promote the benefits of residential fire sprinkler systems and support the industry through comprehensive product training, superior service and leading edge products, including Viega's proprietary PureFlow PEX Press connections and Reliable's unique detection device that alarms only on fire sprinkler flow and not domestic water use in multi-purpose systems.

In addition, Reliable will add Viega's UL-listed (NFPA 13D applicable) PEX products to their existing line of system components offered to their customer network. Viega will promote the use of Reliable's UL & NSF-listed sprinklers with their UL-listed PureFlow PEX piping system.

Potter Electric Chooses First Tennessee Bank

Potter Electric Signal Company, LLC has completed negotiations with First Tennessee Bank, of Memphis to refinance its Senior Secured Debt and become its primary bank. Potter's decision to partner with First Tennessee was due to its understanding and support of Potter's vision of its future business opportunities and the bank's sensible and flexible approach to doing business. Negotiations were completed and agreements signed on September 29th, 2010.

Study Shows BlazeMaster® Fire Sprinkler Pipe & Fittings Outperform Steel Systems

The Lubrizol Corporation announces the successful completion of an ISO-compliant, peer-reviewed Life Cycle Assessment (LCA) that compares the environmental impact of BlazeMaster® fire sprinkler pipe and fittings with steel. Based on the results of the "cradle-to-grave" study, which was conducted by Environmental Resources Management Limited (ERM), an internationally renowned environmental consulting group, BlazeMaster pipe and fittings proved to be a more sustainable choice.

LCAs are recognized in the industry as highly credible measurements of a product's overall environmental impact because they study a broad array of impact categories. In this particular LCA, 13 environmental impacts were studied, including: metal depletion, fossil depletion, terrestrial acidification, freshwater eutrophication, climate change, ozone depletion, human toxicity, freshwater ecotoxicity, photochemical oxidation, terrestrial ecotoxicity, water depletion and

>> CONTINUED ON PAGE 42

SPRINKLING OF NEWS

>> CONTINUED FROM PAGE 41

energy consumption (both non-renewable and renewable energy use). BlazeMaster pipe and fittings received superior marks over steel pipe and fittings in 12 of the 13 categories. The only exception was in the category of ozone depletion. In many categories, such as human toxicity and freshwater ecotoxicity, the performance difference was dramatic.

In an effort to create an undisputed, balanced study and provide steel pipe and fittings with a sufficient advantage, Lubrizol directed ERM to assume that 100 percent of steel pipe is recycled and zero percent of BlazeMaster pipe is recycled. In a more realistic, real-life scenario, the BlazeMaster score would have been even higher over steel to take into account the fact that not all steel pipe is recycled. Significant resource depletion or fossil impart depletion (to be more specific to the case of steel manufacturing) is a key reason why steel receives overall lower scores, despite its ability to be recycled.

For more information about the benefits of BlazeMaster fire sprinkler systems, visit www.blazemaster.com.

BlazeMaster® is a registered trademark of The Lubrizol Corporation.

Tyco Fire Suppression & Building Products Introduces

4.9 K-Factor Flat-Plate Concealed Sprinkler for Residential Systems

Tyco Fire Suppression & Building Productsintroduces the 4.9 K-factor Series LFII Residential Flat-Plate Concealed Pendant Sprinkler.

The Series LFII Residential Flat-Plate Concealed Sprinkler is UL and C-UL Listed for use in NFPA 13, 13D, and 13R wet pipe residential systems. The sprinkler provides a maximum coverage area of 20 ft. by 20 ft. (6,1 m x 6,1 m) and is listed for up to 8-inch-rise-by-12-inch-run sloped ceilings. The large K-factor saves design and installation costs by reducing flow rates, which in turn allows for smaller pipe sizes and lower water supply requirements.

The cover plate is available in chrome, signal white, off white, pure white, standard white, and can be custom painted. The cover plate assembly has a temperature rating of 139°F (59°C) while the pendent sprinkler has a temperature rating of 160°F (71°C).

To learn more about the 4.9 K-factor Series LFII Residential Flat-Plate Concealed Pendant Sprinkler, contact your local Tyco Fire Suppression & Building Products territory manager or visit www.tyco-fire.com.

Honeywell to Name Fundamentals Lab Area of WPI's New Fire Protection Engineering Facility

Worcester Polytechnic Institute (WPI) announces the establishment of a new fire protection engineering facility sponsored in part by Honeywell Life Safety, a division of Honeywell International. The state-of-the-art WPI Fire Protection Engineering Lab, a new facility still in the conceptual phase, is expected to house activities related to combustion and explosion, fire and materials, policy and risk, suppression, wildland-urban interface fires, and engineering tools to support the fire service.

The lab will support the leading-edge education and research of WPI's world-renowned Fire Protection Engineering Program.WPI is home to the world's leading graduate program in fire protection engineering, where experts from a broad array of backgrounds come together to solve fire protection engineering challenges. Students in the program come from such diverse disciplines as chemical, mechanical, electrical, and civil engineering, architecture, and more. WPI's fire protection engineering courses lay the groundwork for a firm understanding of the dynamics of fire: causes, prevention, and how to protect structures, vehicles, clothing, and people from fire's devastating effects.

In addition to offering the nation's first master's degree program in the field, the university was the first to provide a graduate-level program in fire protection engineering via distance learning in 1993, and it grants the world's only formal PhD program in fire protection engineering. WPI has conferred more than 350 masters and doctoral degrees in fire protection engineering and currently delivers programs to students hailing from more than 30 countries.

Honeywell Life Safety joins Chicago-based Rolf Jensen & Associates (RJA) and Schirmer Engineering in supporting WPI's new fire protection engineering lab. These sponsors were recognized at an event on Sept. 23 to celebrate WPI's Fire Protection Engineering program. Alumni of the program and distinguished guests gathered at WPI for a day of panel discussions that celebrated the university's leadership role in fire protection engineering, reflected on the program's distinguished history, and looked toward its future. A highlight of the day-long program was a dinner and special recognition of Raymond Friedman, a pioneer in fire protection engineering and author of Principles of Fire Protection Chemistry and Physics, as well as a remembrance of Duane Pearsall, inventor of the first practical home smoke detector, WPI Presidential Medal and honorary degree recipient, and great friend of the WPI Fire Protection Engineering program.

Viking SupplyNet Now Distributes Legend 13D Pump systems.

Viking SupplyNet will be distributing CB Marketing's Legend 13D (residential) fire pump and tanks systems. The Legend 13D pump helps control the installation costs of residential fire sprinkler systems in single and two family homes. Fire sprinkler contractors now have the ability to purchase Legend 13D pumps directly from CB Marketing or through Viking SupplyNet

The Legend 13D pump is the highest quality residential fire pump available in the marketplace. It incorporates numerous safety benefits while keeping 13D systems affordable. The Legend is built with stainless steel pump components. Legend motors are commercial grade, unidirectional and sized with service factors that are non-overloading at any point on the curve. Legends come standard with pre wired and mounted pressure switches, liquid filled gages, brass discharge riser components, lockable handles, an expansion tank and stainless sensing lines. All preassembled, tested and ready to install.

For further information please call CB marketing at 708.202.0033.

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Call SQ Ad Coordinator Joanne Genadio at 845.878.4200 ext. 118 now for prime ad placement.

TO JOHN VINIELLO:

Dear Mr. Viniello:

On behalf of CAL FIRE – Office of the State Fire Marshal, I would like to thank you and the National Fire Sprinkler Association for Bruce Lecair's continued assistance with our statewide residential fire sprinkler installation training. We feel very fortunate to have the support of a colleague who is so highly respected throughout the industry and fire service. Bruce's active participation, knowledge and expertise are the keystones to the success of this training. He is a pleasure to work with as he hallways demonstrates a sincere, friendly and professional demeanor.

We look forward to your organization's continued support throughout the implementation of this important life safety component.

Sincerely,
Tonya L. Hoover
Acting State Fire Marshal

TO TIM TRAVERS:

Dear Tim Travers:

On behalf of the National Fire Protection Association, I wanted to thank you for your hep in putting together the side-by-side burn event in Weymouth. We see time and time again that witnessing the life-saving impact of sprinklers first-hand is a powerful educational tool. It was an excellent addition to the launching of the new "Faces of Fire" campaign. Many in attendance were seeing this type of live demonstration for the first time.

Our goal with this new campaign is to humanize the tragedy of home fires and in turn raise awareness for the need of home fire sprinklers. We know fire sprinklers save lives and appreciate all of your help in getting that message across to others.

We look forward to continuing to work together in the future, as we make our goal of mandated home fire sprinkler requirements a reality.

Sincerely,
James M. Shannon
President
National Fire Protection Association

Don't miss the opportunity to listen to an industry expert in Fire Protection Industry Metrics.

Greg Coggiano is no stranger to the fire sprinkler industry. In 2008 and 2009 he presented workshops at NFSA's annual seminars on the topic of how a fire sprinkler contractor business is valuated. In the September/October 2010 issue of **SQ** magazine he contributed an article entitled, "2009 Fire Protection Contractor Business Sale Wrap Up and Near Term Outlook." As an expert in fire protection industry metrics, he is uniquely qualified to deliver this year's Economic Address. It's a presentation that every single fire sprinkler contractor absolutely cannot afford to miss!

"Hello, I'm Greg Coggiano. If you are a fire sprinkler contractor, you won't want to miss my presentation at NFSA's Annual Seminar & Exhibition in Baltimore. I look forward to seeing you there."

A note about the Author:

Greg Coggiano is Managing Director, CB Partners LLC. CB Partners LLC represents buyers and sellers of businesses, performs market analysis and market studies, and values businesses in the Fire Protection Contracting industry and others. He is familiar with the focus and objectives of most of the companies and institutions that have interest in buying Fire Protection Contractors. Recently, he has completed business sales and valuations, market research, seminars and workshops related to Fire Protection Contractor business sales and valuation for members of the National Fire Sprinkler Association. Fire Protection Contracting has been a focus since early 2006. CB Partners LLC is a member of the NFSA.

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