

National Fire Sprinkler Magazine

The Flagship Publication of The National Fire Sprinkler Association

March–April 2017
No. 201

Protecting Our Heritage: Installing Fire Sprinklers in the National Fire Heritage Center
pg. 16



Examining ESFR Sprinklers and Obstruction Rules
pg. 37

Insider's Guide to Red Rock Casino Resort & Spa
pg. 46

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ON THE COVER

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AGF	28
Argco	21
Blazemaster	39
Bull Moose	6
CST	3
DeWalt	5
Ferguson	12
Flexhead	22
FPPI	BC
Harrington Inc.	8
Hydro Flow	45
Metraflex	10
Potter	63
PHD	17
Reliable	IFC
Senju Sprinkler	36
Sprinkflex	20
Tyco	IBC
Victaulic	11
Viega/Reliable	30
Viking	2

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March - April 2017 • No. 201

FEATURES

- 35 Home Fire Sprinkler Coalition 2017 Plans**
by Peg Paul
- 37 Examining ESFR Sprinklers and Obstruction Rules**
by Louis Guerrazzi
- 45 Meet The Pros**
U.S. Fire Service LLC

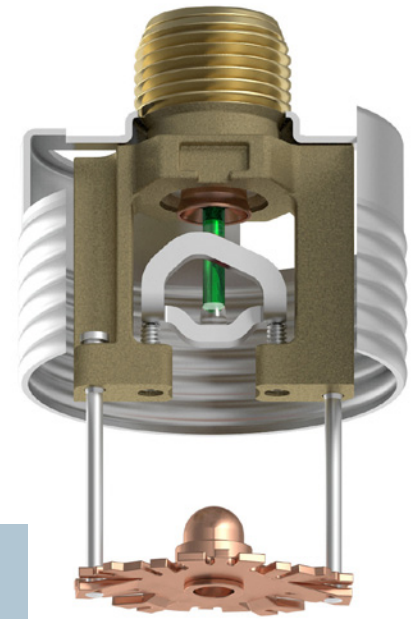
DEPARTMENTS

- 4 Calendar**
- 7 From the President's Desk** - by Shane Ray
NFSA Initiatives
- 9 From the Chairman's Desk** - by Larry Thau
One Path to Our Future?
- 13 Contractor's Cue**
- 14 Education** - by James D. Lake
NFSA Learning Institute
- 16 Technically Speaking** - by Mark Hopkins, P.E.
Installing Fire Sprinklers in the National Fire Heritage Center
- 23 Code Corner** - by Jeff Hugo
Significant Changes to 2018 IFC, IBC, IRC and IEBC
- 26 New Members**
- 27 Supplier's Showcase**
CST Storage
- 29 Item** - by Jason Webb
What's New in NFPA 25-2017 Edition?
- 31 Builder's Box** - by Eric Gleason
2016: Confidence Up, Multi-Family Down, Rates Up
- 33 Notes from the Fire Scene** - by Vickie Pritchett
NFSA Annual Seminar & NAFSE - Teambuilding at its best
- 46 Social Scene** - by Joanne Genadio
The Insider's Guide to Red Rock Casino Resort & Spa
- 47 Chapters in Action**
- 50 HQ News**
- 51 People**
- 53 Sprinkling of News**
- 57 Regional Roundup**
- 64 Article Submission Guidelines**

ERRATA: The Jan/Feb issue of NFSM incorrectly attributed the article *Wood as Construction* to Jason Webb, the article was written by Robert Upson, NFSA's Manager of Installation Standards

March/April 2017 | 1

CONTENTS



*200°F model shown

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CALENDAR

EVENTS OF INTEREST TO NFSA MEMBERS

March 1	Pumps for Fire Protection	<i>Windsor Locks, Connecticut</i>
March 1-3	Inspection and Testing for the Sprinkler Industry	<i>Glenview, Illinois</i>
March 2	Sprinkler System Installation Requirements	<i>Coppell, Texas</i>
March 21	Piping and Valve Installation	<i>ONLINE</i>
March 21	Coordinating NFPA 25 & 72 Inspection, Testing & Maintenance Requirements	<i>Pataskala, Ohio</i>
March 22	Fire Service Mains & Their Appurtenances	<i>Pataskala, Ohio</i>
March 23	Sprinkler System Installation Requirements	<i>Pataskala, Ohio</i>
April 18	Tanks Per NFPA 22	<i>ONLINE</i>
May 15-26	Two Week Layout Tech Training	<i>Orlando, Florida</i>
May 16	Trade Ups in the IBC	<i>ONLINE</i>
June 20	The Impact of NFPA 3 and NFPA 4 on Sprinkler Systems	<i>ONLINE</i>



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	✓ File No. EX1289	✓ File No. EX1289		✓ File No. EX1289 (N)		✓ File No. EX1289 Also UL listed and recognized for use in air handling spaces	✓*	✓*	✓*	✓*	✓*
	✓ File No. 3033795, 3/8" and 1/2" dia. pipe hanger components for automatic sprinkler systems	✓ File No. 3033795, 3/8" and 1/2" dia. pipe hanger components for automatic sprinkler systems	✓ File No. 3038104 Pipe hanger components for automatic sprinkler systems	✓ File No. 3042006	✓ File No. 3059197	✓ File No. J.I. 3015153	✓*	✓*	✓*	✓*	✓*
	✓ ESR-2818 Cracked & Uncracked Concrete	✓ ESR-2502 Cracked & Uncracked Concrete	✓ ESR-2272 Cracked & Uncracked Concrete		✓ ESR-9312 Cracked & Uncracked Concrete	✓ ESR-3657 for Steel Deck in Cracked & Uncracked Concrete	✓*	✓*			
	✓	✓	✓		✓	✓	✓*	✓*			
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NFSA Initiatives – Energy, Commitment and Service

“We are determined to continually improve the critical data we have for our industry and not only access trends of the past, but to have predictability of the future, using outside big data that is now available.”

It is such an honor to serve the NFSA and to see our team in action, working to improve the fire sprinkler industry. The energy level within our industry is high, the economy is good and the upcoming tax reform will help it all continue.

Our major initiatives in 2017 are in full motion with focus on service to you, our members and outreach to communities and our partner groups at the top of our priority list. Fire Team USA is back on the road and will reach ten states. We're excited to have a full-time retrofit specialist on the team, former Philadelphia Fire Commissioner Derrick Sawyer. This outreach will focus assistance to the major metro cities in the country who need high-rise retrofit or have it and have not enforced it. We will also assist state and local jurisdictions on adopting the current codes, the 2018 includes the retrofit of assembly occupancies that have a capacity of 300+ occupants and serve alcohol.



Our training programs continue to expand and we are working diligently to improve our ability to deliver online programs. The amount of custom training has more than doubled in the last two years and will continue based on your needs and feedback. We will utilize our in-class training and our new self-paced online to deliver “blended learning,” which is online and classroom combined.

The opportunities ahead are numerous and it is evident by the presence of people and groups in our new office. With Board and Committee members in and out of the office, hosting the UL/FM meeting and the National Fallen Firefighters Foundation, Common Voices and Phoenix Society for Burn Survivors, it is evidence of improved access for our corporate office. The upcoming Product Safety Summit, E&S Committee, Open House, Research Discussions and presence in Washington, D.C. are all rewarding to observe. While all of this is evident in observation, we hired a new Engineering Coordinator who will help us improve our use of and compilation of data. We are determined to continually improve the critical data we have for our industry and not only access trends of the past, but to have predictability of the future, using outside big data that is now available. We not only seek this info to improve our industry, but to also influence public policy.

All of these programs and the great people are the heart of NFSA. They could not and would not be so energized without you, our members. Thank you for the support and thank you for the passion to help us fulfill our mission, which is to protect life and property through the widespread acceptance of the fire sprinkler concept.

I would also like to extend a personal invitation to each and every one of you to join us at the 3rd North American Fire Sprinkler Expo™ in Las Vegas, Nevada May 3-6, 2017. This issue of NFSM is filled with details that I believe will motivate you to join us and be a part of our “Bet on a Sure Thing” event. A big thank you to all of our sponsors is in order as well – we could not deliver this conference without your support.

A grateful,

A handwritten signature in black ink that reads "Shane Ray". The signature is fluid and cursive, with a large, stylized 'S' and 'R'.

Shane Ray, President

continued on page 8

From the President's Desk

Shane Ray

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Do We Only Have One Path to Our Future, or are There Really Three?

"In evaluating our actions to increase the future use of fire sprinklers, we need to respect and be self-aware of the value of our existing foundations of science, standards development, regulation and code enforcement."

It's become increasingly common for a large number of emerging businesses to include in their mission statements an objective to create "disruptive" businesses. Disruptive here meaning; having a business model so dramatically improved over those in the same space that it conquers large amounts of market share by word of mouth and acclaim rather than by incremental growth. At first glance, this sounds compelling; why toil for years developing services and products which benefit your customers, and even longer building a business reputation which keeps them coming back when you can just disrupt everything and retire in five years? In other words, "Let's all stop screwing around and just do it!" Not so fast girls and boys, remember the hare and the tortoise?



While it is certainly not my intent to compare us to, and encourage us to, emulate a slow-moving reptile, I think the concepts of self-awareness, perseverance and planning to be around for a while are very potent concepts. This thought process is actually the result of comments I've heard following the tragic Oakland "Ghost Ship" fire.

It seems this event caused most of us to have a hollow feeling that stemmed from our knowing in minute detail why those 36 deaths were all avoidable. This feeling alone wasn't my inspiration for this essay, it was what many said post the initial shock... "Let's all stop screwing around and just do it!" Another inspiration came from some news reports that the owner of the "Ghost Ship" was allegedly evaluating using the codes in his defense... Since the codes didn't require it, and since code enforcement took minimal action, I have no responsibility for these deaths (not a direct quotation).

In evaluating our actions to increase the future use of fire sprinklers, we need to respect and be self-aware of the value of our existing foundations of science, standards development, regulation and code enforcement. Unlike the "disruptable" industries, the stability of these institutions also provides a degree of continuity and less volatile growth. Although, there are times they can appear to be impediments. We're comfortable with this process and frankly, we're good at it. We clearly need to continue to invest here as our primary path. The question becomes "Are there any other paths formed by collaborations and different investment targets?" My answer is yes.

One of the first industry collaborations is one President Ray (a.k.a. Chief Ray) has already awakened us to, the Fire Service. While we've recently experienced the passion of Chief Tim Sendelbach, Editor of Firehouse Magazine, for protecting the public, Tim also made an eloquent case for the dramatically increasing need to protect the members of the fire service. It seems NFSA and the fire service need each other due to the risks of new construction methods and the toxic combustibles in new materials. Piercing the building envelope and having to enter a burning structure is among the most dangerous occupations. These Heroes have rightfully earned enormous public respect and perhaps if we provided more education regarding our sprinklers' ability to protect them and the public, they could become stronger advocates.

Another industry collaboration which may surprise is insurance companies and renovation services (yes the guys who run commercials for flood remediation. It struck me one day sitting in traffic alongside a bright green service van that they could hold a few cards which could help us deal with the false perception of "Pre ops". And how about the "Action hero deluge systems" coming out of Hollywood? My perception is that some percentage of the public sees fire sprinkler systems as a "hair trigger pressurized waterfall" in their homes. We all know these are statistically negligible and incorrect, but wouldn't actual industry data from someone else help? What would happen if we gave this collaboration the same attention as our E&S committee?

continued on page 10

From the Chairman's Desk

Larry Thau

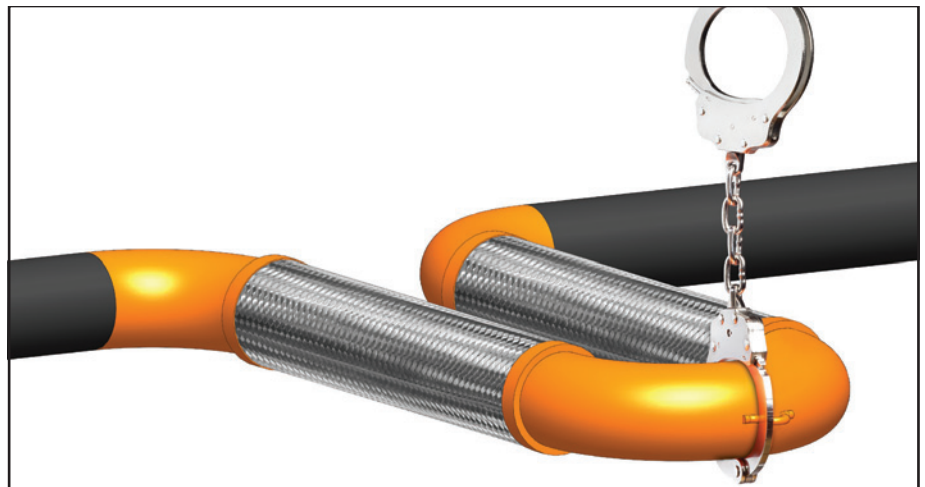
Saving the best for last, our Director of Outreach & Government Relations, Vickie Pritchett and President Shane Ray have been increasingly turning our focus directly toward the public. I was extremely pleased to see the “#NoSprinklersNoGo” campaign in some recent correspondence. This type of “public market pull” actually trumps all the other paths, if the public was educated and refused to enter hotels, entertainment venues and dormitories without fire sprinkler systems, the work of the fire service and code community would be a lot easier in addition to saving lives and property. What would happen if we also gave this collaboration the same attention as our E&S committee?

I'm not saying we should change our name to the “National Fire Sprinkler Education Association” yet but we all need to give this some thought...

At your service,



Larry Thau, *Chairman*



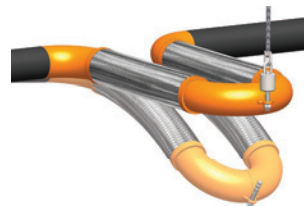
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2019 **Omni Downtown**
Nashville, TN /May 15-18, 2019

2020 **Phoenix**
(Location TBD) /April 29-May 2, 2020

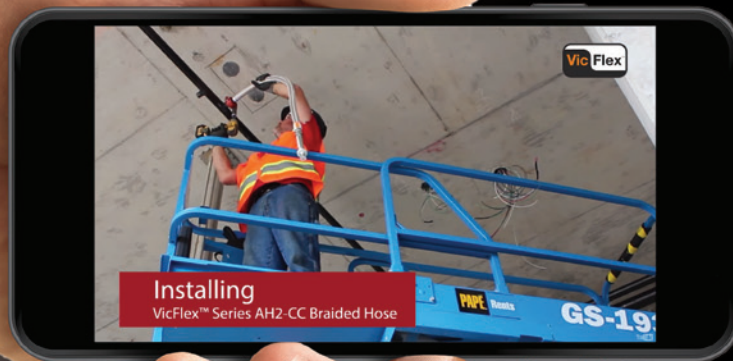


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What to Consider When Creating an Employee Rewards and Recognition Scheme

by: Danica I. Bridges

The right employee recognition and rewards scheme can offer workers a lot of benefits. These advantages include successfully motivating employees to maintain and improve their performance, giving them a clear idea of what behaviors and outcomes the organization values, and providing them a fair return for all their efforts.

If you are starting an employee rewards and recognition scheme in your organization, below are some important things and tips to consider in the planning and implementation process:

Include your employees the actual design and planning of your recognition program. Seasoned HR professionals say that you don't need a lot of money to implement a meaningful rewards and recognition program. Most employees will take pride in a token award when it acknowledges they did a good job that successfully impressed their boss and peers. A good way to give your recognition program the credibility it deserves is to involve employees in creating and administering it. If they have a hand in designing it, they will know exactly what they have to do to earn rewards. This strategy can also ensure that the program provides everyone in the workplace with an opportunity to earn a reward.

Clearly identify the reward criteria. Awards for general benchmarks such as "innovation" and "quality improvement" can be a bit vague and don't define what employees need to do to win. Without specific details, some employees will be stymied before they start. In case of "employee of the month" awards, workers may think everyone's turn comes up eventually and they don't have to work hard to get this recognition.

In addition to outcomes, recognize behaviors as well. Generally, organizations reward results. Although this is appropriate, it can lessen the opportunity to use recognition as a way to encourage poor performers to improve. By recognizing small behavior shifts in employees such as arriving on time, correcting mistakes, helping a co-worker, etc., you can reinforce incremental improvements. Also, keep in mind that when rewarding these changes, you don't have to spend a fortune; a sincere thank you or some specific positive feedback can be an appropriate response.

Personalize the rewards you will be giving. To get the most out of your rewards and recognition scheme, give your employees what they want. One worker may be happy to get some additional time off from work; however, one may be more responsive to getting cash rewards.

Lastly, say "thank you" to your employees frequently. Saying the simple words "thank you" is one of the simplest and most important ways of recognizing employees. If you are sincere with your appreciation, this validates the importance of the work that

your employees do.

Article Source: http://EzineArticles.com/expert/Danica_I_Bridges/1867626

About the author:

Danica I. Bridges has been an expert author on EzineArticles.com since March 31, 2014 and has 47 published articles.

Working for Condominiums

Editor's note:

Stuart Zisholtz comments on New York State Law

Many contractors perform work for condominiums. The contractor is hired by the Board of Managers to perform work throughout the common elements in the building. Beware, the lien law, as well as the real property law, do not protect the contractors sufficiently in order to secure payment.

Real Property Law Section 339-L prevents a contractor from filing a mechanic's lien when it is engaged by the Board of Managers to perform work in the common elements.

The common elements are defined as the land in all other areas of the property that are not expressly part of the individual units. A condominium unit is owned by an individual unit owner. Each individual unit is treated as a separate parcel of real property. The condominium purchaser acquires title to his/her unit and also acquires an allocable share of the common elements. While work performed on an individual unit is lienable, the common elements are not lienable. The only recourse a contractor has is to pursue a claim against the condominium and Board of Managers for breach of contract and diversion of trust funds.

If a mechanic's lien is filed on the condominium's common elements, the mechanic's lien will be vacated. While this is a quirk in the lien law, the reality is that you must know, in advance, that your lien rights are worthless when performing work directly for the condominium.

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

Introducing the NFSA Learning Institute

by James D. Lake, NFSA's Director of Training



My article in the final issue of SQ last year detailed a brand new training product; the *Layout Technician Training Course – Blended Learning Format*. The seminar was divided into two parts, the first being an 85-day online portion that is facilitated by an NFSA instructor where the student will work through a wide variety of presentations and submitted learning activities. The online portion also requires successful completion of online unit quizzes before progressing to the next module. The foundation of being able to deliver this course online is called a Learning Management System or LMS. An LMS is essentially the electronic infrastructure that handles all aspects of the learning process, from registration to recordkeeping. The LMS that we will implement will deliver and manage all of our instructional content, as well as provide a means of assessing individual learning in support of the learning outcomes for a course or certificate programs and track the progress towards meeting those goals. It will also be the central location for collecting and presenting data for both individuals and the entire NFSA training program.

The NFSA Learning Institute, our new LMS, has been developed initially to support the Layout Technician Training Course Blended Learning format and will now be expanded to manage all NFSA training programs. It will be the central point for managing NFSA's training and educational records as well as providing the platform for all online and blended learning courses, as well as many additional functions to facilitate learning in the fast-paced environment of the e-learning experience. Using this system, NFSA will continue to provide top-notch course content delivery in multiple formats and multiple platforms and to automate record-keeping from registration, through record-keeping like individual transcripts.

Student Registration and Administration.

The NFSA Learning Institute will be coupled with the NFSA Association Management Software (AMS) which currently exists to provide a single sign-in access to registration for courses both online and in class.

Course Content Delivery.

Training offered directly at the NFSA Learning Institute will be delivered in one of three e-learning formats; live webinars like Tech Tuesdays that are currently available on NFSA.tv, self-paced courses or components that allow for an individual to tailor their training and proceed through the material at their own pace and blended learning which will combine self-paced facilitated learning with a live in-class practical element. Decisions on the format of the training will be established by the content development team.

Training Event Management

(i.e., scheduling, tracking). An LMS is designed to manage the scheduling and tracking of each course. Progress can be completely freeform or certain elements of a course may be limited and restricted based on a prerequisite completion of other material. This is a tool used in the Layout Technician Training Course to create a pace for the course and ease the facilitation.

Individual Development Plan.

As more courses and learning materials and events are added to the NFSA Learning Institute, it will be possible for an individual to create their own learning development plan. It will also be possible for our members to provide employee training through a required plan for training that they require.

Assessing and Recording.

One of the most important functions of an LMS is its ability to provide assessment tools and record the growing competencies of an individual as they progress through a course. The NFSA Learning Institute will have these capabilities and will implement them in specific courses as appropriate.

Certificates and Surveys.

Continuing Education Units (CEUs) and certificates are an important part of an individual's professional development. Assessment and recording progress leads to certificates of CEUs that have a strong foundation. Surveys will provide feedback for future course development and improvements.

continued on page 15

March 21, 2017

Piping and Valve Installation

Louis Guerrazzi, EIT

Pipe and valves are key components of any sprinkler system. They need to be installed correctly and with consideration of how they will be used over the life of the system, which includes the ability to perform maintenance. Choosing the correct types components for the system at hand is a necessity. The detailed locations and trim for valves, including control valves, check valves and pressure reducing valves will be discussed. In general, this seminar will cover the installation requirements for pipe and valves for various sprinkler systems.

April 18, 2017

Tanks per NFPA 22

Roland Asp, CET

Water-based fire protection systems need a reliable source of water. Stored water is a common and acceptable type of water supply for these systems. NFPA 22 is the Standard for Water Tanks for Private Fire Protection. This document describes the minimum requirements of the various types of tanks used for fire protection including gravity tanks, suction tanks, pressure tanks and break tanks. This seminar will highlight the requirements of this standard and will include valuable information on the various aspects of water tanks design and installation

including: tank capacity, acceptable tank material, tank heating, pipe connections and fitting as well as acceptance test requirements and inspection testing and maintenance of water tanks.

May 16, 2017

Trade Ups in the IBC

Jeffery M Hugo, CBO

The 1973 America Burning report encouraged the U.S. building codes to allow more increased active fire protection systems to reduce passive fire protection systems. This becomes the birth of the tradeoff, or when lives and properties are saved, it is better referred to as the "trade up". Since then, the NFSA and many allies have been involved in the model code arena to promote the attributes of fire sprinkler systems. This program will highlight some of the long serving trade ups in the model codes, the financial benefits of trade ups for building designers and building owners, and tools to convince customers and communities that fire sprinkler systems and trade ups save lives, property and money which benefit everyone that uses current codes.

June 20, 2017

The Impact of NFPA 3 and NFPA 4 on Sprinkler Systems

Mark Hopkins, PE

As part of the 2018 NFPA code cycle, two documents are changing

in ways that will impact the way you do business. First, NFPA 3, Recommended Practice for Commissioning of Fire Protection and Life Safety Systems will become a standard. Both NFPA 3 and NFPA 4, Standard for Integrated Fire Protection and Life Safety System Testing are being incorporated through reference into the International Building Code, NFPA 101, Life Safety Code and NFPA 5000, the Building Construction and Safety Code. The important changes impacting how sprinkler systems are commissioned will be discussed as NFPA 3 becomes a standard. What will you need to do that you aren't doing now? How will this impact cost and time? The important changes impacting integrated testing will be discussed as NFPA 4 becomes more widely used. Will every sprinkler system supervised by a fire alarm system require integrated testing plans and written procedures? These important topics will be discussed.

ALL COURSES ARE AVAILABLE ONLINE ON NFSA.TV (www.nfsa.tv)

continued from page 14

Reporting.

Through the NFSA Learning Institute we will be able to provide analytical data that will also help us develop and deliver courses that are relevant and needed. Also track trends and provide information for future planning for NFSA training programs.

Training Record Management.

Finally, there is the capability of an individual managing and ac-

cessing their own training records and transcripts for confirmation of training when used for certifications in support of licensure or state required programs.

.....

The NFSA Learning Institute is going to provide a solid member benefit and an opportunity for us to provide more and better products geared toward serving our member needs. •

Protecting Our Heritage: Installing Fire Sprinklers in the National Fire Heritage Center

by Mark Hopkins P.E., NFSA's V.P. of Engineering



In a small town, just south of the Mason-Dixon line in Frederick County Maryland, is the home to several significant fire-related buildings. This quaint little historic town is home to the National Fire Academy, the U.S. Emergency Management Institute, The National Fallen Firefighters Memorial, the National Emergency Training Center, the Vigilant Hose Company (Company 6), which is the most visited fire house in the country, and the National Fire Heritage Center (NFHC)/Frederick County Fire Rescue Museum. Figure 1 shows the NFHC, which looks more like an auxiliary fire station than a museum housing a wealth of fire related treasures.



National Fire Heritage Center

The NFHC has been acquiring personal libraries from many important people that have made contributions in the fields of fire protection and firefighting, such as the library of Dr. John L. Bryan, founder and Chair of the University of Maryland Fire Protection Engineering program. The NFHC Newsletter of November 2016 identifies that the NFHC is an archive, rather than a museum. This facility also houses the Frederick County Fire and Rescue Museum, which displays some historical apparatus from Frederick County and The Vigilant Hose Company 6. The facility is home to such documents as the log books used on 9/11 during fire and emer-

gency operations at the Pentagon and Shanksville, Pennsylvania. A collection of fire sprinklers, fire extinguishers, pictures, plaques and other fire-related memorabilia are also displayed throughout the facility. Figure 2 shows some of the books and other collections displayed at the NFHC. Many more are stored at other sites maintained by the NFHC. Protection of these collections may invite a future project of shared significance, as this one has.

During an April 2015 meeting of the Capital Region Fire Sprinkler Association (CRFSA) at the NFHC, the idea of voluntarily installing a completely donated fire sprinkler system to protect the structure and, more importantly, its contents was discussed. A motion to donate all materials, labor and necessary skills to have the system installed without cost to the NFHC was unanimously supported by all members present.



Some of the Collections Displayed at the NFHC.

The idea took hold, and the CRFSA, successfully helped to design and install a fire sprinkler system throughout the structure thanks to the leadership of Terry Victor of SimplexGrinnell, CRFSA Chairman, E&S committee member and Board member, John O'Malley, VP of Reliance Fire Protection, the assigned project manager, and a vast number of generous contractor, manufacturer and professional members of the CRFSA, the local NFSA chapter in the mid-Atlantic area. If simply installing a fire sprinkler system wasn't enough, the CRFSA chose to use this project to demonstrate

continued on page 18

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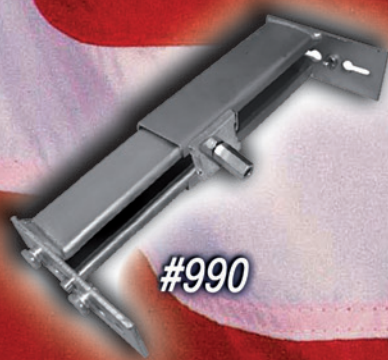


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continued from page 16

all the various skills, talents and resources of the members. This was shown through the contributions made to accomplish this fire sprinkler system installation.

The fire sprinkler system shop drawing was prepared by Phillip Knott, senior layout technician of Reliance Fire Protection. The fire sprinkler system was laid out to showcase all equipment donated by each of the generous manufacturer members. Fire sprinklers were positioned throughout, for easy identification by manufacturer, as well as for functionality. Review and professional endorsement services were provided by Jarrod Childs, P.E. and me, while I was at Jensen Hughes. Construction oversight services were provided by Robert Gagnon, P.E.

The shop drawing is framed and will be prominently displayed near the riser in the building. It is currently displayed on an easel, but will be mounted on the wall as part of the system. Figure 3 shows the framed shop drawing near the riser in the garage portion of the building.



Apparatus Bay

this structure provided an opportunity to show a variety of fire sprinkler types and system configurations. The portion of the fire sprinkler system in the garage area is proudly configured to show the sprinkler system rather than conceal it, as is the case in most buildings. Upright sprinklers are installed throughout this area of the building. Unit heaters and a storage room allow for special attention to be given to protection around heat sources and clearance beneath sprinklers.



Framed Shop Drawing and Riser

The NFHC building is composed of three different functional areas: 1) the garage and apparatus display area (shown in Figure 4), 2) the office, collections storage and gift shop, 3) the museum display area (as shown in Figure 2). The configuration of

The fire sprinkler system installation was truly a community effort. NFHC staff prepared the building for the sprinkler system installation by relocating fire engines and other large apparatus to alternate locations, covering display cases, and relocating and protecting collections. Local CRFSA fire sprinkler contractor members Livingston Fire Protection, Reliance Fire Protection, and SimplexGrinnell stepped up and donated labor to install the sprinkler system. Local HD Supply and Ferguson Supply house members supported the project by fabricating system piping, ensuring equipment was available and coordinating project deliveries. Manufacturer members donated all sprinklers, above ground and underground pipe, fittings, hangers, vents, valves and other equipment necessary for a fully functional system. A local underground excavation contractor performed the wet tap and installed the underground piping.

The sprinkler system was installed to showcase the variety of fire sprinklers in the building as well as other equipment commonly used in fire sprinkler systems. A double check valve assembly is provided at the base of the riser and plans to add a test valve for forward flow testing will be implemented in the future. The sprinkler riser is configured to show a functional Globe alarm valve, a Tyco dry pipe valve and Reliable DDX preaction/deluge valve. This riser will be used as a teaching and instructional aid. Plans to add features to allow for on-site flow testing of the dry and preaction/deluge risers are being developed. Figure 5 shows the riser manifold with the functional wet pipe riser on the right, the preaction/deluge riser in the center and the dry pipe riser on the left.

continued on page 19

continued from page 18



Fire sprinkler riser manifold with backflow preventer.

A clear plastic panel has been installed next to a flexible sprinkler drop used in the museum area. This is shown in Figure 6. This allows for patrons to see the “as installed” condition of this device, which is often installed, but not usually seen from the floor. An air vent has been installed at the end of the cross main in the apparatus bay near the street side of the building. This device is functional but was installed at this location more for educational purposes than anything else. Figure 7 shows the general sprinkler system layout in the apparatus bay along with the air vent.



Flexible Sprinkler Drop With Viewing Panel.

The sprinkler system is functional and a punch list has been developed and is currently being resolved. Other system changes will be made, including, but not limited to, the addition of signage for valves and equipment, the addition of test valves and appurtenances for teaching purposes, the addition of a corrosion monitor,

the installation of a relief valve with an improved inspectors test connection valve.



Air Venting and System Piping in the Apparatus Bay.

A separate residential fire sprinkler system mock-up riser for teaching will also be provided. Figure 8 shows Wayne Powell of the NFHC with Jim McHugh and Ben Gleason of AGF Manufacturing discussing plans for the addition of this residential riser.



Planning for a Future Residential Mock-up Riser for Teaching.

continued on page 21



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continued from page 19



Front row, kneeling left to right: Rich Kozel (Livingston Fire Protection), Wayne Powell (NFHC), Mark Hopkins (NFSA), Terry Victor (Tyco SimplexGrinnell), Dan Bentzen (EBL Engineers), Shane Ray (NFSA). In the second and back row, standing left to right: Vickie Pritchett (NFSA), Dr. Ken Rich, Robert Gagnon (Gagnon Engineering), John O'Malley (Reliance Fire Protection), Dennis Wech (Tyco), Deputy FM Bruce Bouch (MD State Fire Marshal's Office), Dan DeDominic (Globe Fire Sprinkler), Fire Marshal Brian Geraci (MD State Fire Marshal), Dominick Kasmauskas (NFSA), Dave Schultheis (Tyco SimplexGrinnell), Chip Hollis (NICET), Joe Solomon (HD Supply), Danielle Fowler (Potter Roemer), Mark Schneider (System Sensor), Jim McHugh (AGF Mfg.), Ben Gleason (AGF Mfg.), and Roland Asp (NFSA).

At the end of the day, the installation of this sprinkler system will allow everyone to have the peace of mind knowing that it will protect our fire heritage and has united a Chapter for a good cause. •

NFSA President Shane Ray and Director of Outreach & Government Relations Vickie Pritchett were instrumental in this project as they served on the NFHC Board of Directors for many years. "At our original NFHC ribbon cutting, Chief Ray and I looked at each other and said we must find a way to protect this building," says Pritchett. "Our nation's fire service history deserves protecting, and it's so rewarding to see this day arrive and also realize that the NFSA Capitol Region Chapter gets all the credit. What a happy & historical day!"

The NFSA and CRFSA would like to thank the following list of participants for contributing to this successful project that will help to protect our heritage now and in the future. Kudos to everyone involved. Participants included:

- | | |
|----------------------------------|----------------------------------|
| AGF, Inc. | Potter Electric Signal |
| Ames/Watts | Reliable Automatic Sprinkler |
| Anvil International | Company of America, |
| ECS | Reliance Fire Protection, Inc. |
| Ferguson Fire and Fabrication | System Sensor |
| Gagnon Engineering | Tyco SimplexGrinnell |
| General Air Products | Tyco Fire Protection |
| Globe Sprinkler Company | Victaulic Corporation of America |
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| Jensen Hughes | Wheatland Pipe and Tube |
| Livingston Fire Protection, Inc. | and Others... |



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Significant Changes to the 2018 IFC, IBC, IRC and IEBC

by Jeff Hugo, CBO, NFSA's Manager of Codes



This article summarizes the 21 most significant changes for the fire sprinkler industry in the new 2018 “I” Codes that are scheduled to be available mid-2017. Many of these changes deserve more discussion. Some will be explained in-depth in future issues. It is important to note that this article is put together from the proposals the ICC membership accepted during the cycle. The code sections listed may change slightly when the code books are

printed. However, the technical changes remain and the NFSA membership stands to gain, again, from fully participating in the code development process. Many changes in the 2018 editions increase fire sprinkler installations in new and existing construction and increase life safety and property protection.

IFC

Fire Pump and Fire Sprinkler Riser Rooms - IFC/IBC 901.4.6

The section in the 2018 IFC for rooms that house fire sprinkler risers and fire pumps is expanding. What’s new is fire pumps, controllers and risers shall be readily accessible within the room and to those who access the room. If the room has a lock, then the key needs to be always available to those who need to access the room. Signage is required on the access doors to fire pump and riser rooms and shall consist of letters at least two inches in height. Fire pump and riser rooms shall be maintained to be no lower than 40 degrees Fahrenheit, with the heating device permanently installed. Permanent artificial lighting is now required to be installed by the 2018 IFC/IBC.

Integrated Testing - IFC/IBC 901.6.2

NFPA 4 is a new standard for testing integrated fire protection and life safety systems. The 2018 IFC/IBC will reference the 2015 NFPA 4 for integrated testing on high-rise buildings and when a fire alarm system is integrated with a smoke control system. For all other buildings, when two or more fire protection or life safety systems are integrated, the IFC/IBC only requires verification that the integrated systems signal, when initiated. It is important to highlight that these systems (other than high-rise and those

connected to smoke control) are not required to comply or follow the procedures in NFPA 4.

Ambulatory Care Facilities - IFC/IBC 903.2.2

Ambulatory care facilities first became an occupancy and required to be sprinklered in the 2009 IFC/IBC. A sprinkler system is required throughout the floor where the facility is located and extended down to the nearest level of exit discharge. The 2018 IFC/IBC is increasing the fire sprinkler system to include all floors below the level of exit discharge, unless the floors are an open parking garage. There are many scenarios and structures where the nearest level of exit discharge has several floors beneath it. This change will sprinkler the remaining floors below the ambulatory care facility regardless of the occupancy. According to 2017 Dodge Construction Outlook, “...the rise of offsite health clinics and the growing need to serve an aging population will also contribute to growth in 2017.”

Education Occupancies - IFC/IBC 903.2.3

The 2018 IFC/IBC provides an additional threshold for fire sprinklers in education occupancies. Currently the trigger for fire sprinklers is fire areas over 12,000 sq. ft. and floors under the lowest level of exit discharge. In 2018, any fire area that exceeds a 300-person occupant load and any floor other than the floor on the level of exit discharge requires fire sprinklers. The fire code committee and membership agreed it was time to increase the threshold for educational facilities because of security and egress needs, such as locking devices and lockdown practices that use a “protect-in-place” strategy. According to 2017 Dodge Construction Outlook, “...educational facilities is seeing an increasing amount of K-12 school construction, supported by the passage of recent school construction bond measures...” with a projected +9% in starts and 138 million square feet in 2017.

Attic Protection for NFPA 13R Protected Structures - IFC/IBC 903.3.1.2.3

The 2018 IFC/IBC contains additional criteria for attics in residential occupancies protected by NFPA 13R systems. These

continued on page 24

continued from page 23

requirements stem from the 2015 NFPA 13R Summit hosted by NFPA, written about by myself, Roland Asp and Russ Fleming in the Mar/Apr 2016 issue of SQ. The technical changes to the 2018 IFC/IFC were explained in great detail in the Jan/Feb 2017 issue of the National Fire Sprinkler Magazine. In summary, the changes require sprinklers in occupied attics and attics used for storage, and a single sprinkler when fuel-fired appliances are installed. The biggest change is for pedestal or podium type buildings where the attic is over 55 feet from the lowest level of required fire department vehicle access. When this height is exceeded, the attic is required to have fire sprinklers, or the attic can be constructed of fire-retardant-treated wood or of non-combustible materials, or filled entirely with non-combustible insulation.

Occupant Hose Lines – IFC/IBC 905.3.1

Removal of occupant hose lines for Class III standpipes has been in the IFC for a few cycles. However, the IBC and IFC created a paradox, meaning, the IBC requires the Class III hose when built, then the IFC permits it to be removed if the occupants are not trained to use the hose. This change in 2018 IFC/IBC will permit the code official to waive the hose line requirement before construction. Furthermore, another change to this section permits B and E occupancies to have Class I standpipe systems.

Maintenance and Testing of Smoke and Heat Vents – IFC 910.5

Smoke and heat vents, like other fire protection devices, need to be inspected, maintained and tested on a regular basis to ensure proper operation. The change better correlates the IFC and NFPA 204 to provide the code official with needed information for the inspection, testing and maintenance of these devices. However, rather than testing all smoke and heat vents annually as NFPA 204 requires, this change revises the IFC testing requirement of smoke and heat vents to once every 5 years.

Retrofitting A-2 Occupancies with Sprinklers – IFC 1103.5.1

The 2018 IFC will require A-2 occupancies with fire areas having more than 300 occupants consuming alcohol to retrofit with sprinklers. This requirement, in part, comes from Recommendation #1 of the NIST Report of the Technical Investigation of The Station Nightclub Fire. This requirement is not a blanket A-2 retrofit, but only those A-2 fire areas where alcohol is consumed that exceed 300 occupants will require fire sprinklers. According to www.SprinklerSaves.com in the past few years, over 1,400 occupants, in only five establishments, were saved by fire sprinklers when they activated during operating hours. One nightclub, with another 600 occupants, had two fires in the past two years! Sprinklers controlled both fires.

Amusement Buildings using Tents and Membrane Structures – IFC 3103.3.1

Tents and other membrane structures have become a popular option for temporary special amusement buildings. One reason is that the IFC and IBC did not tie together the sprinkler requirements.

This change points the user of the IFC to the amusement building sprinkler requirement in IBC Section 411. This change closes a loophole and will increase occupant safety without introducing the more burdensome requirements of Section 411. The IBC permits an approved temporary water supply, providing some flexibility to sprinkler installations.

High-Piled Storage – IFC Chapter 32

NFSA staff and several members were involved in ICC's Fire Code Action Committee's (FCAC) task group to make over 14 different proposals to change and update the 2018 IFC Chapter 32. An article for the Nov/Dec, 2015 edition of SQ, titled, "Classifying Commodities in IFC Chapter 32 and NFPA 13" explained the largest change to the chapter on the correlation of classification of commodities. The reason for the several changes is primarily to update the chapter and correlate it with NFPA 13 and the new technologies that have occurred since the 2000 edition. Look for future articles explaining more specific details of the reworked chapter.

Laboratories – IFC Chapter 38 and IBC 427

The 2018 IFC has a new chapter on higher education laboratories. This chapter covers labs and laboratory suites in Group B occupancies used for educational purposes above the 12th grade. Among other building and safety criteria it has requirements for fire sprinkler systems.

High-Rise Retrofit Schedule – IFC M103.1

The IFC has a high-rise retrofit requirement in Appendix M. It becomes an IFC requirement only when specifically adopted, but is similar to NFPA 101's 12-year schedule for compliance. The change to the 2018 IFC Appendix M starts the 12-year compliance schedule only when the building owner receives a notice of violation from the code official. This new language will avoid a possible loophole in the current language that may be interpreted to restart the schedule every time a new code is adopted.

IBC

Self/Mini-Storage – IBC 311.2

The mini-storage or self-storage building is now specifically classified as a S-1 occupancy in Chapter 3. Based on an ICC interpretation this change gives code officials a definite classification for mini-storage buildings. This change correlates the fire sprinkler requirement for S-1 occupancies in Chapter 9, meaning, mini-storage fire areas that exceed 12,000 sq.ft., located more than three stories or where all fire areas exceed 24,000 sq.ft. require a NFPA 13 fire sprinkler system. According to the Self-Storage Association, there are 58,000 self-storage facilities with an average of 566 units per facility. The average size of each facility is 39,620 sq.ft. and if each were built new to the 2018 IBC, fire sprinklers would be required.

Occupied Roof – IBC 503.1.4

New construction architectural practices in urban areas often try to

continued on page 25

continued from page 24

use the roof top as an accessory space as attractive environments for people. The 2018 IBC, in Section 503.1.4 states that the occupied roof is not subject to the height, area, and number of story limitations of the main structure. What makes this change to the IBC to the fire sprinkler industry is the new “tradeoff” by this change. A NFPA 13 or NFPA 13R system permits the occupied roof to be of a different occupancy than the story below. This means, for example, a four story, fully sprinklered, office building could have an assembly use on the occupied roof, whereas the unsprinklered office building would be limited to a business use for the occupied roof (and be limited to three stories).

A-4 Ancillary Spaces – IBC 507.4

The IBC permits specific occupancies in unlimited area buildings when fully sprinklered. For A-4 occupancies (indoor sporting events with spectator seating), fire sprinklers are not required to be over the sporting areas, but the change in the 2018 IBC requires fire sprinklers in the ancillary spaces, such as storage rooms, press boxes, concession booths, and others. There are similar requirements for A-5 occupancy ancillary spaces in earlier editions of the IBC. Data from www.SprinklerSaves.com shows there have been several recent fires in ancillary spaces of indoor and outdoor stadiums that sprinklers controlled the devastating effects of fire.

Exterior Areas for Assisted Rescue – IBC 1009.7

The IBC provides an exterior landing for occupants who need assistance when rescued when the building cannot or does not provide a route for the occupant. The exterior landing is required to be separated by an exterior one-hour wall, with a rated wing wall, and opening protection for doors and windows. The change in 2108 provides a tradeoff of the fire rated wall(s) and opening protection when the interior is protected by a NFPA 13 or NFPA 13R fire sprinkler system.

Basement Egress Windows – IBC 1030.1 and IRC R310.1

The 2018 IBC and IRC provides an exception for basement sleeping room (bedroom) emergency escape and rescue openings (egress windows or doors). The provision only applies to IRC, R-2 and R-3 occupancies that are fully sprinklered per NFPA 13, NFPA 13R, NFPA 13D and P2904. The sleeping room window can be eliminated when the basement either has: one means of egress and one egress window OR two means of egress. This change provides a cost savings by eliminating each basement escape window and the associated ladder and window well that goes with each window installation. Combine with the benefit of eliminating leakage and maintenance issues and tripping/fall hazards that may be associated with window wells. This change will offer for homebuyers, who will gain the option of finishing a rough-in basement without the constraint of laying out sleeping rooms based on existing window locations or having to add windows to an existing basement.

IEBC

Existing Windows and Doors Near Fire Escapes – IBC 405.5

The International Existing Building Code (IEBC) has three dif-

ferent pathways or methods to use when renovating an existing building. Each method has its own advantages and disadvantages. When it comes to sprinkler tradeoffs, each method should be equal. Specifically, this change correlates when buildings are sprinklered, the windows and doors along the fire escape do not need the opening protection, such as fire shutters or rated doors. This provides a tradeoff or incentive to sprinkler existing buildings using the IEBC.

Level 3 Alterations – IEBC 904.1.4

The IEBC Work Area Method has three levels for alterations and the fire protection requirements increase as each level increases. For example, a Level 1 Alteration keeps status quo, meaning if fire protection was present before, then the same level remains. Level 2 Alterations would require fire sprinklers for the work area (with stipulations) if the building has a municipal water supply unless the new sprinkler system triggers a new fire pump, then the work area is exempt from sprinklers. Level 3 Alterations increase the threshold for sprinkler installation. The change for the 2018 IEBC is a new Section 904.1.4 that requires sprinklers in work areas when the building site has municipal water for Level 3 Alterations. This change removes the “new fire pump” trigger and loophole for several occupancies when major alterations are performed on existing buildings. This change should lead to more fire sprinkler installations when the IEBC and Level 3 Alterations are used.

IRC

IRC Backflow – IRC P2904.1 and P2902.5.4

The residential plumbing portion of the 2018 IRC will not require backflow preventers when the sprinkler system is installed according to P2904 or NFPA 13D, the piping material complies with the IRC, no antifreeze and the system does not have a fire department connection. This change is not totally new, but is written and correlated to end any confusion within the IRC about backflow preventers for any (including standalone) fire sprinkler system.

IBC Occupancies Built in the IRC – IRC R101.2

The IBC permits some small occupancies to be constructed in the IRC, such as live/work units, owner-occupied lodging houses and care facilities. Many of these are limited to five or fewer persons or rooms. It is important to note that these are small commercial buildings that fall under the IBC, however, because many of these small occupancies are “home-based” they fit better in the community when constructed as a home. The IBC permits the IRC to be used for every aspect; construction, plumbing, mechanical, electrical, but only when they have fire sprinklers. The change to the 2018 IRC uses the sprinkler requirement in the charging language then lists all the small IBC occupancies permitted to use the IRC. The 2018 change does not require anything new, but does specifically require sprinklers in the code text when sprinkler requirement for one and two family dwellings is removed in R313. •

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Dave Jones Inc.
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Front-Line Fire Protection, LLC
North Andover, Massachusetts

Korsmeyer Fire Protection
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Ardor Fire
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**PRO
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Monument, Colorado

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Lanary Design Group
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Joseph Kenz
R.A. Kenz Company
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Derek Foy
Florida State Fire Marshal Office
Ft. Myers, Florida

Ulysee Kemp
City of Miami Fire Rescue
Miami, Florida

Richard Tonks
St. Cloud Fire Rescue
St. Cloud, Florida

Gerald Watson Jr
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Bruce Britton
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Sandra Boike
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St. Augustine, Florida

Kingman Schuldt
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John Preston
Oakland Park Fire Rescue
Oakland Park, Florida

Susan Molloy
Greenacres Fire Rescue
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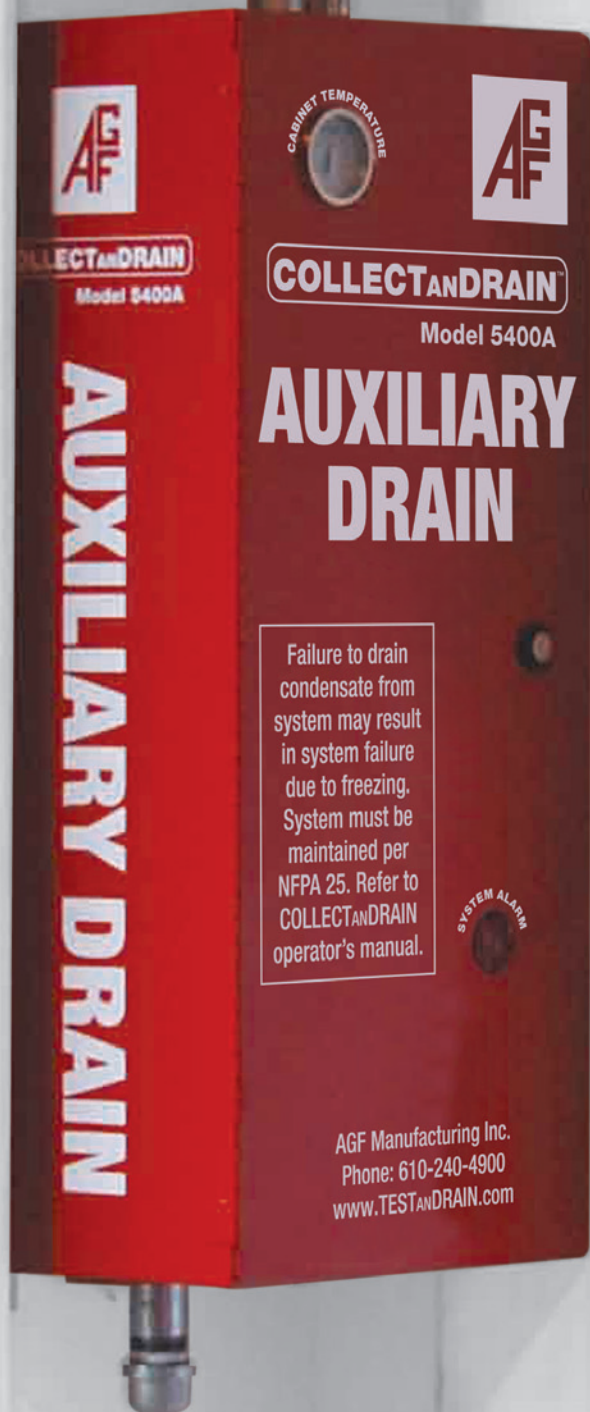
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www.collectandrain.com

What's New in NFPA 25-2017 Edition?

by Jason Webb, NFSA's Director of Public Fire Protection



As this article is being written in November of 2016, the “new” 2017 edition of NFPA 25, the Standard for the *Inspection, Testing, and Maintenance of Water Based Fire Protection Systems* is just about to become a reality. Work on the standard began back in August of 2014 with a pre-first draft meeting of the technical committee to lay the groundwork for the upcoming cycle and establish priorities. Also at that meeting, several task groups were established to work on some larger projects.

This cycle, many of the changes that found their way into the standard focused on simplification and clarification. This was a major theme of the technical committee during the pre-first draft meeting. Many users of the standard express frustration at the perceived lack of “user-friendliness” of the document. The work that transpired resulted in a few new ITM requirements and, of course, addressing public inputs and comments. However, many of the 2017 edition changes are focused on relocating and refining existing requirements. For example, Chapter 13 now contains many of the gauge requirements that were previously scattered throughout most of the system chapters.

Some of the more significant changes include:

- ▶ New requirements for automated inspection and testing. Automated inspection equipment is permitted if it meets the intent of the visual inspection. Examples of this equipment would include cameras, temperature sensors, etc. Automated testing is allowed, but it must produce the same action as required by NFPA 25 to test a device. Automated tests must be visually observed once out of every three years, or, if this is not possible, the test must be performed manually at that frequency. There are several other new requirements for automated inspections and testing that can be found in section 4.6.6.
- ▶ New subjective language was added to the sprinkler inspection requirements in Chapter 5. Past editions required sprinklers to be replaced if they showed signs of corrosion or loading. In the 2017 edition, the qualifying term “detrimental to sprinkler performance” has been added to these two conditions. This threshold must be met before the sprinkler requires replacement.

- ▶ The standpipe flow testing requirements (6.3.1.1) were changed to include testing of all automatic standpipes. In the 2014 edition, class II standpipes were excluded from this requirement. This change also clarifies the need to flow test only automatic standpipes.
- ▶ In the 2014 edition, a change to the private fire service main flow testing requirements took place with the condition of “serving hydrants” added. In the 2017 edition, this language was deleted resulting in a requirement to flow test all underground fire service mains on a five-year frequency regardless of the presence of hydrants.
- ▶ The fire pump chapter went through an intensive re-write. Among these changes are a prohibition against increasing engine speed above rated speed to meet performance requirements and a requirement to correct whatever deficiency is causing low pump performance. In the past, this was only required to be investigated. Many more changes can be found in Chapter 8.
- ▶ Language was added to Chapter 4 (owner’s requirements) and in other chapters directing ITM service providers and the owner or designated representative to coordinate to minimize damage caused by water discharge.
- ▶ Annex B was expanded to include more recommended information on all ITM reports. The goal of this annex language is to improve consistency in ITM reporting. Likewise, Annex G was created to give guidance to AHJ’s considering a color-coded ITM tagging program.

These are just a few of the many changes that appear in the 2017 edition. **All the changes can be viewed free online at www.nfpa.org/25.**

While the new edition has been released, it’s important to keep in mind that it won’t become effective until it is adopted by the Authority Having Jurisdiction. In some cases, this is the state, but in others it may be a local jurisdiction like a municipality or fire district, or even a state or federal agency. Check with your local AHJ to determine which edition is adopted or look for updates at www.nfsa.org.

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2016: Confidence UP -Multi-Family DOWN - Rates UP

by Eric Gleason, Great Plains Regional Manager



As 2016 went forward, a new 2017 builder confidence jumped to its highest level since July 2005. This is a remarkable and continuing shift to pre-recession levels. This is an absolute opportunity for fire suppression contractors to reach out to their existing homebuilder contacts and see where they see their sales numbers for 2017. This is also the perfect climate to forge new business relationships with other home builders.

Residential starts continued to be the trending highlight of 2016. As builder confidence and starts typically trend together, the continued upward trend and cautious inventory being retained on the balance sheet is a good sign toward sustainable growth in the industry. Housing completions (privately-owned) were up 25%, year over year.

Multi-Family pushed all housing starts down 18.7% as reported by the National Association of Home Builders. Isolating the multi-family part of the equation is very important in this as multi-family was down, it is still 9% higher than the previous year. What do fire suppression contractors do with this info? Analyze. Different parts of the country were impacted differently and dramatically.

Overall housing (single family and multifamily) have seen dramatic growth since the great recession. As many businesses have fine tuned their organizations, builders are no different. Cautiously optimistic.

Finally, with any (and almost every) presidential election, interest rates rise. This not only slows new construction sales, but can be paralyzing for the resale market which, in effect, drives the new construction market. All of this may be academic given Reuters reports that U.S. existing home sales are on a 10-year high.

SOURCES:

Confidence: <https://goo.gl/jJkwss>

Confidence: <https://goo.gl/SRZifi>

Multifamily: <https://goo.gl/hsc3Uq>

Multifamily: <https://goo.gl/FVaWY8>

Rates: <https://goo.gl/Awd9IW>

Please join our Advocates' Coalition as we work to create Fire Safe Homes

Working together, we can create resources to educate those who make the decisions regarding community fire protection. Our goal is to be a go-to resource for community leaders who need a first-person account of the devastating impact fire can have on a community and a family. We can prevent future tragedies, and we believe that our stories help everyone understand in a way that makes a difference. Visit our website for additional resources and information. Order our Media Kit for a complete package of PSAs, media information, talking points, statistics and actual examples of resources used in communities. Your support is greatly appreciated, and as a non-profit 501(c)3 we are now ready to grow our mission and expand our efforts. We hope you will join our team as an Advocate, Supporter or Corporate member (details are on our website).



Our voices have joined to share our first-person real life stories... our hope is that future tragedies may be prevented by our sharing with you.

www.fireadvocates.org

Fire Sprinklers Save Lives

NFSA Annual Seminar & NAFSE-Teambuilding at its BEST!



by Vickie Pritchett, Director of Outreach & Government Relations

Team NFSA is busy preparing for our 3rd North American Fire Sprinkler Expo™ and we are very excited about the line-up we have for you and your team. That's right, we are encouraging you to bring your "team". As we reflect on feedback from our last conference, we know that NFSA members shared that they wished they had brought more of their team members to benefit from the sessions.

Why were those comments made? Team NFSA believes because of the energy present (when we all gather it's always a positive thing) and the level of speakers – from breakout presentations to our main stage sessions.

At our upcoming event at the Red Rock Resort in Las Vegas, we have a speaker line-up that is first-class! We believe that the sessions you (and your team) will attend will be difference-makers to your companies, organizations, and to you as an individual. Also, we want to remind all Chapters, that there are lots of sessions geared toward them (and Future Leadership Committee members as well).

Now, let me get back to that first-class line-up of speakers! Wednesday, May 3rd provides multiple tracks of workshop sessions that we are billing as our "Innovation and Information Sessions" that includes "Tailgate Training" in the parking lot with multiple trailers supporting our industry on display. We will enjoy lunch there too as we have a *Fire Sprinkler Tailgate*. You won't want to miss this event, along with the technical, leadership and business options available throughout the day. Visit www.nfsa.org and click on the conference schedule button to get the complete listing of presentation topics and speakers.

Our Opening General Session will feature Drs. Kevin & Jackie Freiberg. We are thrilled that Kevin is back, this time joined by his wife Jackie. We assure you that they will challenge us all to examine ourselves, our businesses and our industry with insight and candor — all focused on our "Cause" — think about it, we are uniquely qualified due to the nature of what we do and who we are to examine ourselves in this way.

These days everyone is increasingly concerned about people, planet and profit. If your company isn't tied to a heroic cause, your business may be doomed. Companies that define themselves as cause-oriented stand out! They have better employee engagement, customer loyalty and, ultimately, stronger profitability and growth, all of which is centered around a *CAUSE!*

The Freibergs will share *CAUSE!* as a fresh approach to leadership and collaboration that drives business success in companies as diverse as TOMS Shoes, Lululemon, Virgin, Southwest Airlines and PepsiCo.

Today, employers tout their larger "social" mission as a way to attract and motivate employees – and especially Millennials. For generations, marketers have talked about a unique "point of difference" for their brands. In our neighborhood, we all know that one person whom we can approach for help, under any circumstances.

Whether we call it "purpose," or "cause," we all intuitively understand that people, brands, and companies motivated by a core reason or a prime passion perform better. They have more fun. They act as leaders. They attract followers. Don't you want to be this type of person, want to push this type of brand forward, want to work harder for this type of company? Don't you want your team to engage this way as well? This session will be engaging for members, spouses and guests and is sure to be a highlight of our week.

We also have Chief Billy Goldfeder joining us to share insights from the fire service regarding fire sprinklers, with lots of examples that will have you talking in our after-session events.

Jack Stack will bring his "Great Game of Business" to our closing general session and our highlight of our time together will be our closing awards banquet on Saturday evening. Last year set the stage for a new format that we are continuing (because we had such a great time) honoring fire sprinkler industry leaders.

In closing, I encourage you to make today the day you decide to register yourself and your team. Team NFSA is focused on delivering an event that will be of great value to you. There are also special activities planned for Chapters and Future Leadership Committee, and an Expo hall that showcases the latest our industry has to offer plus the wildly popular Top Tech competition that is always a crowd pleaser!

A big thank you also goes to our sponsors.... we could not do this without you and your support of our Association. Your efforts are very much appreciated.

I sure hope to see y'all in Vegas! •

Cheers,
Vickie



People who know the facts want to live in a home with fire sprinklers



According to a Harris Poll, after learning the facts, 74% of U.S. homeowners said they would be more likely to buy a home with fire sprinklers than one without.

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Selling A Home Protected by Fire Sprinklers DVD: Helps real estate agents market and sell sprinklered homes.

Understanding Water Supply For Home Fire Sprinkler Systems Guide: Information for water purveyors, utilities and local officials.

Protecting Your Community with Home Fire Sprinklers DVD: Helps building officials understand why sprinklers are needed to protect occupants and firefighters.

A Quick and Easy Guide to Home Fire Sprinklers DVD: Easy-to-understand information for consumers.

Fire and Sprinkler Burn Demonstration Kit: Everything a fire departments needs to build and conduct a side-by-side demonstration.

All HFSC material is free and can be viewed, downloaded and ordered from the HFSC website:

www.homefiresprinkler.org
or call toll-free: 1.888.635.7222



Home Fire Sprinkler Coalition Announces 2017 Plans

by Peg Paul

Empower fire departments, educate real estate and insurance agents and target people planning to build new homes

The Home Fire Sprinkler Coalition (HFSC) has always developed programs to reach, educate and empower members of the fire service so they will have the knowledge and ability to make grassroots home fire sprinkler education a priority. Fire departments are faced with challenges at the local level, from anti-sprinkler activities that lead to the spread of misinformation, lack of knowledge about water supply issues, inflated cost information and general lack of awareness among key stakeholders such as builders, real estate and insurance agents, water purveyors and the general public.

HFSC recently launched a new website to make it easier for fire departments to navigate, identify and download valuable home fire sprinkler resources for their own education efforts. These resources include infographics, photos, illustrations, videos and brochures.

One of the first infographics made available on the new website was the Home Fire Timeline, a visual that shows how fast a fire

spreads and flashover occurs without fire sprinklers compared to how quickly a sprinkler prevents a fire from becoming deadly. After posting the downloadable graphic on the website and promoting it via social media, 9,660 people viewed it on the website and more than 32,000 people viewed it on Facebook with nearly 2,000 responding or sharing. The infographic has been customized for various fire departments to include their logos, and even some NFSA chapters have customized it. Fire Team USA has made a large banner using the graphic for display during its fire and sprinkler side-by-side demonstrations. Various reporters and media have also included the graphic in their stories.

HFSC will develop a kit that fire departments can use to build an NFPA 13D fire sprinkler riser display for educational purposes. The kit is modeled after educational displays developed by the Northern Illinois Fire Sprinkler Advisory Board (NIFSAB). NIFSAB has built numerous displays to help fire departments educate builders, water utilities, building officials and the public in towns where fire sprinklers are required. A display was featured in HFSC's booth during the 2016 International Builders' Show as an effective

continued on page 36



HFSC's new infographic features a flashchart comparing a fire with and without fire sprinklers.

Fire Team USA turned the HFSC flashchart into a banner to show the speed of fire during side-by-side demonstrations.

HFSC is developing an NFPA 13D display kit with material lists and instructions. Fire departments are encouraged to work with fire sprinkler contractors to build the display for education use.

continued from page 35

“HFSC continuously works to attract partners and seeks grant funding and other financial support. Individuals can make secure online contributions by clicking the “Donate” button on HFSC’s website.”

<http://homefiresprinkler.org/index.php/donate-now>

tool to help builders understand all the features of an NFPA 13D system. Fire departments are encouraged to work with a local fire sprinkler contractor to make sure the riser is assembled correctly.

During the year, HFSC will conduct eight education forums for real estate and insurance agents. Based on a program developed by NIFSAB and HFSC through a FEMA Fire Act Grant, the program includes a presentation featuring HFSC’s real estate agent education video, the NFPA 13D fire sprinkler riser display, side-by-side presentations, pre- and post-tests and media outreach.

HFSC will also conduct a digital campaign that targets consumers planning to build new homes. The campaign will include display ads that will appear on various websites people visit when planning to build. The display ads will link to the consumer information on HFSC’s website for more information.

These are just a few examples of the many ways HFSC is working

to identify challenges and problems and respond with powerful educational tools and campaigns that overcome misinformation and negativity with home fire sprinkler facts.

Of course, all of this educational outreach takes time, money and resources. To maintain its comprehensive educational program and to ensure its ability to reach and support the fire service, HFSC continuously works to attract partners and seeks grant funding and other financial support. Individuals can make secure online contributions by clicking the “Donate” button on HFSC’s website (<http://homefiresprinkler.org/index.php/donate-now>).

NFSA members are encouraged to follow HFSC on Facebook (www.facebook.com/HFSCorg), Twitter (<https://twitter.com/HFSCorg>), Pinterest (<https://www.pinterest.com/hfsc/>), and join HFSC’s LinkedIn group. •

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Examining ESFR Sprinklers and Obstruction Rules

The Early Suppression Fast Response Sprinkler

by Louis Guerrazzi,
NFSA Manager of Product Standards

The 1980s brought on the advent of fast response sprinkler technology. Through this establishment, Early Suppression Fast Response (ESFR) sprinklers were developed to address high challenge fires in storage applications. This allowed more flexibility to protect higher hazard storage scenarios with ceiling only sprinkler protection and lead to large cost savings by eliminating the need for in-rack sprinkler protection. Today the ESFR sprinkler is a staple in the layout technician's and designer's toolboxes when dealing with high piled storage, specifically regarding protection of Group A Plastics. In fact, if you are looking to protect Group A Plastics above 25 feet without in-rack sprinklers, or protect any commodity where the ceiling height is 45 feet, the only prescriptive options available in accordance with NFPA 13-2016 would include the use of ESFR sprinklers.

The key to the success and eventual widespread adoption of the ESFR concept was the fast response element and associated high pressures, which allowed the sprinkler to operate during the incipient stages of fire growth with an engineered spray pattern designed to penetrate plumes generating high velocity flows. The response characteristic was fast enough to operate early, but not sensitive enough to cause skipping of sprinklers. There was enough water to handle high challenge fires, but not to a point where the water supply demand becomes too large and costly.

The success was also brought on by the novel approach of looking at ADD (actual delivered density) and RDD (required delivered density), which gives a quantitative look at what is needed to achieve extinguishment. The goal is to have the ADD be equal to or greater than the RDD. Understanding that the earlier a fire sprinkler operates, the higher the ADD is and typically the lower RDD, helps show the value in the ESFR sprinkler technology.

The NFSA has consistently been involved in the progress made with ESFR sprinklers over the years. Russ Fleming, NFSA Senior Adviser, wrote a series of articles in *Sprinkler Quarterly* in the late 1980s, which captured the progress of the fast response technology. In the Spring – 1987 edition, an article was included which discussed the applications and limitations of fast response technology of the times. It was noted that ESFR sprinkler rules would likely be limited to relatively flat ceilings, smooth or with open bar joists, with spacing limited to 10 feet x 10 feet or 8 feet x 12 feet, restricting other types of construction and structural elements. This makes sense when we look at the nature of the hazards ESFR sprinklers

were intended to protect and the high pressures associated with these sprinklers. The effect of an obstruction in these scenarios is greater than the effect to the standard spray sprinkler counterparts because of the intensity of the water being discharged paired with the intensity of the hazard below. This is why obstruction criteria for ESFR sprinklers are by far the strictest of all sprinkler types.

NFPA 13-2016 provides criteria for the spacing of ESFR sprinklers near obstructions in section 8.12.5. This starts out by referencing the ESFR version of a Beam Rule in Table 8.12.5.1.1 and Figure 8.12.5.1.1, and then goes on to cover isolated and continuous obstructions in 8.12.5.2 and 8.12.5.3, respectively. For the purposes of this article, we are only going to focus on the continuous obstructions section of 8.12.5.3.

When dealing with continuous obstructions 2 inches or less in width, the ESFR sprinkler needs to be located a minimum of 2 feet above or 1 foot horizontally from the edge. Obstructions over 2 inches and less than 1 foot require a 1 foot horizontal separation distance from the sprinkler, while obstructions up to 2 feet require a 2 foot horizontal separation from the sprinkler. ESFR obstruction requirements also state the sprinkler needs to be located a minimum of 12 inches horizontally from any bottom chord or joist.

The Technical Committee on Sprinkler Installation has recognized that standard spacing for structural members may interfere with a standard ESFR sprinkler layout. To address this in a practical way, the ESFR shift rule was created to allow a single ESFR sprinkler or single branch line to be shifted up to 1 foot beyond its standard spacing. However, to use this shift rule the sprinklers being shifted cannot cover more than 110 square feet, with the average area of protection for the sprinklers adjacent to the shifted sprinkler not exceeding 100 square feet, while no sprinkler can exceed 12 foot spacing and you cannot shift a branch line where a sprinkler has already been shifted. This rule is often misinterpreted or misused in practice due to these interrelated stipulations, which adds to the challenge of installing ESFR sprinklers correctly.

In 2014 The Fire Protection Research Foundation (FPRF) funded a multiple phase project to examine the effect of obstructions on the effectiveness of ESFR sprinklers. The results of these findings may determine whether the rules in NFPA 13 are appropriate as is or warrant modifications. Throughout this project, the NFSA has contributed as a Principal Project Sponsor.

continued on page 38

Obstructions and ESFR Sprinklers - Phase 1 Summary

Phase 1 of the project started with a literature review to identify knowledge gaps and determine the need and basis for further testing. Through this process, 10 full-scale tests were identified as relevant. Of these tests, eight used K-14 ESFR sprinklers while the other two used K-17 sprinkler. Seven of the tests explored the effects of bar joists/bridging members as obstructions while the other three examined the effect of plugged sprinklers. These tests used arrangements ranging from 20 foot storage heights of cartoned expanded Group A plastics with 30 foot ceiling heights, to 30 foot storage heights of cartoned expanded Group A plastics with 40 foot ceilings. Based on these findings, a test plan was developed to look at the most common arrangements of bar joists and bridging members. From there, subsequent test series could be funded to examine other miscellaneous obstructions. The focus landed on bar joists and bridging members as structural elements, since these are commonly encountered and the existing data pertained to these conditions. For full details on the Phase 1 literature review, the report is public on the FPRF website.

Obstructions and ESFR Sprinklers - Phase 2 Summary

Phase 2 focused on horizontal separation distances from bar joists with and without bridging members. It has been noted through experience and testing that bridging members are one of the most difficult obstructions for installers to deal with. This is in part because bridging members are not typically included on drawings and are not commonly found to be uniformly spaced.

One thing of note was that the research panel decided to utilize K-17 ESFR sprinkler for the test series. While most of the testing

identified in the literature review was based on the use of K-14 ESFR sprinklers, more recent testing has shown unsatisfactory performance of the K-14 ESFR sprinkler in high clearance arrangements where the ceiling height exceeds the storage height by over 15 feet. Following those unfavorable test results, K-17 ESFR sprinklers are now preferred.

The test series would use both intermediate tests and full-scale tests to evaluate the performance of a K-17 ESFR sprinkler offset from bar joists and bridging members. The intermediate testing consisted of 18 ADD tests to examine the spray pattern and delivered water density. Of these tests, nine consisted of a round robin testing between three specific sprinkler models to identify a preferred model for consistency. After selecting the sprinkler, an unnamed model “A”, an additional nine ADD tests were given to narrow the scope of the full-scale fire tests. These nine ADD tests on sprinkler “A” looked at bar joists at 22 inch depth, 30 inch depth and 36 inch depths, with horizontal offsets of 0 inches, 3 inches, and 6 inches. Based on these ADD tests, the most challenging scenario proved to be a 36 inch deep bar joist with a 6 inch offset and a 30 inch deep bar joist with a 3 inch offset. Figure 1 and Figure 2 show the results of the ADD test series.

See Figure 1 - Table 9 on page below

See Figure 2 - Table 10 on next page

Moving on to the full-scale test series, the test array utilized standard cartoned unexpanded Group A Plastic commodity on double-row racks, with 6 inch longitudinal and transverse flues. The storage height was chosen to be 30 feet with 40 foot ceilings and the K-17 ESFR sprinklers were operating at 52 psi. A total of five tests were run, with four of the five showing very promising results as shown in Figure 3.

Table 9. ADD Comparison Testing Results

Obstruction: 30 inch Deep Bar Joist 3-inch off-set															
Sprinkler Code	Center 4 Pans			Center 16 Pans			North 4 Pans			South 4 Pans			North 8 Pans		
	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff
A	1.24	0.71	-43%	0.84	0.51	-40%	1.07	0.12	-89%	1.18	1.27	8%	0.80	0.12	-85%
B	1.27	1.15	-9%	0.81	0.71	-13%	0.83	0.20	-77%	1.07	1.57	47%	0.74	0.19	-75%
C	1.43	0.69	-52%	0.85	0.51	-40%	0.79	0.12	-85%	1.31	1.26	-4%	0.64	0.12	-81%

Obstruction: 22 inch Deep Bar Joist 3-inch off-set															
Sprinkler Code	Center 4 Pans			Center 16 Pans			North 4 Pans			South 4 Pans			North 8 Pans		
	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff
A	1.24	0.93	-24%	0.84	0.56	-34%	1.07	0.17	-84%	1.18	1.36	16%	0.80	0.14	-83%
B	1.27	1.47	16%	0.81	0.78	-4%	0.83	0.44	-47%	1.07	1.57	47%	0.74	0.33	-55%
C	1.43	1.21	-15%	0.85	0.70	-18%	0.79	0.45	-43%	1.31	1.45	10%	0.64	0.33	-48%

Obstruction: 22-inch Deep Bar Joist 3-inch offset. Bridging member 0 offset															
Sprinkler Code	Center 4 Pans			Center 16 Pans			North 4 Pans			South 4 Pans			North 8 Pans		
	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff
A	1.24	0.87	-30%	0.84	0.43	-49%	1.07	0.25	-77%	1.18	0.77	-35%	0.80	0.23	-72%
B	1.27	0.93	-26%	0.81	0.56	-31%	0.83	0.38	-54%	1.07	0.77	-28%	0.74	0.38	-49%
C	1.43	0.47	-67%	0.85	0.54	-36%	0.79	0.43	-45%	1.31	0.52	-60%	0.64	0.44	-30%



Figure 1 - Table 9 from “Obstructions and ESFR Sprinklers - Phase 2 Report” Reprinted with permission from the FPRF

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Table 10. Sprinkler A ADD Testing Results - Bar Joist Depth Comparison

Horizontal Offset: 0-inch offset															
Bar Joist Depth	Center 4 Pans			Center 16 Pans			North 4 Pans			North 8 Pans			Overall Average		
	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff
22-inch	1.24	0.14	-89%	0.84	0.17	-80%	1.07	0.10	-91%	0.80	0.09	-89%	0.47	0.21	-55%
30-inch	1.24	0.28	-77%	0.84	0.35	-58%	1.07	0.31	-71%	0.80	0.16	-80%	0.47	0.32	-32%
36-inch	1.24	0.25	-80%	0.84	0.39	-54%	1.07	0.36	-66%	0.80	0.20	-75%	0.47	0.39	-17%

Horizontal Offset: 3-inch offset															
Bar Joist Depth	Center 4 Pans			Center 16 Pans			North 4 Pans			North 8 Pans			Overall Average		
	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff
22-inch	1.24	0.93	-25%	0.84	0.56	-33%	1.07	0.17	-84%	0.80	0.14	-83%	0.47	0.32	-32%
30-inch	1.24	0.71	-43%	0.84	0.51	-39%	1.07	0.12	-89%	0.80	0.12	-85%	0.47	0.32	-32%
36-inch	1.24	0.73	-41%	0.84	0.55	-34%	1.07	0.14	-87%	0.80	0.14	-83%	0.47	0.38	-19%

Horizontal Offset: 6-inch offset															
Bar Joist Depth	Center 4 Pans			Center 16 Pans			North 4 Pans			North 8 Pans			Overall Average		
	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff	Baseline	OBST	% Diff
22-inch	1.24	1.37	11%	0.84	0.71	-15%	1.07	0.78	-27%	0.80	0.45	-44%	0.47	0.41	-13%
30-inch	1.24	1.42	15%	0.84	0.72	-14%	1.07	0.74	-31%	0.80	0.42	-48%	0.47	0.43	-9%
36-inch	1.24	0.98	-21%	0.84	0.62	-26%	1.07	0.33	-69%	0.80	0.24	-70%	0.47	0.40	-15%

 *Figure 2 - Table 10 from "Obstructions and ESFR Sprinklers - Phase 2 Report" Reprinted with permission from the FPRF*

See Figure 3 - Table 11 on page next page

As you can see Tests 1, Test 3 and Test 4 all had three or less sprinklers operate with the maximum ceiling temperature ranging from 238 °F to 294 °F. Test 5, which examined a 22 inch deep steel joist with a 6 inch offset to the sprinkler and a 1 ½ inch x 1 ½ in bridging member would be considered a failure by most definitions, as 23 sprinklers operated, which far exceeds the standard 12 sprinkler design for ESFR sprinklers. The intent of Test 5 was to represent the worst case scenario, in which case, one could argue this a success.

Test 2 operated 12 sprinklers, however it was noted that there were some data system issues in the values recorded and are not likely representative of the test itself. Noting this issue, Test 2 was considered a success.

Obstructions and ESFR Sprinkler - Phase 3 Summary

Phase 3 of the project was, in a way, an expansion of Phase 2, but moved the focus to miscellaneous obstructions and vertical distances from the sprinkler. Three full-scale tests were conducted with sprinklers located directly above a bridging member, offset 6 inches above a 6 inch wide obstruction and offset 6 inches above a 12 inch wide obstruction. The intent of the 6 inch and 12 inch obstruction was to simulate light fixtures, ducts and other miscellaneous obstructions. As you can see in Figure 4, all three tests were

deemed successful having operated one sprinkler, ten sprinklers and one sprinkler, respectively, and by keeping maximum ceiling temperature below 242° F in all three tests. The results of this phase are in line with the results of Phase 2, which had shown successful results with a sprinkler installed 6 inches offset from an obstruction.

See Figure 4 - Table 6 on page next page

Moving Forward and Conclusion

Phase 2 of this project has generated the most substantial data which could be used as guidance to affect standards moving forward, where Phase 3 has provided additional support to permitting a 6 inch horizontal offset. Here at NFSA, we would not be surprised if the committee used this data to make changes to the requirements of 8.12.5.3, moving from 12 inches horizontally to 6 inches horizontally between ESFR sprinklers and the bottom chord of bar joists and open trusses. A change like this would allow significant flexibility to installers when it comes to handling obstructions, which could lessen the need for application of the ESFR shift rule.

The research panel is investigating a Phase 4 of the Obstruction and ESFR Sprinkler Project, which may be focused on additional miscellaneous obstructions, such as larger duct/light fixtures. Regardless of what the next step is for this project, NFSA will be involved.

continued on page 42

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Table 11. Summary of Full-Scale Test Results

Test Number	1	2	3	4	5
Primary Obstruction	36 inch deep steel joist, tip of lower chord 6 inches from centerline of sprinkler	30 inch deep steel joist, tip of lower chord 3 inches from centerline of sprinkler	36 inch deep steel joist, tip of lower chord 6 inches from centerline of sprinkler	36 inch deep steel joist, tip of lower chord 6 inches from centerline of sprinkler	22 inch deep steel joist, tip of lower chord 6 inches from centerline of sprinkler
Secondary Obstruction	None	None	1-1/2 inch by 1-1/2 inch bridging member; 1-1/2 inch away from sprinkler	1-1/2 inch by 1-1/2 inch bridging member; Centered below sprinkler	1-1/2 inch by 1-1/2 inch bridging member; Centered below sprinkler
Length of Test (minutes)	31	32	32	32	32
First Sprinkler Operation Time, (min:sec)	0:56	1:46	1:19	1:11	1:01
Last Sprinkler Operation Time, (min:sec)	6:08	7:39	1:19	1:11	6:42
Number of Operated Sprinklers	3	12	1	1	23
Peak Gas Temp. at Ceiling Above Ignition (°F)	294	406*	238	250	1264
Maximum 1 min Average Gas Temp. at Ceiling Above Ignition (°F)	129	256*	114	115	979
Peak Steel Temp. at Ceiling Above Ignition (°F)	128	157*	86	84	248
Maximum 1 min Average Steel Temp. at Ceiling Above Ignition (°F)	126	157*	85	83	246
Fire Travel to Extremities of Test Array	No	No	No	No	Yes (North Target)
North Target Array Ignition Time	3:36	3:24	N/A	N/A	2:26

* Due to a data system issue, data was taken at 20-second intervals during Test 2. The values reported are the peak and one minute maximum recorded values and likely not the true peak and time average maximum values.

 Figure 3 - Table 11 Summary from "Obstructions and ESFR - Phase 2 Report" Reprinted with permission from the FPRF


continued on page 43



#fastes

Table 6 – Full-Scale Test Results

FIRE TEST NUMBER	Test 1	Test 2	Test 3
Test Date	August 4, 2016	August 9, 2016	August 12, 2016
Obstruction	1½-inch by 1½-inch bridging member, directly under sprinkler, 12 inches down from deflector	12-inch wide, 3-inch deep structural C shape; 6 inch offset from primary sprinkler; 20 inches below deflector	6-inch wide, 2-inch deep structural C shape; 6 inch offset from primary sprinkler; 20 inches below deflector
Test Results			
Length of Test (minutes)	32:00	32:00	32:00
First Sprinkler Operation Time, (min:sec)	1:18	1:22	1:11
Last Sprinkler Operation Time, (min:sec)	1:18	7:06	1:11
Number of Operated Sprinklers	1	10	1
Peak Gas Temperature at Ceiling Above Ignition (°F)	242	217	240
Maximum 1 minute Average Gas Temperature at Ceiling Above Ignition (°F)	143	142	122
Peak Steel Temperature at Ceiling Above Ignition (°F)	92	138	94
Maximum 1 minute Average Steel Temperature at Ceiling Above Ignition (°F)	91	137	94
Fire Travel to Extremities of Test Array	No	No	No
North Target Ignition	No	North target array at approximately 4 minutes, 30 seconds and damaged commodity, but the fire did not travel to the outer plane of this target array.	No

 Figure 4 - Table 6 from "Obstructions and ESRF - Phase 3 Report" Reprinted with permission from the FPRF



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MEET THE PROS: US Fire Service LLC

By Darrell Bagley

US Fire Service LLC began in 1978 as a fire sprinkler consulting and design company. The business closed in 1982, reopened in 1985, closed again in 1995 and reopened in 2010. We are currently located in Chattanooga, Tennessee and offer consulting, estimating, design, hydraulic calculation and stocklisting for wet pipe, dry pipe, preaction, deluge, AFFF and high expansion foam fire protection systems. All design, hydraulic calculation and stocklisting is performed using AutoCAD and HydraCAD software. We do new construction and retrofit construction and can travel to any of our clients' offices or construction sites as needed for meetings and survey work. Our 43 years of experience designing a wide range of projects brings our clients the knowledge that their project will be well taken care of at a reasonable price.

U S Fire Service LLC has been a member of NFSA for three years and been acquainted with and participatory in NFSA for over 30 years. NFSA offers excellent training with their ongoing Tech Notes and other email distributed information. The online courses that we have taken have been very enlightening and very well presented by their knowledgeable staff. The public advocacy for our industry by NFSA is on point and keeps fire officials and building officials informed as to the benefits we all accrue from having fire sprinklers installed.

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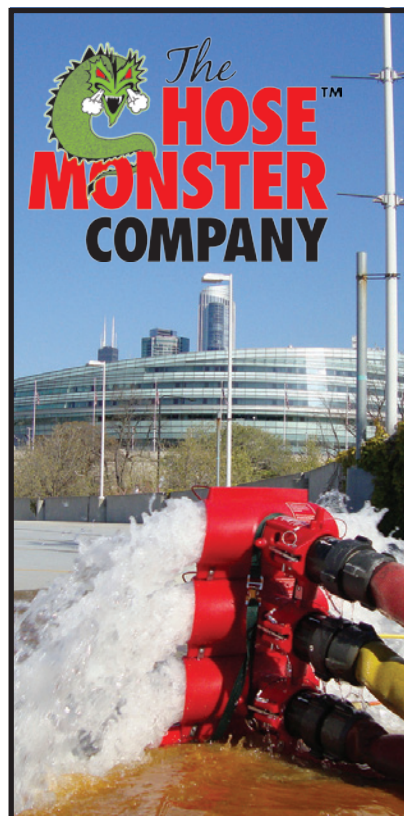
In our spare time, we enjoy our church family, spending time with our children and grandchildren, baseball, college football, reading and travel. We love good home cooking, as well as Chinese and Mexican cuisine.

For more information, please contact Darrell Bagley.

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The Insider's Guide to the Red Rock Casino Resort & Spa



NFSA is thrilled to host our Annual Seminar and North American Fire Sprinkler Expo™ at the gorgeous Red Rock Casino Resort & Spa in Las Vegas. This is the second time the Association will be hosting an event at Red Rock. Attendees were so wowed by the venue when we were first there, it was a no-brainer to go back again. If you weren't with us last time, this is a can't miss opportunity to

enjoy all this venue has to offer. Be assured that you are in for a treat! The Red Rock is situated on 70 acres of land at the gateway to the beautiful Red Rock Canyon. Though close in proximity, the canyon is a stark contrast to the glitter and gambling of downtown Las Vegas. Red Rock offers beauty and thrills of a different nature, including a 13-mile scenic drive, miles of hiking trails, rock climbing, horseback riding, mountain biking, road biking, picnic areas, nature observing and a visitor center with indoor and outdoor exhibits.

The unique geologic features, plants and animals of Red Rock represent some of the best examples of the Mojave Desert. The Red Rock Recreation Lands is a National Conservation Area. Red Rock Canyon National Conservation Area is a popular spot for locals, as well as visitors from across the United States and many foreign countries. Two million visitors each year enjoy the gorgeous desert landscape, climbing and hiking opportunities. Some are even lucky enough to catch a glimpse of the wild horses and burros that roam the canyon.

Once you have your fill of the great outdoors, it's time to venture inside the Red Rock. You'll be in wonderment once again as you enjoy the unique amenities this resort has to offer. Inspired by the breathtaking beauty of the canyon, Red Rock Casino Resort & Spa pays homage to the elegant 1950s and 60s resorts that made Las Vegas famous. It's the perfect way to enjoy the ambience of classic, cool Las Vegas, while luxuriating in all the conveniences and comfort a 21st century hot spot has to offer. A recipient of the AAA Four Diamond Award since opening and named one of the world's best new hotels by Conde Nast Traveler magazine, Red Rock redefines casino resort architecture by incorporating natural light, a convenient layout and the comforts of a modern lifestyle, making for the perfect mix of the thrills and excitement of Vegas and the majesty of the surrounding landscape.

More than three acres of the property are dedicated to Red Rock's outstanding swimming pool. With 19 private cabanas and an in-

land fountain, the pool area offers enough space for rocking pool parties or quiet relaxation. The Sandbar, the resort's poolside café, offers refreshing bites, cool cocktails and specialty drinks galore. There's even a poolside casino with gaming tables! The Red Rock pool is sure to delight loungers, swimmers, cocktail sippers and sun enthusiasts alike. It's a can't miss stop during your stay!

For those of you that like to spend an evening or two with Lady Luck, I'd be remiss not to mention the casino. The eye-catching, state-of-the-art casino features thousands of games, with more than 2,700 of the latest casino slot machines and video poker machines. Table games fill the casino floor with blackjack, baccarat, craps and roulette, including two high-limit areas. For fans of Race and Sport Books, the casino offers an eye-popping experience with giant-screen TVs and individual monitors.

The 25,000 square foot Spa at Red Rock feature a comprehensive fitness area with state-of-the-art treadmills and fitness equipment. A mind-body studio boasting floor-to-ceiling glass windows for active classes such as TRX, tai chi and vertical wall yoga. A second fitness studio offers spinning and exclusive In-Trinity Board classes, an elevated fitness program designed to build strength, balance, flexibility and coordination. You can visit a custom-designed demo kitchen for personalized nutrition and health consultations as well as signature spa services.

When is the last time you went bowling? Even if it was recently, I bet you never bowled in an alley like this! With 72 lanes, lounge, game

room and deli snack bar, it's the largest luxury bowling center in Las Vegas. Bring the family, your friends and colleagues and channel your inner Ralph Kramden! A great way to wind down, spent some time with the important people in your life and just plain have fun!

Hungry? Red Rock's on site dining options have something for every taste with fine dining restaurants serving gourmet cuisine from around the world. Red Rock's Feast Buffet won the Best of Las Vegas 2015 award for top buffet, so make sure to give it a try! T-Bones Chophouse is a modern interpretation of the classic American chophouse, featuring USDA Prime dry-aged beef, an excellent selection of the freshest seafood, creative sides and outrageous desserts. The restaurant was voted the Best Steakhouse in Las Vegas in 2011.

Beautiful scenery, a first-class hotel, casino and spa, and an Annual Seminar and Fire Sprinkler Industry Exhibition that spans the North American Continent. Are you packing yet? See you there! •



New York Empire Chapter Meeting

NFSA's Empire Chapter held a meeting on December 14, 2016. NFSA's Engineering Services Manager Bob Upson gave a presentation on the "Duties of the Expert of the Day", which explained one of the most valuable NFSA benefits. NFSA's Expert of the Day program handles over 2,000 requests each year, providing technical assistance that saves members money, often enough to pay for a year's dues.



Empire Chapter- 2017 Initiatives

The NFSA Empire Chapter is continuing to be active in 2017 on several statewide and local issues.

New York statewide fire sprinkler contractor licensing is still a priority, as it has been for 25 years. Local issues seem to revolve around ITM, including addressing a municipal form used in the City of Albany and getting updates from City of Schenectady Buildings Dept. on their progress and statistics from third party reporting.

The Albany Inspection form is old and crudely put together. It had been somewhat inactive until 2015–16 when area contractors saw an increase in demands from building owners needing the form completed per local code enforcement. NFSA Regional Manager Dominick Kasmauskas and the Empire Chapter ITM Team have developed an updated form which sticks to the scope of NFPA 25 and puts the responsibility on the building owner, lessening liability exposure of the fire sprinkler contractor.

Schenectady has been using thecomplianceengine.com since July of 2015. Local contractors are not seeing an increase in inspections either with existing or new customers. Regional Manager Kasmauskas noted, "There may be some changes in personnel in Schenectady and we will track down the correct person to see if there is analysis in the works by the Building Inspections Department."

Capital Region Fire Sprinkler Association (CRFSA) Donates Fire Sprinkler System

The members of the CRFSA in Maryland and Washington D.C. held a meeting at the new National Fire Heritage Center in Emmitsburg, Maryland to celebrate their donation of a fire sprinkler system throughout the building, as well as extra risers installed for training purposes.

The Chapter is also in planning for the Maryland Fire Inspectors Training Day in March 2017. This program, which the Chapter has prepared for a few years, is a full day of no cost training for Maryland fire inspectors and others. For further information, contact NFSA Regional Manager Dom Kasmauskas at kasmauskas@nfsa.org.

2017 NFSA Illinois Chapter Meeting Dates

March 9	Maggiano's, Oak Brook
May 11	Maggiano's, Oak Brook
September 14	Morton's, Schaumburg
November 9	Maggiano's, Oak Brook

5:00 PM Meet & Greet 6:00 PM Dinner Meeting

RSVP to Dave Rosso 312-543-2963

DRosso@ReliableSprinkler.com

[NFSA Illinois Chapter Meetings are now approved by Illinois OSFM for 1-hour of continuing education.]

New Jersey Fire Sprinkler Advisory Board Hosts Training Seminar

On November 3, 2016, the New Jersey Fire Sprinkler Advisory Board hosted a training seminar at Sprinkler Fitters Local 696 in Millburn, New Jersey. The subject of the class was titled, "NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems" and was conducted by Local 696 training instructors. This dynamic hands on training event was well received by local AHJs and contractors who were in attendance. As always, training is extremely important to the Board, as they look forward to having several new training seminars in the new year.

NFSA's PenJerDel Chapter and NJ Fire Sprinkler Advisory Board Attend Realtor Convention

On December 5th – 7th 2016, the New Jersey Fire Sprinkler Advisory Board and the NFSA PenJerDel Chapter attended the Triple Play Realtor Convention and Trade Expo in Atlantic City, New Jersey. The expo hosts members of the real estate industry who come from New Jersey, New York and Pennsylvania. The expo consists of different exhibitors and several different train-

continued on page 48

continued from page 47

ing sessions which educate realtors on different subject matters regarding real estate.

Representing the NFSA PenJerDel Chapter and the NFSA New Jersey Chapter was Executive Director David Kurasz and New Jersey State Coordinator Matthew Addeo, on hand from NFSA was Marketing Manager Joanne Genadio. The expo experienced a huge turnout this year with approximately 5,000 people stopping at the NJFSAB/NFSA PenJerDel booth. The attendees who stopped at the booth to inquire about fire sprinklers were extremely interested in learning about the benefits of fire sprinklers, both residential and commercial. The overall reaction to the fire sprinkler concept was positive and numerous valuable connections were made with different realtors from the region.



Dear Amy,

On behalf of myself and New York Empire Chapter President, DJ DeLuca and all the Chapter members from CT and NY, I would like to present a financial donation in the amount of \$10,250.00 to the Phoenix Society for burn survivors.

These funds were raised through the 2nd Annual CT / Empire NFSA Chapter Golf Tournament which was held this past fall in CT. It was without reservation all proceeds would be donated to the Phoenix Society. The mission of the NFSA is “to protect lives and property from fire through the widespread acceptance of the fire sprinkler concept”. As an extension of this mission, our members, through the meaningful work they perform, advocate to save lives and reduce burn injuries. We cannot think of a more meaningful way to support individuals and their families as they face suffering and recovery from burn injuries.

Accordingly, please accept our support and gratitude as you continue to provide for those who suffer emotionally and physically from the unexpected consequences of fire.

James H. Brake
President
 NFSA CT Chapter

Florida Fire Sprinkler Association News



Justin Gey, Wayne Automatic Fire Sprinklers, Lisa Gey, Wayne Automatic Fire Sprinklers, Clark Gey, Wayne Automatic Fire Sprinklers, Lorrell Bush, Executive Director FFSA, Senator Dennis Baxley and Kevin Rodebaugh, Southern Fire Protection of Orlando

The Florida Fire Sprinkler Association (FFSA, a chapter of NFSA) Board of Directors held its first meeting of the year on January 23 and 24. One of the highlights of the meeting was the swearing in of the officers for 2017-2019 by the Director of the State Fire Marshal’s Office, Julius Halas. Director Halas swore in the new Executive Committee, consisting of: President Joey Hatfield of Tri Serve Fire Protection, First Vice President Clark Gey of Wayne



NFSA’s Connecticut Chapter welcomes incoming President, Jim Brake from Brake Fire Protection

NFSA Empire and Connecticut Chapters Donate to Phoenix Society

Following is a letter from Connecticut Chapter President Jim Brake to Amy Acton, Executive Director of The Phoenix Society.

Amy Acton
 Executive Director
 The Phoenix Society, Inc
 1835 RW Berends Dr. SW
 Grand Rapids, MI 49519-4955

continued from page 48

Automatic Fire Sprinklers, Second Vice President Fred Lupo of Freedom Fire Protection and the Secretary/Treasurer Brad Kinsell of Gator Fire Equipment, who was unable to attend.



On January 23, 2017, the Florida Fire Sprinkler Association said good-bye to a long-standing board member. Lenny Hollis of Southern Fire Protection, Orlando retired from the Board of Directors. Lenny was one of the original board members and has worked for the Association for more than 30 years. The FFSA Board presented Lenny with a leather jacket with FFSA logo and lifetime membership. The work he has done will continue. Thanks Lenny for paving the way.

FFSA Board of Directors joined by the American Fire Sprinkler Association (AFSA) Board of Directors and Florida Fire Equipment Dealers (FFEDA), walked the halls of the capitol, meeting with state legislators to convey the importance of fire sprinklers. After, FFSA, AFSA and FFEDA met jointly to discuss the results of meeting with our representatives, our successes and our challenges. Workers Compensation was on the forefront of all our agendas.

The fire sprinkler and fire equipment industry showed up as one voice with a common interest to make Florida better!



Exec. Committee from left to right - Joey Hatfield, President, Director Julius Halas, Exec Director, Lorrell Bush, First Vice President Clark Gey, Second Vice President Fred Lupo

Puget Sound NFSA Chapter Election Results Are In!

Congratulations to the following newly elected officers:

Chair: Pat Watson, Western States Fire Protection

Vice Chair: Derek Crewdson, Fire Systems West

Treasurer: Evan Boulanger, Patriot Fire Protection

Secretary: David Lisiecki

The Chapter also thanks outgoing Chair Steven Hobart of Cosco for his two years of service and leadership.

Tennessee Fire Sprinkler Contractors Announce 2017 Meeting Schedule

March Meeting / March 16th

Doubletree Hotel in Murfreesboro
1850 Old Fort Parkway
Murfreesboro
Phone 615.895.5555

May Meeting / May 11th

Annual Associate Member Appreciation Cookout
ABC Office Building in Nashville
1604 Elm Hill Pike,
Nashville
Phone: 615.399.8323
Fax: 615.399.7528

DEAN CORNWELL GOLF CLASSIC

June 5th at the Windtree Golf Course in Mt. Juliet

July Meeting/ July 13th

Joint meeting with Memphis Area Fire Protection Association
Doubletree in Jackson
1770 Highway 45 Bypass
Jackson
731.664.6900

Annual Fall Fling meeting / October 5, 6, 7

Wilderness at the Smokies
1425 Old Knoxville Hwy
Sevierville
Phone 877.325.WILD (9453)
<http://www.wildernessatthesmokies.com>

November Meeting / November 9th

Homewood Suites in West Knoxville
10935 Turkey Drive
Knoxville,
865.777.0375 •

Christmas Party to be held in December location, date and time to be announced.

NFSA Welcomes Derrick Sawyer as Retrofit Specialist



Derrick J.V. Sawyer is a 30-year veteran of the Philadelphia Fire Department who served as its 19th Fire Commissioner from June of 2014 to May of 2016. Over 2,400 members fell under his command. With a passion for educating the community on the merits of life-safety and preparedness, he has become a sought-after speaker for public and private sector entities.

He led the award-winning Fire Prevention Division and, as a result of his hands-on leadership, assisted the Department in reducing the number of fire fatalities in the City of Philadelphia to its lowest rate in recorded history. Chief Sawyer was the 2011 recipient of the T. Seddon Duke Award for Fire Prevention.

Currently, he serves as a Chairperson for the National Fire Protection Association's (NFPA) Urban Fire Safety Taskforce and maintains board membership with the NFPA Technical Committee 1730, Deployment and Staffing for Fire Prevention Activities, the FM Global Fire Service Advisory Group and the American Red Cross of Southeastern PA.

Derrick is a graduate of the National Fire Academy's Executive Fire Officer Program, the Carl Holmes Executive Development Institute and The Harvard Kennedy School of Executive Education for State and Local Government. He also holds an Associate Degree in Fire Science from Community College of Philadelphia, a Bachelor of Arts Degree in Public Safety Administration from Holy Family University and a Masters Degree in Homeland Security from Saint Joseph's University.

In his role as Retrofit Specialist, Derrick will work to identify what steps must be taken to establish effective local strategies that will accomplish the mission of retrofitting existing buildings with fire sprinklers, and bring them to fruition. He will be building broad coalitions, converting adversaries into allies and keep existing allies motivated and focused on the mission

NFSA Baltimore HQ in Full Swing

NFSA is loving our new location in Linthicum Heights, Maryland, and we've had several recent examples of how being in Maryland has allowed us to be very responsive when opportunities present themselves.

► From UL/FM/NFSA Standards Review Committee and NFSA Committee meetings to National Fallen Firefighters Foundation (NFFF) partnership meetings to Chapter Meetings – we are open for business and happy to welcome all guests. It's also nice to be able to be into the Capitol (Washington, D.C.) within 30 minutes when legislative issues arise that need our presence. The week following the "Ghost Ship" fire in Oakland, California we were with our lobbying firm meeting with California Congresswoman Barbara Lee's staff. As a result, nine more members of Congress signed on to co-sponsor the Fire Sprinkler Incentive Act. (FSIA)



► Another example of this was when the nationally syndicated television show, Housesmarts, needed help to understand modern fire and solutions for keeping people safe. Their request was for a live side-by-side burn demonstration, along with a fire chief perspective. We quickly sprang into action, securing a site with the New Jersey Fire Sprinkler Advisory Board. We brought the side-by-side trailer from our headquarters and taped the segment with then Philadelphia Fire Deputy Chief Derrick Sawyer. What a great event it turned out to be! Four minutes of the 30 minute program were all about fire safety. You can view the segment online at <https://www.housesmartstv.com/video/lifestyle/fire-your-home-things-you-should-know>.

► Another great example of NFSA making a difference with national media was when Good Morning America needed live Christmas trees burned on live TV prior to the holidays. Their outreach to us came because of the Common Voices #DoItForDon Holiday Safety campaign. Within 12 hours of the request, we

continued on page 51

James Golinveaux Named President and CEO of The Viking Group



The Viking Group announces that James Golinveaux has joined the company as its new President and CEO. He succeeds Kevin Ortyl, who served as Viking Group's CEO for the last ten years, and Chairman since 2014.

Mr. Golinveaux comes to Viking with nearly 35 years of fire protection industry experience including both contracting and manufacturing. A native of the San Francisco bay area, he began

his career in 1982 as a trainee in fire sprinkler design at Allied Fire Protection. In 1991 he joined Central Sprinkler as their Director of Technical Services. Mr. Golinveaux spent the next 25 years with Central Sprinkler/Tyco, where he worked in plant operations, technical services, R&D, product management, and executive leadership.

Mr. Golinveaux holds over 50 U.S. and foreign patents and is NICET IV certified in Automatic Sprinklers. He has been a member of the National Fire Protection Association (NFPA) and was a member of the NFPA 13 Technical Committee for over 22 years. In addition to his contributions to various NFPA committees and task groups, Golinveaux is also a member of the NFPA Standards Council which, in his words, is one of the highest honors for "techno-geeks" like himself. Golinveaux maintains a passion for teaching and is a regular presenter at industry meetings and events.

Mr. Golinveaux was a member of the National Fire Sprinkler Association's Board of Directors and in 2016 received the NFSAs distinguished Russell P. Fleming Technical Service Award. •

HQ NEWS

continued from page 50

were in the Fire Science Lab at the University of Maryland doing live burns on ABC's Good Morning America. A big thank you goes to Maryland's State Fire Marshal's Office and the University of Maryland's Fire Science Department with Ken Isman and Dr. Milke providing great support. Examples like this re-confirm the NFSAs Board decision to move our national headquarters and we look forward to each new opportunity that comes our way! •



NFSA President Shane Ray, Director of Outreach & Government Relations Vickie Pritchett, and Florida Regional Manager Lorrell Bush join Florida Fire Sprinkler Coalition members and the winners of their PSA contest following the recent Fire Team USA workshop delivery in Lake Mary, Florida.

TAKE CARE OF YOUR SMILE WITH MEMBER DENTAL DISCOUNT PLAN



The NFSA Careington Dental discount plan provides health and wellness solutions designed to complement traditional health insurance and provide significant savings for under-insured or uninsured individuals.

- Members save 30% off the monthly subscription rate
- Save up to 60% on most dental procedures
- Up to 20% savings on orthodontics including braces and retainers for children and adults

MORE DETAILS: www.ememberbenefits.com/NFSA

Reliable Automatic Sprinkler Co., Inc. Announces Attic Sprinkler Protection With Coverage Areas



Reliable Attic Sprinklers are cULus Listed Specific Application sprinklers, which are available for the protection of combustible and non-combustible light hazard concealed spaces with roof/ceiling slopes of 4:12 to 8:12.

Reliable Attic Sprinklers are upright sprinklers listed for use on wet-pipe or dry-pipe sprinkler systems. These sprinklers use a 212°F (100°C) temperature rated fusible-link operating element.

There are six Attic Sprinkler models: Models DD56-6, DD56-27, DD80-6, DD80-27, DS56, and GP56. With a K-Factor of 5.6 (80 metric), the DD56 Series sprinklers provide coverage for spans up to 40 ft. (12 m) with one row of sprinklers. The DD80 Series sprinklers have a K-Factor of 8.0 (115 metric) provide coverage for spans up to 70 ft. (21 m) with one row of sprinklers. The Model DS56 sprinkler has a K-Factor of 5.6 (80 metric) and provides coverage up to 6 ft. x 40 ft. (1.8 m x 12 m). Finally, the Model GP56 sprinkler with a K-Factor of 5.6 (80 metric) provides coverage up to 10 ft. x 15 ft. (3.0 m x 4.6 m).

For more information, please refer to Bulletin 056 on Reliable's website – www.reliablesprinkler.com

Tyco Partners with Caterpillar to Offer Factory-Installed Fire Suppression Systems

Tyco Fire Protection Products, makers of the leading global brand ANSUL®, announced the launch of its factory-installed fire suppression system program with Caterpillar, the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. The program will provide factory-installed fire suppression systems on several models of Cat® mining equipment, with the ultimate aim of enhancing vehicle integrity and longevity as well as expediting machine delivery.

With the factory-installed fire suppression system program, select vehicles will be equipped to seamlessly incorporate ANSUL fire protection systems during the earliest stages of vehicle development and production, fully integrating the technology into vehicles and standardizing installation practices worldwide. The Caterpillar and Tyco teams worked collaboratively to design fire suppression systems for Caterpillar vehicles. Vehicles currently offering fire suppression ready and factory-installed fire suppression systems include the D10T2 Dozer, 777G Off-Highway Truck and D11 Dozer, all installed with the ANSUL CHECKFIRE 210 Detection

and Actuation and LVS Liquid Agent Fire Suppression System. Additional releases are scheduled in the coming year.

The factory-installed fire suppression system program resulted from Caterpillar Voice of Customer surveys that revealed end users' need to address after-market design and installation practices. Caterpillar conducted a worldwide evaluation of vehicle system manufacturers and their fire suppression technologies in order to standardize these systems for their vehicles. From this evaluation, Tyco Fire Protection Products and its ANSUL brand fire protection systems were chosen due to the global network of Authorized ANSUL Distributors, innovative fire protection technologies, and world-class global account support and technical expertise.

Caterpillar introduced its vehicles with factory-installed fire suppression systems at MINExpo International 2016 in Las Vegas Sept. 26-28.

To learn more about ANSUL brand products, visit www.ansul.com. For more information, visit www.tycobsp.com

Globe Fire Sprinkler Corporation Introduces model RCW Water Control Valve



Globe Fire Sprinkler Corporation recently announced the introduction of the Model RCW Water Control Valve for use in Dry, Deluge and Preaction Systems.

The Globe Model RCW valve is a hydraulically operated, external resetting, differential-latching style valve used to control Dry, Deluge, and Preaction fire suppression systems. The Model RCW

is the industry's lightest and most compact combination Dry/Deluge/Preaction Valve.

The Globe model RCW is Underwriters Laboratory (cULus) Listed and Factory Mutual (FM) Approved in 4" and 6" sizes.

Available with time-saving Groove x Groove connections, the RCW Water Control Valve features include:

- A patent-pending Low Friction Roller Arm allows for free movement of the lever arm assembly in the presence of corrosion or debris.
- Red and Green color-coded ball valve handles indicating normally open (Green) and closed (Red) position.
- One common valve body for 10 different system types.
- QR code for instant field access to technical data and set-up animations.

For more information: www.globesprinkler.com

continued on page 54

continued from page 53

Viking Introduces New COIN® Specific Application Sprinkler



Viking Corporation has introduced a new quick response specific application upright sprinkler for combustibles interstitial (concealed) spaces, such as those found between floors and for low-pitch attics with roof pitches up to and including 2/12. With a coverage area up to 16' x 16', and a maximum height of 60", the new 5.6K COIN® (COmbustible INterstitial)

Model VK950 features a glass bulb operating element and special deflector that delivers the operation speed and broad distribution pattern required in shallow combustibles concealed spaces. COIN® sprinklers are designed to protect areas constructed of wood truss, non-combustible bar joist, solid wood joists, or composite wood joists.

COIN® sprinklers are cULus Listed for use in specific light hazard combustibles as well as non-combustible concealed spaces requiring sprinkler protection as outlined in NFPA 13, and can be installed in both CPVC and steel wet pipe sprinkler systems. When using steel pipe, they can be also be used in dry sprinkler systems. The new Model VK950 has a 200°F (93°C) temperature rating and features a ½ in (15 mm) NPT thread size. In addition to the standard brass finish, the sprinkler is available with an Electroless Nickel PTFE (ENT) plating for corrosion resistance.

Viking also offers an extensive line of specific application Attic sprinklers suited for both wet and dry pipe systems in combustibles and non-combustible sloped attic spaces.

For more information visit www.vikinggroupinc.com or call 800.968.9501.

Viking Announces New Concealed Residential Sidewall Sprinkler



Viking Corporation introduced a new 5.8 (84) K-factor flat plate concealed, horizontal sidewall sprinkler for residential applications. The new Model VK490 is cULus Listed for coverage areas as large as 16 x 20 ft (4,9 x 6,1 m). With its larger K-factor, the new sprinkler may allow for lower starting pressures in many residential systems, particularly those requiring a design

density of 0.1 GPM/ft².

The VK490 features a flat cover plate and is well-suited for residential applications where a concealed appearance is desired. With a takeout dimension of less than two inches, the sprinkler can also be installed in a standard 2" x 4" wall space. Additionally, the new VK490 sprinkler is cULus Listed to be installed with the deflector located between four and twelve inches (102 – 305 mm) below the ceiling.

The new sprinkler is one of four in Viking's Freedom® residential line with a 5.8 (84) K-factor, joining the VK472 pendent, VK474 flat concealed pendent, and VK460 horizontal sidewall sprinklers. The new Model VK490 is offered in addition to the existing Freedom® Model VK480, 4.0 (58) K-factor, residential concealed sidewall sprinkler, which also features a flat cover plate.

The new VK490 is available in 165°F (74°C) and 205°F (96°C) temperature ratings and features a ½ in (15 mm) NPT thread size. The sprinkler also comes standard with the special ¾ inch (20 mm) pipe guide to ensure the sprinkler is located the correct distance from the face of the finished wall.

For more information visit www.vikinggroupinc.com or call 800-968-9501.

Viking Introduces New 5.6 K-factor Quick Response Flush Pendent Sprinkler



Viking Corporation announces the availability of a new 5.6 K-factor Quick Response Flush Pendent Sprinkler. The new Model VK478 is cULus Listed for Light Hazard and Ordinary Hazard Group 1 and 2 occupancies, making it an attractive option for applications

including apartments, schools, hospitals, hotels, restaurants, retail stores, churches, and office buildings.

The new VK478 flush pendent sprinkler is offered in two standard white finishes (standard painted white and RAL9010 white) and is available in 165°F (74°C) and 205°F (96°C) temperature ratings. The sprinkler features an aesthetically pleasing two-piece sprinkler and ceiling ring design that provides up to 5/8" (16 mm) of vertical adjustment. The sprinkler's decorative ceiling ring is included with the sprinkler and is shipped standard with the product.

In addition to the new VK478, Viking offers flush-style designs in a residential sprinkler (Model VK476) and a dry barrel sprinkler (Model VK482). Additional information can be found at www.vikinggroupinc.com/products.



We are always on the lookout for fresh material of interest to the fire sprinkler industry. Article submissions from outside sources are always welcomed. Please refer to page 64 for details.



NFSA Annual Seminar and 3rd North American Fire Sprinkler Expo™

red rock

CASINO · RESORT · SPA
Las Vegas

May 3-6, 2017
Red Rock Casino & Resort
Las Vegas, Nevada

***Bet on a Sure Thing and Join us
at the Red Rock Resort in Las Vegas,
Nevada, May 3-6, 2017.***

- Exciting line-up of general session speakers, including Jack Stack, Kevin & Jackie Freiberg and Chief Billy Goldfeder.
- Expanded Expo opportunities for our vendors, including live demos on the expo floor during the exhibition!
- Get your foursome together and register for the *2nd Annual Common Voices Golf Classic* in Vegas!

Registration is open

Take advantage of early bird pricing and make your reservations today!



for more information please visit:
<http://bit.ly/NAFSE2017>

MEMBER DISCOUNT PROGRAMS



The NFSA G&K Uniform Services discount provides branded identity uniforms and facility products and services for rent and purchase to various industries including automotive, warehousing, distribution, transportation, manufacturing and more.

- Free assessment, cost comparison and set-up for new customers
- 20% discount off standard pricing
- Direct purchase discount of 5% off catalog prices



The 20% NFSA Member Wyndham Hotel discount was created to help hard-working, dedicated veterans like you save on hotel accommodations around the world. With over 7,600 properties and 14 different brands, Wyndham Hotel Group is sure to have the perfect hotel for you... and at the perfect price!

- Members save up to 20% year round
- Includes 14 Wyndham Hotel Brands
- Members eligible for Wyndham Rewards Points



The NFSA Careington Dental discount plan provides health and wellness solutions designed to complement traditional health insurance and provide significant savings for under-insured or uninsured individuals.

- Members save 30% off the monthly subscription rate
- Save up to 60% on most dental procedures
- Up to 20% savings on orthodontics including braces and retainers for children and adults



The NFSA health insurance program offers affordable, full-service group and individual health insurance solutions.

- The right solution at the right price
- Individual and family insurance support
- National carriers in all 50 states
- Special pricing for individual and group programs.

FOR MORE DETAILS PLEASE VISIT: EMEMBERBENEFITS.COM/NFSA

From Maine to California, and every place in between, NFSA Regional Managers bring the best of the Association right to your doorstep. Helping our members is Job #1.



New England Region

DAVE LAFOND
Regional Manager

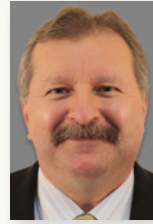
CONNECTICUT, MAINE, MASSACHUSETTS,
NEW HAMPSHIRE, RHODE ISLAND, VERMONT

Deadly Fire Sparks Response from New England Regional Manager

The following Letter to the Editor appeared on the Mass Live website on January 4, 2016, in response to a fatal apartment fire in Holyoke, Massachusetts that occurred on New Year's Day. It was written by NFSA New England Regional Manager Dave LaFond.

On New Year's Day morning, fire ripped through a Holyoke apartment building claiming the lives of three residents. This deadly fire injured others and resulted in heroic actions by Holyoke's firefighters in rescuing many others from that horrible fate. This tragedy underscores the fire problem that exists in our state and nation, and provides us an opportunity to focus on prevention and how we can protect our families. Technology exists that can prevent these heartbreaking events. Fire sprinklers save lives, and had they been present in this fire the outcome would have been much different. New research from Underwriters Laboratories reveals rapid fire spread is intensified using building contents that have changed significantly in recent years, contributing to the decrease in time to untenable (life threatening) conditions. During the first 90 seconds after a fire starts, the smoke alarm activates and the heat from the fire activates the sprinkler. Without sprinklers, the odds of escaping decreases quickly as flashover can occur in three to five minutes. Fire is fast, but fire sprinklers are faster. There is no other technology available that is more effective and efficient in getting water on a fire. While nothing can replace the presence of highly trained and heroic firefighters, in buildings that feature these systems the risk to these brave men and women are often mitigated allowing them more time to enter the structure and do their job. Fire does not discriminate and can strike at any time and in any type of home, but working smoke detectors and properly installed and maintained fire sprinklers can help prevent tragedies like these from occurring in the future. Fire sprinklers buy time and time buys life. I urge you to check the batteries in your smoke alarms, educate yourself on the current fire protection requirements in your own city and state, and learn how to protect yourself, your loved ones and your community from the ravages of fire. Our thoughts and prayers are with the victims, their families and friends following this tragedy. David A. LaFond, Holyoke

Dave LaFond
NFSA's Regional Manager / New England
email: lafond@nfsa.org
2 Burns Way, Holyoke, MA 01040
phone: 413.244.7653



New York Region

DOMINICK KASMAUSKAS
Regional Manager

NEW YORK

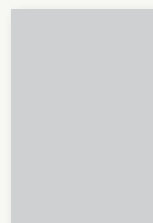
NY State Department of Health (NYSDOH) Form

The Bureau of Water Protection under NYSDOH has a new form for Healthcare Facilities. It's DOH-5222, dated 9/16. On page three in Section 14 there are two questions. The first question is easy, as it inquires about the frequency of fire sprinkler flow tests and can simply be filled in with the correct response. The second question is more difficult and should just be answered "N/A" as per instructions on page one. What is the second question? (You can't make this up, folks) to paraphrase; What do you do to protect patients when you do flow tests through fire sprinklers?

Thank you to S&S Fire Sprinkler for bringing this to our attention.

Regional Manager Dom Kasmauskas has contacted the Division of Building Standards and Codes, as well as the Department of Health to communicate with them regarding this matter.

Dominick Kasmauskas
NFSA's Regional Manager / New York
email: kasmauskas@nfsa.org
1436 Altamont Avenue
Suite 147 Rotterdam, NY 12303,
Phone: 518.937.6589, Fax 518.836.0210



Mid-Atlantic Region

TBA
Regional Manager

DELAWARE, MARYLAND, NEW JERSEY,
PENNSYLVANIA, VIRGINIA, WASHINGTON D.C.

A letter to the editor by New Jersey Fire Sprinkler Advisory Board's Dave Kurasz

Fire sprinkler system in rebuilt school will ensure safety

On Jan. 3, the students of James Monroe Elementary School in Edison happily returned to their school after one improperly discarded, partially burning cigarette burned the school and all of its cherished memories three years ago. Even with the heroic efforts of the firefighters who risked their lives battling to save the school, it

continued on page 58

continued from page 57

took only a few short hours for the flames to consume the school.

One student, now in the fifth grade, recalled the moment when he found out that his elementary school had been destroyed.

“I was in shock and I was crying, I still remember that moment.”

Nearly 500 students, along with the faculty and staff of James Monroe Elementary School, have been displaced for more than two years, temporarily holding classes at the former St. Cecelia School. An insurance payout of \$19 million, along with an \$18.6 million bond approved by voters, made it possible for the school to be rebuilt with some major improvements.

Today, students will be able to enjoy a second floor of classrooms and a new gym, stage and cafeteria. Students and staff, however, will hardly notice the most important improvement to the school, as it stands quiet guard against fire. It will save lives and it will protect property. A fire sprinkler system now stands between the students of James Monroe Elementary School and another potential tragedy.

The New Jersey Fire Sprinkler Advisory Board urges that any new school built in New Jersey, and across the United States, include a fire sprinkler system in order to prevent misfortunes like the one at James Monroe Elementary from happening again.

A parent should never have to worry when sending their child to school each day. Our children are our future, and they are worth the investment. We commend the Edison Board of Education for installing fire sprinklers in the new James Monroe Elementary School.

Dave Kurasz
Executive Director
New Jersey Fire Sprinkler Advisory Board
North Brunswick

The fire was out of control and spread to other materials.

The water from the fire sprinkler put out the flames, saving a home that means the world to Tyson. Her family moved into the home in 2011 as part of the Habitat for Humanity program. “I was here when this house was built, I helped build this house,” said Tyson. “It’s just a warm feeling because I know it’s mine.” If not for the sprinkler, Tyson said she would have lost that feeling. The damage from the flames resulted in an estimated \$350 worth of repairs. Assistant Fire Chief Frank Blackley said it’s a small price to pay compared to the money you could lose without a residential sprinkler. Blackley said his department typically sees severe damage/injuries in these situations if residential sprinklers aren’t installed.

Wayne Waggoner
NFSA’S Regional Manager / Southeast
email: w.waggoner@comcast.net
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Phone: 865.755.2956, Fax: 865.381.0597

Florida & Puerto Rico



LORRELL BUSH
Regional Manager
FLORIDA, PUERTO RICO

Florida Fire Sprinkler Association Reports Very Active and Successful Year

Below are some of the highlights from 2016:

Florida Fire Sprinkler 2016 A Year in Review

- **556** – The number of Contractors, AHJ’s and Industry Professionals that participated in NFSA training classes.
- **19** – The number of technical training classes offered throughout the state.
- **164** – The number of Industry Professionals that participated in our Spring 2016 Conference at Daytona Beach Shores.
- **225** – The number of golfers and Skeet shooters that participated in the 22nd Annual Buddy Dewar Golf Classic.
- **\$42,000** – The amount raised from the Buddy Dewar Golf Classic
- **341** – The number of AHJ’s that received FREE training as a result of the funds raised during the Buddy Dewar Golf Classic.
- **30** – The number of Area Interest Meetings held throughout the state in 2016.
- **300** – The average number of attendees who participated in the AIMS quarterly. The most widely attended AIMS were held in June with a record attendance of 452.

continued on page 59

Southeast Region



WAYNE WAGGONER
Southeast Regional Manager

ALABAMA, GEORGIA, MISSISSIPPI,
NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE

Residential Sprinkler Saves Habitat for Humanity Home

A residential fire sprinkler saved a Habitat for Humanity home from a dangerous grease fire in Wilmington, North Carolina. By the time crews from the Wilmington Fire Department responded to the incident, the fire had been put out.

“I just knew that this whole kitchen was just going to blow up, that’s how bad the fire was. It was just up in the air all the way to the ceiling,” said homeowner Carol Tyson. “Before we could do anything the sprinklers came on.” Tyson said she was cooking fish and took a quick trip to the bathroom. Minutes later she said her husband started yelling her name. That’s when she saw the flames.

continued from page 58

- **27** – the number of Side by Side Fire Sprinkler Demonstrations were held throughout the state.
- **3,000** – The number of spectators which were exposed to the benefits of fire sprinklers through side by side fire sprinkler demonstrations.
- **102** – The number of new members added in 2016. The members consisted of 16 new Contractor members, 1 new Professional members and 2 new Supplier and Manufacturer and 83 Subscriber/Built for Life members.
- **1,148** – The number of online classes taken via the FFSA Online Training Program.

Lorrell Bush
 NFSA's Regional Manager / Florida & Puerto Rico
 email: bush@nfsa.org
 2025 Droylsden Lane, Eustis, FL 32726
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 Cell: 954.275.8487 Fax: 561.327.6366

Great Lakes Region



RON RITCHEY
 Field Service Coordinator

INDIANA, MICHIGAN, OHIO, WEST VIRGINIA,
 KENTUCKY

In December, the State of Michigan Department of Licensing and Regulatory Affairs announced their intention to adopt the following editions of the ICC Model Codes into effect in April 2017.

- 2015 Michigan Mechanical Code
- 2015 Michigan Plumbing Code
- 2015 Michigan Rehabilitation Code
- 2015 Michigan Building Code
- 2015 Michigan Residential Code

Unfortunately, despite the strong advocacy and support of the Michigan Sprinkler Coalition (including key representatives from the Michigan Fire Chief's Association, Michigan Fire Inspectors Society, and other key stakeholders) all of the provisions in the IRC that require residential sprinkler to be installed in residential occupancies were removed from the state adopted code. Despite this setback, the Coalition continues to provide important educational materials to their constituents and they remain steadfast in their knowledge that fire sprinklers save lives.

Ron Ritchey
 Regional Manager, Great Lakes Region
 3311 Dover Court, Lafayette, IN 47909
 Phone: 765.412.6707
 email: ritchey@nfsa.org

Illinois Region



BOB TINUCCI
 State Coordinator

ILLINOIS

Inspection Testing and Maintenance in Illinois

NFSA's Illinois Chapter has an Inspection, Testing & Maintenance Committee. The committee members are a cross-blend of representatives including: fire sprinkler contractors, fire protection consultants, third party reporting firm, fire service inspectors and local NFSA representatives. The focus of this committee is to promote proper maintenance of water-based fire protection systems through industry review, enforcement of national standards and best practices of local Authorities Having Jurisdiction.

The responsibility for maintaining fire sprinkler systems belongs to the property owner (or occupant). Water-based fire protection systems are to be tested and maintained at regular intervals in accordance with *NFPA 25: Standard for the Inspection, Testing and Maintenance of Water Based Fire Protection Systems*.

The Office of the Illinois State Fire Marshal notice below (dated July 2011) reinforces local units of government to enforce these requirements.

Office of the Illinois State Fire Marshal

RE: Ability of Local Enforcers to Apply Illinois Administrative Code Requirements with Specific Attention to Automatic Sprinkler System Inspection, Testing and Maintenance

To Whom It May Concern,

The purpose of this correspondence is to verify that authorities of local units of government have the ability to enforce the requirements of the Fire Sprinkler Contractor Licensing Rules promulgated by the Office of the State Fire Marshal (OSFM). These rules are found at 41 Ill. Adm. Code 109 and were developed by the OSFM under the authority of both the Fire Investigation Act [425 ILCS 25] and the Fire Sprinkler Contractor Licensing Act [225 ILCS 317]. More specifically, the Fire Investigation Act provides that the OSFM "shall adopt and promulgate such reasonable rules as may be necessary to protect the public" from fire-related dangers. [425 ILCS 25/9]. Accordingly, the OSFM has adopted NFPA 101, Life Safety Code, as the Illinois Fire Prevention and Safety code. [41 Ill. Adm. Code 100.7]. NFPA 101 expressly adopts NFPA 25, "*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*" in its entirety. As such, NFPA 25 is considered enforceable State-wide as part of the Illinois Fire Prevention and Safety code.

The Fire Sprinkler Contractor Licensing Act also mandates that the OSFM adopt rules "to protect the health and safety of the

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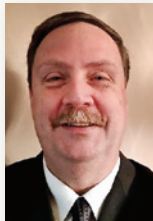
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public.” [225 ILCS 317/55]. The OSFM’s administrative rules specifically require that fire sprinkler systems shall be installed, repaired and maintained in accordance with the standards and recommended practices in effect at the time of installation or alteration. As you will see below, NFPA 25 “*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*” is one of the identified compliance standards for Illinois fire sprinkler systems: *Section 109.110 Compliance Standards*

We are requesting Illinois authorities having jurisdiction (AHJ’s) to complete a survey to provide our committee with actual enforcement data. The ITM Committee plans to study the data collected from this survey to better understand the actual enforcement of NFPA 25 and to develop methods to gain more widespread enforcement of the standard.

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Wisconsin Region



MARTY KING
State Coordinator

WISCONSIN

Sprinkler Saves

Three separate incidents within three separate communities highlighted fire sprinkler saves in apartment buildings. On November 10th the Oak Creek Fire Department responded to a report of fire where a cooking fire was controlled by a single fire sprinkler. November 16th found the Kenosha Fire Department dispatched to a water flow alarm and found a single fire sprinkler activation controlled a stove fire that had spread to the upper cabinets. Lastly, November 30th the Madison Fire Department responded to a fire in a fourth floor apartment that was controlled by a single fire sprinkler.

In all three cases the fire, smoke and water damage was minimal, with minor affects to the residents. Compare this to fires occurring daily across the country in residences without fire sprinkler protection. A recent apartment fire in Milwaukee displaced 10 families who will not be home for the holidays.

Legislative Update

Wisconsin is looking to update the adopted model codes for commercial building construction from the 2009 edition to the

2015 edition of the ICC suite of codes. It is anticipated that they will adopt these codes, with “Wisconsinisms”, within the spring legislative session for enactment by June/July 2017. The Wisconsin Fire Prevention Code, 2012 edition of NFPA 1, will remain and is not scheduled to be updated on the same schedule.

Wisconsin was informed by ISO that failure to regularly update the codes may affect the insurance ratings for communities and needed to be completed by fall.

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Minnesota Region



TOM BRACE
State Coordinator

MINNESOTA

Residents Asked to Evacuate After Fiberglass Plant Fire in Northern Minnesota

On January 18, a fire at the unsprinklered Nordic Fiberglass facility in Warren, Minnesota prompted nearby residents to evacuate their homes.

The Marshall County Sheriff’s Department asked residents living within a one-block radius to leave their homes and find alternative housing for the night. It’s unknown what caused the fire started, but the blaze caused significant damage to the facility.

Nordic Fiberglass first opened a facility in 1970 in Devils Lake, according to its website. The company opened a second branch in 1986 in Warren, where it is now headquartered. The manufacturer produces fiberglass products for the electrical industry. That includes box pads for transformers, oil-filled switchgear, ground sleeves for sectionalized cabinets and other products.

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continued on page 61

continued from page 60



Missouri Region

RANDY L. COLE
Field Service Coordinator

MISSOURI

Missouri Fire Sprinkler Coalition Update:

This past November, the Missouri Fire Sprinkler Coalition held a professional facilitated focus group meeting in St. Louis to expand on a productive dialogue with various stakeholders relating to fire sprinkler installation costs and potential barriers.

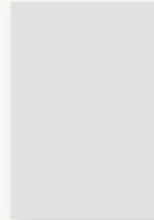
Stakeholders included water purveyors, home developers, local AHJ's (fire/building), plumbers, fire sprinkler engineers and contractors.

The group identified four action item topics in need of further information and details.

1. **St. Louis area database** – intended to outline local AHJ permitting/fee requirements and clearly identify disparities across the region and how to minimize such disparities. Database would include sprinkler contractor contact information who desire to install residential fire sprinklers to ensure quality installations.
2. **Pilot Development** – work to identify home builders who have an interest in installing fire sprinklers in future residential developments, identify tradeoffs and other incentives to increase fire sprinkler installations.
3. **Insurance Industry Engagement** – the meeting identified a barrier for sprinkler contractors in that their insurance premiums are higher when installing sprinklers in residential homes. Further exploration of this issue will be explored.
4. **Contractor Support** – the Sprinkler Coalition committed to providing support to contractors/fitters to include expanding the mission of the coalition to facilitate education and productive dialogue with local AHJ's.

The annual Missouri Fire Sprinkler Coalition Summit is scheduled for March 22, 2017 in St. Louis. Logistics are underway to feature a presentation from Common Voices at the Summit as well as a side-by-side burn demonstration.

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Central Region

TBA
Regional Manager

IOWA, KANSAS

Fatal Fire in Hoxie, Kansas

Fire claimed the life of a woman in Hoxie, Kansas in January. Sheridan County Sheriff Brandon Carver said in a news release that the fire broke out around 6:30 p.m. Firefighters from the Sheridan County Fire Department stations in Hoxie and Menlo along with firefighters from Quinter and Grainfield responded to the scene and found a two-story home fully involved in flames. The home was not equipped with a fire sprinkler system.

Carver said searchers who walked the scene of the fire and nearby buildings using a drone and thermal imaging cameras did not immediately find the woman. The body of the victim was later found in the home.

Carver did not report the cause of the fire or how much damage it caused.



South Central Region

CYNTHIA GIEDRAITIS
Regional Manager

ARKANSAS, LOUISIANA, OKLAHOMA, TEXAS

Spring 2017 in South Central Region Brings Many Great Happenings

- The Texas Legislature 85th Regular Session will end on May 31, 2017.
- The American Backflow Association Comes to San Antonio, Texas April 3-5th 2017.
- Fire Team USA brings a National Team of Fire Sprinkler Experts to Austin on April 19, 2017.

The NFSA North Texas Chapter will head to Las Vegas where the 2017 The NFSA National Conference & Expo will take place May 3-6th, 2017

Winter 2017 In Review

JANUARY

- ▶ Regional Manager Cindy Giedraitis started off the year with a Kevin J. Kelly, P.E. (Codes & Standards Specialist for Victau-

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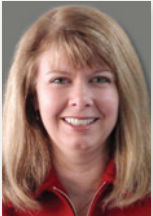


continued from page 62

Jeff Landon, Lubrizol Corporation, Kevin Kane, Viking Corporation, Bruce LaRue, Potter Signal Company and Mark Solomon, Ferguson Fire and Fabrication.

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Northwest Region



SUZANNE MAYR
Regional Manager

ALASKA, IDAHO, MONTANA, OREGON, WASHINGTON

Northwest Coalitions Seek Collaborative Ways to Reduce Barriers to Home Fire Sprinklers

As part of a FEMA grant, Oregon's Ashland Fire & Rescue and Medford Fire-Rescue are promoting fire sprinklers in both "tried and true" and new ways.

The two jurisdictions have worked to eliminate many barriers to voluntary installation of fire sprinklers, including reducing fees, working with water districts on meter sizing and SDC charge issues, and streamlining processes to make installing sprinklers a viable option for all new homes.

Recognizing that communication is key to a smooth construction project, the two fire districts brought together general contractors, fire sprinkler contractors, building and fire officials at a training in January. The first part of the training covered how (and when) sprinklers fit into a residential project from the initial stages through final inspection, allowing parties involved with fire sprinklers to dialogue and learn how their role affects the rest of the project. A side-by-side burn demo and in-depth training on NFPA 13D by NFSA's John Corso rounded out the day.

The Oregon Residential Fire Sprinkler Coalition extended its educational outreach efforts to special water districts by hosting an information booth at a state-wide conference in February. It is focusing on increasing collaboration between fire marshals and building officials to work together on water and access issues in rural construction.

The Washington Residential Fire Sprinkler Coalition recently hosted a second forum for home builders, water purveyors, fire sprinkler contractors and fire marshals. With input from all parties, the Coalition is finalizing a "Best Practices Guide" that seeks to outline processes that will make the entire fire sprinkler installation portion of a home building project seamless. As more jurisdictions adopt a customer service approach and reduce both cost and time hurdles, opposition to residential fire sprinklers will decrease.

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National Fire Sprinkler Magazine

The Flagship Publication of The National Fire Sprinkler Association

NFSM Article Submission Guidelines

National Fire Sprinkler Magazine (*NFSM*), a members-only publication of the National Fire Sprinkler Association, is published six times a year. It offers Fire Sprinkler Industry news and articles of interest to Association members.

Query

Send an e-mail or letter briefly describing your article proposal, why the topic is important, and how it is relevant to our audience. Say something about the sources of your information (*personal involvement? interviews?*) and about your present position and background. Tell us what types of photographs and graphics are available to illustrate your story. Be sure to include an email address and a daytime phone number.

NFSM runs full-length feature articles of approximately 800-1200 words.

Feature Articles

Articles for *NFSM* should be on a topic of significant interest to the industry. Articles promoting a specific product or service will not be published. We have advertising opportunities available to boost your sales.

Writing Guidelines

NFSM tries to maintain a straightforward style. Accuracy is vital. All facts should be double-checked before a manuscript is submitted. All manuscripts must be submitted as Word docs, single-spacing between sentences. Images must be submitted as separate hi-res jpegs. Charts and tables must be submitted as separate pdfs.

Each manuscript should be accompanied by a list of resources on the topic at hand: relevant books and reports, conferences, and/or contact people and their phone numbers. To settle points of style, use *The Chicago Manual of Style* (University of Chicago Press).

Illustrations

NFSM uses a variety of photographs, line art, charts, and maps.

We prefer to receive artwork electronically, and all illustrations should include credit and caption information.

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NFSM does not pay for articles; we do recognize an author with a byline and credit. NFSM reserves the right to reject any submission at its own discretion.

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