

National Fire Sprinkler Magazine

July–August 2021
No. 227



The Flagship Publication of The National Fire Sprinkler Association



THE COSMOPOLITAN
of LAS VEGAS

October 5-7, 2021
Las Vegas, Nevada

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of NFPA 13**

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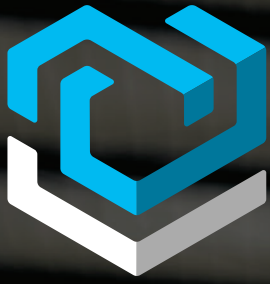
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Top Tech 2021 will be in the round in the Expo Hall!

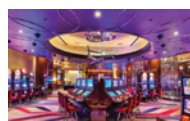


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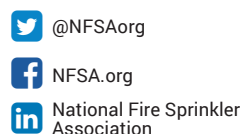
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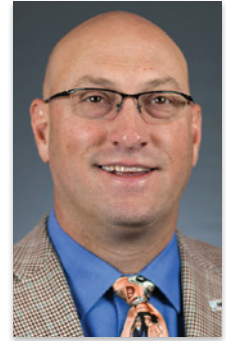


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Give 'Em Hell Harry!



"No dollar value can ever be put on the irreplaceable things which fire destroys. Who can count the value of a human life destroyed by fire? We as a Nation cannot continue to ignore the staggering destruction of goods, natural resources, buildings, and other property by fire,"—President Harry Truman, 1947



Greetings NFSA Members,

President Harry S. Truman did more for the fire sprinkler industry than any president in American history, thanks to the impact of the President's Conference on Fire Prevention in 1947. The best news ever is that he will be at our conference in Las Vegas in October, you can't and shouldn't miss these historical moments. Ok, ok, it's really President Harry S. Truman's amazing grandson, Clifton Truman Daniels, that will be appearing in character and delivering the speech his grandfather gave to open the event. Just think, NFSA had representatives in attendance at the speech, and we worked with many states as they enacted both local and state-wide codes and standards.

I write this article with renewed optimism, as we seem to be seeing strong signs of a real recovery from the worldwide pandemic. With vaccines being administered across the nation, we see travel resuming and life returning to some semblance of "normal." While I believe that we will never return to the exact state of where we were pre-pandemic, there are many positives that have emerged as a result. We are able to work with greater efficiency, and I am again reminded how grateful I am for our NFSA Board's support of our technology improvements that positioned us well.

Now, for the theme of this issue — Codes and Standards! This is an area where NFSA shines bright, and there is a strong foundation set for us from the past that will continue into the future. It was great to read through the history of NFSA as then-president Russell Grinnell, at the January 23, 1947 meeting of the "National Automatic Sprinkler and Fire Control Association", welcomed Percy Bugbee of the National Fire Protection Association, along with H.E. Hilton representing the Chamber of Commerce of the United States of America. You can imagine, thinking back to the fact that on December 7, 1946 the tragic Winecoff Hotel fire occurred, that a major topic of concern for all was hotel fires. Well, NFSA was present then and even more so today.

From 1905, when NFSA formed, through present day, the Association has been very active in the codes and standards process. This involvement is, and will be, a major driving force in why fire and life safety has improved in America and around the world. Our Codes, Standards, and Public Fire Protection Team, along with our Engineering Team and Field Operations personnel with fire service backgrounds, recently participated in 18 straight days of public hearings for the International Code Council (ICC) process in May. These hearings impacted the fire sprinkler industry in various ways, and NFSA is always fighting on behalf of this industry. These hearings often go from 08:00 a.m. to 11:00 p.m. This year, NFSA batted .500 for the homeruns we were seeking, but we are batting 1,000 when it comes to negative impact to the fire sprinkler industry. Our amazing team ensured that fire sprinklers were not removed from any occupancy and that nothing was approved that would harm the reputation or success of the fire sprinkler industry.

On the state and local code front, NFSA had lobbyist in 14 states this year and had to address over 250 bills that would be harmful to the fire sprinkler industry. These included contractor licensing issues in New York, West Virginia, Missouri, Washington, California, and Illinois. We cannot thank our staff and our Chapters enough for their efforts, as these battles were intense in some areas.

On the federal front, we are in the process of working with our lobbyist and our national fire service groups to advance both the Public Safety Housing Act and the High-Rise Fire Sprinkler Incentive Act. There is a strong possibility that one or both pieces of legislation will move with the Infrastructure Bill this Fall. Vickie Pritchett will keep us posted once our talking points are confirmed so that we can all join in with outreach to our congressmen and senators. Utilizing *Voter Voice*, we will be able to make this outreach easy for members!

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From the President's Desk

Shane Ray

I hope you'll check out the insert in this issue for all the details about our upcoming conference, which we postponed from May. Registration opened June 1, 2021, and I hope you are already registered! If you have not done so, be thinking of who on your team you'd like to send! Top Tech will occur on the Expo floor in the round. For the first time in NFSA history, there is also a virtual attendance option for \$149 for NFSA members! You'll be able to tune into selected workshops, both General Sessions, and have a walk-through of the Expo Floor. You'll need to be there in person to see Elvis at our Opening Reception and all the award winners on banquet night. We are also excited that the 6th Annual Common Voices Golf Classic will be held Friday afternoon, October 8th at Bears Best. Having Economist Gene Marks and President

Truman's grandson, Clifton Truman Daniels join us is sure to be an extra treat.

I also hope you've joined in the conversation with our new online communities. What a great place for us to gather online, sharing the latest information as well as posing technical questions to our experts!

I look forward to seeing many of you in Las Vegas. Until then, I hope you remain safe and healthy.



Shane Ray, President



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Meet Me in Las Vegas!

Ok — close your eyes and picture yourself laying poolside with an ice-cold adult beverage in your hand on a sunny 90-degree day. How about sitting with a large table of industry friends in an exquisite restaurant about to put that first cut into a 40-ounce Tomahawk steak after just having sipped on some finely aged Bordeaux? Or the ching-ching-ching of a slot machine paying off after you finally hit that big jackpot? That, my friend, is just some of what you have to look forward to if you come out and meet me (and all our hard-working NFSA staff) in Las Vegas this October 5th thru 7th for our 2021 North American Fire Sprinkler Expo and Board of Directors Meeting. It's been far too long since we've been able to get together and swap some industry war stories. I miss seeing those early morning blood-shot eyes after you've popped those three Advil and plopped down next to me for a 7:00 a.m. breakout session.



I look forward to being able to applaud belatedly for our 2020 Award Winners. My predecessor as Board Chair Mr. Larry Thau is finally being presented with the Golden Sprinkler Award after having been chosen pre-pandemic. Kudos to the rest of our 2020 winners as well. Pete Schwab (Russell P. Fleming Technical Service Award) and Jim Ford (Leadership in Public Safety Award). Hall of Fame Inductees – Kevin Ortyl, Norm MacDonald, Top Myers and Harold Nothtaft. We will be able to honor our 2021 Award winners also. I'd be surprised if there was many a dry eye in the house when Ray Fremont, Sr. receives the Golden Sprinkler Award for 2021. Congrats to Jeff Shapiro (Russell P. Fleming Technical Service Award) and Kevin Reinertson (Leadership in Public Safety Award). Hall of Fame Inductees – Dick Oliver, Tom Deegan and Tom Multer.

You can reach me at:

kmezaros@qrfpss.com

kent@quickresponsefireprotection.com

Many thanks to staff and the Seminar committee for changing on the fly and making our 2021 Seminar happen. In a post Covid-19 world there are a lot of moving parts to blend what we all have in our memories as a traditional Expo year conference and freshen it with what we've learned since the pandemic. I love the move to table tops displays and smaller booths for our suppliers (as I'm sure they do as well). The fact that we were forced to go all virtual last year makes it much easier for us to provide a virtual option for those that either aren't quite ready to or can't make it out to be with us in person in Las Vegas. The fact that we will be having the NFSA Top Tech Competition and crowning a champion in 2021 is awesome. Many of us have gotten accustomed to intently watching the competition and being proud of ourselves when we can still answer a couple of the questions correctly.

Once you make it to Vegas you will love The Cosmopolitan, as it is definitely on the high end of chic. It should be relatively easy to spot our group in the crowd (especially those of us that have already grayed) as this place attracts an often well-dressed and well-toned group of customers. There is great food, great bars and a great atmosphere at the Cosmo. It is also centrally located on the Strip so if you have another favorite hotel or restaurant you want to visit, you won't be too far of a walk away. Here's hoping all of the infamous Las Vegas shows and entertainment will be running at full speed when we're there in October.

For those of you that actually come to these things to learn something, no worries! We have you covered as well. NFSA always does this part right and our industry's brightest will be there to make sure you leave Las Vegas more learned. So, if you haven't registered yet, put down your copy of NFSM for a minute, jump online and hop on board! Feel free to pick the magazine back up and finish reading after you've committed to joining us this fall.

Stay healthy and be well my friends. I can't wait to see all of you!!

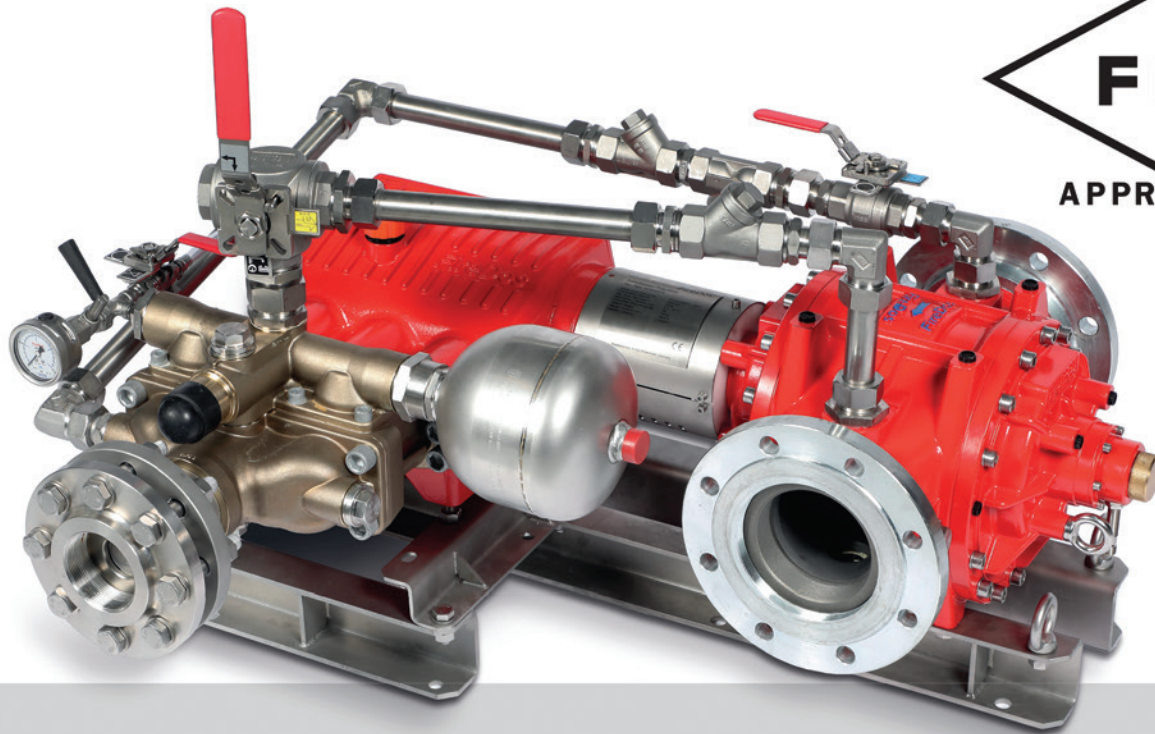
Respectfully yours,

A handwritten signature in black ink, appearing to read 'Kent Mezaros', written in a cursive style.

Kent Mezaros, Chairman

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How Can You Save Waste at the Construction Site?

by KT Madhusudan

Let's first look at the various inefficiencies that lead to waste of resources of various forms in construction:

- Performing work out of sequence
- Shifting scrap many times before disposing
- Delay in information flow due to communication gap between design- office - site.
- Errors or omissions in drawings
- Mismatch between drawing & specifications
- Delay in material or shop drawings approval
- Delay in finalizing vendors/ procurement
- Spending too much time in searching, locating and sorting stirrups or scaffolding/ shuttering parts
- Unsuccessful searches for materials or machinery resulting in wasted supervisory time, crew idle time, disruptions in daily plans
- Bought out item waiting at vendors store due to space constraint at site
- Shipping, transportation, unloading and on-site storage done without considering execution sequence
- Double handling of materials - unload near gate, move closer to site then to the work location
- Extended working hours for managers, engineers, supervisors
- Finding too many workers in one area such that no one can work properly
- One trade waiting for other to complete the work
- Disconnect within Master Schedule (Design/ Drawing Schedule, Procurement Schedule & Execution schedule)
- Project Manager spends 50% of time arranging workers or site engineer spends 50% of his time on follow-up with workers or manager/ engineer spends 40% of time for procurement follow-up

Sound familiar? These cover the most common forms of inefficiencies in projects. Now let's categorize these into the different types of waste in construction.

7 Wastes in Construction-

- Waiting or Delay (Inactivity that occurs because a preceding activity didn't finish on time)
- Rework or Defect (Anything not done correctly the first time)
- Over Processing (Unnecessary steps in operations, such as re-processing, double-handling and double-checking, which adds no value)
- Over Production (Producing more than needed, faster than needed or before it is needed)
- Motion (To move and add value is called work. To move and not add value is called motion)



- Transportation (Unnecessary motion or movement of materials)
- Inventory (Excess or shortage)

And, last but not least:

- Value vs Waste
- Value -the client cares that it is being done.
- Waste -not valuable to the client.

One way to control waste is by using the 5S method - which is a workplace organization methodology. It is short for, Sorting, Simplifying, Sweeping, Standardizing & Sustaining. 5S is not a one-time activity. Motivation & self-discipline are required. 5S can help us to separate "be busy" and "be effective" 5S can help to identify and eliminate wastes.

See table next page

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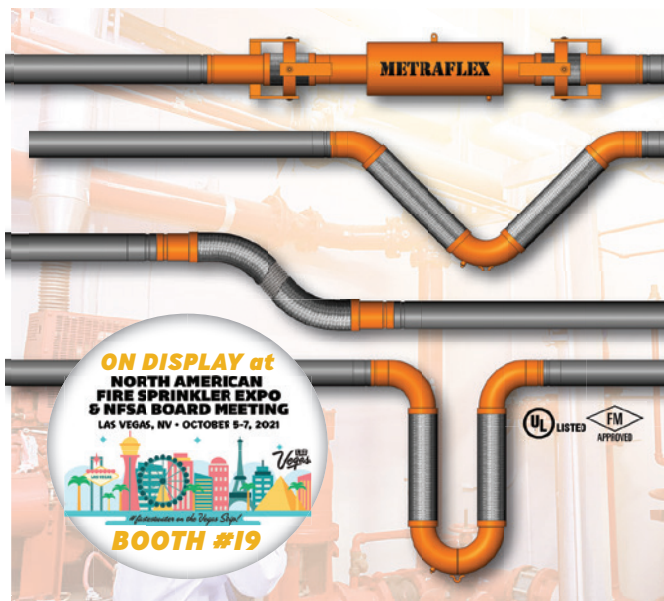
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The purpose of 5S is to make a workplace function better by making it an easier place to work. This occurs by making spaces make sense; tools and materials are placed in logical locations based on who needs them, how frequently they're needed, etc. Spaces are cleaned regularly. Cleaning and organization become

habits. When used correctly, 5S ultimately makes processes safer and more efficient. •

Article Source: https://EzineArticles.com/expert/K_T_Madhusudan/2762708 © 2021

Japanese Term	American Term	Definition
Seiri	Sort	Sort through materials, keeping only the essential items needed to complete tasks. (This action involves going through all the contents of a workspace to determine which are needed and which can be removed. Everything that is not used to complete a work process should leave the work area.)
Seiton	Set in order	Ensure that all items are organized, and each item has a designated place. Organize all the items left in the workplace in a logical way so they make tasks easier for workers to complete. This often involves placing items in ergonomic locations where people will not need to bend or make extra movements to reach them.
Seiso	Shine	Proactive efforts to keep workplace areas clean and orderly to ensure purpose-driven work. This means cleaning and maintaining the newly organized workspace. It can involve routine tasks such as mopping, dusting, etc. or performing maintenance on machinery, tools, and other equipment.
Seiketsu	Standardize	Create a set of standards for both organization and processes. In essence, this is where you take the first three S's and make rules for how and when these tasks will be performed. These standards can involve schedules, charts, lists, etc.
Shitsuke	Sustain	Sustain new practices and conduct audits to maintain discipline. This means the previous four S's must be continued over time. This is achieved by developing a sense of self-discipline in employees who will participate in 5S.



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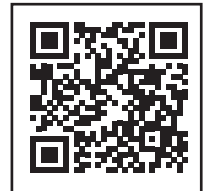
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16	825
18	725
20	650
22	580
24	530
26	490
28	450
30	415
32	385
34	360
36	335
38	315
40	300

SCAN FOR PRODUCT INFORMATION PAGE



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20 Potential Changes in the 2022 Edition of NFPA 13

by Roland Asp



The revision cycle leading to the publication of the next edition of NFPA 13 is in its last stages, and the 2022 edition of NFPA 13 will be issued sometime this fall.

The first and second draft stages are complete and the next steps in this three-year revision cycle is for NFPA membership to consider any Certified Amending Motions at the 2021 NFPA Technical Meeting, which will be held virtually this June.

The various technical committees responsible for this standard (as well as NFPA staff and the NFSA Engineering and Standards Committee) spent a tremendous amount of time and effort in ensuring that this new edition maintains the high level of life-safety and property protection provided by previous editions of the standard. As a result, this new edition will include a number of new requirements that are important to everyone in the fire sprinkler industry.

As the author of this article is a member of the Technical Committee on Sprinkler System Installation Criteria, this article will focus on the changes to the installation criteria rules of NFPA 13, although some of the highlights from the other committees will be included as well.

This article will highlight some of the technical changes found in the second draft report of NFPA 13. This will not be a list of every change to the standard, but is intended to help everyone understand some of the major changes to expect from the 2022 edition of NFPA 13. The number in parenthesis is the section number from the second draft report of the 2022 edition of NFPA 13.

Smooth Ceiling Definition (3.3.28.4). NFPA 13 has historically defined a smooth ceiling as “free from significant irregularities, lumps and indentations.” This language was vague and difficult to define. This revised definition provides guidance on how to define a smooth ceiling. This revision deletes the term significant and adds language that defines a smooth ceiling as having no irregularities greater than 4 inches in depth.

Exterior Projection Definition (3.3.73). Exterior projections were not defined in the 2019 or earlier edition of NFPA 13. This lack of guidance led to confusion on just which “projections” required sprinkler protection. Questions such as “is an open trellis considered an exterior projection?” was not clarified in the standard. Both first and second revisions were accepted to

formally define an exterior projection and Second Revision No. 1019 settled on a definition that defined an exterior projection as an extension beyond an exterior wall of a structure that is capable of collecting heat below.

Waterflow Alarm Devices (7.7). NFPA 13 has historically required an alarm to sound within five minutes of water flow. This requirement conflicts with NFPA 72 and NFPA 25, which required the alarms to be initiated within 90-seconds. To resolve this conflict, the 2022 edition will separate waterflow alarms into two types: mechanical waterflow devices such as water motor alarm and gongs, and electrical water flow alarm devices. The five-minute requirement was retained for mechanical alarm devices installed on systems without a fire alarm system. The purpose of the five-minute time frame was to account for water flow fluctuations and air pockets which may result in nuisance alarms. For electrical water flow alarm devices, the alarm will be required to sound within 100 seconds of water flow. This 100-second criterion is to meet the 90-second requirement plus a 10 second delay to respond to the signal from the initiating device.

Calculated Water Delivery Time (8.2.3.6.3). Water delivery time is vital in ensuring that a dry pipe system delivers water to a fire in a reasonable time frame. However, NFPA 13 did not define the criteria for calculating this water delivery time when using a calculation program. New language was added which states that the calculations of water delivery time must be based upon the time difference between the calculated point when the most remote sprinkler(s) open and the calculated point when the pressure at the most remote sprinkler reaches and maintains the required design pressure.

Nitrogen Supply in Dry Systems (8.2.6.9 & 28.2.4.8.1). For new dry systems utilizing nitrogen, an increased C value of 120 will be permitted. The nitrogen must be supplied from a permanently installed listed nitrogen generator capable of maintaining a minimum 98% concentration of nitrogen, and a way of verifying the concentration must be provided in order to take advantage of the increased c value.

Concealed Spaces with Non-Fueled Fired Equipment and Access Panels (9.2.1.2.2). A new section was added to clarify that non-combustible or limited combustible spaces with non-fueled fired equipment (such as vertical terminal air conditioner

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or VTAC units) with an access panel for maintenance is simply a type of concealed space and sprinkler protection is not required.

Soffits of Combustible Construction (9.2.1.11). Soffits of combustible construction will not require sprinkler protection where they are below noncombustible or limited-combustible ceilings and are separated into volumes not exceeded 160 cubic feet. The annex to this section states that the interior of the soffit may contain ductwork, electrical components and plumbing and mechanical equipment. Further, it states that it is not the intent to require dampers the ductwork. (see figure 1)

Porte-Cocheres with occupancy above (9.2.3.2.1). A new rule was added that would require sprinklers below porte-cocheres that are located below floors that are intended for occupancy.

Small Temporarily Occupied Enclosures (9.2.10). Small temporarily occupied spaces (such as lactation stations, phone booths, and similar spaces) are not required to be protected with sprinklers as long as the space is isolated, does not extend to the ceiling, contains no storage, and does not exceed 24 square feet in area.

Balconies and Decks Serving Dwelling Units (9.3.20). NFPA 13R and the building code have long required sprinklers below balconies, decks, and patios with a roof that serve dwelling units in combustible (Type V) buildings. Similar provisions have been brought into NFPA 13 in order to be consistent with the International Building Code (IBC) and NFPA 13R.

Obstruction Tables (Global). The obstruction tables throughout the standard have been reformatted. In 2019 and earlier, the distance from the sprinkler to side of obstruction (or A dimension) was a range of distances as shown in the following example (see Table 1 below).

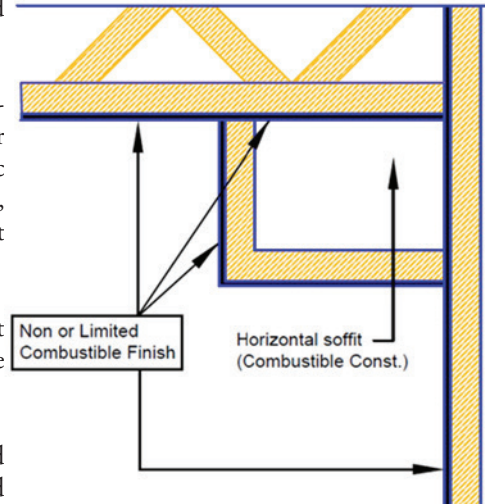
All obstruction tables were modified based upon this format.

Distance from Sprinklers to Side of Obstruction (A)	Maximum Allowable Distance of Deflector Above bottom of Obstruction (B) [in. (mm)]
Less than 1 ft (300mm)	0 (0)
1 ft (300 mm) to less than 1 ft 6 in. (450 mm)	2 ½ (65)
1 ft 6 in (450 mm) to less than 2 ft. (600 mm)	3 ½ (90)
2 ft (600 mm) to less than 2 ft 6 in. (750mm)	5 ½ (140)
Continues	Continues

For the 2022 edition the obstruction tables have been reformatted as shown in the following table (see Table 2 below).

Distance from Sprinklers to Side of Obstruction (A)	Allowable Distance of Deflector Above bottom of Obstruction (B) [inches]
Less than 1 ft	0
1 ft or more	2 ½
1 ft 6 in or more	3 ½
2 ft or more	5 ½
Continues	Continues

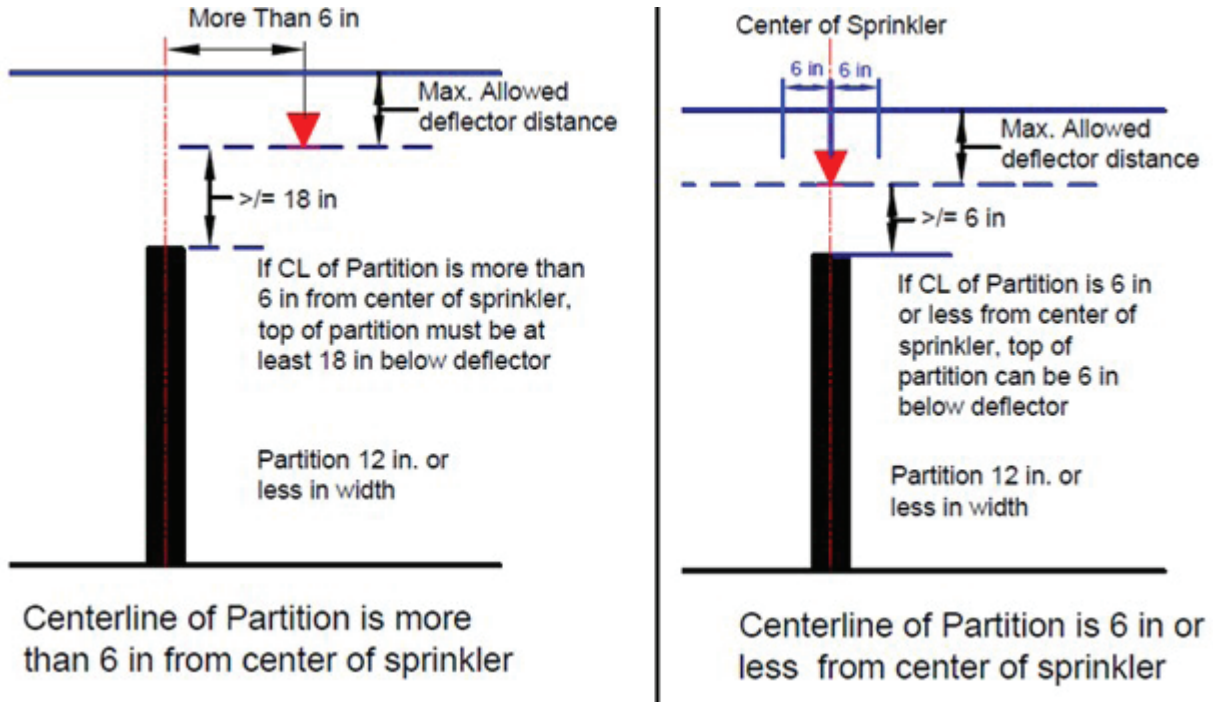
Figure 1



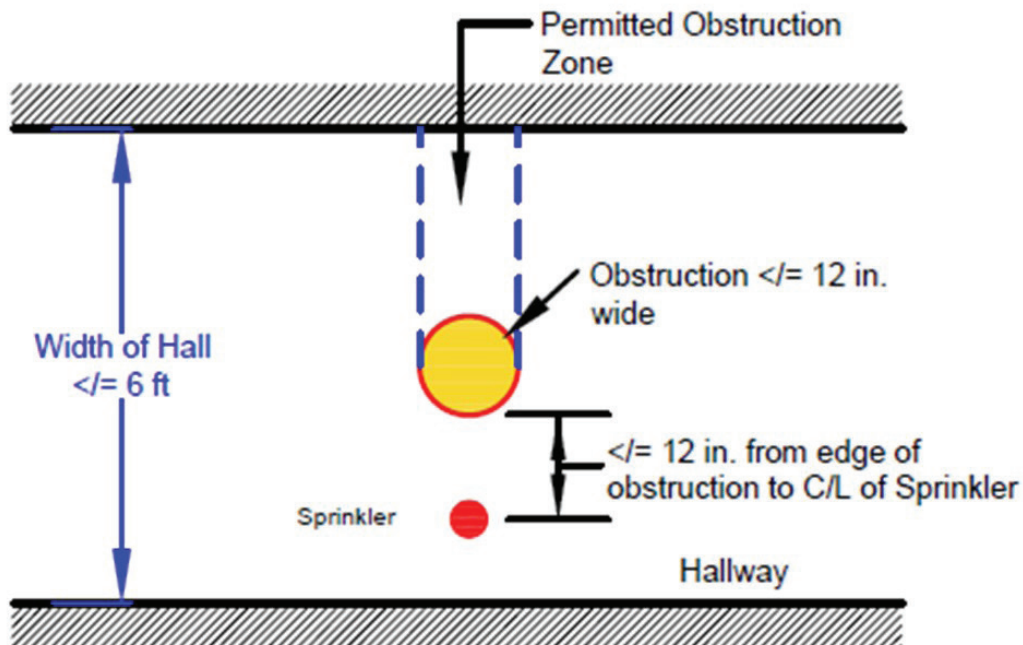
continued from page 14

Suspended or Floor-Mounted Vertical Obstructions in Ordinary Hazard Occupancies (10.2.7.3.2.3 and 10.2.7.3.2.4).

In past editions of NFPA 13, specific obstructions rules for vertical obstructions such as partitions and room dividers were limited to light hazard occupancies only. For the 2022 edition, new language will be added to address these vertical obstructions in ordinary hazard occupancies. This new language can be summarized in the following diagrams:



Obstructions in Narrow Hallways (10.2.7.2 (5)). A new obstruction rule was brought into NFPA 13 from NFPA 13D and NFPA 13R which allows certain obstructions in a hallway which is no wider than 6 ft. This new rule would allow obstructions that do not exceed 12 inches in width where the nearest edge of the obstruction is at least 12 inches from the centerline of a sprinkler as shown in the following diagram.



Similar rules were added for sidewall sprinklers.

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Concealed Residential Sprinklers in Beams (12.1.8.1.2). In the 2019 edition of NFPA 13, pendent residential sprinklers were permitted to be installed under beams up to 14 inches in depth, but restricted concealed sprinklers to beams of four inches or less. In the 2022 edition of NFPA 13, concealed residential sprinklers will be permitted to be installed under beams of up to 14 inches in depth.

ESFR Sprinklers Closer than 8 ft (14.2.4.3, 14.2.9.4.1 and 14.2.9.4.2). Past edition of NFPA 13 required ESFR sprinklers to be spaced at least 8 ft apart in all cases. The 2022 edition will add allowances which will allow ESFR sprinklers to be closer than eight feet apart where they are separated by a structural member or by baffles.

ESFR Sprinklers and Conveyors (14.2.11.4). A new section was added to provide guidance for dealing with obstructions caused by conveyors in buildings protected with ESFR systems. This new language gives six options as follows:

1. Quick response sprinklers permitted under conveyors with no high-piled storage underneath.
2. Ceiling level sprinklers must be below conveyors with high-piled storage underneath.
3. Additional sprinklers not required under belt type conveyors that are 70% or more open in horizontal profile.
4. Additional sprinklers not required under conveyors that are 4 ft or less in width and do not have high-piled storage underneath.
5. Additional sprinklers not required below roller conveyors where the distance between rollers is equal or exceeds the width of the roller.
6. Additional sprinklers not required under roller conveyors that do not have high-piled storage underneath.

Nail Plates for Nonmetallic Pipe (16.4.4). A new requirement was added that would require the use of steel shields to protect piping other than steel that is less than 1 ¼ inches from face of the member.

Single Point Density (19.2.3.1.1). All the density/area curves have been replaced with single point density tables for all new systems. New Density/Area Table

Hazard	Density/Area (gpm/ft/ft ²)
Light	0.1/1500 or 0.07/3000*
Ordinary Group 1	0.15/1500 or 0.12/3000*
Ordinary Group 2	0.2/1500 or 0.17/3000*
Extra Group 1	0.3/2500 or 0.28/3000*
Extra Group 2	0.4/2500 or 0.38/3000*

**When required for unsprinklered concealed spaces*

All curves in the storage chapters have also been converted into a single point density tables that include any adjustments. The original density/area curves remain for evaluation and modification of existing systems.

Parking Garages (A.4.3.3.2). Based upon the fact that today’s cars have more plastics than vehicles in the past, and with the increasing use of lithium-ion batteries, the discharge committee reevaluated the appropriateness of an ordinary hazard group 1 classification for automobile parking garages. During the first draft, the committee voted to remove parking garages from the annex examples for ordinary group 1 occupancies and during the second draft voted to classify parking garages as an ordinary hazard group 2 occupancy.

Contractor’s Material and Test Certificate for Aboveground Piping (A.29.1). The test certificate for aboveground piping will be moved from the body of the standard to the annex. This will allow more flexibility to tailor the form to specific projects and allow this form to be in a digital format.

.....
This has been a summary of some of the significant changes to the next addition of NFPA 13. There are many more, and NFSA will continue to present, teach, and write about the requirements in the 2022 edition of the standard.

Notice of Intent to Make A Motion (NITMAM) and Certified Amending Motions (CAMs). The 2022 revision cycle was undoubtedly a success and will result in a stronger document that even better serves the primary purpose of NFPA 13: “to provide a

continued from page 16

reasonable degree of protection for life and property from fire...” However, not every proposed change will receive full consensus. When someone is not satisfied with the work of the committee(s) that resulted in the second draft report, a Notice of Intent to Make a Motion (NITMAM) can be submitted. A NITMAM is simply a notice to NFPA that an individual intends to file motion to change the document as published in the second draft. If NFPA finds that the filed NITMAM is in order it becomes a Certified Amending Motion (CAM) and will be heard and debated at the technical session in June.

As of the writing of this article, NFPA has not posted the list of accepted Certified Amending Motions however, NFSA’s Engineering and Standards Committee did submit NITMAMs on two issues:

Waterflow Test Evaluation (5.2.2.2.2). In many cases, the fire sprinkler industry relies on hydrant flow test data to determine the strength of the water supply that will serve the sprinkler systems. For many editions, guidance was given in the annex of NFPA 13, which states that where appropriate an adjustment should be made to this data to account for conditions such as a daily and seasonal fluctuations that may affect the water supply. For this edition, a second revision was accepted which would make it a requirement to evaluate the test data to determine if an adjustment is appropriate. It is the position of the E&S committee that the current language in the annex is sufficient and this guidance needs to remain in the annex.

K28 and 33.6 ESFR Sprinklers (Table 23.3.1).

K28 and K33.6 ESFR sprinklers were added to Table 23.3.1, which mandates the number of design sprinklers to be 12. However, these sprinklers have been tested and data sheets allow these sprinklers to be used with a 9 or 10 sprinkler design area. The E&S committee submitted a NITMAM to remove K28 and K33.6 ESFR sprinklers from this table as it modified the approved design (9 or 10 sprinkler design area) for these sprinklers. This would limit options for owners and contractors. Removing these sprinklers from this table will make it easier for an AHJ to approve these sprinklers with a 9 or 10 sprinkler design area based upon the test reports and data sheets.

This article summarized some of the potential notable changes to the 2022 edition of NFPA 13. It must be noted that the entire revision process must be completed before they can truly be called changes. The next step is the technical session where NFPA members have an opportunity to change the second draft of the document by voting on CAMs. Once this process is complete, the revision is in the hands of the Standards Council. The Standards Council will hear any appeals that are filed on a particular document. This final appeal process is to ensure that the entire process as outlined in this article has been conducted in a fair manner and in accordance with the NFPA rules for standards development.

Once the Standards Council has ruled on all appeals, the document in question is issued as an official NFPA Standard. According to NFPA rules, this standard becomes effective 20 days after it is issued by the Standards Council.

NFSA is heavily invested in this process for the documents that impact our industry, such as NFPA 13. NFSA staff, the Engineering and Standards Committee, and NFSA members who represent the NFSA on the NFPA technical committees, are committed to this process. We invest a lot of time and effort to ensure that the relevant NFPA standards continue to provide unsurpassed life- and property-protection and ensure our industry is represented in this process. This process, and NFSA’s participation in it, is truly a valuable NFSA member service. •

Contractor's Material and Test Certificate for Aboveground Piping

A. Procedure - Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected, and system left in service before contractor's personnel finally leave the job. A certificate shall be filled out and signed by both required representatives. Copies shall be prepared for approving authorities, owners, and the contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with the approving authority's requirements or local ordinances.

Property Name: _____ Address: _____

New Installation
 Modification - Complete applicable portions and describe scope of work on the reverse side of this form

B. Plans
 1. Approving Authorities: _____
 2. Address: _____
 3. Installation conforms to accepted plans: YES NO
 4. Equipment used is approved YES NO

C. Instructions
 1. Has the person in charge of fire equipment been instructed as to the location of control valves and care and maintenance of this new equipment YES NO
 2. Have copies of system component instructions, care and maintenance instructions, and NFPA 25 been left on the premises: YES NO

D. Location of systems: _____

E. Sprinklers

Make	Model	Year Made	Office	Quantity	Temperature

F. Pipe and Fittings
 1. Type of Pipe: _____
 2. Type of Fittings: _____

G. Alarm Valve or Flow Indicator

Type	Make	Model	Maximum flow to operate through contractor's test

H. Dry-Pipe Valve
 Make, Model, and Serial Number: _____

I. Quick Opening Device (QOD)
 Make, Model, and Serial Number: _____

J. Dry-Pipe System operating test
 1. Time to trip through test connection? _____
 2. Water Pressure: _____ psi
 3. Air Pressure: _____ psi
 4. Time water reached test outlet*: _____
 5. Alarm operated properly: YES NO

K. Drainage and Pre-action
 1. Make, Model, and Serial Number: _____
 2. Operation: Pneumatic Electric Hydraulic
 3. Piping and detection media size: _____
 4. Does valve operate from manual, remote, and/or automatic releases: YES NO
 5. Is there an accessible test to reach circuit for: YES NO
 6. Does test circuit operate supervision alarm: YES NO
 7. Does each circuit operate valve release: YES NO
 8. Maximum time to operate release: _____

Pressure Reducing Valve
 Location of Floor: _____
 2. Make and Model: _____
 3. Setting: _____ psi
 4. Static Pressure - Inlet _____ psi Outlet _____ psi
 5. Residual Pressure - Inlet _____ psi Outlet _____ psi
 6. Flow Rate: _____ gpm

M. Backflow Device Forward Flow Test
 1. Means of Forward Flow: _____
 2. Was system flow demand created? YES NO

N. Test Description
 Hydraulic tests shall be made at not less than 200 psi for two hours or 150 psi above static pressure in excess of 150 psi for two hours. Differential dry pipe valve supports shall be left open during test. All relevant damage. All aboveground piping leakage shall be stopped. (Optional) Establish 40 psi air pressure and measure drop. Test pressure levels of residual water level and air pressure and measure drop. In both cases, the pressure drop shall not exceed 10%.

O. Tests
 1. All piping hydrostatically tested _____ for _____ hours
 2. Dry piping pneumatically tested YES NO N/A
 3. Equipment operates properly YES NO
 4. Do you certify as the sprinkler contractor that additives and corrosive chemicals, solvents, silicones, or derivatives of any silicon, epoxy, urethane, or other corrosive chemicals are not used in any test systems or stopping lines? YES NO
 5. Drain Test:
 a. Static pressure reading at gauge located near water supply test connection _____ psi
 b. Residual pressure at valve in test connection _____ psi
 c. Residual pressure at open water supply test connection _____ psi
 d. Underground mains and lead in connections to risers flushed before connection made to sprinkler _____
 e. Flushed installer of underground piping YES NO
 8. If power driven fasteners are used in concrete, has representative sample been satisfactorily completed? YES NO

P. Back Testing Gaskets
 1. Number used/removed: _____
 2. Locations: _____

Q. Welded Piping - If welded piping was used in the system, the sprinkler contractor certifies:
 1. Solder and welding operations followed the requirements of at least AWS D1.1, ASME Section IX or other required standards. YES NO
 2. Welding was carried out in compliance with a documented quality control procedure to ensure that all disks are removed, openings to pipe are smooth, slag and other welding residues is removed, the internal diameters of piping are not penetrated, completed welds are free from cracks, incomplete fusion, surface porosity greater than 1/32 inch in diameter, undercut deeper than the lesser of 25% of the wall thickness or 1/32 inch, and the completed circumferential butt weld reinforcement does not exceed 3/32 inch. YES NO

R. Cutoffs (Disks)
 Do you certify that you have a control feature to ensure that all cutoffs (disks) are retrieved? YES NO

S. Hydraulic Data Nameplate Provided YES NO
T. Sprinkler contractor removed all caps & straps? YES NO

U. Date left in service (with all control valves open):
 1. Name of sprinkler contractor: _____
 2. Tests witnessed: _____
For property owner (Signed): _____
 Printed: _____
 Title: _____
 Date: _____
For sprinkler contractor (Signed): _____
 Printed: _____
 Title: _____
 Date: _____
Optional - AHJ (Signed): _____
 Printed: _____
 Title: _____
 Date: _____

Comments - Use the reverse side of the form for occupant comments. All "No" answers must be explained.
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2021 ICC and NFPA Model Code Changes

by Jeffrey M. Hugo, CBO, Vice President of Codes and Public Fire Protection
Andrew Bevis, MCP



As always, there were many changes in the 2021 edition of model codes, that are developed and produced by the International Code Council (ICC), as well as in the latest editions of the National Fire Protection Agency (NFPA) publications of NFPA 1, NFPA 101 and NFPA

5000. Many of these changes affected the fire sprinkler industry both positively and negatively. This article will take an in-depth dive into these changes and review those effects.

2021 International Building Code:

13R Systems Reduced to Three Stories (903.3.1.2.3, 903.3.1.2): Section 903.3.1.2 of the IBC provides the language that permits NFPA 13R systems to be used for residential multi-family occupancies. The charging language remains as in previous editions, but the change occurred in the conditions of the use of the section. Two new conditions were included that add additional measurements that a building must comply with before a NFPA 13R system is permitted for use. These changes not only affect multi-family buildings on podiums, but also stand-alone residential apartments, condos, and motel buildings. This forces the design professional to carefully review floor-to-floor construction heights and adjoining grade plane.

Corridors and balconies in the means of egress (903.3.1.2.2): Sprinkler protection is required to be provided in corridors and for balconies in means of egress when several different types of configurations occur. This change provides a high level of protection for building occupants traveling to protected exit.

Quick Response and Residential Sprinkler Locations (903.3.1.2.2): This change adds another location where quick response sprinklers or residential sprinklers may be used. They are permitted for use in spaces within a smoke compartment that contain care recipient sleeping units in Group I-2. This will provide additional options for designers and flexibility in sprinkler selection.

Distilled Spirits in F-1 Occupancies (903.2.4.2): Automatic sprinkler systems are required in F-1 fire areas that are used for the manufacture of distilled spirits. This will provide an increased level of protection for the occupants that are involved in this manufac-

turing process. Distilled spirits present a significant hazard level and difficult firefighting operations.

Distilled Spirits in S-1 Occupancies (903.2.9.3): Automatic sprinkler systems are required in S-1 fire areas that are used for the bulk storage of distilled spirits. The bulk storage of distilled spirits presents an extreme fire hazard as well as difficult firefighting operations. This change will greatly reduce the potential of major loss fire.

Upholstered Furniture in F-1 Occupancies (903.2.4.3): Automatic sprinkler systems are required in F-1 fire areas that are greater than 2,500 square feet and are used for manufacturing upholstered furniture and mattresses. Upholstered furniture provides a unique fire hazard. Most modern furniture contains highly combustible plastic foam materials. Providing sprinkler systems in these spaces affords a much higher level of protection.

Upholstered Furniture in M Occupancies (903.2.7.2): Automatic sprinkler systems are required in M fire areas that are greater than 5,000 square feet that are used for the display and sale of upholstered furniture and mattresses. Upholstered furniture provides a unique fire hazard. Most modern furniture contains highly combustible plastic foam materials. When layering that with increased occupant loads on a sales floor, a highly dangerous environment is created. Placing sprinkler systems in these spaces provides a much higher level of protection.

Upholstered Furniture in S-1 Occupancies (903.2.9.4): Automatic sprinkler systems are required in S-1 fire areas that are greater than 2,500 square feet and are used for storage of upholstered furniture and mattresses. Upholstered furniture provides a unique fire hazard. Most modern furniture contains highly combustible plastic foam materials. Having a large stockpile of these highly combustible materials creates a massive potential for a large-scale fire. Providing sprinkler systems in these spaces gives a much higher level of protection.

Open Parking (903.2.10): Automatic sprinkler systems are now required in S-2 open parking garages when exceeding 48,000 square feet. The 55 feet height exemption (903.2.11.3) is also removed for open parking. This is a big step forward in protecting these types of occupancies. Fires in open parking garages can easily

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spread to other cars and floors with flammable liquids flowing down access ramps causing a higher level of hazard.

Mechanical Access Enclosed Parking Garages

(903.2.10.2): An automatic sprinkler system is required throughout buildings used for the storage of motor vehicles in mechanical access enclosed parking garage. Additionally, the portion of the building that contains the mechanical access garage must be protected with a specialty engineered automatic sprinkler system. This will greatly increase the level of protection in a unique occupancy. This are a new type of use that has gone unaddressed in the model codes. This is becoming the new way to purchase vehicles with no way to properly protect these occupancies.

Group S Manual Alarm System Exemption (907.2.10 Ex.):

An automatic sprinkler system removes the requirement for manual fire alarm boxes in public and self-storage occupancies. This is a major advantage for the owners. Manual fire alarm boxes in public storage can cause false alarms that cost owners large amounts of money. When occupants are moving their belongings in and out of storage units they often accidentally hit these manual alarms causing false alarms and fire departments being dispatched. Also, self-storage units create a unique fire hazard. The fire loads are always changing within the units and are often unknown. The automatic sprinkler system provides protection for all these unknown factors that are found within self-storage occupancies.

2021 International Fire Code:

High-Rise Retrofit (1103.5.4): This change requires all existing high-rise buildings over 120 feet to retrofit with fire sprinklers. High-rises less than 120 feet (down to 75 feet) have an option to provide a second stairway, a full fire-alarm system, or retrofit with fire sprinklers, where normally unprotected occupants located on floors hundreds of feet above fire department vehicle access are not provided the safety that comes with an automatic fire sprinkler system.

Storage Plan Maintenance (3205.1): This change requires that the approved posted storage layout plan be verified annually and any changes to the layout must be approved by the fire code official before the changes are made. This will ensure that the fire protection systems in place will still protect the storage as originally designed and that any changes will be approved and addressed by the fire code official.

Lithium-Ion Batteries (Table 3203.8): Lithium-ion batteries are becoming more prevalent, with the increasing number of electric vehicles and similar transportation methods that use this power source. This code change adds lithium-ion batteries to the commodity classification table in Chapter 32. This will aid designers in properly protecting the spaces that store lithium-ion batteries.

Automated Rack Storage (3209.4.2): While the protection and manual shutdown of automated rack storage was already a require-

ment, this change requires the addition of automatic shutdown of automated rack storage. Automatic shutdown is required to occur upon the detection of waterflow in the required sprinkler system or the activation of the fire detection system. This will provide a higher level of protection by shutting down the automated rack storage upon sprinkler activation.

2021 International Residential Code:

Townhouse Definition (R202): This proposal added an updated definition for townhouse. The previous definition created confusion in its interpretation and application among code enforcement professionals. It clarifies the difference between a townhouse and townhouse unit. This will provide clarification applying further fire sprinkler requirements.

Townhouse Common Walls (R302.2): The fire resistance rating of the common wall that separates townhouse units is reduced to one hour when provided with a NFPA 13D sprinkler system. This will provide adequate sprinkler protection while saving cost on the construction of the rated wall assembly.

Duplex Common Walls (R302.3 Ex. 1): The fire resistance rating of the common wall that separates two family dwellings is reduced to 1/2 hour when provided with a NFPA 13D sprinkler system. This will provide adequate sprinkler protection while saving cost on the construction of the rated wall assembly.

Common Wall Penetrations (R302.4.1 Ex. 2): When water-filled fire sprinkler system piping penetrates a fire-resistance rated wall or floor assembly; the annular space around the piping is not required to be a fire-resistance rated assembly or an approved penetration firestop system. The annular space can be filled with the normal methods of penetration protection. This will significantly lower the cost of installing piping throughout the dwellings. These types of penetration firestop systems can be very costly.

Habitable Attics (R326): A habitable attic is not considered a story above grade plane when it is not greater than 1/2 of the floor areas of the story below and the dwelling unit is protected throughout with a fire sprinkler system and meets other requirements. Additionally, habitable attics are permitted above a third story if the dwelling unit is equipped with a fire sprinkler system. These exceptions will provide designers with greater freedom in their design approach during challenging site condition that would force them to design vertically.

2021 International Existing Building Code

Level II Alterations (803.2.3): In group I-2 occupancies undergoing a level II alterations, automatic fire sprinkler systems are required to installed in accordance with NFPA 13. Additionally, when areas that have a higher hazard use as listed by IBC are undergoing these alterations; they are required to be retrofitted with fire sprinkler systems. This creates a higher level of protection in areas

continued from page 20

that may normally not have sprinkler systems or where exempt for various reasons.

Level II Alterations in Unusual Protection Areas (803.2.5):

In buildings that contain unusual protection areas like drying rooms, stages, aircraft hangars, play areas, etc. (Table 903.2.11.6, IBC), that have exits or corridors serving multiple tenants or serving an occupant load of 30 or more, it is required to have an automatic sprinkler system installed. These buildings have uses that contain unusual areas that may not normally have sprinkler protection. This change will require that when Level II alterations are completed in these areas, they will now be protected by an automatic sprinkler system.

Level III Alterations (904.1.4): Any Level III alteration in Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1, and S-2 will require the installation of an automatic sprinkler system. This will provide a much higher level of protection in areas that would otherwise not require automatic sprinkler systems in existing buildings.

Level III Alterations in I-2 Occupancies (904.1.5): In group I-2 occupancies undergoing level III alterations, automatic fire sprinkler systems are required to be installed in accordance with NFPA 13. Additionally, many occupancies are required to be fitted with fire sprinkler systems when the work area would require to be provided with sprinkler protection under new construction. Also, work in windowless stories is required to be provided with a sprinkler system under the provisions of IBC for newly constructed buildings. This creates a higher level of protection in areas that may normally not have sprinkler systems or where exempt for various reasons.

Fire Sprinklers in Change of Use (1011.2.1):

When a change of occupancy occurs, an automatic sprinkler system is required within the areas of the change of occupancy and areas of the building that are not separated by fire resistance-rated construction. This will ensure that formally unprotected areas of the building will have an automatic sprinkler system installed and increase the level of protection throughout the structure.

2021 NFPA 101 Life Safety Code

Daycare (16.3.5.1): This change requires that all new daycare occupancies have an automatic sprinkler system. Often the evacuation of daycares is much slower than normal, due to having to move groups of children to a safe place. This provides a much higher level of protection for children and teachers in these occupancies.

High Rise Retrofit for Industrial Occupancies (40.4.2.2 & 40.4.2.3):

All existing high-rise industrial occupancy buildings are required to provide a reasonable degree of safety from fire. Two options are permitted to meet these requirements. The first option is a supervised automatic sprinkler system. The second option is to provide an engineered life safety system (ELSS), that

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was developed by a registered professional engineer experienced in fire- and life-safety systems. The ELSS are permitted to contain partial sprinkler systems, smoke detection systems, smoke control systems, compartmentation, or other approved systems. Additionally, these high-rise occupancies are required to comply with the retrofit within 12 years of the adoption of NFPA 101.

Bars and restaurants added as new assembly spaces

(12.3.5.1): This change added two new assembly types to the list of assembly uses required to be protected by a supervised automatic sprinkler system. Without the addition of bars and restaurants to this section, these spaces would go unprotected. Often these spaces contain larger groups of individuals who are under the influence of alcohol. This creates a higher potential for death to occur as it would increase evacuation times for these individuals.

High Rise Retrofit (31.3.5.9): A 12-year time frame has been developed for existing high-rise apartment buildings for building owners to plan the design and installation of a fire sprinkler system. The sprinkler system must be installed by January 1, 2033. The time frame is not intended for building owners to wait 11 years and then try and get the work done in the last year. One method for getting a full sprinkler system installed over time is to get the water supply in place and put the sprinkler system in the common portions of the building first. Then, as building spaces are renovated and tenants turn over, the sprinkler system can be extended into those spaces.

Engineered Life Safety Systems in Existing High Rise Apartment Building (31.3.5.9.3):

All existing high-rise apartment buildings are required to have an approved, supervised, automatic sprinkler system, unless the building is provided with an approved engineered life-safety system that was developed by a registered professional engineer experienced in fire- and life-safety systems. They are permitted to contain partial sprinkler systems, smoke detection systems, smoke control systems, compartmentation, or other approved systems. Additionally, previously approved ELSS are required to be maintained with the original approved design documents and applicable standards. This change permits the use of an ELSS if it was already installed in lieu of an automatic sprinkler system. While an automatic sprinkler system would be preferable, this would allow existing protection systems to stay in place, as they do provide a certain level of protection.

Engineered Life Safety Systems in Existing High Rise Business Occupancies (39.4.2.1):

All existing high-rise business occupancy buildings are required to have an approved, supervised, automatic sprinkler system, unless the building is provided with an approved engineered life-safety system that was developed by a registered professional engineer experienced in fire- and life-safety systems. Additionally, previously approved ELSS are required to be maintained with the original approved design documents

and applicable standards. This change permits the use of an ELSS if it was already installed in lieu of an automatic sprinkler system. While an automatic sprinkler system would be preferable, this would allow existing protection systems to stay in place as they do provide a certain level of protection.

Electrical supervision (various)

Many sections in NFPA 5000 and NFPA 101 were updated and adjusted to the correct electrical supervision requirements for valves and waterflow switches. In short, all new buildings with sprinklers will have electrically supervised valves and flow switches.

2021 NFPA 1 Fire Code

ITM Records (1.11.1.1): NFPA 1 requires the Authority Having Jurisdiction (AHJ) to retain all plan reviews, permits, and all associated notes in Section 1.11. The change to Section 1.11.1.1 requires the AHJ to retain all the electronic ITM records that are used for NFPA 25 enforcement. This change still allows building owners to retain ownership of their documents when the fire protection systems are maintained according to the ITM standards.

Storage plan and maintenance (34.1.3): The 2021 NFPA 1 added similar requirements as the IFC as to having an approved storage plan. The storage plan is mounted in an approved location and contains all the necessary and important fire protection details, such as commodity classification, location of commodities, storage height, aisle widths and more. The storage occupancy is inspected and compared to the approved plan annually. Changes or modifications are permitted to the approved plan; however, they need to go through the AHJ prior.

2021 NFPA 5000 Building Construction and Safety Code

Storage plan (30.1.1.5): NFPA 5000 as a building code requires the storage plan for all new storage occupancies. The annual maintenance requirements, as noted above, come from the NFPA 1 and the IFC.

Electrical supervision (various)

Many sections in NFPA 5000 and NFPA 101 were updated and adjusted to the correct electrical supervision requirements for valves and waterflow switches. In short, all new buildings with sprinklers will have electrically supervised valves and flow switches.

Daycare (18.3.5.1): This change requires that all new daycare occupancies have an automatic sprinkler system. Often the evacuation of daycares is much slower than normal, due to having to move groups of children to a safe place. This provides a much higher level of protection for children and teachers in these occupancies. •

Unpacking the Value of Training

by Evan Combs, **Manager of Training & Education**



We often measure the growth of a business using various metrics like customer base, annual revenue, workforce size, services, or even net promoter scores. These tools allow owners, employees, and public stakeholders to set Key Performance Indicators (KPIs) for an organization and give leadership teams quantitative data for strategic planning. However, when you look under the hood of a business and start analyzing what components directly influence each of those growth metrics, you will find employees at the center of it. Training is the most useful tool available to support institutional growth because it focuses primarily on expanding the potential of an organization's most critical resource, people. The level of return training provides is most often thought of as learning a new concept, developing specific skillsets, or assisting in maintaining certification, but it provides so much more!

Wholistic Development

The world of training is heavily saturated with opportunities to pick up a quick skill, learn something new, or provide an easy way to earn a Continuing Education Unit (CEU), but it is important to consider that not all training is created equal. Standard training addresses and focuses on one of two types of skills, hard skills (technical skills) or soft skills (core traits related to work performance). An example of a hard skill is learning all the updates that occurred in a standard from one edition to the next or identifying the components of various standpipe systems. An example of a soft skill would be time management or leadership.

You have likely seen numerous training for each of these types, a retreat to develop leadership skills or a webinar on NFPA 13 updates. The NFSA training team pairs hard and soft skills into all curriculum, ensuring outcomes that develop an individual more wholistically. This means that if you enter an NFSA training course to learn about NFPA 13 updates, you will simultaneously enhance critical thinking skills, problem solving, communication, and more. This is done through research-driven instructional design that critically focuses on learner outcomes from conception to delivery, creating active learning experiences that synthesize hard and soft skills.

Innovation

With new technology comes new processes and systems that help our industry protect lives and property. Training helps ac-

commodate and react to change, but it also seeds the potential for innovation. First, recognize that innovation is much broader than inventing a new product. It can be reimagining a process that becomes more efficient, or even using current tools in new ways to offer more services. The best way for individuals to become innovators is to be exposed to new perspectives and given the opportunity to share and cultivate new ideas. If this sounds familiar, it is a major part of the diversity and inclusion movement sweeping across the business world. A quality training program, whether being in-person, virtual, or asynchronous (without an instructor), will provide learners with the opportunity to understand differing views, synthesize opinions, and put them all into practice, honing innovation skills.

This learning not only provides opportunity for small businesses that may not have a robust and diverse workforce to cultivate innovation, but it also sends ripple effects through medium and large organization. After an employee receives training and returns to the job, whether you ask them to or not, they often share their experiences. This includes knowledge gained, but many times comes with championing new and fresh perspectives that influence peers and management, which then impacts product, services, and processes.

Organizational Health

By having an employee complete a training, you are communicating investment into the employee, and then they themselves feel valuable to the organization. You are dedicating hours, dollars, and any potentially other resources so that an individual may learn and grow; it goes a long way. This intangible boost to self-worth drastically impacts an employee's loyalty and morale. A more loyal employee gives an organization a more stable workforce which avoids turnover, which costs an extensive amount of time and money. An employee with higher morale positively influences an organization's culture, which increases productivity, efficiency, work ethic.

Yes, training should be related to the job of the employee to ensure you are investing resources into the right places, but another major indicator of organizational health, is the ability to be agile and react and adapt to change. With management shifts leaving pockets in roles, consider succession planning to remain prepared. With specialists moving up linearly, think about lateral potential (transferable skills) to prevent bottlenecks. Always keep in mind how much more valuable an employee can be if they have the skillset, morale, and loyalty to support these inevitable circumstances.

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Learning Forward

Education, at its core, focuses on establishing a growth mindset in individuals. This means that quality training material will target an employee's desire to learn and foster it. When individuals enter an environment with a fixed mindset, or unwillingness to learn or develop, their capabilities and contributions become stagnant. By investing in a life-long-learner culture, individuals in that community will begin to respond better to feedback or reviews, find opportunity in failure or setback, and embrace challenges and unknown or uncomfortable circumstances.

The most valuable part of having a growth mindset, is that it is contagious. Colleagues and peers will want to follow suit and become more curious and braver, but also, a business's profile will

change drastically. Building partnerships, customer relationships, or any other external interactions will be rooted growth, rather than static transactions.

Moving back to the goal of company growth, and the purpose of training being to bolster an organization's people, reflect on investment potential for a moment. If you combine all the additive features you achieve from engaging with high-quality, outcome-driven training, and are able to connect them directly to institutional KPIs or goals, you can begin formulating a Return on Investment (ROI) that more accurately reflects the impact training can have on your organization. If selecting a training program to fit your needs, always consider if it will deliver each of these added benefits, and to what degree. •

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Partners in Progress... at NAFSE '21 and Beyond



by Vickie Pritchett, **Vice President/Executive Officer**

I am counting down the days, and I can hardly contain my excitement for NFSA's North American Fire Sprinkler Expo. Check out all the details contained within this issue, and please join us in Las Vegas this October! If you cannot be there in person, I hope you will consider joining us virtually. Our Seminar Committee is very happy with this option and has decided on a \$149 registration fee to help us offset the cost of live streaming.

I'm very excited about our partnership with the International Association of Fire Chiefs Fire & Life Safety Section. You'll note the FLSS has their very own track. Every time workshops are offered, you'll have a FLSS option. We salute those who work within communities to ensure that fire- and life-safety issues are a priority. We are also happy to offer a special AHJ rate for our fire service partners of \$249 for the week!

I also wanted to share some information about recent visits that highlight the important role that NFSA plays on the local level across the nation. It was an honor to join President Shane Ray and Southeast Regional Manager Brian Biggs on recent visits to Greenville, TN. Greenville city leaders are focused on a downtown revitalization project and are promoting the retrofit of the buildings within the Depot Street District. It was so rewarding to see the resources we have created at www.nfsa.org/taxreform put into use, and it was fun to share the federal fire sprinkler incentives available. This was a true example of how our efforts at the national level make a difference locally.

President Ray shared this well while in Greenville meeting with city officials and building owners: *"Revitalization for a vacant downtown is critical to improve the quality of life within a community as well as the economic viability, but preservation is essential because of the history. One fire in any building at the wrong time and with the right set of conditions and circumstances can destroy in a day what it has taken centuries to build. As the changes with new utility infrastructure, including water, sewer, electrical, and fiberoptics, topped off with a new road surface, concrete sidewalks and a lot of beautiful landscape in the streetscape, fire protection considerations are a must very early in the process."*

We concluded by applauding city officials for their proactive vision and wrapped it up with *"It's not preserved until it's protected!"* Codes, standards, and incentives that support and promote them are valuable to a community's quality of life. Way to go Greenville, TN! (see photos next page)

Switching back to conference dreaming, I would like to again highlight our award recipients. We will be honoring both our Class of 2020 and Class of 2021 recipients and what an awesome two classes they are! As a recap, here's our honorees:

2020 Golden Sprinkler Award:

Larry Thau

2021 Golden Sprinkler Award:

Ray Fremont, Sr.

2020 Russell P. Fleming Technical Service Award:

Pete Schwab

2021 Russell P. Fleming Technical Service Award:

Jeff Shapiro

2020 Leadership in Public Safety Award:

Jim Ford

2021 Leadership in Public Safety Award:

Kevin Reinertson

2020 Hall of Fame Inductees:

**Kevin Ortyl, Norm MacDonald,
Top Myers, Harold Nothhaft**

2021 Hall of Fame Inductees:

Dick Oliver, Tom Deegan, Tom Multer

II sure hope I see you in Las Vegas! #fastestwateronthevegasstrip is going to be epic! Can't wait!

Stay Safe, Until Next Time,

Vickie

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Depot Street in Greenville, TN which will undergo a complete renovation.



A historic church...



Team NFSA with city officials during a stakeholder meeting regarding the revitalization project.

Member Engagement

by Caleb Armbrust, Director of Membership



Dear Members:

This Spring has been far from slow for Team NFSA! By now, you have likely seen some significant changes to the website (*new homepage, new membership*), and a new member engagement platform. On June 1st we celebrated one-year since the launch of our new member platform and transition to a Customer Relationship Management Platform (CRM), which was/is great, challenging, and not without a few bumps in the road.

The *Fastestwater* Forum, as we are calling it, will allow members to engage with one another more than has ever been possible in the virtual environment at NFSA. We will continue to launch chapter specific sites and streamline the member experience based on your feedback, so keep it coming (good and bad!).

Last year COVID-19 forced most of the staff into a remote environment with limited travel and thus some of the normal processes like member packets were derailed, and I am exciting those will launch again this month! You should have or will be shortly (main accounts) receiving a revised membership certificate in a custom frame, which we are proud to share with you. Please let us know if it arrives in less than excellent condition. We would love for you to send us a picture of your team with the certificate so we can frame and post at HQ. NFSA staff will be working to deliver similar versions to your branch offices throughout the year.

It is my belief that the institution of NFSA is special and bigger than any one of us. I really feel that we on staff get to be custodians of a treasure as we work to advance NFSA and the industry at large. So, we want to hear from you, in your own words, why you are a proud member of NFSA. *Just email me your photo and thoughts at armbrust@nfsa.org to be included in upcoming editions!*

Paul Cacioppo of Landmark Fire Protection in New Jersey graciously agreed to kick us off when he shared:

"NFSA membership has been a valuable asset to our business for over four decades. The online and in-person training, the engineering resources available on code and standard related questions, and the support on legislative issues important to our industry alone make membership worth it. But it is the camaraderie, idea exchanges, and networking that occurs at our local chapter & national meetings that I find most important. Sharing with fellow professionals as committed as yourself to not only growing your individual businesses but the entirety of the fire sprinkler industry helps to nourish my passion for our life-saving business and reenergize me for the work ahead."



It is individuals like Paul that have pushed NFSA and our industry to be what it is today, and as a younger individual in this industry, it produces a deep sense of gratitude and appreciation in me.

Until next time,

Caleb

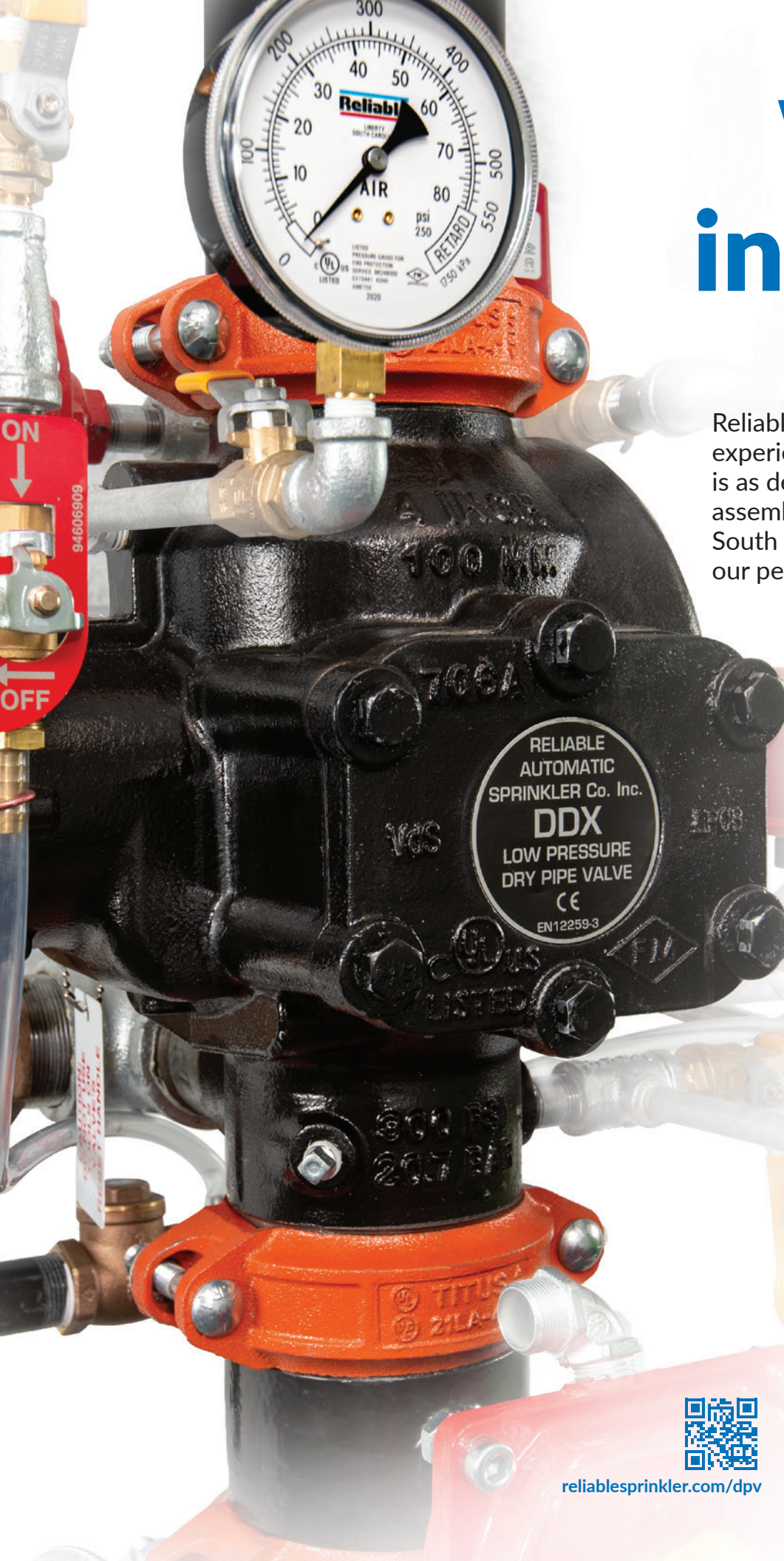
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4", 6"	300 psi	•	•	•
8"	250 psi	•		•



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Valve Size	Pressure Rating	End Connections		
		GxG	FxG	FxF
2"	250 psi	•		
2-1/2", 3"	300 psi	•		
4", 6"	300 psi	•	•	•



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FIRE SPRINKLERS IN ACTION

St. Louis

Single Sprinkler Controls Apartment Fire



On March 24th, St. Louis Firefighters responded to an apartment complex to find that a fire sprinkler had controlled a fire before their arrival. A resident had put shopping bags on the stove, not realizing that a burner had been left on. NFSA member Boyer Fire Protection of St. Louis had installed the system and service technician Dan Love responded to the emergency service call.

The sprinkler was quickly replaced, and the system was back in service. “It’s critical that systems like these have regular inspection, testing and maintenance that ensures that the system works in an instant. A big part of the inspection includes verification that spare sprinklers are on hand to replace the used one,” said Kathleen Balch of Boyer Fire Protection.

Virginia, MN

Sprinkler Save at Retrofitted Apartment Complex

Thank you to Virginia, MN Fire Marshal Chris Clark for sending in this sprinkler save.

On Sunday March 28, 2021 at 1317 hours Virginia Fire Department responded to the Ivy Manor apartment complex for a water flow alarm and detector activation in an apartment. Upon investigation, it was confirmed to be a cooking fire and was extinguished by the fire sprinkler system. No injuries reported and only one tenant was displaced.

This is the third sprinkler save in two years and the second in four months at this complex.

The Ivy Manor was retrofitted for sprinklers in January of 2017 as part of a multi-million renovation project. It is noteworthy that this building is a 42-unit, three story complex with basement units. While Virginia Fire Department has maintained an aggressive cooking fire prevention campaign two of the three fires

were stovetop cooking and were related to impaired and distracted cooking with oil.

This event being in a low-rise building supports recent proposed legislation in Minnesota for sprinkler installation for High-rise buildings. It also the mission that ultimately sprinklers do save lives and property and serves as a reminder despite the water damage occurring on all levels and mild concentrated fire damage in the unit, this building remains valuable and operational. Comparatively fire damage is difficult to clean or repair if sprinklers were not in this building the building integrity and damage would have been devastating not to mention the high risk of injury or death that could have occurred.

Thank you to Assistant Chief Steven McDonald of the Fort Bend County, TX Fire Marshal’s Office for sending us the following three sprinkler saves!



Fort Bend County, TX

Fire Sprinklers Extinguish Fire in an Apartment “Sprinklers Save Lives”

On April 21, at approximately 3:49 am, investigators from the Fort Bend County Fire Marshal’s Office were dispatched to the scene of an apartment fire. Upon arrival, investigators discovered

that a fire had occurred on the patio of a residential living unit. It was determined that the resident smokes cigarettes in this area and had done so before going to bed a few hours earlier. The fire was controlled with one single sprinkler activation. There was minor heat damage to the adjacent area. No other units were affected by this fire.

Fort Bend County, TX

Single Sprinkler Controls Dryer Fire



Investigators from the Fort Bend County Fire Marshal's Office were dispatched to the scene of an apartment fire with Richmond Fire Department. Upon arrival, investigators discovered that a fire had occurred in a clothes dryer in the laundry closet of a residential living unit. The fire was controlled with the single head activation and there was minor heat damage to the adjacent area. No other units were affected by this fire.

Fort Bend County, TX

Single Sprinkler Controls Kitchen Fire



On April 20, at approximately 12:56 am, investigators from the Fort Bend County Fire Marshal's Office were dispatched to the scene of an apartment fire with Stafford Fire Department. Upon arrival, investigators discovered that a cooking fire had occurred in the kitchen of a residential living unit due to unattended cooking. The fire was controlled with the single head activation and there was minor heat damage to the adjacent area. No other units were affected by this fire.

Tomball, TX

Fire Sprinkler System Extinguishes Kitchen Fire

Thank you to Tomball, Texas Assistant Fire Chief – Fire Marshal Joe Sykora for sending in this sprinkler save!

On Monday, April 26, 2021 at approximately 7:26 pm, the Tomball, Magnolia, Cypress Creek and Klein Fire Departments of Texas responded to a report of an apartment fire at a 103-unit independent senior living complex in in Tomball.

The first arriving Tomball unit encountered a large volume of smoke in a third-floor apartment. One elderly victim was rescued from the apartment by fire crews after falling while attempting to exit the structure. Upon further investigation, crews found a cooking fire that had been extinguished by the fire sprinkler system. One resident was transported to a local hospital for further evaluation. Assistant Fire Chief and Fire Marshal Joe Sykora said, "Firefighters were able to quickly rescue the occupant due to the teamwork of our dispatchers relaying critical information to fire crews prior to their arrival. The fire was quickly extinguished by an activated sprinkler."

The Tomball Fire Marshal's Office responded to the scene to investigate the cause of the fire. Investigators determined that the fire was caused by overheated cooking grease on a residential stove.

Maple Grove, MN

Sprinkler Save at Grocery Store

Thank you to Jon Nisja, Fire Safety Supervisor, Minnesota State Fire Marshal Division for reporting this sprinkler save!



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Fire Sprinklers in Action

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This fire sprinkler save in a commercial kitchen within a HY-VEE supermarket shows the need to ensure all systems are maintained. Deputy State Fire Marshal Ralph Peterson III reported, “The details so far point toward a lack of semi-annual testing of the hood suppression system, which is required by Code. This is exactly why buildings are fire-sprinklered throughout, with or without other internal fire safety measures. Fire sprinklers never sleep. Add this to the history of successful sprinkler saves. This HY-VEE will be back in business in less than five days probably – only because the building was fully fire-sprinklered to begin with.”



According to Deputy State Fire Marshal Jon Nisja, “The cooking line was shut down and remained down for several days. The rest of the food court was open very soon after the fire. The grocery store itself remained open during the incident.” This fire is proof that all systems need to be maintained, but fire sprinkler systems are always on duty.

Nuts and Bolts:

Date: Tuesday, 4/13/2021
Location: Maple Grove HY-VEE
Area of Origin: Fire in commercial kitchen
Equipment Involved: Wok
Protection Involved: System protecting hood (did not discharge); sprinkler protection outside of hood (did activate)
Scenario: Two fusible links melted but did not activate system. Manual pull station was activated by employee; cable broke. Single sprinkler outside of hood activated and controlled the fire until the fire department arrived.

Northglenn, CO

Single Sprinkler Saves Apartment Building

Thanks goes to Division Chief Steven Gosselin of the North Metro Fire Rescue District in Colorado for sending us this sprinkler save!

On March 28th, North Metro Fire responded to a fire in Northglenn, CO. Crews arrived to nothing showing and a report from a party on scene of an active sprinkler in the bedroom of an occupied apartment. The crew confirmed water flowing from a single fire sprinkler and found a small, fire sprinkler-controlled mattress fire.

The fire had been extinguished by the single activated sprinkler without fire extension out of the room of origin. Firefighters assisted with water mitigation in the unit until a facility representative arrived. The fire was determined to be caused by an unattended curling iron left on the mattress. The apartment building's fire sprinkler system prevented significant fire and smoke spread and the fire damage that did occur to the apartment was minimal.

Antioch, IL

Single Sprinkler Saves Business

Thanks to Antioch, IL Fire Inspector Joe Schimanski for reporting this sprinkler save!



This was a very unique call. The call came in as a fire alarm. When the crews entered the building, they were hit with black smoke and a lot of water on the ground. The fire was in the corner next to the washer and dryer. The sprinkler that activated was right by the washer. The heat and flames traveled about four to five feet. Then the fire activated the sprinkler, and it was all over from there.

One sprinkler put out the fire and saved around \$800,000 worth of equipment. Business reopened two days later. Most of the damage was dry wall and replacing the lines for a new smoke alarm and replacing the sprinkler head. No water damage to any of the machines in the business or fire damage. The sprinkler did its job. Speaking to the owner, he was not a believer in the sprinkler system. He states he is now. Without the sprinkler, the entire building and Apartment next door would have been a total loss.

Nuts and Bolts:

Date: Sunday, 4/04/2021 at 21:55am
Business name: High Performance Racing
Cause of fire: Oily Shop Rags. Spontaneous combustion
Number of sprinklers activated: One
Any injuries: None
How long until business reopened: Two Days
Damage estimate: \$1,000.00

continued from page 34

Plainfield, IL

Single Sprinkler Extinguishes Apartment Kitchen Fire

Thank you to Mary Ludemann of the Plainfield, IL Fire Protection District for sending in this sprinkler save!



On April 1st, just before 4 pm, a 9-1-1 call was placed to the Plainfield Fire Protection District for a kitchen fire. Upon arrival all occupants of the apartment had safely escaped when the smoke alarms went off and the fire was extinguished by a single fire sprinkler.

The fire had started in a pan of oil heating on the stove and spread to the microwave and cabinets above the stove before being extinguished by the sprinkler. The fire sprinkler system kept the fire from spreading throughout the kitchen and firefighters assisted with smoke removal and water cleanup upon arrival.

Firefighters credit the quick thinking of a teenage occupant who made sure everyone heard the alarm, waking up a sleeping sibling and getting everyone out of the apartment and calling 9-1-1.

Cecil County, MD

Sprinkler Save on Apartment Balcony

Thanks to FPE Derek Chastain for providing the photo.

Apartment building in Cecil County with residential sprinklers under an exterior combustible balcony. The sprinkler system controlled the fire and prevented serious damage and injuries. •



Farmers Branch, TX

Single Sprinkler Extinguishes Apartment Fire

Thanks to Captain Scott Burke of the Farmers Branch, TX Fire Department for sending us this sprinkler save.

On March 29th, at approximately 6:30 in the evening, a single fire sprinkler extinguished a fire inside a Farmers Branch, Texas apartment. The fire started when movers placed combustibles on a stovetop, either unaware the stove was on, or by turning it on accidentally during the move. The combustibles ignited and activated the building's fire sprinkler system. The four-story, 250-unit apartment building is estimated to have sustained \$1500 in fire damage. There were no injuries. •

An advertisement for 'Smart Monster' featuring a firefighter in the background. The text reads: 'FLOW SMARTER, NOT HARDER.' The logo for 'SMART MONSTER' is shown, with a flame icon above the word 'SMART'. Below the logo, the text says: 'We're coming to Las Vegas for the NSFA Expo, and we're not coming alone. This is your chance to check out our industry-leading flow testing equipment, including our revolutionary cloud-based digital behemoth: Smart Monster. Visit us Oct. 5-7 at Booth 42. HOSEMONSTER.COM'.



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NFPA 25 - 2020 Edition Updates and Changes

by Vince Powers, *NFSA's ITM Specialist*



This article will focus on many of the changes to the 2020 edition of NFPA 25, *The Standard for Inspection, Testing, and Maintenance for Water-Based Fire Protection Systems*. It will focus on Chapters 3 through 16, and will not identify every change to the standard, but will outline some of the significant changes to the 2020 edition. Though, there are only a handful of frequency changes in the 2020 edition of NFPA 25; there are many changes and additions

throughout the standard.

Before getting into the specific NFPA 25 changes, let us look at how the NFPA indicates changes that were made. These indications are the same when using any NFPA model code or standard:

- Changes to figures or tables will have a shaded Δ . This symbol will also be placed throughout a chapter where it has been heavily modified.
- New sections, figures, and tables will be indicated by a bold, italic *N* in a gray box to the left of the new material.
- Deleted sections will have a bullet point (•) between the sections remaining.

Chapter 3-Definitions

There are four new definitions that have been added to Chapter 3.

1. **3.3.3 Automated Inspection and Testing.** This new term defines automated inspection and testing from a distant location and allowing devices to report status.
2. **3.3.26 Lowest Permissible Suction Pressure.** This is an extract from NFPA 20 and is regarding the lowest permissible suction pressure at the fire pump suction flange.
3. **3.3.42.6 Electrically Operated Sprinklers.** This term is relatively new to the industry and provides the definition of an electronic sprinkler.
4. **3.6.2.12 Variable Speed Pump.** While this term is not necessarily new to the industry it defines the variable speed fire pumps.

Chapter 4-General Requirements

There are about a dozen changes in Chapter 4. The following are just a few of the highlights from the owner's section, 4.1.

1. **4.1.2.2** - States that pipes that are outside of the building

envelope or in unconditioned spaces that are not subjected to freezing do not have to be maintained at 40°F.

2. **4.1.2.5** - Makes the owner responsible for conducting daily checks for pre-action, dry, and deluge valve enclosures to ensure they are at a minimum of 40°F.
3. **4.1.2.5** - Makes the owner responsible for changing out equipment that is recalled or under a replacement program identified by the owner's maintenance person(s), contractor, or representative. This was originally in Chapter 5 of the standard. It was then moved to the annex in the 2011 edition and now has moved into the owner's section.

Chapter 5-Sprinkler Systems

There are not many changes in Chapter 5. One of the notable ones is the change of testing dry sprinklers from 10 years to 15 years. The inspection and testing requirements for electrically operated sprinklers were added as well.



Chapter 7-Private Fire Service Mains

There are a few additions for the inspection of dry hydrants. This is not to be confused with a dry barrel fire hydrant. Dry hydrants are what the fire department connects to in order to draw water from ponds and cisterns.

Chapter 8-Fire Pumps

There are several changes that have been made to Section 8.1. The new minimum requirements address conducting inspections within the fire pump controller without opening an energized controller as well as other inspection requirements that deal with the

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diesel batteries, such as clean the terminals, test the specific gravity, and ensure that only distilled water only is used. In previous editions the requirements were only to check these items.

Several sections were added to the end of Section 8.3, which now provides the minimum testing requirements of remotely monitored automated testing.

Section 8.3.3 addresses annual flow testing. This section has four new sections. One of these new sections contains the requirement to flow a variable speed fire pump at seven points. These points are: no-flow (churn), 25%, 50%, 75%, 100%, 125%, and 150% percent of the rated pump flow capacity. Once that is complete, it is then required to bypass the variable speed option and flow the pump at the traditional three points of no-flow (churn), 100%, and 150%. These new sections require the conducting of two flow tests.

In Section 8.3.7.2.3, the requirements for evaluating the fire pump test results were modified. In the 2017 edition, Section 8.3.7.2.1 was added. This section stated that the velocity and pressure must be adjusted to determine compliance with section 8.3.7.2.3(2). However, when the changes were made to this section in the 2020 edition, the subsection (2) should have been changed to subsection (3) but was missed. Technically, with this oversight, the speed and velocity cannot be adjusted to determine compliance. The NFSA will be submitting a tentative interim amendment (TIA) to correct this.

Below is a link that explains what a TIA is and the process for submitting one.

<https://www.nfpa.org/Codes-and-Standards/Standards-development-process/How-the-process-works/TIAs-Errata-and-FIs>

One of the last notable changes is in Section 8.3.7.2.4 (3). It states that failure to provide maximum system demand shall be deemed an impairment, while subsection (5) states that degraded performance that provides system demand shall be considered a noncritical deficiency.

Chapter 9-Water Storage Tanks

Only two notable changes were made to Chapter 9. The first change that was made is that the water level is required to be verified through the level indicator, where provided. The second change is that the tank is required to be at full or the designed water level. In many cases the designed water level will probably not be available for inspection, but in cases where it is, this section can save the owner from an unnecessary deficiency.

Chapter 10-Water Spray Fixed Systems

Several changes in the wording of this chapter but there were no significant changes to this chapter. However, if conducting inspection, testing, and maintenance (ITM) on these systems, the changes in this chapter will affect the ITM business.

Chapter 11-Foam Water Sprinkler Systems

There are only a few additions to this chapter. There was a change regarding where to send foam concentrate samples in Section 11.4.2. There are two new sections for hydrostatically testing bladder tanks under the maintenance Section 11.4.5.

Chapter 12-Water Mist

This chapter was heavily changed and modified. This chapter was essentially re-written and an entire blog could be written just on the changes to this chapter. For that reason, this article will not call out any specific changes and will suggest that anyone conducting ITM for water-mist systems thoroughly familiarize themselves with the changes.

Chapter 13-Common Components and Valves

Two of the most notable changes to this chapter is the addition of time requirements for testing electric and mechanical alarm devices. It is common knowledge that a waterflow switch should operate in ninety seconds, but it was never a requirement in NFPA 25. The committee also added the five-minute requirement for the operation of a water motor gong. Also, ITM for Nitrogen generators was added to the air compressor section.

There are no notable changes to the remaining chapters, but there were many new additions to the annex sections as well as changes to the wording throughout.

Often there are frequency changes from edition to edition of NFPA 25, and there are a few to the 2020 edition and knowing these changes is important. Knowing what tasks were added or deleted and the changes to any of the processes of these tasks is as or more important than knowing how often something needs to be completed. As an ITM or service manager, it is imperative that when

a state adopts a new edition of NFPA 25; that everyone that is conducting these tasks know what changes were made to protect the company and ultimately to ensure that the proper ITM service is being provided to the building owner. •



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*University of Strathclyde. "Research raises concerns over smoke detectors' effectiveness in waking children." ScienceDaily. ScienceDaily, 27 June 2013.

NFPA Code 770 Implementation Provides Long-Awaited Standards for Hybrid Fire Extinguishing Systems

by Bob Ballard

Hybrid fire extinguishing systems appeal to guardians of data centers, electrical equipment, laboratories, or even precious artifacts in museums and libraries due to their ability to extinguish fires quickly and limit damage to vital assets. The need for such advanced systems – which efficiently deliver a cloud of atomized water and nitrogen – and the speed of commercial adoption meant they made it to market before fire safety industry codes were officially adopted.

Following the emergence of this new fire protection technology, and with the support of the National Fire Protection Association (NFPA), hybrid extinguishing experts recently collaborated on uniform and minimum standards by which to follow when working with a system of this sort. Thus, NFPA 770 – *Hybrid (Water and Inert Gas) Fire Extinguishing Systems* was created, finalized, and officially adopted in 2020.

Now recognized as the industry standard, NFPA 770 was developed to provide a straightforward guidance for companies that are purchasing, designing, installing, testing, inspecting and maintaining hybrid fire extinguishing systems. The standard became official after a years-long development and review process which acknowledged early on that such hybrid systems were already commercially available from manufacturers.

Hybrid fire extinguishing systems are becoming more prevalent and are used in a variety of settings, including: archives, vaults, uninterruptible power supply systems, cable ducts and false floors, and storerooms containing flammable liquids. These systems are also used to protect special hazards found within metal processing facilities, wet benches for the semiconductor industry, and electrical system equipment, such as turbines, closed transformers and generators or even combustion, steam, and hydroelectric equipment.

End users rely on hybrid fire extinguishing systems to perform as expected and extinguish fires when called upon. For instance, the Museum of the American Revolution in Philadelphia houses George Washington's War Tent in a room protected by the Victaulic Vortex™ Hybrid Fire Extinguishing System (Vortex). Museum settings such as this, that display some of America's most prized history, require the utmost confidence and, by extension, standards. To help ensure reliability, NFPA 770 provides the guidance to design, install, inspect and maintain these types of systems.

While standards already existed for mist fire suppression systems (NFPA 750), and for systems with clean agents (NFPA 2001), the industry needed a standard to specifically address hybrid fire extinguishing systems. The standard provides the minimum requirements for systems that use a combination of atomized water and inert gas to extinguish fires.

Hybrid fire extinguishing systems are increasingly popular, and as these system designs are augmented and improved, they will find utility in an even broader range of applications. NFPA 770 establishes a guideline, allowing hybrid systems to be used with confidence in existing and new applications. It constitutes an important update to the NFPA codes and standards, paving the way for the safe proliferation of advanced fire safety system technology.

NFPA codes and standards help to eliminate death, injury, property and economic loss. These codes are created and written by experts in the fire protection industry in tandem with listing agencies to provide the public with safe standards that outline products for their intended use.

Hybrid fire extinguishing systems differ from other fire protection systems, like clean agent or water mist, that may employ the use of inert gas to propel fluids through a piping network. Instead, hybrid fire extinguishing systems combine the benefits of inert gas and water mist to extinguish fires and prevent re-ignition. The gases are non-toxic and non-ozone depleting. NFPA 770 also provides definition for hybrid fire protection systems, specifying a more precise range for the water droplets to ensure the effectiveness of the systems from different manufactures.

NFPA 770 refers to the use of a flooding factor where each manufacturer evaluates their system to determine the minimum quantity of hybrid media to be used for the desired application. The hybrid systems may be used to protect specific special hazards as a local application or more broad hazards as a total flooding application. The results of this testing can sometimes demonstrate that fires may be extinguished with as little as .25 gallons per minute. With NFPA 770 providing guidance for 3-minute discharge, the risk of over pressurization and water consumption is minimized.

With any new technology, it is important to understand the science behind it. Hybrid systems are no exception, having spent nearly six years of development and testing before the first Approval

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Standard, FM 5580, and another decade until the release of NFPA 770 all the while building technology and use expertise.

Although most product testing occurs in laboratories at fixed locations, a portion of this testing included the use of a mobile laboratory which was used to evaluate and validate the effects of change in elevation on the performance of the system. Over 150 fire tests were conducted at elevations ranging from 10,000 ft, 6,000 ft, and 500 ft above sea level. The lab was enclosed in a 40-foot cargo container on a tandem-axle gooseneck trailer towed by a heavy-duty pickup truck. This took testing to new heights, literally.

The inside of the cargo container was set up with various burn materials and the system was allowed to discharge until the fire was extinguished or the discharge scenario completed. Data and video of the test were collected, including time to complete extinguishment, amounts of hybrid media required for extinguishment, and oxygen levels at extinguishment. When re-ignition studies were conducted, re-ignition was attempted every minute for 10 minutes after extinction and 10 minutes after end of discharge.

Following each test, the enclosure was completely ventilated before the next test was started. Free burns without extinguishment were conducted at each elevation to establish baseline burning behavior. More than 150 tests were conducted for the project over a period of about three months and the data informed the development of NFPA 770. The analysis showed the presence of water in the hybrid media provided tangible benefits in extinguishing performance over inert gas systems. These results contributed to the formulas found within NFPA 770.

The extensive testing of this innovative technology reinforced the specifics of why NFPA 770 was written and those details guide fire protection system providers when deciding how to design, install and properly maintain fire extinguishing systems. As hybrid systems continue to evolve, so too will the standards. We can expect to see new approval standards with agencies around the world, and as the demand for new applications continue, the NFPA standards will continue to undergo revision every three years. •

Bob Ballard is the Director of Fire Suppression Technology at Victaulic. Bob served on the NFPA Code 770 Technical Committee.



The Victaulic Vortex™ hybrid fire extinguishing system mixes nitrogen with atomized water particles, attacking the oxygen and heat legs of the basic fire triangle to suppress and extinguish.



George Washington's War Tent at the Museum of the American Revolution in Philadelphia is protected by the Victaulic Vortex™ Hybrid Fire Extinguishing System.



The mobile testing lab deployed during the development of Code 770 reached new heights for testing at different elevations.

A Public/ Private Partnership for Life Safety

by Tom Brace

This article represents the opinions of a former State Fire Marshal who works part-time with the National Fire Sprinkler Association. Opinions expressed represent only the author's viewed from his position as a strong sprinkler advocate.

There are private organizations that have a high percentage of former public employees. An example would be private national/international security firms that have former military members working for them. Many local security firms have former law enforcement in various positions in the company. Sometimes, the individual may go back and forth between public and private. A case in point was a polygraph operator who was full-time in the public sector and yet did work beyond his principal employer. Another example would be firefighter/EMTs who are employed by agencies who provide Emergency Medical Services to concerts, sporting events, and other public events.

Sometimes the local fire official is concerned when someone representing the private sector approaches them for information. Others evaluate the person on a case-by-case basis and decide. Recently, I was collecting data on high-rise residential buildings for a piece of legislation and having trouble getting the detail that I needed. I talked to the local chief and he could tell me, from memory, several of the locations. Their pride in answering my questions was really appreciated. They wanted their city correctly counted.

The whole issue of third-party inspections could be a stand-alone paper, but once again the local public official chooses a private sector company to collect data on their behalf. Several former fire service members have worked for some of these private sector groups.

If one reviewed the roster of employees at NFSA, you would find a tremendous number of former fire service professionals. In some cases, you would find some employees still on volunteer departments. This is not to say that one must have a fire service background to work for the organization. It merely draws the reader's attention to the fact that fire expertise has been a factor in at least some hiring decisions. This representation is found in the highest levels of the association, and also throughout the organization.

For example, the Minnesota Team is made up of Tim Butler, who served 10 years as the Fire Chief of St. Paul, Joel Hewitt, who has been the fire chief of five Minnesota Departments with over 43 years of service, and Tom Brace, who served the State of Washington and the State of Minnesota as the State Fire Marshal. These

backgrounds are found in some manner in most of the Field Ops Staff. Headquarters also has significant examples of distinguished Fire Service backgrounds.

These men and women bring a public sector experience to bear in a private sector arena. What is critical in this discussion is these employees are here because they believe and support the mission. They did not take their experience and shelve it. They are using their training in a different but no less valuable role. This is not the driveway coating association or the aluminum siding association, but the National Fire Sprinkler Association. We are selling life safety and we have wonderful members making, installing, and maintaining the product.

Our members have a special responsibility as they are associated with a product that saves lives and property. If it does not work correctly, people can die. NFSA, through its many resources and training, can help our members to do their job well. In addition, whatever profession you are in, most people want to do their part and not let others do the heavy lifting. Once again, the various fire service backgrounds come into play at both the local, state, and federal level to advance the sprinkler industry and the sprinkler concept.

Our future is built on partnerships and collaborations. The days of our organization being known as a "Trade Association" are long past. NFSA is the leader in the Sprinkler Industry and is playing a significant role in the organized fire service. We are no stranger to developing partnerships, and the Fire Service is just one of the examples. It appears to the author that we will partner with almost anyone who believes in our mission and participates in the expansion of it.

In conclusion, I wish to be clear that we also have men and women in our Association that do not have a fire service background that contribute tremendously toward our Mission and the success of it. The author wishes to respectfully point out that the Fire Service connection is especially strong and there is a symbiotic relationship between the public fire service and the premier sprinkler advocate-The National Fire Sprinkler Association. •



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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'll support our team as an Advocate, Supporter or Corporate member (details on reverse side, along with form).

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FOX & friends

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30 Day Yoga Challenge – Here’s What I Learned

*Previously published in
The Republican, Springfield, Mass.*

by Elizabeth Lafond Coppez

On day one, I took the pledge for myself. I took a deep breath, cleared a space on the carpet amidst wooden train tracks and barbie dolls, and got on the mat.

My body feels so rigid – full of tensions and stresses from this pandemic, trying my best to give my kids some normalcy in this strange world.

I hit “play” on the Yoga with Adrienne YouTube channel, and key in on her voice. She says, “Forget what you know about yoga and find what feels good.” So, I begin my 30-day yoga journey and learn more than I thought.

Adriene Mishler lives in Texas with her beloved dog, Benji, and she started offering free yoga classes on her YouTube channel in 2012. Today, she has over 9 million subscribers, and she’s become a worldwide yoga sensation.

Adriene’s latest free yoga program is called, “Breath,” and each day is dedicated to something special, like, “believe,” “trust,” “heal,” “expand,” and “rejuvenate.” I’m suddenly hooked.

By day three, my palms are sore, and the backs of my legs feel like they are slowly unraveling. The first few practices are gentle, yet effective. Adriene encourages proper form and paying attention to the breath. Her mantra is, “my breath is my anchor, and my anchor is my breath.”

On day four, I feel taller. It’s amazing how much tension we hold in muscles, from abnormal sleep poses, to sitting at a desk. The wrist stretches really showed me how much tension is held there from typing or holding a phone or iPad, something we are all guilty of doing daily.

On days six and seven, there are many poses for core strength, and opening in the shoulders. While making my bed on day eight, I noticed the absence of tightness in my lower back and hamstrings while reaching. Most days after a yoga practice, my legs have that delicious “shake” from unraveling all the worries from 2020.

During a family nature walk at a local park, I slip on ice and it leaves me in a very low lunge. I jump up quickly and was appreciative for my agile muscles, thanks to this yoga.

By day 12, I do a downward dog and suddenly realize there’s space in my lower calves. I can almost bring my heels to the floor! It was a strange and wonderful feeling, although foreign. Low lunges were suddenly easier, and the tightness in my hamstrings was not as noticeable.

Adriene says, “Breath in and give yourself some love. Love your body...it’s the only one you’ve got.” Like a flash of lightning, I realize that I need to appreciate this body I have. It has created

children, it cares for my family, it keeps our house clean, cooks nourishing food, and the list goes on.

This yoga is making me realize I must appreciate what my body can do for me and others. And, wow, downward dog with my heels touching the floor? That’s an accomplishment!

On day 13, my muscles are quite stuck. I feel so much tightness in my neck and shoulders. The needle pose helps. I recognize my tension is from the stress of managing two remote learning schedules with disengaged children who just want to be kids and play outside.

I hear myself talking, and I sound like a nagging monster! “You have a lot of work to do,’ ‘Let’s focus,’ ‘Did you finish yet?’ It’s all so terrible.

I take deep breaths. Will this matter a year from now? Will my daughter ‘catch up’ to the proper level according to state standards? Will this impact her learning ability for life?

Grace will be ok. She will learn to enjoy reading. She’ll understand word problems and increase her vocabulary. This current pandemic life is just a hiccup if you look at the big picture.

This strange time is certainly significant, and it’s not easy, but we will be okay. Back on the mat, my calves release slightly...my side body stretches further. Maybe tomorrow will be easier.

Day 23 is a typical cold New England day, and we’re stuck inside. My yoga practice keeps getting pushed aside, but I refuse to go to bed without this essential stretching. Afterwards, my mood is lifted, and I feel so accomplished! I put my needs before my excuses.

On day 27, I crave yoga as soon as I wake up. My muscles are begging to stretch and move – suddenly I need yoga like my body needs water and fresh air.

Day 30 arrives, and I did it. I made it to the yoga mat every single day for 30 consecutive days.

This journey taught me some lessons, and the most important is this: I have the power to make time for myself. Even during this tricky pandemic world, with two very active kids navigating through changing learning models, a busy, new business-owner husband, and my own work projects, I made getting on the mat a personal priority. And everything was okay.

My big take-away from this journey is simple. Why stop at 30 days? I pledge to keep going! A daily visit to my yoga mat is a gift for my health, and a gift for my family. I feel much calmer amidst this tumultuous world of uncertainty, and for that, I am grateful.

*Give it a try for yourself. I promise, you won’t be disappointed.
Namaste. •*

These Incentives Improve Community Safety and Provide Developer Savings

In exchange for installing home fire sprinklers in entire developments, authorities having jurisdiction can offer locally negotiated trade-ups as incentives to developers. These incentives may include:



- Street-Width Reduction
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- Increased Street Grades and Building Setbacks
- Additional Units Permitted
- Expansion of Existing Water Supply May Not Be Needed
- Increased Hydrant Spacing
- Subdivision Single Access Point
- Gated Communities

HOME FIRE SPRINKLERS PROTECT THE ENVIRONMENT*

Reduce greenhouse gas emissions by 98%

Reduce fire damage by up to 97%

Reduce water usage to fight a home fire by as much as 91%

Reduce water pollution

* Environmental Impact of Automatic Fire Sprinklers, FM Global, 2010



For more information about home fire sprinkler incentives, including case studies, video testimonials, fact sheets and NFPA 13D information, visit our website at HomeFireSprinkler.org/crr.

Home Fire Sprinklers: A Win-Win for Your Entire Community

Home fire sprinkler incentives can reduce construction costs, while protecting residents and firefighters, and help to protect the environment.



The Power of the Bodycam

In recent years, the undeniable power of bodycam video has become a dominant force behind what many say is long-overdue reform of local police departments across our nation. Depending on the content, it has the power to invoke deeply emotional responses from viewers of footage obtained during police activity. It even has the power to affect legislation and influence court decisions. Like it or not, the use of bodycams has changed the way many police departments police their cities.

While searching for news stories about fire sprinklers to post on social media, I came across police bodycam video of a different kind. One that truly gave me pause, and even after 15 years as an NFSA team member, reinforced the realization of the importance of our mission, “to protect lives and property through the widespread acceptance of the fire sprinkler concept.” After more than 10 years managing NFSA’s social media accounts, I must admit that it’s kind of hard for me to have an “oh, wow!” moment while sifting through sprinkler saves and the messes created in unsprinklered fires. Don’t get me wrong, I still get a thrill when I find a good save in my Google alerts, but it’s because of the affect I believe it will have on our audience. After all, I know the difference fire sprinklers make in a fire. However, yesterday afternoon I got something in those alerts that truly affected me.

The headline wasn’t great; *VIDEO: Blue Ash Firefighters Rescue Man from Nursing Home Fire*. Was it sprinklered? I had to watch the video to find out. What I saw touched me so deeply, that after all the years of knowing the difference fire sprinklers make between living or dying in a fire, I had that “aha” moment that happens too rarely for this seasoned fire sprinkler advocate.

The fire began in one room of a nursing home in Blue Ash, Ohio. One male occupant was in the room when the fire erupted. A police officer arrived on scene with his bodycam rolling, and what I watched, I’ll never forget. People standing outside the nursing home were visibly upset and tell the officer there’s a resident in a room with a fire. As the officer runs towards the building, he sees a group of people standing outside a window screaming. As I watch the video, I notice there is no visible smoke or flames coming out of the window. “It must be sprinklered,” I say to myself. As the officer gets closer, I hear it. That sound we all know so well, spraying water. As he rips away what’s left of the window, we get a look inside. There it is: the spray from an activated fire sprinkler. No flames, little smoke, some steam, and one hell of a great sprinkler save. As the officer peers into the room, we see the occupant huddled on a bed, unharmed. The officer asks if he is okay. The crowd outside is still screaming. The officer turns to them and says, “He’s alright. There’s no fire.”

Those five little words, “He’s alright. There’s no fire,” have been playing in my head over and over since I first saw the bodycam

video. Wow! This is why we do what we do. How I wish I could get everyone to watch this video. If this now seasoned fire sprinkler veteran could be so affected by what I saw, just what would it do for people who never witnessed or thought about what we like to call the *#fastestwater difference*?

“You’re going to be a little wet, buddy, but we’ll get you out of here.” At that point, about three minutes after the bodycam video started, the fire department arrived. The officer peers through a window at an adjoining room and sees that it is untouched by fire. We all know what could have happened in those three minutes if the building was not equipped with a fire sprinkler system.

I hope that by the time this article is published the bodycam video is still available to view. I’d like you all to take three minutes of your time to watch. I know you will pause after viewing and have a renewed sense of purpose and pride in what we all do. Please share this priceless example of a real-time sprinkler save. There are no words to sufficiently convey the power of this bodycam video... none. • bit.ly/fastestwater1

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NFSA Conducts Successful Research Burns

Conducting live fire demonstrations and sharing with government officials, firefighters, and the public is one of the most effective means of educating and advocating for fire sprinklers.

NFSA had a unique opportunity to conduct fire tests and fire demonstrations in acquired structures slated for demolition because of a highway project. We conducted a series of six burns during the day with over 70 observers. We set up scenarios that compared modern fire sprinklers with legacy fire sprinklers, fire sprinklers in the basement with modern and lightweight construction features, some protected with drywall, and other parts with fire sprinklers. We also burned a small building in a commercial setting with an NFPA 13 system, including attic protection. We let the fire go to flashover with the fire sprinkler system turned off and then allowed the fire department to supply the FDC (fire department connection).

The results of all the burns will be presented at our conference in October by NFSA Director of Contractor Services Mike Joanis, P.E. and our staff Fire Protection Engineer Jeff Dunkel, P.E.

The old fire sprinkler and the new fire sprinkler both con-

tained the fire to the room of origin, and the one without a fire sprinkler lead to total death and destruction. The basement tests were successful. Flashover was prevented in the area protected with fire sprinklers. The demonstration of pumping the FDC amazed both us and the firefighters, from the newest recruit to the most experienced fire officer. With a burn time of over eight minutes with no water supply to the fire sprinklers and temperatures well over 1200 degrees F, supplying the FDC by the FD immediately contained the fire and dropped temperatures to below 300 degrees F.

A special thanks to the State of Tennessee, Pleasant View Fire Department, Ashland City Fire Department, and the Brentwood Fire Department for giving us this opportunity and allowing us to train and demonstrate. None of this would have been possible without an amazing NFSA staff, which included Brian Biggs, Marty Blackwell, Tobi Hunter, Gary West, Mike Joanis, Jeff Dunkel, Dennis Wood, Vickie Pritchett, as well as our photo and video team of Josh Crandall and John Buckman. •



CHAPTERS IN ACTION

Florida

FFSA Attends Future Builders of America Leadership Summit

The Florida Fire Sprinkler Association had the great honor of participating in the Future Builders of American Leadership Summit in April. Among the trades represented were Masonry, Electricians, Landscaping, Pool Construction, Welding, Roofers, Carpenters, HVAC, Green Building and, for the first time ever, Fire Sprinklers!

The week opened with a side-by-side fire sprinkler demonstration. Everyone at the summit, including all trade organizations and students, attended the demonstration, which was supported by the Polk County Fire Department.

Many of the trade instructors had no idea how quickly a home and lives could be lost. The demonstration had a major impact on both students and instructors. The summit continued as students in small teams moved to the different classes. Each group of students first visited our classroom and then the NFSA fire sprinkler valve trailer for 75 minutes to get hands-on experience of a career in fire sprinklers. Dave Haney from Wayne Automatic Fire Sprinklers and Vince Powers from NFSA provided a window into our industry. This was a great experience and FFSA is already planning for 2022.



The Florida Fire Sprinkler Association featured on SEBC website in highlights of the 2019 Southeast Building Conference and are gearing up for the 2021 Southeast Building Conference, July 15-16 at Gaylord's Palms Resort and Convention Center. Come check them out at booth 615.



Texas

NFSA Texas Chapter- Winter Freeze Protection - Lessons Learned

The NFSA Texas Chapter hosted a panel discussion on May 12, 2021; with fire protection professionals who were directly impacted and responded to the historic winter freeze which affected Texas, Oklahoma, and Arkansas in February of 2021. The panel including Steve Rians of American Fire Protection Group, Van Fitch of JF Ahern Company, Dan Merritt of Reliable Automatic Sprinkler Company, Chief Ariana Kistner of Rockwall and the Texas Fire

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Marshals Association, Kelly Stalder & Ernest McCloud of the Texas State Fire Marshal's Office – all discussed best practices for best winter freeze design, installation, repair, and reporting.

Texas

COVID in the Rear-View Mirror and We Were Busy!

NFSA South Central Region and the NFSA Texas Chapter hosted 14 Amazing Virtual Meetings and Trainings from May 2020 to May 2021!

During the COVID Pandemic, over 185 new individual and company members joined the NFSA South Central region, thanks to our NFSA Texas Chapter Board chaired by Tate Hitzeman and Tyler Mobley, PE, and our outstanding NFSA Training Department and Expert Technical Staff including: the famous Ron Ritchey, Jeff Hugo, Andrew Bevis, Mike Joanis, Vince Powers, Terin Hopkins, Consultant Jeff Shapiro and guest panelists including: Rob Hicks, Ernest McCloud, Kelley Stalder, Ariana Kistner, Tate Hitzeman, Dan Merritt, Kim Denson, Kelly Kistner, Tim Ippolito, David Kerr, Greg Gordon, Laurie Christensen, Andrew Barr, Mark Savasta, Bruce Lambright, George Poli, Van Fitch and Steve Rians. Several of the following trainings were co-hosted with the Texas Fire Protection Association and the FSCATX – Fire Sprinkler Contractors Association of Texas.

Pumps A – Z: From Selection to Protection; FSCATX & NFSA
May 13, 2020, 11:45 a.m. – 1:00 p.m.

NICET, NFSA & Texas State Fire Marshal Licensing
June 17, 2020, 11:45 A.M. – 1:00 p.m.

IBC & NFPA Alternate Methods of Design
Wednesday, August 12, 2020

Remote Inspections - The Future is Here; Texas Fire Protection Association & NFSA A Panel Discussion on the new ICC Guide, NFPA 915 Standard and Texas AHJ Perspectives
September 16, 2020

What Does A Fire Survivor Really Want? Burn Me Once – Don't Burn Me Again.
October 15, 2020

Roles & Responsibilities in Fire Protection System Design
November 17, 2020

Is the Code Right? Code Requirements for Sprinkler Design Vs. Full Scale Fire Test TX & Texas Fire Protection Association
November 18, 2020

Construction Fires & NFPA 241 – NFSA Texas & FSCATX Joint Meeting
February 18, 2021

NFPA 13, 14, & 20 Updates
January 27, 2021

Understanding NFPA 25 ITM - 2020 Version
February 24, 2021

Storage Fire Protection
March 10, 2021

Fire Sprinkler Trade-ups in the IBC – NFSA Texas & Texas Fire Protection Association Joint Meeting
March 24, 2021

NFPA 14 – Standpipes for Fire Protection
April 14, 2021

Winter Freeze Fire Protection – Lessons Learned
May 12, 2021

Wisconsin

Wisconsin Chapter Promotes Home Fire Sprinkler Week

The Wisconsin Chapter of NFSA helped promote fire sprinklers during Home Fire Sprinkler Week (May 16–22, 2021) by running a media campaign utilizing the commercial developed by NFSA and the website firesprinklersbuylife.com. The campaign ran on three stations in the top media markets in Wisconsin – WBAYTV in Green Bay; WISCTV in Madison; and WITITV in Milwaukee. It was estimated that the close to 100 commercials reached at least 80% of the population in Wisconsin. The campaign also included outreach on those TV stations' websites and on social media.

Northwest

Northwest Area Chapters-Back to Reality!

Both the Columbia-Willamette and Puget Sound chapters resumed in-person meetings in June. Reliable Automatic Sprinkler's Technical Services Manager Dave Thompson gave an excellent presentation highlighting various dry, deluge, and pre-action systems available, including the recently introduced FX Dry Pipe Valve. Sprinkler flow & distribution patterns were also demonstrated. The chapters wish to thank Reliable's Northwest Team of Damon Cook, Mike Collett and Dave Thompson for this meeting and their ongoing support of the Northwest NFSA chapters.

The June meetings also had a special guest, Sprinklerman. This icon, developed in the Northwest by the Fire Sprinkler Advisory Board of Puget Sound more than 20 years ago, was sporting a redesigned outfit, complete with lighted sprinkler spray. Sprinklerman had to stay under wraps like the rest of us during the pandemic but is now ready to help spread NFSA's mission to promote the widespread acceptance of the fire sprinkler concept.

Both Northwest chapters will be planning the remainder of 2021 and 2022 meetings; please contact a chapter board member or Suzanne Mayr if you have ideas for speakers. •

Asurio, Inc. Announces A Series of Management Team Promotions

Jack Coffelt named General Manager & Laura Skidgel Named Manager of Forms & Technical Support

Asurio, Inc. announced two promotions on the Asurio team.

Jack Coffelt, a 30-year life safety industry veteran, who joined Asurio as the Business Development Director, has been promoted to General Manager. **Laura Skidgel**, who has served as the manager of Asurio's Forms Department, has been promoted to Manager of Forms & Technical Support.

"Both of these promotions are well-deserved, and Asurio is even stronger for placing these team members into their new positions," said Asurio President Top Myers. "We look forward to even more growth and capabilities to help our customers with Jack Coffelt overseeing operations and Laura Skidgel managing the Asurio forms department and customer support operations."

With more than 30 years of experience in the Fire Life Safety industry, Jack Coffelt brings extensive, practical knowledge across all the different Fire Life Safety Inspection disciplines – Fire Alarm, Fire Sprinkler & Fire Suppression Systems, Fire Pumps, and more – to his role as General Manager for Asurio, Inc.

Laura Skidgel brings decades of experience to the table for Asurio and its customers, both in the specifics of the BirdDog Life Safety Inspection System and in training and technical support skills.

In her role as Manager of Forms & Technical Support, she supervises Asurio's customer support technicians; manages staffing for Asurio's customer support operation; and manages the BirdDog Inspection System's continuing education program for customers.

Viking Appoints Regional Sales Managers

Viking SupplyNet announces the promotions of two long-time employees to Regional Sales Manager positions in the eastern United States. **Ted Collazo, III** will lead the sales efforts in the southeast while **Terry Laffey** will assume responsibility of the northeast.

Ted Collazo has been a Territory Sales Manager in Florida since 2018 but began with Viking SupplyNet in 2006 as a branch manager and was promoted to location manager in 2010. Collazo, a former U.S. Marine, has proven his leadership abilities both within the company and in the greater industry as well. He currently serves as Director for the American Fire Sprinkler Association Florida Chapter.

Terry Laffey first began work in the fire protection industry some 35 years ago as a Contract Sales and Project Manager before transitioning to Viking in 1998. During his more than 22 years at Viking SupplyNet Terry has mentored numerous colleagues and provided steadfast leadership for the company in the Northeast United States.

To learn more about Viking Group, Inc. and Viking SupplyNet, visit www.vikinggroupinc.com.

FUTURE DATES FOR NFSA ANNUAL SEMINARS AND BUSINESS AND LEADERSHIP CONFERENCES

October 5-7, 2021

Cosmopolitan, Las Vegas, NV

May 3-6, 2022

Sheraton Sand Key, Clearwater Beach, FL

May 3-6, 2023

JW Marriott, Austin TX

May 7-10, 2024

Wailea Beach Resort, Maui, HI

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■ Red Cross Reports Home Fire Responses Rise 16% in First Three Months of 2021

In the first three months of 2021, Americans faced 16% more home fires than they did during the same period in 2020.

As the nation's most frequent disaster, home fires have remained a constant threat during the COVID-19 pandemic as people have spent more time at home. From this past January to March, the Red Cross responded to nearly 17,000 home fires affecting more than 70,000 people across the country — an increase of 2,300 fires affecting nearly 9,000 more people than the same time last year.

"Home fires can happen anytime, anywhere, and it's critical for all of us to protect ourselves," said Trevor Rikken, senior vice president of Disaster Cycle Services for the American Red Cross. "Help keep your family safe by taking two simple steps: Practice your two-minute home fire escape drill and test your smoke alarms monthly."

'You Can Replace Things; You Cannot Replace People' CNN Entertainment Reporter Chloe Melas learned first-hand about the importance of preparing for home fires when a faulty fireplace sparked a devastating blaze. It spread behind the walls, filling her toddler's bedroom with smoke and consuming much of her home — thankfully the entire family, including her two young sons, were able to escape safely wearing only the clothes on their backs.

"Something I'll always remember that the fire chief told me the night of our fire, is that, 'You can replace things; you cannot replace people,'" she said. "That has always stuck with me... We were just so grateful just to have each other. That's what mattered."



■ World's Fire International Sprinkler Monument

A six-foot+ high bronze fire sprinkler will be the world's first international sprinkler monument. At the center of a roundabout on what will be called 'Plaza del Sprinkler' it will greet visitors to Alcobendas, Spain's third largest city. Alcobendas is just north of Madrid and is the Spanish home to many major multinational companies.

Anselmo Iglesias Poli, a famous sculptor whose monuments are found across Spain, will create the sprinkler. Emilio Rodriguez, owner of Pacisa, a leading sprinkler installer, has secured all the approvals. While he will guarantee the project, this monument will help to publicize the sprinkler concept and as such should ideally be a broad sprinkler initiative funded by as many parties as possible, all of whom will be recognized on the sculpture.

For more details, please contact Emilio.Rodriguez@pacisa.es

■ FM Approved IBC Spill Containment Unit Provides Breakthrough Method for Fire Protection of Flammable Liquid Storage

The Viking Corporation announces the availability of its Intermediate Bulk Container (IBC) Spill Containment Units. The FM Approved units provide a new option for fire protection challenges associated with flammable liquids stored in composite IBCs within manufacturing, industrial or other similar type environments.

In the event of a spill, the containment units capture the ignitable liquid released from the IBC. The liquid is then deposited into a holding tank with a capacity of 150% of the composite IBC for which it is designed. This allows the unit to capture water or foam discharged by a fire protection system. A flame arrestor protects the containment sump from fire.

Viking's IBC spill containment units feature unique installation features, ensuring added convenience for users. The units are offered with their sides up or sides down, allowing for options when being placed in the facility. The units also feature a convenient folding access door for forklifts and pallet trucks, and both the Model 275 and Model 330 have a footprint of 57.5" x 70.5", and are 92" and 98" tall when fully assembled, respectively.

To learn more about Viking's IBC containment units or other fire protection products available from Viking, visit www.viking-groupinc.com or contact your local Viking SupplyNet distribution center.



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■ Uponor Revamps AquaSAFE™ Fire Safety Training for Installers

To support the growing demand for fire safety contractor training, Uponor North America recently revamped the former AquaSAFE™ Level I classroom and Level II job-site training into one comprehensive, online qualification program via Uponor Academy Online.

The training, which focuses on the NFPA 13D standard for installations in one- and two-family homes, is available on-demand to meet the needs of busy professionals in today's home construction market.

Key learnings from the qualification program include system types, water-supply requirements, design layouts, materials, installation best practices, testing, and maintenance. The program also covers support information, including estimation and designs from Uponor Construction Services.

Cost for the new online qualification training is \$199 for licensed plumbing contractors and fire safety professionals. After completing the six-part program, attendees receive a qualification certificate that satisfies any manufacturer training required by state or local authorities.

To learn more about Uponor AquaSAFE residential fire sprinkler systems, visit uponor-usa.com. To learn about other Uponor professional training opportunities, visit uponoracademyonline.com.



■ Zurn Announces PRO Partner Program

Zurn Industries, LLC announces the PRO Partner Program. This exclusive service connects certified plumbing and installation contractors with wide-ranging commercial businesses. Zurn PRO Partners will gain member-only access to resources, training, and tools, including Zurn co-branded marketing materials to reach current and prospective customers.

Plumbing contractors who enroll in the PRO Partner Program will receive product training and education, as well as dedicated sales representatives, customer care team associates, will-call, and product experts. There is no charge or minimum purchase requirements to gain access to the program. Plumbing and installer professionals interested in becoming a PRO Partner can learn more about the program by emailing PROPartner@Zurn.com.

■ Potter Announces Intelllicheck™ Advanced Leak Rate Monitor

Potter Electric Signal Company, LLC of St. Louis, Missouri USA, announces the release of the Intelllicheck™ Advanced Leak Rate Monitor, which will grant users improved monitoring of dry

and pre-action sprinkler systems using a supervisory gas supply.

The IntelliCheck has been designed to provide similar data to the IntelliGen® controller on existing or new sprinkler systems not utilizing Potter nitrogen generators. The IntelliCheck monitors system pressure, compressor run-times, ambient temps, leak rates, and runs NFPA 13 and NFPA 25 leak rate tests. These abilities will allow personnel to detect system leaks sooner, and even determine if compressor maintenance is needed.



In addition to monitoring capabilities, the IntelliCheck also integrates seamlessly into Potter's IntelliView™ dashboard allowing users to remotely view the device's status and data on their computer, tablet or smartphone. This will allow facility managers to take advantage of IntelliView's data charting and tracking capabilities, which in turn allows users to diagnose gas and compressor demand more effectively. Additionally, the IntelliCheck's accessibility to IntelliView also allows users the ability to download NFPA leak test reports required for inspections.

Please visit www.pottersignal.com for more information.

■ Potter Electric Acquires Surecall's In-Building Public Safety Communication Business

Potter Electric Signal Company, LLC announced the acquisition of SureCall's emergency responder communication enhancement systems ("ERCES") business, which provides in-building public safety radio communications for first responders. Potter is expanding its portfolio of life safety and fire protection systems by adding to its 2020 acquisition of TowerIQ, manufacturer of wireless life-safety communication and smart building technologies. The combination of SureCall's Guardian product range with TowerIQ's technology provides the broadest ERCES offering in the market. To support this platform, Potter provides business partners, emergency services personnel and building owners with full-service applications design services, including cloud-based monitoring and engineering tools.

ERCES deployed by fire services throughout the country use a variety of frequency bands. The Guardian booster products support the most prevalent 700/800 MHz frequency band and provide reliable coverage in those installations. •

REGIONAL NEWS

**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.**

FLORIDA

Fire Sprinklers Save Lives



Look at our folks in Tamarac! Tommy Demopolous, you truly are a Champion!!!! Fire stations and city buildings supporting fire sprinklers.

GREAT LAKES

NFSA Leadership Team Travels to Eastern Kentucky University

On April 1, 2021, NFSA President Shane Ray and members of his leadership team made a visit to Eastern Kentucky University located in Richmond, Kentucky. While there, students attending the ECU Fire Science Program were able to witness a side-by-side burn demonstration and witness firsthand the effectiveness of residential sprinklers in the home environment.

Additional burn test was conducted by Director of Contractor Services Mike Joanis, P.E., and Jeff Dunkel, P.E. utilizing the ECU laboratory resources.

Following these test burns, ECU students were provided with the opportunity to interact with NFSA President Ray, himself a graduate and alumni of ECU.

This is yet another example of NFSA's commitment to strengthening our partnerships with those who share our common goal and mission "to protect lives and property from fire through the widespread acceptance of the fire sprinkler concept."



Left to Right- Joshua Armbrust, Grace Armbrust, Vickie Pritchett, Shane Ray, Mike Joanis, Jeff Dunkel, Gary West, Ron Ritchey, Brian Biggs, Abbie Gunnells, Lance Gunnells, Caleb Armbrust.

SOUTH CENTRAL



NFSA Lobbyist Andy Quinn, NFSA President Shane Ray, Representative Kevin Brady (Former Chair of the House Ways and Means) Texas's 8th congressional district, serving since 1997 and who will retire at the end of this legislative term.; NFSA Vice President Vickie Pritchett, Fire Chief Randy Parr (now retired from Tomball, Texas)



Texas Representative Travis Clardy who proposed HB 2885 CEUs for Fire Detection with Cindy Giedraitis, NFSA Regional Manager



Texas Heroes Behind Fire Protection Tax Reform

Thank you, Chief Randy Parr, and U.S. Congressman Kevin Brady! **Fire Chief Randy Parr** of Tomball, Texas has retired after 47 years in the Texas Fire Service. Chief Parr's experience as a CPA, (Certified Public Accountant) and a fire chief was very helpful with NFSA's efforts to educate all legislators and U.S. Congressman Kevin Brady from Texas District 8 about the importance of tax incentives for fire protection systems in our buildings. Congressman Brady was the Chair of the US House Ways and Means Committee and wrote the Tax Cuts and Jobs Act of 2017 with Chief Parr's assistance. The day after alerting Congressman Brady of Chief Parr's retirement, Congressman Brady has announced his

retirement from the US Congress.

Their efforts will allow all Texans and United States residents to live and work - for years to come - in safer buildings protected by fire protection systems. Federal Tax Incentives now help business owners to deduct some of the cost of fire protection systems.

New Oklahoma State Fire Marshal

The Oklahoma State Fire Marshal Commission has appointed **G. Keith Bryant** as the State Fire Marshal. He is the previous U.S. Fire Administrator, Oklahoma City Fire Chief, Past President of the International Association of Fire Chiefs (IAFC), Past President of the Metropolitan Fire Chiefs Association and Past President of the Oklahoma Fire Chiefs Association (OFCA). Fire Marshal Bryant brings a wealth of experience and the proven leadership needed to guide the Agency in fulfilling its mission.

He was previously involved with the State Fire Marshal's Office serving two terms as a Commissioner prior to his appointment with the U.S. Fire Administration. State Fire Marshal Commissioner Kent Lagaly said, "Under Fire Marshal Bryant's leadership, the State Fire Marshal's Office will continue to protect and serve the citizens of Oklahoma with the highest level of service provided."

2021 Proposed & Passed South Central Legislation & Rules Affecting Fire Protection

NFSA South Central Regional Manager **Cindy Giedraitis** and our National Legislative Office monitored, testified, and reported on all 2021 Arkansas, Oklahoma and Texas proposed legislative laws and rules that affected the fire protection industry from January – June 2021. Below are the most significant laws passed or proposed.

Arkansas Fire Sprinkler Rules

The Arkansas Fire Protection Licensing Board has posted Proposed Fire Sprinkler Licensing Rules. The deadline to submit rule proposed changes was January 5, 2021. Please go to their website here: www.arfireprotection.org.

Advanced Training Comes to Texas-Taught by Ken Isman, PE, University Of Maryland

Sign up for each class or all three!

Advanced topics in the design and installation of sprinkler systems all taught by the Famous Fire Protection Engineer/Professor **Ken Isman!**

July 20 – Advanced Hydraulics includes determination of discharge criteria (flow from each sprinkler, number of sprinklers in the design area, and location of sprinklers in the design area) for complicated spaces and non-uniform spacing of sprinklers. The training will also cover the methods of performing velocity pressure calculations and Hardy Cross loop analysis. The Darcy-Weisbach friction loss calculation technique will be covered.

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July 21 – Advanced Pumps includes how to calculate suction pressure, test header pipes, and discharge pressure. Pump selection, break tank rules and super high rise requirements also featured.

July 22 – Advanced Codes includes the layouts and use of CMSA and ESFR sprinklers, the design of freezer and cooler systems, and the analysis of the results of different tests performed periodically on sprinkler systems. This program will be an excellent study session for those people seeking NICET Level III & IV.

GREAT PLAINS

Hands on ITM/Side-by-Side Sprinkler Trailer



NFSA was pleased to bring its new hands-on Inspection, Testing, and Maintenance class to Centennial, Colorado. The two-day class was held at NFSA member Western States Fire Protection’s Training Lab. It was taught by our ITM Specialist Vincent Powers.

The WSFP lab was a great location for this class as it offered students the ability to understand and manipulate many different valves and appurtenances in a controlled setting. The course is ideal for sprinkler fitters, inspectors, property managers, and AHJs wanting to better understand the systems they encounter.

Several people expressed disappointment that they could not attend this offering. No worries! The course will be coming back

to Centennial this Fall. Keep an eye open for the announcement. Side-by-Side Sprinkler Trailer

The NFSA side-by-side sprinkler demonstration unit has seen a great deal of service since it arrived in Colorado. Prior to the COVID-shortened season of 2020, the trailer was seen in upwards of twenty demonstrations per year and in several states. It has been a powerful asset in promoting the benefits of residential fire sprinklers.

Sadly, all these demonstrations have taken a toll on the trailer. Although it was partially refurbished in 2018, the trailer has reached the end of its life. The trailer will be returning to Pleasant View Fire Department in Tennessee where it will be stripped down and completely refurbished.

Fortunately, Area 9 will not be without a demonstration prop as a new, replacement trailer was delivered just in time for the 2021 season. There are eight demonstrations already scheduled in 2021, with the possibility of several others. We would love to showcase this trailer throughout the region! Don’t hesitate to reach out if you have an event where it would be helpful to in promoting the fire sprinkler message.

MISSOURI

Fire sprinklers saved my life!

Mark Esker isn’t shy about his life and death encounter with fire. At a St. Louis Metro Chapter meeting this past April, Esker described his experience and his journey. He was 18 years old, a recent high school graduate, and excited to go on to college when his life was “forever changed in a split second.” While working his summer job, he suffered burns over 70% of his body in a gas explosion and fire. “I’m alive because fire sprinklers activated before I could even think,” explained Esker. After years of surgeries and painful skin grafts, his wounds healed, and he went on to earn a Master’s in Social Work and help thousands cope with their own struggles. He is the proud father of three children.



As a burn survivor, Esker continues to give back to the St. Louis community. He has served as peer support counselor for Midwest

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REGIONAL NEWS

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Children's Burn Camp and coordinated educational programs for both the Burns Recovered Support Group and Mercy Hospital Burn Unit. Now helping the St. Louis Fire Sprinkler Alliance, Esker encourages those who have lived through the pain of burn injuries to help others by volunteering and sharing their stories. "One of the best ways to live through trauma is to help others realize that the scars are only a reminder of where we have been, not who we can become," said Esker. Although a fire has forever changed his life, fire sprinklers saved his life. A resolute fire sprinkler advocate, Esker is available to speak to community groups and attend public events.

WISCONSIN

33rd Annual Burn Center Golf Invitational



Sponsorship mailers were sent to promote the 33rd Annual Burn Center Golf Invitational to be held on August 23, 2021 at the Grand Geneva Resort and Spa in Lake Geneva. This event, initiated and supported by the fire sprinkler industry, benefits the Ascension Columbia St. Mary's Burn Unit and the Wisconsin Youth Burn Camp. The event has raised just under \$3 million over the years, with \$72,000 donated last year. The event is hosted by the NFSA Wisconsin Chapter and is truly a great networking event. Contact Marty King at king@nfsa.org regarding any questions, sponsorship opportunities, or golf.

NORTH CENTRAL

We welcome these new members to the Region:

- Driven Fire Consultants in Sioux Falls, South Dakota
- Tri-City Fire Protection in Davenport, Iowa
- The Virtual Workspace

If one were asked to name a "positive" outcome for businesses during the COVID pandemic, the answer most commonly heard would likely be the rise of virtual meetings and events. Although many people report being "burnt out" from continual Zoom meetings, NFSA has leveraged the new virtual workplace with exciting innovations and unique applications. One technology investment that has significantly benefitted local NFSA chapters is the NFSA's deployment of portable audio-visual (AV) equipment kits to various regions, including the North Central Region. Packaged in compact Pelican cases, AV equipment can be taken to the classroom, the board room, or the field to create unique collaboration opportunities not seen in other sprinkler industry or fire service associations. These portable kits have allowed the Minnesota and Wisconsin Chapters to hold hybrid meetings and virtual classes, and livestream events to large social media audiences.

Hybrid meetings (where both in-person and a virtual attendance is available) ensures that local COVID protocols can be complied with as they change, while opening participation up to

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larger attendees. NFSA members and potential members who are geographically remote from the meeting location can participate, speakers from around the nation can present to a local chapter audience, and national NFSA leaders can speak directly to local members.

The portable AV equipment can be used to “livestream” video directly to social media platforms like Facebook, Twitter, and Instagram. For the first time, local, national, and even international audiences can view and comment on NFSA side-by-side demonstrations, conferences and expos, and charity events. Recent livestreamed side-by-side demonstrations have easily and repeatedly reached audiences of more than 4,000 viewers. Imagine the impact of having 4,000 people see the products and services offered by our members!

Field Operations staff have very successfully used the portable AV equipment to expand the training opportunities to members. Local and national instructors from all parts of the industry have presented at several chapter events in Florida, Texas, Seattle, Connecticut and other areas. Members can attend classes and product demonstrations without the cost of traveling or the threat of COVID exposure. Many of the virtual training sessions provide CEUs for member certification and licensing requirements.

NFSA has worked hard to get and stay ahead of the technology curve so vital to surviving and thriving during the COVID pandemic. The portable AV kits provided to Field Operations personnel are one small part of the technology improvements, but they are yielding impressive results, making a wide variety of resources available to our members, expanding our industry’s “reach,” and helping to bring our industry partners even closer during a period when most other organizations are suffering from being socially-distanced and isolated. The use of NFSA portable AV kits will certainly be part of the Association’s “new normal” moving forward!

NORTHWEST

The Fire Sprinkler Advisory Board of Puget Sound is teaming up with Local 699 to host the **Sprinklerman Shootout** in August at Willows Green in Redmond. We encourage all signatory contractors to sign up early—this event should sell out!

The Fire Sprinkler Advisory Board of Puget Sound’s media campaign generated a lot of buzz around fire sprinklers. Numerous homeowners contacted the NFSA through our “Time Buys Life” website to inquire about a home fire sprinkler system. Thank you to the NFSA members who have agreed to follow up with these individual inquiries.

As COVID restrictions lift, more and more fire protection groups and associations will be hosting in-person trainings and conferences. Look for NFSA’s involvement this fall in the Alaska Fire Conference with a full-day hands on presentation, at the Washington State Fire Marshal Association Prevention Institute, and in partnership with the Oregon Residential Fire Sprinkler Coalition as it shares information with policymakers on the benefits of installing fire sprinklers in new housing developments. •

National Fire Sprinkler Magazine
The Fire Sprinkler Advisory Board of the National Fire Sprinkler Association

WE ARE SEEKING SUBMISSIONS FOR NFSM NOVEMBER/DECEMBER FREEZE PROTECTION ISSUE!

WE WANT TO HEAR YOUR THOUGHTS ON THIS IMPORTANT TOPIC!

PLEASE SUBMIT ARTICLES OF APPROXIMATELY 800-1,200 WORDS FOR CONSIDERATION TO NFSM EDITOR JOANNE GENADIO AT GENADIO@NFSA.ORG

ARTICLE SUBMISSION GUIDELINES ARE AVAILABLE ON PAGE 59.

“I FACE TOUGH CHALLENGES EVERYDAY. HAVING ENOUGH TIME TO ESCAPE A HOME FIRE SHOULDN'T BE ONE OF THEM.”



The National Fire Protection Association estimates that physical disability was identified as a contributing factor in an estimated average of 400, or 15%, of U.S. home fire deaths per year. Certain modern construction methods and synthetic home furnishings have **reduced the time to escape a home fire to about three minutes.**

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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 sent as attachments to emails or through a file transfer site. We cannot use images embedded within a document. 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.

Copyrights

Articles must be exclusive to *NFSM* magazine and not submitted to any other industry publication, unless prior agreement has been reached. Author is responsible for the accuracy of article and that it does not infringe on any other copyright. All published submissions become the property of NFSA.

Payment

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

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