

National Fire Sprinkler Magazine

January-February 2022
No. 230



The Flagship Publication of The National Fire Sprinkler Association

EMERGING
TECHNOLOGIES
ISSUE



Ray Fremont, Sr.
NFSA 2021 Golden Sprinkler
Award Recipient



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When Emerging Technologies Meet Codes and Standards

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National Fire Sprinkler Magazine (ISSN 1050-2958) (USPS 524-010), is published bimonthly (January/February, March/April, May/June, July/August, September/October, November/December) by the National Fire Sprinkler Association, Inc., 514 Progress Drive, #A, Linthicum Heights, MD 21090. Periodicals Postage is Paid at Linthicum Heights, MD, and at additional mailing offices.

Subscription free to NFSA members and member companies.

POSTMASTER: Send address changes to:

NFSA, 514 Progress Drive, Suite A,
Linthicum Heights, Maryland 21090

or update your membership profile at www.nfsa.org

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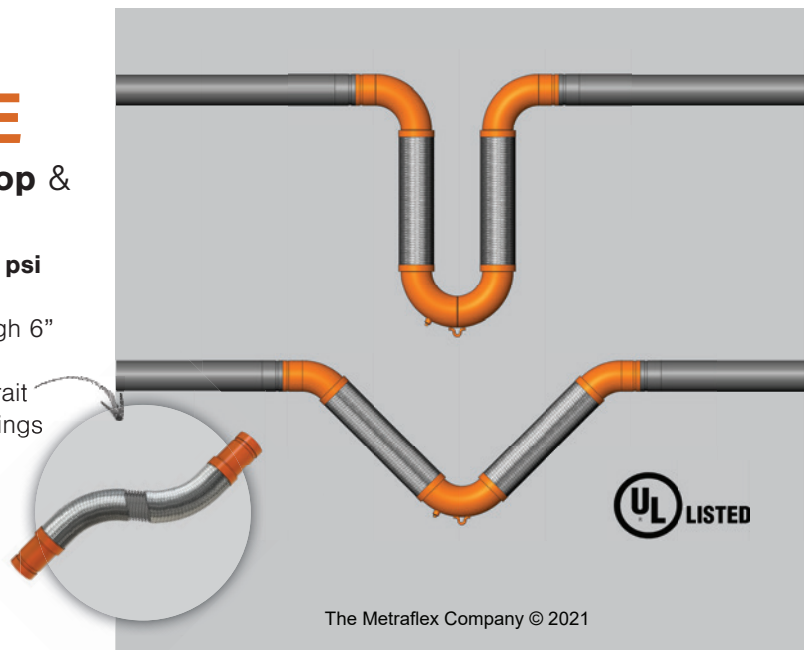
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Passion and Perseverance – Preparing for the Future

It's hard to believe that it's been two years since I wrote a very similar article, sharing about the election of NFSA officers. While many may write about the pause that occurred because of COVID-19, and others may describe that they are still not traveling, I assure you, NFSA never paused. While our travel was limited for several months, we tripled the number of meetings and work we conducted. It is great to be in an industry that led through a world-wide pandemic and to be part of an association that continues to lead through unprecedented times.



The only thing that slowed down for NFSA during the past two years was in-person meetings. The sad part about limiting travel and in-person meetings was missing time with friends and colleagues in the fire sprinkler industry, which is still an industry where networking with one another is not only positive for the industry, but for the people and organizations that are engaged. The person deprived the most was a person that makes his biggest difference at in-person meetings, and certainly benefits all those he encounters, that is our Chair of the Board, Kent Mezaros.

American author, pastor, and motivational speaker John C. Maxwell publishes a 365 Day Devotional... *A Leaders Heart*, which is a part of my daily life. It has a title for every day with a passage, a story, and a question. One of the titles is *It Takes a Mentor*, and the question is, 'Who is your mentor?' Like most, I have been blessed to have many mentors in my life. Those mentors usually come with your position and profession. I started recording my mentors in *A Leaders Heart* in 2015, when I became NFSA president. There isn't a single year that I didn't include Kent Mezaros.

The fire sprinkler industry has benefited greatly from Kent Mezaros' leadership within NFSA, and I know my life and leadership has been enhanced by his mentorship. Kent's subtle but strong presence from his days on the Seminar Committee, Contractors Council, Residential Committee, and the Executive and Finance Committee have shaped NFSA into what it is today. I have been blessed to have served my first three terms (two-year terms) as NFSA president under the great mentorship of Larry Thau, Kent Mezaros, Jim Boulanger, and Bruce LaRue, the only officers I have served under during my time.

As we go into 2022, I am happy to announce that the Board of Directors has continued to put forward a great slate of officers for the Board of Directors. The March meeting of NFSA will include the Nominating Committee's slate of officers for 2022 – 2023. The nominee for Chair of the Board is Patriot Fire Protection's Jim Boulanger from Seattle, Washington. The nomination for Vice Chair is James Golinveaux with the Viking Group, Inc. of Michigan. The nomination for Treasurer will be an election by the Board of Directors between James Lewis with American Fire Protection Corporation in Shawnee, Kansas and Zarko Ognjenovic with Milton J. Wood Fire Protection in Jacksonville, Florida. An election within an organization is healthy when it includes great people with pure motives for the mission of the association.

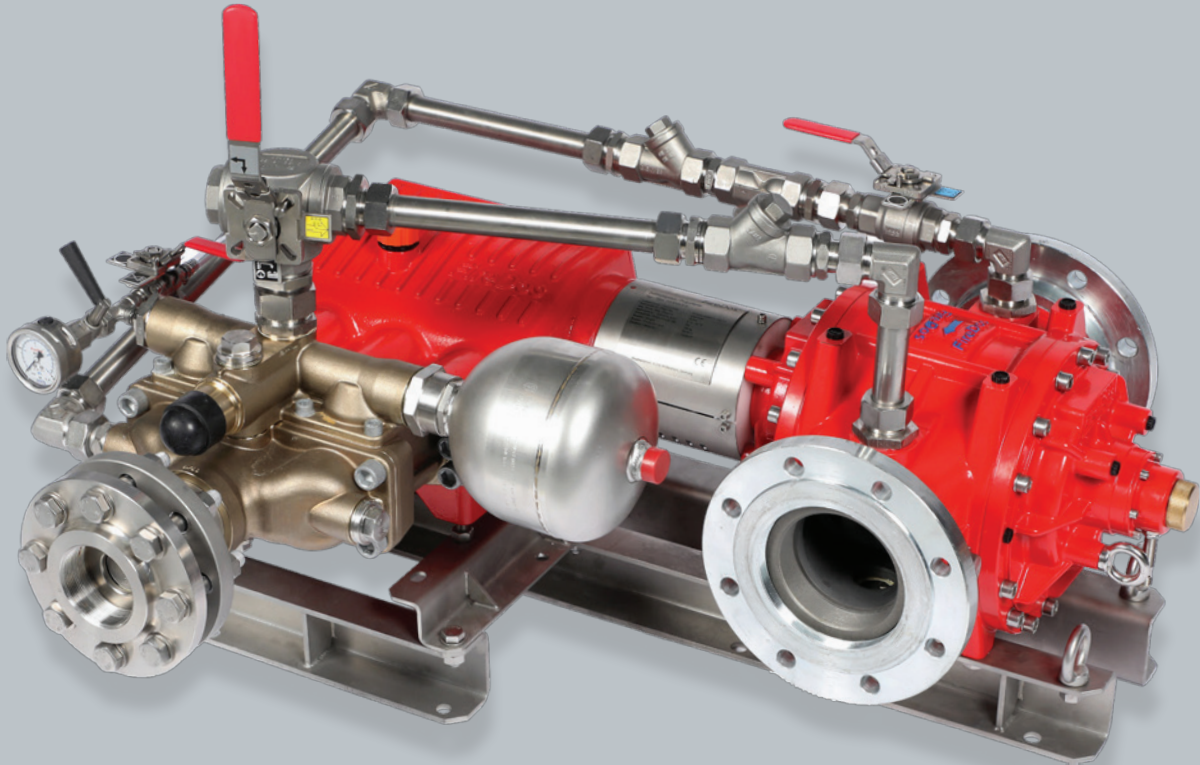
I want to close with more positives. Thanks to the entire Board of Directors, which includes the Contractors Council, the SAM Council, and the Manufacturers Council, for leading through challenging times that resulted in record years for the fire sprinkler industry. While the final quarter of 2021 isn't in at the time of this writing, it appears 2021 will end with a record year for fire sprinkler shipments and perhaps labor hours as well.

Cheers Chair Mezaros! Thanks for completing the transition of this great association and seeing through all the initiatives you put forward. You have left NFSA a lot better than you found it and all of us that have worked with you are all better for it.

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

Shane Ray, President

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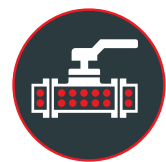
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Peace Out!

Well, my friends, this will be my last time sharing my thoughts with you “*From the Chair’s Desk*”, as the end of my second and final term as your Chairperson of the Board comes to an end. For those of you that may have anxiously awaited your copy of National Fire Sprinkler Magazine every other month just to find out what wisdom I would be sharing with you, it is time to say a sad goodbye (But also please ... Get A Life! There are certainly more qualified scribes out there to keep you enlightened).

Prior to serving the past four years as your Chairperson, I was Vice Chairperson of the Board under Larry Thau. I had the opportunity to see Larry’s cool demeanor and calming influence on the Board during a period of transition that the NFSA had never experienced before. When I started my first term, I promised you that I would not be able to speak anywhere near as eloquently as previous Chairperson Thau (and boy has that held true). My background had me sorting fittings in the shop prior to product procurement, design, management and administration. No fancy degrees or dozens of patents next to my name. My upbringing did however assist me in the ability to speak a tad more colorfully and I’ve been told I can be enjoyable to share a cocktail with. I told you I had never been afraid to work hard and assured you that I would try my hardest to keep NFSA pointed in the right direction to the best of my abilities. I do believe that I’ve done a good job on delivering on my promise to keep NFSA pointed in the proper direction over the past four years.



When I first started, I warned you all that over my term as Chairperson a *coufefe* moment would probably appear in my Twitter space. I asked for you to accept my apology at that time, so happily I do not owe you one now!

I also have previously admitted to you that there was a small part of me that entertained the idea of getting up at our last Board of Directors meeting of my first term, microphone in hand, and letting it drop to the floor with a loud thud knowing that there was no chance the following two years could go as smoothly as the first two years for me. However, the constant nervous leg bounce of our President who sat next to me, and the peaceful and joyous look at our beloved Vice Chairman (and newly nominated incoming Chairperson) that sat next to him, sucked me back into hopping aboard for my second and final term. Never in my wildest dreams did I think at that moment that as a Nation and an Industry we would have a worldwide pandemic to deal with. I’m saddened by the loss of life it has caused, as well as the difficult sacrifices we’ve all had to make in living our everyday lives because of it. However, I’m so very proud of the way our NFSA team adapted to the difficult circumstances and served our membership along the way. Kudos to Shane Ray, our leadership team, and all our NFSA employees. You have earned both my respect and everlasting appreciation for a job well done.

I’ll share with you my final words of wisdom here with a quote from Ronald Reagan’s Farewell Address. And by no means am I comparing my time in office to that of our great former President. (I know many of you probably feel Bill Clinton’s time in office would probably be a better comparison, less the Monica Lewinsky events of course, and I too have left you with a budget surplus!).

*But on to President Reagan’s fine words, “The lesson of all this was, of course, that because we’re a great nation, our challenges seem complex. It will always be this way. But as long as we remember our first principles and believe in ourselves, the future will always be ours. And something else we learned: Once you begin a great movement, there’s no telling where it will end. We meant to change a nation, and instead, we changed a world.”*To all our NFSA members, take pride in what you do each day, and keep pushing on.

Lastly, I thank you all for the opportunity to serve. NFSA has done more for me and my family than I will ever be able to do for it. The past 17 years have been my attempt to try to make good. I look forward to quietly serving out my final year as Mid-Atlantic Regional Director and then turning it over to our next generation and allowing them to have the same opportunity as I’ve had. I leave you wholeheartedly believing that President Shane Ray and the rest of our staff will make sure that NFSA remains as the Voice of the Fire Sprinkler Industry.

Thank you all for the fun ride. Peace Out.

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

Kent Mezaros, Chairman

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Lessons From a 103-Year-Old Productivity Technique

by Madeline Frank

Have you ever caught yourself engaging in productivity envy? Some people accomplish so much, yet it seems like no matter how hard you work, your task list keeps expanding and you don't feel like you've made significant progress.

While there are many "productivity tools" and hacks that promise instant efficiency at lightning speed; all you need is one sheet of paper.

Charles M. Schwab was president of the Bethlehem Steel Corporation, the largest shipbuilder, the second-largest steel producer in America, and one of the richest men in the world.

Schwab was continuously seeking new ways to improve the efficiency of his company and keep an edge over his competition.

Ivy Lee, a well-known consultant in productivity and management, successful businessman, and a pioneer in public relations, arranged for a meeting with Schwab. (As retold by Charles "Tremendous" Jones in his book *"Leadership is for You"*, pp. 42-44. (1968)

Schwab said, "Show us a way to get more things done, I'll be glad to listen to you. And, if it works, I'll pay you whatever you ask within reason."

Lee responded, "If that is what you want, I will show you a method that will increase your personal management efficiency, and that of anyone else who applies it, by at least fifty percent."

This bold promise intrigued the business mogul.

Lee "handed Schwab a blank piece of paper and said, "Write down the most important things you have to do tomorrow."

Schwab took about five minutes to do this.

Lee then asked Schwab to number them in the order of their true importance. (This took a little more time for Schwab.)

Lee then shared the last step of this simple system, "The first thing tomorrow morning, start working on item Number 1, and stay with it until it is completed. Then take item Number 2 the same way. Then Number 3, and so on."

"You will have completed the most important projects before getting to the less important ones. If you can't finish all that you planned for tomorrow with this system, there's no other way you would have finished. And without this system you probably would have taken much longer to complete what you set out to do, without taking care of things in the order of their real value to you and your company."

Lee then encouraged Schwab to do this every working day. After he had convinced himself of the value of this system, have his men try it.

He closed the meeting by saying, "try it as long as you like, and then send me your check for whatever you think the idea is worth."

Charles Schwab and his executive team at Bethlehem Steel used Ivy Lee's Method for productivity with great success. Three months



later, Schwab sent a check for \$25,000 to Ivy Lee. (\$25,000 in 1918 is equal to \$475,318 in 2021.)

Schwab stated that this lesson was the most profitable one he learned in his business career. It was later said that this was the plan largely responsible for turning a little steel company into one of the largest producers in the world."

Ivy Lee's 4 step method for achieving peak productivity:

1. At the end of each workday, write down the six most important things you need to accomplish tomorrow. Do not write down more than six tasks.
2. Prioritize those six items in order of their true importance.
3. When you arrive tomorrow, concentrate only on the first task. Work until the first task is finished before moving on to the second task.
4. Approach the rest of your list in the same fashion. At the end of the day, move any unfinished items to a new list of six tasks for the following day.

Repeat this process every working day.

Many businesses over the last 103 years have used Ivy Lee's system for peak productivity with great success. It's all about focusing on "managing priorities well".

Madeline Frank, Ph.D., is an Amazon.com Best Selling Author, speaker, business owner, teacher, concert artist, and parent. She helps businesses and organizations "Tune Up their Business". Her observations show you the blueprints necessary to improve and keep your business successful.

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Could Water Mist “Emerge” Again?

by Michael J. Joanis, PE



History of Water Mist

Water mist systems are not new or emerging technology. High pressure water mist for fire suppression was invented in 1880 by an American company, F.E. Myers, as a manual fire extinguisher for forest fires. Ten years later, Grinnell developed its ‘pepper pot’ nozzle which fought fires also using small water droplets. By 1930, Lechler, a German company, innovated a multiple orifice nozzle called water dust nozzle and in the 1940s Factory Mutual began their first tests with small droplet nozzles.

Although it was already understood during the 1930s and 1940s that small water droplets under certain conditions could improve efficiency compared to larger water droplets, it was not until the 1990s that fixed “water mist” fire protection systems were commercially available. This was driven by the Montreal Protocol and a deadly fire aboard the Scandinavian Star passenger ferry.

The Montreal Protocol initiated the phasing out of Halon which was widely used in marine and aviation markets. Water mist fire-suppression systems were initially researched and developed as a Halon replacement. A fire incident occurred on the passenger ferry ship in Sweden in 1990, killing 158 people (50% of the passengers) on the ship. This forced the industry to look for systems to install aboard ships, and water mist emerged as a viable candidate. This led to improvements to the International Maritime Organization’s (IMO) fire safety requirements and installation guidelines as well as the development of fire test procedures for alternative sprinkler systems. IMO resolutions during 1994 and 1995 accelerated the use of water mist in the marine industry as an alternative to conventional sprinkler systems. During this time, UltraFog and Marioff developed commercially available high-pressure water mist systems. In addition, their application and effectiveness for residential occupancies, flammable liquids storage facilities, and electrical equipment spaces was investigated with encouraging results.

In 1993, the NFPA Technical Committee on Water Mist Fire Suppression Systems was established. The committee developed NFPA 750 to provide design and installation standards for water mist fire protection systems. The standard contains elements similar to those for other types of fire protection systems and addresses system components and hardware, system types, installation requirements, design objectives, hazard classifications, calculations, water supplies, atomizing media, plans, documentation, acceptance criteria, and maintenance considerations. It does not provide

definitive fire performance criteria or specific guidance on how to design systems to control, suppress, or extinguish a fire. Instead, listed water mist equipment or systems that have demonstrated performance in fire tests as part of a listing process are required. Water mist systems have several FM approvals and UL listings and are also addressed in FM Data Sheet 4-2.

The International Water Mist Association (IWMA) was founded in 1998. Their mission is to promote research, development, and the use of water mist fire suppression systems worldwide. This includes building the basis for a much wider use of the technology. Future opportunities for water mist technology to re-emerge and expand their use are most closely tied to their ability to be accepted as an alternative to automatic sprinkler protection.

What do the model codes say?

The International Building Code and International Fire Code, 2021 edition, provide requirements for when automatic sprinkler systems shall be installed and requires they be installed in accordance with NFPA 13, 13R or 13D. Alternative automatic fire extinguishing systems, including water mist, are permitted as an alternative to the required automatic sprinkler systems when approved by the fire code official. However, they are not considered an alternative to sprinkler systems for the purpose of exceptions or reductions allowed by the code when an automatic sprinkler system is provided.

NFPA 101 and 5000, 2021 edition, indicate alternative systems, again including water mists systems, are permitted in any occupancy where the character of the fuel for fire is such that extinguishment or control of fire is accomplished by a type of automatic extinguishing system in lieu of an automatic sprinkler system. Such extinguishing systems shall be installed in accordance with the applicable standard. The annex Section A.9.8.1 goes on to indicate when the entire building is protected with an alternate system, the exceptions, reductions, and alternative code provisions that are offered as options when fire sprinkler systems are installed should not be granted unless the other system has demonstrated the same temperature control during a fire and reliability of operation as a fire sprinkler system.

NFPA 1, 2021 edition, indicates where other fire protection systems are installed with the approval of the AHJ as an alternative or equivalency, the design and installation of the system shall comply with the appropriate referenced standards. It does not

continued on page 12

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include the same annex language as NFPA 101 and 5000 relative to exceptions, reductions, and alternative code provisions that are offered as options when fire sprinkler systems are installed.

In addition to the model code requirements, NFPA 13, 13R, and 13D, 2022 edition, Section 1.1 indicates these standards do not address water mist systems, their design and installation shall comply with NFPA 750, and they are not considered sprinkler systems.

The model building and fire codes require automatic sprinkler protection to be in accordance with NFPA 13, 13R, or 13D. The referenced standards make it clear that water mist systems are not equivalent to a sprinkler system. Therefore, water mist systems may be installed as an alternative to automatic sprinkler systems when approved, but they do not provide equivalency to automatic sprinkler systems relative to the associated code exceptions or reductions we commonly refer to as “trade-ups.”

Earlier Attempt at Equivalency to Sprinkler

Manufacturers of water mist systems promote their systems as equivalent to, and in some applications, superior to automatic sprinkler systems. They are interested in pursuing equivalency through the code adoption process to expand their market share. Without code acceptance, the “trade-ups” provided by the building and fire codes, traditionally only permitted for automatic sprinkler systems, cannot be achieved.

In 2012, the water mist industry submitted proposals to NFPA 101 and NFPA 5000 to be considered equivalent to automatic

sprinkler systems. Proponents presented listings from UL and FM approvals attempting to demonstrate equivalency and extend the automatic sprinkler “trade-ups” to include buildings where water mist systems are installed. The NFPA Technical Committees rejected these proposals with the following Public Input Response (Committee Statement): “Although water mist systems have been demonstrated to control fires in specific areas, performance and reliability data have not been submitted demonstrating that NFPA 750 water mist systems are equivalent to NFPA 13, 13D or 13R for buildings or areas of buildings required to be protected throughout. Data is required to warrant modifying other code requirements based on the presence of water mist systems.”

Future proposals and debate are expected to be presented for IBC, IFC and NFPA consideration. Water mist is an excellent form of fire suppression, but it currently is not considered equivalent to automatic sprinkler systems.

What could it take to be considered equivalent to sprinkler?

The NFPA committee’s written statement on this issue cited the need for performance and reliability data to demonstrate equivalency for entire buildings or areas of buildings. It also suggested the water mist data presented was only germane to specific building areas or specific hazards and not to the entire building. The annex language indicates the water mist system should demonstrate the same temperature control and reliability as that of an automatic

continued from page 12

“It is expected that water mist systems will continue to push forward and evolve. They will again be compared to automatic sprinklers systems in the eyes of the model building and fire codes. Hopefully this effort will come with the additional research, testing, and certification needed to compete with the long history and experience of automatic sprinkler system performance, reliability, and success.”

sprinkler system.

Ultimately, market demand will drive the required research and data for this effort. However, the cost of water mist systems may be a barrier to increasing market demand, except for protection of specific hazards or when there is limited water supply.

Often reliability of water mists systems is cited as a concern. This includes small orifice nozzles with the potential for blockage and reliance on high system working pressures. Design details such as water supply duration and flexibility of the system to handle various hazards and/or changing hazards are often debated. Many question the use of existing water mist listings or approvals for specific applications or hazards to extrapolate the use of water mist systems for entire buildings or building areas. There is also a lack of experience with water mists systems in buildings that results in a lack of competent designers and installers for the industry. If water mist systems were to be installed as equivalent to automatic sprinkler systems, our current training and certification requirements would need to be expanded as well.

New test protocols from independent third party certification agencies are required to account for all building hazards and their life cycle to demonstrate water mist systems can adequately protect entire buildings. Sprinkler systems designed and installed in accordance with NFPA 13 are based on over a hundred years of engineering principles, test data, and field experience. Water mist systems for protection of entire buildings lack the decades of experience and are reliant on research, testing, and certification. Currently as special protection systems, there is no design procedure that would allow the test results to be applied across many different hazards including all the hazard types and situations that are addressed in NFPA 13.

It is expected that water mist systems will continue to push forward and evolve. They will again be compared to automatic sprinklers systems in the eyes of the model building and fire codes. Hopefully this effort will come with the additional research, testing, and certification needed to compete with the long history and experience of automatic sprinkler system performance, reliability, and success. •

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



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

When Emerging Technologies Meet Codes and Standards

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



Fire sprinkler systems evolve and adapt all the time. When a new problem arises, such as higher piled storage, wildland exposure protection, lithium-ion battery protection, remote inspections, and more, the fire sprinkler industry solves these emerging issues with new methods and technology. When the fire sprinkler industry reacts (or for the lack of reaction), the market can quickly become inundated with alternate, modified devices, equipment, and worse, gadgets and counterfeits. Fire sprinkler contractors, building owners, and code officials deal with emerging technologies and fancy marketing all the time and often are at a loss on when or how to accept something new. Fortunately, the fire sprinkler industry has robust codes and standards that narrow the acceptance of any sprinkler appearance or practice.

Process for New Equipment in Codes and Standards

When emerging technology equipment or process is presented to a contractor, owner, or code official there is a process for local acceptance. For this discussion, it is helpful to keep in mind a model code, for example, International Building Code (IBC) or NFPA 101 Life Safety Code, states when fire sprinkler systems are required. A referenced installation standard, such as NFPA 13 or NFPA 25, states how sprinklers systems are installed. When model codes (IBC) are locally adopted, they and their referenced standards (NFPA 13, NFPA 25) are enforceable. In short, codes say when a building needs a sprinkler system and standards say how to install it.

For Emerging Technology, the Standards Come First

When emerging technology is presented, the acceptance process is backwards, meaning, it must first comply with the installation standard(s). For example, an IoT (Internet of Things) device that is inserted into sprinkler piping to monitor temperature. This device would first need to be accepted by the installation standard, NFPA 13. This typically includes being listed and approved (as defined) when required by the standard and installed accordingly. Another example could be wildland urban interface protection devices and equipment, the same process of getting acceptance by the installation standard is necessary. When the installation standard permits the equipment, the codes (IBC Section 104.9) accept the system, providing a path of compliance for the contractor, owner, and code official.

The Code Official or Authority Having Jurisdiction is Part of This Process

Codes and standards are just words in a book until adopted. Then the words in the book are legally enforced by the code official or the Authority Having Jurisdiction (AHJ). The ICC family of codes, such as the IBC, and the NFPA, such as NFPA 13, puts the responsibility of accepting emerging technology on the code official and AHJ. Often the code official and AHJ are the building official and fire marshal. Codes and standards do not prohibit emerging technology (see IBC Section 104.11 and NFPA 13 Section 1.7) but the AHJ needs to be convinced it will be effective and reliable in its installation. This can be accomplished by becoming:

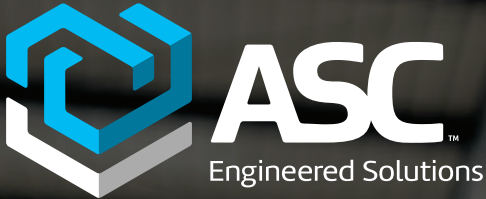
- Approved. Both the IBC/IFC (Section 202) and NFPA 13 (Section 3.2.1) have a similar definition but approval of using or installing merging technology comes from the AHJ.
- Listed. A listed product, per NFPA 13 Section 3.2.3, often satisfies the AHJ for any emerging technology. However, NFPA 13 (see Section 7.1.1), as well as other installation standards NFPA 13R and NFPA 13D, have varying requirements for installing listed equipment. For example, a pressure gauge is not required to be listed for NFPA 13, NFPA 13R, or NFPA 13D, however a control valve is required to be listed by NFPA 13 and NFPA 13R, but not NFPA 13D.
- Alternative materials and methods. As noted above, the codes and standards do not prohibit new technology, but there are times when a listed process is not available or developed. The IBC provides a path in Section 104.11 for equivalency, reports, and testing to convince the AHJ the emerging technology meets the minimum requirements of the code.

The path is wide, but the gate is narrow

Fire sprinkler systems are property- and life-safety systems. Their operation is critical. The listing and approval process is often a deterrent for new and emerging technologies. When other fire protection and mechanical systems seem to outpace the sprinkler industry in cutting edge technology, it is important to know what tempers our progress is for our own good. Getting to market with an emerging technology is long and expensive, but we have rarely seen it fail us as an industry. When determining if the new equipment or process is acceptable for the building or system, the first step is found in the codes, standards, and the local AHJ.

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21st Century Learning Technologies

by Evan Combs, **Manager of Learning & Development**



Educational technology has come a long way in the last 20 years. In 2000, the NFSA was sending out VHS tapes with accredited training and using overhead projectors to present material to a packed room. We then began streaming our live presentations and were having our instructors use a green screen to stand in front of a PowerPoint and lecture, much like broadcasting the weather. Educationally, these concepts had great intent and effectiveness given the state of instructional technology. They supported ideas like delivering on-demand accredited learning, targeting various visual learning types, and even finding ways to maintain engagement. With the theme of Emerging Technology, it is important that we focus on how we keep true to the value and effectiveness of our learning, and how we continue to find ways to enhance the educational experience for learners through leveraging new technology.

Asynchronous Technology – The “LMS”

Arguably the biggest educational technology innovation of the 21st century is the popularization of the Learning Management System, or LMS. Fundamentally, an LMS is a robust version of a Content Management System, or CMS, which is a database that is user-friendly and designed to organize and manage digital assets. Where an LMS branches off from a CMS is in its ability to track and manage a student’s learning pathway while delivering on-demand chunks of content. At the NFSA, this is a critical platform for us, and we integrate the journey into the overall member experience, allowing users to purchase on-demand classes, register for events, and navigate to the LMS to engage and interact with their products with easy navigation.

As we continue through 2022, the NFSA will enhance the user experience in our LMS and leverage the technology to deliver higher quality and more efficient on-demand learning opportunities. Rather than just having a recording of a live training, which was not optimized for asynchronous learning, we will offer small chunks of eLearning content, technically called SCORM packages (Sharable Content Object Reference). These packages will be able to track learners progress in real time and allow not only the student monitor their performance and have personalized learning in response but allow NFSA’s expert staff of instructors to intervene and drive curriculum based on class or individual performance. This will allow for a more truly blended experience that harnesses the power of technology to deliver adaptive curriculum.

Synchronous Technology – The Digital Classroom

While an LMS focuses on enhancing the one-on-one learning model where a student engages with an educational session on their own time and at their own pace, the educational technology industry also offers a plethora of technologies to enhance the synchronous, or live, digital classroom. The most obvious benefit of this technology is being able to connect instructors and students from around the globe in real-time, eliminating the burden (financially and logistically) of travel. However, there are more instructional strategies that can emerge from this technology.

The overhead projector was the predecessor of the “share screen” model we all use daily by sharing our computer screen with colleagues to provide an over-the-shoulder view of what someone might be working on. The ability to share your screen is fully integrated into every platform, but in a digital classroom the concept of a collaborative presentation board allows instructors and students to share an interactive space without the physical limitations of being able to see what’s going on, limited number of participants on the physical material, or other tangible limitations.

Breakout rooms allow for peer instructional strategy that focuses on learners coming to the table with different experiences and pushes those perspectives into a collaborative activity. This allows a group of learners to critically compare their thoughts with others within similar circumstances. Using breakout room functionality, the NFSA is integrating more learning activities that allow students to work in small groups within their own digital space, sharing and collaborating on documents, architectural plans, mock bid proposals, and other real-world exercises.

One of the biggest challenges digital learning faces is student engagement. Instructors well-versed in face-to-face learning find it difficult transitioning into a digital classroom because they can’t physically measure engagement and act accordingly. There are many ways to overcome this challenge, including having students use webcams, microphones to actively participate, and most importantly, use real-time activities that not only force engagement, but also give instructors measurement tools to gauge a class’s understanding of concepts. The NFSA is using real-time polling technology to help address engagement and checking for understanding. This technology is also being utilized with in-person classes as well, leveraging student’s smart devices to participate in class or group exercises.

These technologies are just a small portion of the pool of resources the NFSA uses to help embrace the digital shift our industry is facing. If you have questions or concern about the technology you are interacting with in our courses, please reach out to the Learning and Development team at learning@nfsa.org.

NEW MEMBERS

INDIVIDUAL

Greg Becker
Greeley, CO

Steven Dempsey
Reedsburg, WI

Michael Hall
Marianna, FL

Russ Hall
Holden, MA

Sean Hayes
Madison Lake, MN

Rob Indrebo
Shakopee Fire Dept
Shakopee, MN

Dustin Kalis
Lake Elmo Fire Department
Lake Elmo, MN

Fred Kramer
University City, MO

Chris Marzolf
Hudson, WI

Jerome Novak
Maplewood, MN

Dustin Paddack
Liberty, MO

Mike Perucca
Hudson, WI

Steve Ptaszynski
Village of Salem Lakes Fire & Rescue
Salem Lakes, WI

William Rumsey
Rogers, AR

Kevin Such
Philadelphia, PA

Ben Uden
East Bethel Fire Department
East Bethel, MN

John Weber
La Jolla, CA

Gary, Wilmes
Golden, CO

Raymond Buckley
Hiller Fire Protection and Security
Solutions
Mobile, AL

Michael Lawrence
Hiller Fire Protection and Security
Solutions
North Charleston, SC

Professional

Steven Berlett
East Peoria, IL

Thomas Cummings
Edmonds, WA

Isak Klicic
Chicago, IL

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Happy New Year! Cheers to 2022 and a Year of Emerging Technology!



by Vickie Pritchett, Vice President/Executive Officer

Before I jump in on the emerging technology theme, I must send my best wishes to you and your family. I hope you enjoyed a wonderful holiday season filled with all the things that matter most! Friends and family have never been more important, that's surely something we've all learned while living through a pandemic.

Since a new year provides us the opportunity to begin anew, it's an awesome time to reflect on all the good, while planning for a bright future. Let's go with the theme that the future is so bright we gotta wear shades! We are very encouraged by the fire sprinkler industry's resilience and ability to thrive through these unprecedented times.

I'm not one to be big on new years' resolutions, but I am one to pick my "one word" for the year. Last year's word was "heart" (past years I've selected believe, focus, passion and vision). 2022 seems like a good year to be intentional. A big thank you goes to Jon Gordon for being the one who shared the "one word" exercise with me. I always have fun with it, and it really does serve as a guiding star throughout the year. When I think about intentional, I am reminded of the choices we make daily. I want to be intentional with those choices in both my personal and professional life, and when it comes to NFSA, I hope that we are *intentional* with every decision we make to live our mission, save lives, and create a safer world! *Let's do this!*

Speaking of Jon Gordon, I'm happy to share that I am now a *Certified Jon Gordon Trainer!* The completion of this program in 2021 enables us to offer training to you and your company! (another NFSA member value). The program is an eight-hour class on the Power of Positive Leadership. We are working on a pricing structure and will be sharing that soon in Spotlight on Fire Sprinklers. I'd love to come spend time with your senior leadership team, your sales team, and/or your front-line workers. The course can be customized to make sense to you and your team! I can't wait! We can all use positive leadership strategies to our advantage, and this is going to be an addition to our NFSA course offerings that provides a new perspective.

Back to our theme of Emerging Technologies, I must send a shout out to the Virtual Reality resource that is coming soon

thanks to the Home Fire Sprinkler Coalition (HFSC). NFSA was so excited to be part of the filming of the new footage in Ashland City, TN, and we look forward to seeing this resource used across the country. For all the details, visit www.homefiresprinkler.org. Being able to put people into two identical rooms (one with a fire sprinkler and one without) will be a game changer. I can just imagine how this can make a difference to policy makers, citizens and firefighters too! Seeing is believing for sure, and our side-by-side burn demonstrations do this so well. However, there are times that the side-by-side is not an option, and this will provide a great alternative or addition!

As this year heads out of the chute full steam ahead, know that we are focused on continuing our efforts to support our mission *'To protect lives and property from fire through the widespread acceptance of the fire sprinkler concept'* with our work. Fire Team NFSA is slated to be back on the road, and we will continue to expand our outreach across the board. Let's make 2022 the best year yet and live it with positive, intentional work!

Until next time, Stay safe,

Vickie

P.S. I would be remiss to not give a big shout out to Ray Fremont Sr.'s family. Ray is featured on our cover for this issue, and we applaud him and all the differences he made to the fire sprinkler industry. General Air Products will continue to be a legacy to his name, as Ray shared his passion well with his children and the General Air family. Ray lived and loved BIG, and those of us lucky enough to call him friend, are lucky enough. We look forward to presenting the 2021 Golden Sprinkler Award to his family when we gather again for our conference. We miss him and toast him as we embark on this new year. Ray would want nothing less than our total commitment to the cause. Much love to the Fremont family!

#fastestwater

Fire Sprinklers Save Lives!



FIRE SPRINKLERS IN ACTION

Indiana

Two Sprinkler Saves in Evansville, IN in One Week!

Thanks go to our friend Chief John Buckman for alerting us to this sprinkler save!

On October 11th, Evansville fire crews were called to an industrial building for a fire that broke out shortly before noon.

Officials say they put out the fire with the help of the building's fire sprinkler system, and everyone was back to work in about an hour.

They say this is the second time recently that a sprinkler system has helped stop a fire from spreading.

A few days before, there was a fire at a former Whirlpool plant. The space was filled with Lithium batteries, but fire crews say the sprinkler system activated and put the fire out. No one was hurt. Fire officials used these saves as an opportunity to share the importance of fire sprinkler systems.

ing. One fire sprinkler activated and extinguished the fire prior to firefighters' arrival.

The damage was kept to approximately \$5,000.00. After replacing the water heater, the restaurant was open for business the next day. Estimated property value saved: \$7,500,000.00. No injuries were reported.

Texas

Single Sprinkler Extinguishes Hotel Arson Fire



Thanks go to Harris County Fire Marshal's Office Director of Communications Rachel K. Neutzler, for sending us this sprinkler save.

On October 23, Harris County ESD 48 Fire Department requested HCFMO investigations for a fire at the Woodspring Suites in Houston, TX. A man was staying in a room with his girlfriend. During an argument, he assaulted his girlfriend and set fire to the hotel room. The fire was stopped by the fire sprinkler system. The perpetrator was arrested and charged with assault by HCSO and arson of a habitation by HCFMO. This fire could have been much worse, but one fire sprinkler activated controlling the fire until the fire department arrived. *#fastestwater.*

Illinois

Sprinkler Save at Extended Stay Hotel

Thanks to Schaumburg, IL Fire Marshal Michael Rons for sending us this sprinkler save!

A fire occurred on November 11th at an extended stay hotel. A contractor was working with some chemicals that contacted a heat source and ignited. A single sprinkler activated and extinguished most of the fire. Damage was limited to one unit and no residents were displaced.



Single Sprinkler Saves Restaurant

Thanks to South Barrington, IL Fire Chief Jason Parthun for submitting this sprinkler save.

On November 16th, a fire broke out at the Wok-N-Fire Restaurant in South Barrington, IL.

The water heater located in the kitchen area caught fire. This was located in an operating restaurant with eight employees in the build-



Fire Sprinkler System Controls Fire at Walmart

Thank you to NFSA Contractor Member American Fire Protection Group's Joe Tortorici for sending us this sprinkler save and to the Trophy Club, TX Fire Department for posting the save on their Facebook page.

On October 27th, fire crews responded to a report of fire in the



continued from page 20

outdoor garden area of a local Walmart. Upon arrival, crews noted a fire involving merchandise on pallets. Involved were a skid of fire starter logs and an adjacent skid with tiki torch fuel. The fire sprinkler system had activated, containing the fire. First in crews did a great job limiting damage and further containing fire spread. There was minimal damage to the roof structure. A cause is not yet determined. No injuries were reported.

Fire Sprinkler System Controls 3 Arson Fires Set in Apt Complex

Thanks go to NFSA Contractor Member American Fire System's President David Stone for sending in this sprinkler save!

On October 29th, three separate fires were set in a Houston, TX apartment building.

When firefighters arrived at about 3:00 a.m., they found three small fires in the building: a burning wreath on a door, a car on fire on the 8th floor of the parking garage, and a fire in a stairwell.

"We extinguished each fire easily, with the help of the sprinkler system," District Chief Greg Leonard with HFD said. "Now we're just cleaning up. But we had no major fire, no injuries, thankfully."

Wisconsin

Sprinkler Save at Goodwill Industries

Thanks to Madison, WI Fire Marshal Ed Ruckriegel for sending in this sprinkler save!

On October 8th, firefighters were dispatched to the Goodwill of South-Central Wisconsin Home Office round 12:45 for a report of a fire. Occupants were evacuating as firefighters arrived.

Crews found smoke at the back of the building where the dumpster and trash compactor were located inside. Officials said a single fire sprinkler inside the compactor room helped control the fire until firefighters were able to put it out.

Damages were held to only \$500. No injuries were reported

Fire Sprinkler System Saves Hotel

Thank you to Brookfield, WI's Deputy Chief of Fire Prevention Nick Rogne for sending in this sprinkler save. Thanks also go to the Wisconsin Fire Sprinkler Coalition for posting the save on their Facebook page.

On the evening of October 31st, Brookfield, WI fire crews responded to a report of a fire at TownePlace Suites.

At approximately 11:00 p.m. the Waukesha County 911 Communications Center received a 911 call for a reported grease fire in one of



the apartments, with an active sprinkler activation and alarms sounding. First arriving units reported light smoke in the hallway and activation of the sprinkler system.

The fire was contained and extinguished by the fire sprinkler system. The fire was limited to the kitchenette. There was no structural damage to the building. Areas of the building were evacuated to protect occupants. The fire remains under investigation, and there is no damage estimate for the structure or its contents.

Sprinkler System Controls Apartment Fire

Thank you to NFSA member Complete Fire Solutions for reporting this sprinkler save! CFS did the head replacement in this apartment!

On November 14th a fire on the third floor was reported at a local apartment complex in Beaver Dam, WI. The Beaver Dam Fire department responded immediately and found no smoke or fire visible from the apartment complex and residents actively evacuating.

Crews found dark black smoke coming from the apartment where the fire originated and quickly made entry. Crews were able to quickly knock down and extinguish the fire and keep the fire contained to that unit. The presence of a sprinkler system within the apartment unquestionably prevented further spread and damage to neighboring apartments. Crews remained on scene just under 3 hours to make sure fire was completely extinguished and to ventilate the building.

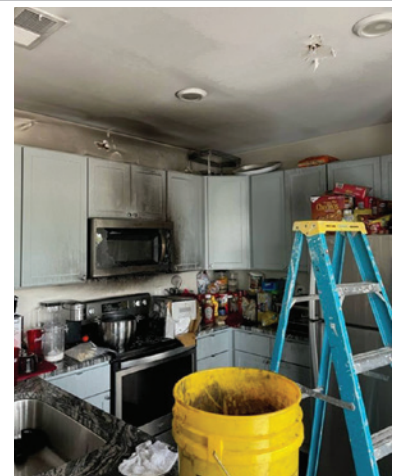
No civilians or fire personnel were injured during this incident.

Missouri

Single Sprinkler Saves Historic Senior Apartment Building

Thank you to NFSA member Boyer Fire Protection for sending us this sprinkler save!

St. Louis firefighters responded to a fire at the historic Homer G. Phillips complex in St. Louis. It opened as a hospital in 1937 but was abandoned in 1979 and sat vacant for 20 years before it was repurposed as senior apartments and refitted with fire sprinklers. Boyer Fire Protection quickly replaced the activated sprinkler and put the system back in service. "It's a good feeling knowing that all of us work in an industry where we all play a critical part in saving lives and property," said Richard Boyer.



continued on page 22

Fire Sprinklers in Action

continued from page 21

Minnesota

Single Sprinkler Extinguishes Grease Fire



Thanks to Woodbury, MN Fire Marshal Rick Current for sending in this sprinkler save!

A tenant had a grease fire which activated 1 sprinkler head above the stove which extinguished the fire. As you can see by the pictures, there was very light fire if any to the stove and cabinet above.

Colorado

Single Sprinkler Extinguishes Fire at High School



Thank you to Brighton, CO Fire Marshal Elizabeth Bednarcik, who sent us this account of a recent sprinkler save at a local high school.

On October 6th, a student at our local high school went into the bathroom and lit the paper towel dispenser on fire. The fire engulfed the entire paper towel dispenser, which was attached to a painted drywall surface.

The flames activated the sprinkler in the bathroom, which extinguished the fire. I was so happy to hear that the sprinkler activated and put the fire out before it spread or created more smoke. All students were evacuated, and EOC was set up to get all students sent home safely.

California

Hotel sprinkler save!

Thank you to South San Francisco, CA Battalion Chief Fire Marshal Ian Hardage for sending us this sprinkler save.

On November 3rd, we had a sprinkler save in a hotel in South San Francisco. Approximately at 10:00 a.m., emergency respond-

ers were dispatched to a fire alarm activation. Upon arrival they found the building fire pump running, water flowing through the building fire sprinkler system, and the building fire alarm sounding. Upon investigation they found a single fire sprinkler activation in a fourth-floor unit that extinguished an accidental, small lithium-ion battery storage device that was plugged in on the nightstand that failed and went into thermal runaway and began to ignite adjacent combustible foam headboard, mattress, bedding, and other combustible in the immediate area. The single sidewall activation extinguished the fire prior to first responders arriving on site and prior to the fire growing large enough to cause significant fire damage to the hotel.

The hotel was back in operation with limited business continuity impact after approximately 5 hours after initial activation.

Thank you to your entire industry for its quality products that continue to perform as or better than designed.

Washington

Fire Sprinklers Save Cabela's

Thanks to Nate White, Service Foreman at Western States Fire Protection in Redmond, WA for sharing this sprinkler save:

While your camping gear may come pre-loaded with that campfire smoke smell, you are still able to shop at the Tulalip, WA Cabela's. Fire crews were alerted to a water flow alarm at the giant sporting goods store in Tulalip early in the morning on Friday, Oct. 15th. Smoke had filled the huge retail space, making it difficult for fire personnel to locate the fire's point of origin. Eventually, crews found four sprinkler heads had extinguished a fire in a rear storage area.

"Although there was smoke damage to the soft goods, the sprinklers prevented Cabela's from burning down a \$20 million asset," Marysville Fire District Fire Marshal Thomas Maloney told NFSA. "The sprinklers did their job."

The sprinklers flowed for at least 40 minutes. A service crew was called in right away to address the water, and NFSA contractor member Western States Fire Protection responded to put the fire sprinkler system back in action. There were no injuries, and the cause of the fire is under investigation. •



We hope you'll choose to support our Advocates' Coalition as we work to create Fire Safe Homes

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Emerging Technology in Inspection, Testing, and Maintenance

by Vince Powers, *NFSA's ITM Specialist*



With technologies emerging in the fire protection industry what seems almost daily, how do we as an industry keep up with them? There are a variety of evolving technologies in the fire protection industry, including not only how the fire protection systems are maintained, but also how we learn. COVID hit us out of nowhere and changed how we do many things. Most employers closed their doors, and many people received a crash course on how to conduct virtual meetings. Over this short time for development of platforms, the virtual meeting platforms changed almost weekly. In the fire protection industry, there are many states that required a continuing education credit to continue to maintain certifications. Like many industries, virtual training became the norm, and The National Fire Sprinkler Association was not to be left behind in creating several virtual training sessions. We plan to continue to create more moving forward. This seems to be the new normal and is a great resource, but what about actually conducting inspection, testing, and maintenance of water-based fire protection systems?

NFSA Training and E-Learning Site

<https://community.nfsa.org/learning/home>

Thankfully NFPA 25, The Standard for Inspection, Testing, and Maintenance of Water-based Fire Protection Systems was ahead of the pandemic. Not because of the pandemic, but automated inspection, testing, and maintenance (ITM) has been discussed for several years within the fire sprinkler industry. We are always looking for ideas to be able to improve the processes and effectiveness of the entire industry. In the 2014 edition of NFPA 25, Section 4.6.6 was reserved for automated testing. In the 2017 edition several new sections were added under 4.6.6 to provide guidance and requirements for automated inspection and testing.

NFPA 25 states that the requirements for automated inspection and testing must meet the requirements within the standard. As an example, when conducting the annual operation of a control valve remotely, a valve status test must be completed after the control valve is returned to the open position. The use of automated testing does not change these requirements or any other inspection and testing requirements in the remaining chapters of the standard. This may open opportunities for manufacturers to design and manufacture new control valves that can be operated remotely. While inspection and testing tasks are being completed, the inspector must still visually observe these tests, whether it is through video

cameras, drones, or physically being on site. This could also add additional installation requirements for this equipment.

There are several new technologies on the market, and many in the research and development phase. Some of these may be not very old but are not used much in the fire sprinkler industry, such as wireless monitoring of waterflow alarms and tamper switches. How about an automatic testing flow switch? Well, that is and has been on the market for a while. One of the biggest issues we fight in this industry is corrosion. With new technology such as the *Potter VSR-AT*, we can test a flow switch without flowing water. This saves water, and at the same time does not introduce new oxygen into the system contributing to corrosion. This is allowed in accordance with Section 4.6.6.4.1, which states that automated

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equipment that does not discharge water shall be permitted. It is stated in another section that water must be flowed once every three years.

Another new technology that is on the market is the *EAS-1 Electronic Sprinkler by TYCO*. This sprinkler is specifically made to address challenging storage fire hazards. They operate through heat detectors that are connected to a specific receiving panel. The heat detectors sense the rate of heat rising and the panel uses an algorithm to determine what sprinklers to activate to contain the fire.

As the industry evolves and NFPA standards continue to evolve with technology, we need to determine the best way to conduct these tasks. In time, some buildings will have fully automated systems implemented, while some will have only partially automated systems installed. There will certainly be variations, and as an industry we must adapt and explore ways to complete the required ITM in these types of facilities. Most importantly, we must ensure to a reasonable degree that the fire protection systems will operate if needed by conducting all related ITM tasks, while at the same time ensuring that our technicians are safe. This process may be different for each fire protection service provider and certainly will be different depending on location and type of equipment. To assist in all of this, be on the lookout for NFPA 915 The Standard on Remote Inspections. It is in the process of being created and will provide requirements for procedures for remote inspections, tests and distance monitoring. •



While inspection and testing tasks are being completed, the inspector must still visually observe these tests, whether it is through video cameras, drones, or physically being on site.



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Large Diameter Fire Department Connections: A Cautionary Note

by Nicholas Brondum

Introduction

Before any sprinkler technology can be used to extinguish a fire, the system must first have water supplied. While domestic water supplies or other solutions like fire pumps can supply water much faster, nearly all sprinkler systems will require a fire department connection (FDC). While many of the model codes require these fittings, they do not differentiate which type of fitting is needed, leaving this decision up to system designers and AHJs. However, before choosing to use only one type of FDC, it is important to examine the purpose of these fittings as well as the different types.

The Job of an FDC

What are FDCs for?

FDCs are designed to increase the water pressure in fire protection systems. While sprinkler systems can be supplied by domestic water supplies, fire pumps, and other alternative means, FDCs are another method to supply water for firefighters. When initially designed, sprinkler systems' water supplies are determined for a certain design area. This design area correlates to the number of sprinklers that will open to protect the space during fire. From this information, the water flow rate required to extinguish a fire in that area can be determined. From this flow, the pressure required to achieve this flow is calculated. However, if more sprinklers were to open, in extreme circumstances, the flow required to extinguish these fires might not be possible to achieve. Thus, the fire department can increase the pressure, and therefore the flow in the system, through FDCs.

FDCs are also designed to supply water to standpipe systems, especially manual standpipe systems. These manual systems may necessitate the use of a FDC for firefighters to supply the flow and pressure needed to combat a fire. Because standpipe systems may require a higher pressure than sprinkler systems, achieving the necessary flow through other means can be much more difficult. Therefore, as with manual systems, firefighters can pump water into the building to provide the required system demanded water supply.

Pressure vs. Flow

It is important to draw a distinction between the water pressure and the flow. While it may be referred to as volume, the volumetric flow rate is not the volume of water. This distinction can be seen in the units of each quantity. The volume of water in the system can be shown in cubic feet (or cubic meters). This quantity is determined

by the length of the pipe times the cross-sectional area of the pipe. The volumetric flow rate is given in units of cubic feet (or meters) per second. Therefore, increasing the pressure will not increase the volume of water in the pipe, but it will increase the volumetric flow rate. This pressure increase, and by extension, volumetric flow rate increase, is one of the aims of an FDC.

Two Types of Fittings

Introduction

The two types of these fittings are known colloquially as Siamese and large diameter quick connect fittings. Each of these have their advantages and disadvantages, which will be discussed as follows.

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Siamese: The “Old School” FDC



Wall mounted Siamese Fire Department Connection.

Colloquially known as Siamese fittings, a pair of 2.5” threaded inlets are the traditional choice for FDCs. These fittings are still the majority of FDCs, although large diameter quick connect FDCs are becoming more common. These fittings date back to the 1970s and earlier, before the widespread fire service adoption of large diameter supply hose. During this era, 2.5” and 3” hose, both of which using 2.5” couplings, were typically the largest hoses on fire apparatus. Therefore, these couplings were adopted to FDCs. Today, 2.5” couplings are still prevalent on American fire apparatus, lending to the continual use of traditional Siamese FDCs.

In addition to being the traditional option, redundancy is another additional benefit of Siamese FDCs. One common justification within the fire service is that if one of the inlets, or its threads, are damaged, a hose can be connected to the other inlet, allowing for use of the FDC. While two fire apparatus cannot supply water through the FDC at the same time, this arrangement also allows for two separate fire apparatus to connect to the FDC, potentially primitively accounting for a failure of one fire apparatus pump or fire hydrant. However, some jurisdictions are turning toward

newer large diameter quick connect FDCs, which lack this redundancy.

Large Diameter Quick Connect: The “Latest and Greatest” FDC

After only about 15 years in the FDC market, these connections are becoming common in many jurisdictions. Known colloquially as Storz, large diameter, or quick connect FDCs, these 4” or 5” connections are designed to be coupled to large diameter hoses, which have become quite prevalent in the American fire service through the last 50 years. These connections are non-threaded, meaning either end of a fire hose can be used to supply water to the system, unlike the threaded Siamese connections. Another benefit of non-threaded connections is that they allow for greater interoperability between fire departments that may not use the same hose threads. Finally, because these fittings are non-threaded and are also only for a single hose, firefighters can connect these hoses faster. For these reasons, many jurisdictions have chosen to require large diameter FDCs.



Storz Fire Department Connection.

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Standalone Siamese Fire Department Connection.

However, while these are becoming more popular, there are some drawbacks with large diameter FDCs. While these FDCs do not have the redundancy benefits of their Siamese competitors, it may also be important for fire departments to examine their supply hose. An annex note in the 2020 edition of NFPA 1961: *Standard on Fire Hose*, supply hose should be used at a maximum pressure of 185 psi. Attack hose, on the other hand, should not be used at an operating pressure greater than 275 psi according to A.3.3.4.1. Therefore, 2.5" or 3" hose would allow for firefighters to add more pressure to an FDC than the large diameter hose used with quick connect FDCs. However, it is important to ensure that the system can withstand this high pressure. If the system rated demand pressure is exceeded through the FDC, then the system components can fail, creating far more challenges for firefighters. With this particular concern in mind, it is important to make a quick note on two current challenges regulating FDCs.

A Note on Regulation

One challenge directly affects designers of these systems. While this article has focused on FDCs for sprinkler systems, it is important to consider FDCs for standpipes, or for combined sprinkler and standpipe systems. One important consideration with 2.5" inlets is that each inlet is designed to supply 250 gallons per minute in accordance with NFPA 14. Therefore, if a system were to require 750 gpm, then three inlets would be needed rather than the standard two, as seen in most Siamese connections. However, NFPA 14 only states that large diameter connections can be used if they are listed for that use. This leaves the guidance to the FDC manufacturer, with some providing between 500 and 1000 gpm.

Another regulatory conundrum is a blanket requirement of large diameter quick connect FDCs. As discussed previously, these FDCs are well suited for buildings requiring a significant increase

in volumetric flow rate with only a small pressure increase, such as low-rise or single-story buildings. However, for buildings only requiring a small flow increase, large diameter FDCs could cause significant problems. For example, it is important to evaluate specific language for FDCs on 13R and 13D systems. While many of these systems do not require FDCs, a large diameter fitting would provide a large flow to much smaller residential piping. As mentioned in the above section, if too high of a pressure or a flow is added to a system, then system components can fail. Therefore, it is important to ensure that language is included in relevant codes to limit large diameter FDCs in residential systems.

Conclusion

While FDCs may not be the most innovative technology, it is important to consider the water supply components of these systems. It is important to make sure that large diameter FDCs are not installed on buildings equipped with systems that only require a small flow and pressure, such as residential buildings. It is also wise to not include large diameter FDCs on high-rise buildings that may require a significant pressure increase. This can be done through the inclusion of language to limit these increasingly popular FDCs to systems where their advantages can be best realized. •

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Washington State NFSA Member Gives Idea House Best Idea Ever

by Suzanne Mayr, *NFSA Northwest Regional Manager*

If you toured the 2021 Idea House in Woodinville Washington, you'll be forgiven if your attention was captured by the Zoom Room, complete with green background screen. You'll be excused if you can't stop thinking what it would be like to have two full-size washers and dryers in a dedicated Taj Mahal-like laundry room. You might even be absolved if you start dreaming about Mother Nature taking care of all the yardwork in the certified wetlands that literally make up the backyard.

But you'll be kicking yourself if you overlook the state-of-the-art fire protection system that blends seamlessly with the elegant interior and tech-savvy features.

Moore Fire Protection, an NFSA member from Issaquah, designed and installed the sprinkler system in the 2021 Idea House. Because tours of the home benefit a local charity and showcase sustainable living, owner Tracy Moore enlisted the help of NFSA members Viking SupplyNet and General Air to also donate time and materials so a fire sprinkler system could be installed in the Idea House.

Washington state leaves it up to local jurisdictions to adopt the fire sprinkler requirements found in the International Residential Code. To date, ten jurisdictions require all single-family homes to install sprinklers. Homes built outside those jurisdictions often go un-sprinklered unless a home builder talks to clients about installing a system.

Moore, who is also a pillar of the Washington Residential Fire Sprinkler Coalition, has made it his mission to educate the many home builders he works with about the life-saving advantages of

fire sprinklers. Those homebuilders play a key role in deciding whether a home will or won't have a fire sprinkler system installed.

"I joined my local Master Builders association mainly to have a place where I could speak directly to the builder community at large about fire sprinklers," Moore said. "At the Residential Builder Council meetings, I was always the only fire sprinkler contractor in the room."

Moore remembers those first few meetings as awkward. "Most made it obvious that they did not want me there. I assured them that I was only there to help," he said.

Most of the contractors at those Master Builders meetings built homes in communities where fire sprinklers were required in all new homes, such as Redmond, Kenmore and Mercer Island. Other nearby areas had requirements that kicked in depending on a home's square footage, water availability or ease of access. Thus, installing fire sprinklers is a reality for a majority of the area's home builders.

"The reason I am here is to help you plan for those eventualities," Moore told the builders. "With good planning, and some foreknowledge, the costs for these systems can be dramatically reduced. This message was somewhat well received, and I was engaged in pre-planning discussions on projects more and more often."

As time went on and Moore developed a better rapport with the builders, he encouraged builders to view fire sprinklers as a benefit that could help set them apart.

"I told them it was time to stop fighting against fire sprinklers and start seeing the unique opportunity that fire sprinklers pro-



Viking concealed fire sprinklers grace the ceilings of the primary bedroom in the tech-savvy, sustainable 2021 Idea House. NFSA member Moore Fire Protection installed the system in this showcase home, providing not only a priceless life safety system but also contributing to the home's green ideals.



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vide them. I pointed out that a builder who not only ‘offered,’ but also highly encouraged their clients to install residential fire sprinklers gave them a unique marketing slant that would not be the same once fire sprinklers were required everywhere. Not only were they providing their clients with the latest “state of the art” fire protection system, but they were also completely helping out their neighbors and entire community due to the very compelling green nature of fire sprinklers.”

Moore’s message has been well received. More than 60 percent of his business is in the residential market.

“My success rate in getting builders to not only offer but to also encourage residential fire sprinkler systems has skyrocketed. Custom home builder Lochwood-Lozier now offers fire sprinklers to clients as part of its design-built process,” Moore said.

“Fire sprinklers used to be a considered a negative,” said owner Todd Lozier, builder of the 2021 Idea House. “A lot of people were afraid of installing them in their homes, thinking they would be like smoke detectors and have false alarms. Now we educate our customers on the reliability of fire sprinklers, as well as their life safety and green benefits.”

Fire sprinklers fit right in with the ideas presented in the 2021 Idea House.

The house touts not only techno-savvy and creative design, but

also sustainability bona fides. The home underwent a rigorous third-party review to become BuiltGreen certified. Practices such as mitigating erosion and protecting surrounding trees’ roots during construction, and features such as a domestic hot water recirculating pump and a designated shoe removal area near the main entrance earn points towards the BuiltGreen designation.

Fire sprinklers can play a key role in increasing a home’s sustainability. In 2021, FM Global reaffirmed its initial groundbreaking study showing that in a home fire with installed sprinklers:


- Greenhouse gas emissions were cut by 97.8%
- Water usage was reduced between 50% and 91%
- Fewer persistent pollutants, such as heavy metals, were found in sprinkler wastewater versus fire hose water
- The high pH level and pollutant load of non-sprinkler wastewater are an environmental concern

In its new Environmental Impact of Residential Fires Review, FM Global estimates since 2010, more than 1.8 billion pounds of greenhouse gases have been emitted into the atmosphere due to the lack of home fire sprinklers. Installed home fire sprinklers would have reduced greenhouse gas emissions by 97%.

Tracy Moore takes this research seriously.

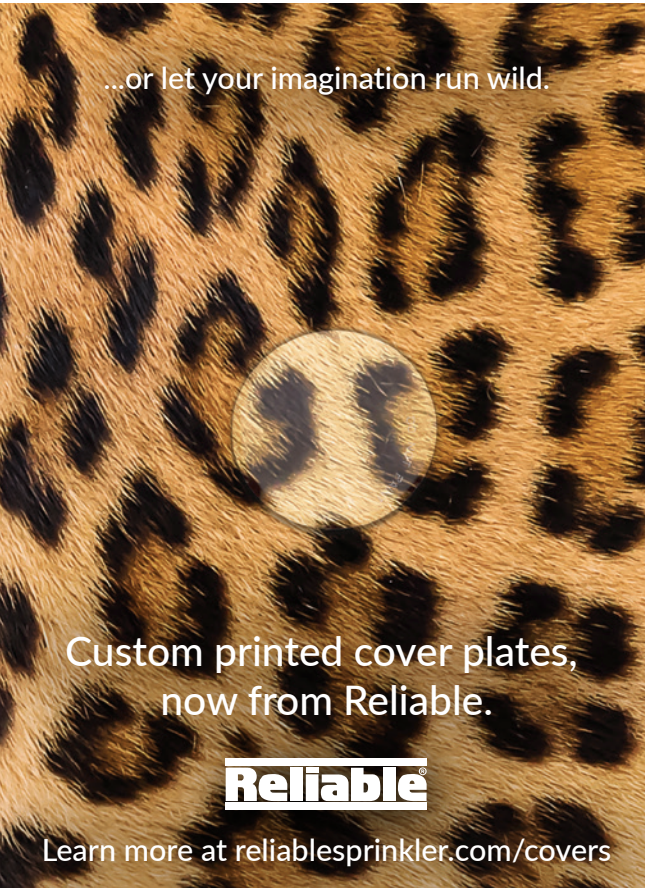
“While life safety remains the main reason why I advocate for fire sprinklers, I am finding that the ‘Fire Sprinklers Are Green’ message really resonates with home builders and ultimately home buyers,” he said. •

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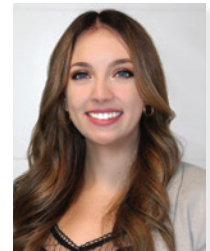
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Big Tech's Big Impacts: Developing Technology and its Effects on Fire Protection Solutions

by Darby Napieralski with contributions by Martin Workman



As industry professionals, we're no strangers to emerging technologies, their unique applications, and the fire protection requirements and demands that follow. But in a world where technology research and revenue are advancing exponentially, and society relies more on the production of tech such as semiconductors or massive energy production, we often find ourselves energetically asking, "What new innovation can we provide?"

Last month, The Semiconductor Industry Association (SIA) declared global semiconductor industry sales were over \$47 billion by the middle of the third quarter – that's up by over 29% as compared to 2020's Q3. To illustrate this uptick in chip manufacturing, Intel, the world's largest semiconductor manufacturer by revenue, is partnering with industry giants to provide advanced integrated circuits for the United States Government. This is just one example highlighting the impact that the semiconductor industry has on society across the globe – its continued innovation is crucial to our connectivity and networking capabilities.

There are plenty of other technology progressions and industries growing diligently, as well. Just some of these exclusive applications include batteries so large, they can support grids massive enough to power tens of thousands of homes. Additionally, cutting-edge, automated storage solutions from the industry's most nascent companies provide a level of storage convenience so revolutionary, it's hard to argue that their philosophy is the future of storage.

It's projected that by 2030, there will be about 125 billion connected devices across the globe. With this rate of growth, it's important we consistently raise the bar for our own manufacturing and development standards. What ground-breaking solutions are we, as fire protection experts, considering to keep these advancing applications safe for our technology-reliant civilization?

Well, for starters: research. Protecting ever-progressing applications require fire protection manufacturers' continued exploration and learning. For instance, protecting board foundries, or basic chip manufacturing, relies on a sophisticated level of factory and production comprehension. Understanding the facility in which these products are made is the key to success in these scenarios. Said facilities are not like typical industrial assemblage plants; rather, their manufacturing / assembly areas are large "clean rooms". These clean room applications require air exchanges to create a "pure" environment, and air exchanges are possible with duct work – duct work that is protected with fire sprinklers.

In the past, a convenient fire sprinkler duct installation didn't really exist – the trade would instead "hard pipe" to said sprinkler, and a few resourceful contractors would provide an access door that allowed for sprinkler inspection and maintenance. Today, however, products have advanced, and our industry consistently proves that it's well prepared to take on these new and evolving protection challenges.

In our duct work scenario, for instance, products like FlexHead® Industrial / Duct Sprinklers make protection and installation much easier, while simultaneously providing installation requirement compliance for these fire sprinklers (such as the ability to easily remove the sprinklers for inspection purposes). Moreover, oftentimes the air exchanges that channel through these ducts are corrosive, making the selection of a corrosive-resistant fire sprinkler crucial – choices like Electrolys Nickel PTFE and stainless-steel sprinklers will likely be used in these applications to ensure that proper protection is provided.

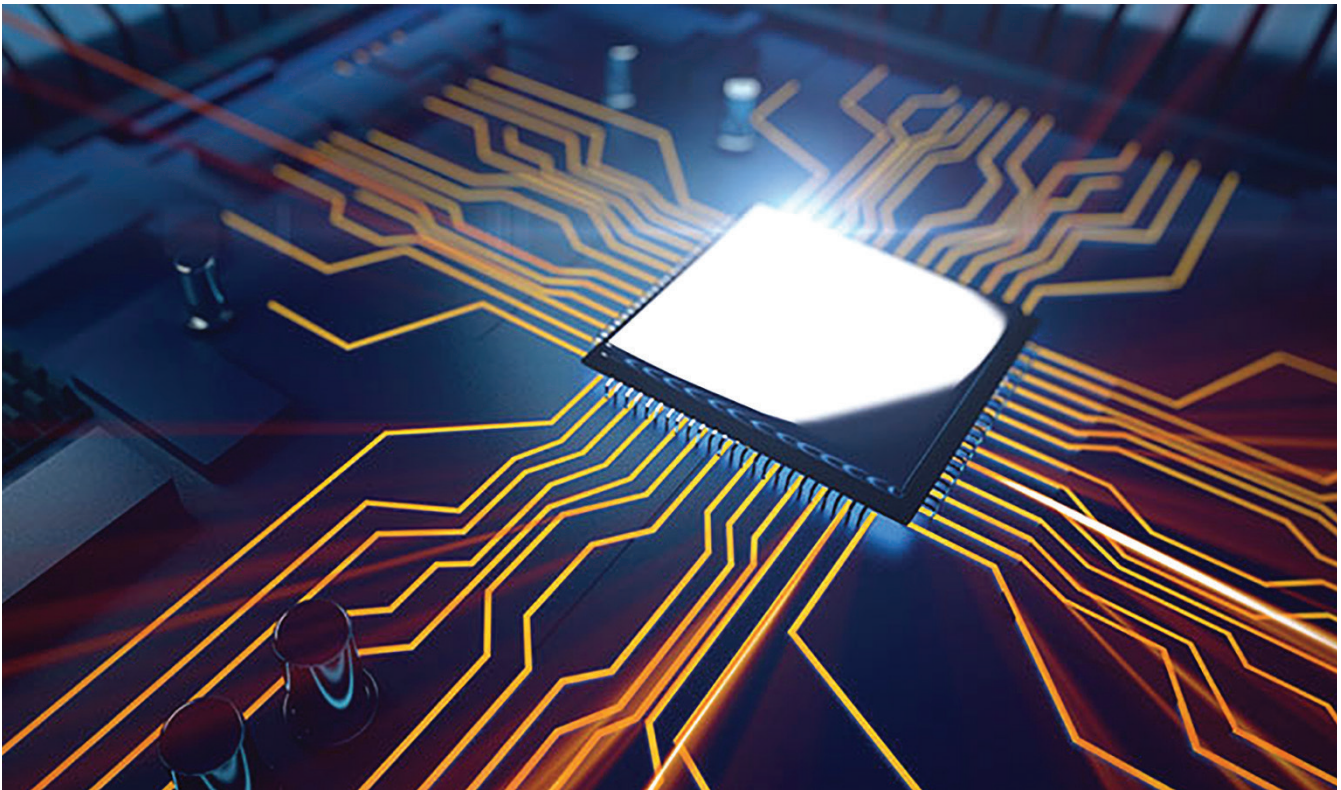
In addition to protecting the duct work for these clean room applications, there are other scenarios to consider when looking to safeguard semiconductor production environments. Silane, for instance, a pyrophoric gas (meaning that it ignites in the presence of oxygen), is used as semiconductor coating in chip manufacturing facilities. This gas is highly dangerous – methods of storage and transportation are meticulously detailed so problematic circumstances can be avoided when this gas is in use. Typically, these scenarios will see deluge systems where Silane exists – a good indicator that many of our existing and popular solutions are suitable and practical for new means of technology production.

While Silane gas itself is dangerous, its potential for leaks is just as (if not more) significant. Planning for leaks and being prepared to face them is crucial to a safe production environment. While there are a multitude of options available for gas detection, cutting-edge, sophisticated sensors are the most plausible options. Oftentimes, there are advanced visual detection devices used in these applications – innovative fire detection technologies include devices such as the FDS301 Intelligent Visual Flame Detector from Micropack, or Viking's VSF Intelligent Video Flame Detectors. These types of explosion-proof detectors have transformed the way we think about protection for numerous high-risk applications.

In 2022, it's perhaps clearer than ever that what we create not only protects critical applications and saves countless lives every

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“In 2022, it’s perhaps clearer than ever that what we create not only protects critical applications and saves countless lives every year, but it ensures that the advancements of our civilization and the many technology platforms on which we rely can continue to work effortlessly.”



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year, but it ensures that the advancements of our civilization and the many technology platforms on which we rely can continue to work effortlessly.

So, in short, what are we doing as an industry to advance along with our changing tech? As researchers and pioneers, it’s clear that we can determine the foundations of a new challenge and subsequently develop solutions that meet the needs of a specific environment. Our groundbreaking research and development teams coupled with no scarcity of seasoned tradesmen have proven that we are already ahead of the game. Many existing solutions are proving to be the correct answer for new challenges, and when we are faced with something completely unique, we know that we can rise to the occasion with assurance and, most importantly, a novel solution. •

To learn about Viking’s initiatives, product innovations and more, visit www.vikinggroupinc.com. •

Darby Napieralski is Marketing Communications Specialist for Viking Group. Martin Workman is Viking Vice President, Product Management.

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Children's Book Becomes Reality Thanks to Local Artist

by Elizabeth LaFond Coppez



The light is dim. It's warm, safe, and quiet. I inhale a sweet scent of almonds and lavender as I kiss my daughter's forehead and whisper, "goodnight."

As I exit her doorway, she pops up quickly and asks, "Mommy, can you tell me a story?"

As much as I want to resist and enjoy some free time channel surfing, I sit down and reach deep into my imagination to give Grace a stellar bedtime story that we'll all forget by morning. We find ourselves on a vegetable farm with a little girl who becomes friends with a goat.

Grace is satisfied, and we go on with our daily lives—Grace enjoying kindergarten, and her brother, Joseph, adjusting to life with his big sister in school all day.

A week goes by, and our bedtime routine extends a little longer again because Grace asks, "Mommy, can you tell me that story about that goat?"

My tired brain thinks, "goat, goat, goat. What story is this?" My inner light bulb flickers, and again, the story flows.

A month goes by, and again, Grace asks for the story about the goat. That night, I wrote it down.

And now, three years later, my dream of bringing this story to life came true! "*Farley, the Hippy Hoppity Goat*," is available on Amazon, and was all made possible by local artist, Robert Markey.

I met Bob at a read aloud event at the Edwards Public Library in Southampton, Massachusetts. He joined writer Lynne Guyette and she read her book, "*Jesse's Duck Story*," that Bob illustrated. We exchanged cards, and before I knew it, Bob brought "*Farley*" to life in his art studio in Ashfield, Mass., using watercolors to depict each scene.

Bob is an incredible artist. He's very kind and soft-spoken, and admitted he was nervous when we first met to see our first copy of the book. We met at Thornes in Northampton. I was beaming. I took my mask off briefly so he could see the smile on my face that just kept getting wider.

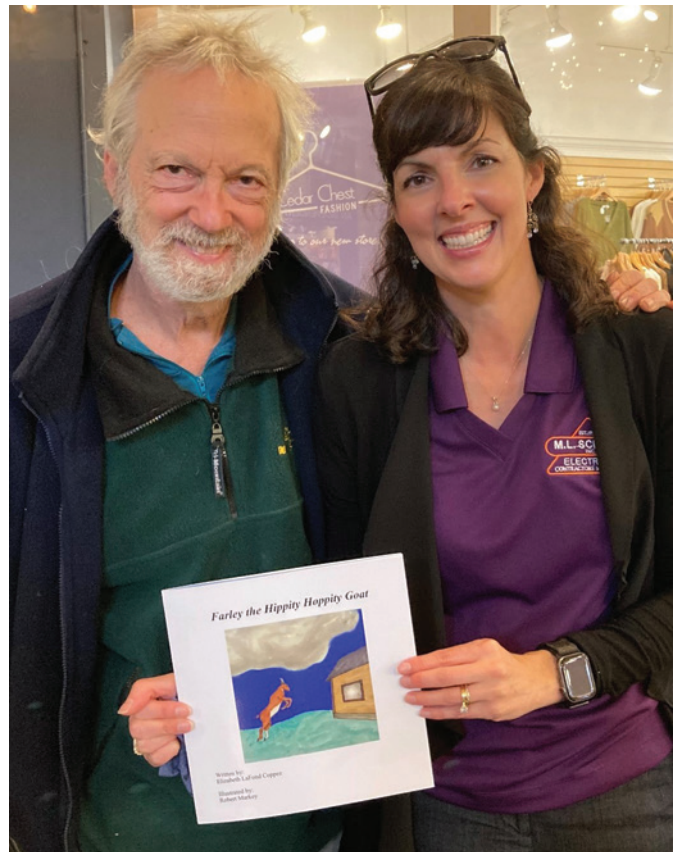
"I'm so glad you're happy," Bob said to me as we parted. Happy is an understatement. Bob managed to capture the essence of the story in his bright scenes – each brush stroke coming together to give the reader a wonderful, fun, playful visual.

Bob is a fine artist with a great life story. His first love was music, and he began playing the guitar at age seven. He hoped to study guitar in college, but instead studied physics on a scholarship at the Massachusetts Institute of Technology (MIT).

"Learning about the beauty of the universe and how it works blew me away," he said.

Although uninterested in dedicating his professional life to physics, enrollment in a wood sculpture class at UMass for fun was life altering. "As soon as I started the class, I knew it was what I wanted to do with my life," he said.

Nearly 40 years later, Bob has traveled the globe working, study-



Artist Robert Markey and writer Elizabeth LaFond Coppez celebrate their book, "*Farley the Hippy Hoppity Goat*."

ing and teaching. He's been to Japan, India, Cambodia, Sri Lanka, Europe, Afghanistan, and Central and South America. His true joy is working with vulnerable populations creating community mosaic mural projects.

The enrichment he experiences after every trip abroad livens his

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soul. “The food, clothing, language and art are so different, and the people I meet are such good people,” he said. “To understand people abroad, and to relate to them through art has had a profound influence on me.”

His message to the world about art and community is peace and understanding. “How do we make the world a more peaceful and loving place?” he said.

Some of Bob’s most memorable projects took place in Brazil, where he taught himself how to create mosaic murals using broken tile and cement.

The first mosaic project he did with children experiencing difficult home lives, will always stay with Bob. “The moment this little boy finished it [artwork]—the look on his face moved me!”

Bob’s first mosaic project using broken pieces of mirror is in the Union Station underpass on Dwight Street in Springfield, Mass. I personally have been admiring those mosaics for years!

When I asked Bob if he would be interested in illustrating my

book, he said he “said yes” simply because I asked him. He admitted the project was more involved than anticipated, but he loves a variety of artistic mediums.

“I like doing everything!” he said. “I would like to illustrate more – each time it’s a little different.”

Bob is very busy, and recently completed a mosaic project in the space behind the Pushkin Gallery in Greenfield, Mass. He’s also volunteering to help restore and fix the Ashfield steeple, teaching an upcoming class on mosaics, and has some art shows, too.

Thanks to Bob, my little story now has life – it can be shared with so many children who love the simple pleasure of reading and listening to books. It’s pure magic.

And now, my children have a tangible book in their hands, that “their mommy” wrote.

You can learn more about Bob at robertmarkey.com, or find him on Facebook. And you can find our book by searching, “*Farley, the Hoppity Hoppity Goat*” on amazon.com.•

Fire happens fast...thankfully, so does this.



U.S. fire departments respond to an average of one home fire *every 86 seconds*.

On average, seven people per day die in U.S. home fires where fire sprinklers are not present.

Fire sprinklers can control and may even extinguish a fire in less time than it would take the fire department to arrive on the scene.

In a home with sprinklers, the average *property loss per fire is cut by about 70% compared to fires where sprinklers are not present*.

Residential fire sprinkler systems cut the risk of dying in a fire by about 80%.



www.nfsa.org





If I Could Choose Other People's New Year Resolutions

My doctor is a health nut. He's hiked the Appalachian Trail from start to finish. He's skied the highest slopes in Switzerland. He runs at least ten miles every day, training for the New York City and Boston Marathons. He is my age. He puts me to shame and loves to remind me every time I see him. I am in the unfortunate position to have my yearly physical in January, right after the holidays. The only marathons I participated in during the past couple of months are Italian family eating feasts (and yes, they do serve lasagna before the turkey!). The only resolution I put any stock in is to widen my search for a fat doctor that smokes.

However, if I had my druthers and could choose resolutions for others, I'd have a veritable field day, especially when it comes to advancing the fire sprinkler concept. For those in our industry, I would ask them to resolve to get involved in social media this year as in no other. The advantages are many and have been discussed in length in my previous articles. The cost is nothing but your time. The benefits are boundless, according to how much you are willing to commit. Even a half hour of your day can make a difference in growing your audience, reaching potential customers, engaging stakeholders and advancing the vision of a stronger industry and a safer world. Time to dip your toes in the water! Start with Twitter! It's simple, short and quick. For those of you that don't like to write, how can you go wrong with a character limit of 280? Even if posting is not your thing, start by following relevant accounts; others in the industry, fire departments, news outlets, and retweeting posts that are pertinent to fire sprinklers. At first you may feel that no one is listening. Persistence pays off! If you follow accounts, they will most likely follow you in turn and before you know it, you'll be off to the races!

Now my resolution for the fire service. Let me first say that I applaud our partners in progress in the fire service! I have seen a tremendous increase in positively reported sprinkler saves since the inception of our social media. I am thankful just about every day that I can post a positive quote from a local fire chief regarding the difference the fire sprinkler system made in a structure fire. Still, I sometimes come across quotes from the fire service that make me wince. "The majority of the damage was caused by the fire sprinkler system." "The sprinkler system caused extensive flooding and led to the displacement of 26 tenants." "Water from the fire sprinkler system caused over \$100,000 in damages." These are all actual quotes from the fire service when talking to the media about a fire that was extinguished or contained by sprinklers. While I know reporters tend to lean toward the sensational, we can all help to steer them in the right direction when discussing the fastestwater difference! Sure, they may ask about damage. Sure, you should always answer truthfully. But please don't forget the important truth that without the fire sprinkler system that stopped or contained that fire, the risk to residents, property and firefighters would have

been incalculable. That is the point that we need to get across to reporters, and, in turn, the general public.

Finally, my resolution for the media; dig deeper! You're reporting on a fire that was contained or extinguished by fire sprinklers. Everyone is safe. The building is still standing. Chances are you've reported on fires where fire sprinklers were not present. Notice a difference? Wondering why? When you interview a member of the fire service, ask questions! Interview the residents that were able to evacuate safely! Write a story about that dog that was home alone when a fire broke out but was saved by sprinklers! I receive sprinkler saves almost every day from our members. The majority (*I'd say 90%*) never make the news. There's no story there. No one was injured, the damage was minimal, and life goes on. One of the



first rules of journalism that I learned in college was to go beneath the surface, ask the questions no one else was asking, go to sources that are "in the know." NFSM stands at the ready to take reporters' questions and to educate on the life- and property-saving benefits of fire sprinklers. After reading a poorly reported sprinkler save, I often reach out to the reporter, inviting them to contact NFSM President Shane Ray or V.P. Vickie Pritchett to learn more about the positive impact of fire sprinklers. My resolution for those reporters is that they take me up on that offer!

Here's to hoping that others are better at sticking to resolutions than I seem to be. And, as I am writing this article a few days before Thanksgiving, that I have the fortitude to pass up that lasagna and refrain from taking an extra helping of stuffing. That annual physical is right around the corner!

Wishing you all a happy and successful 2022,

Joanne

Siemens Employees Get Hands-On Experience at NFSA HQ!



On October 20th, a contract class for Siemens geared towards estimating fire sprinkler installs took place at NFSA HQ. This project-based learning used our headquarters as a retrofit scenario to have groups compete in a bid.

Home Fire Sprinkler Coalition Virtual Reality Video Shoot a Success Thanks to Help from National Fire Sprinkler Association and Ashland City Fire Department

NFSA was happy to be part of a successful Home Fire Sprinkler Coalition (HFSC) live-fire video shoot on location in Ashland City, Tennessee. HFSC conducted the shoot to produce an unprecedented, virtual reality, 360-degree house fire and sprinkler educational video.

When it is completed later this year, viewers will be able to experience the fires without and with sprinklers as if they were inside the burning house. Using a VR headset, they can watch from any angle and hear the fire crackle. They'll see flashover and watch as the flames and smoke spread. They'll understand how the high

heat from the fire activates the sprinkler and watch as the sprinkler controls the blaze. Viewers will also be able to compare damage in the two rooms after the fires are out.

NFSA teamed up with the Ashland City Fire Department, securing a single-family house earmarked for demolition and obtaining permission to use it for live fires. The home was ideal because it had two rooms that could be set up as identical living rooms. I was honored to be accompanied by NFSA VP/Executive Officer Vickie Pritchett, Director of Field Operations Gary West and Regional Manager Brian Biggs. Chief Chuck Walker led the Ashland City Fire Department team, which also provided suppression.

"Everyone working on this project was a true professional." said HFSC Communications Manager Peg Paul, "I am especially grateful to Shane, Vickie, Brian, and the rest of the NFSA team who stepped up. This summer, when I asked Vickie if NFSA had a home we could use for the shoot, she immediately said yes and said NFSA would provide all the resources we needed for it, including working with Chief Walker and the Ashland City Fire Department. When we sent Brian the long list of things we needed done to the rooms and all the items to furnish them, he didn't miss a beat. He kept reassuring us that whatever we needed, it would get done, and it did."



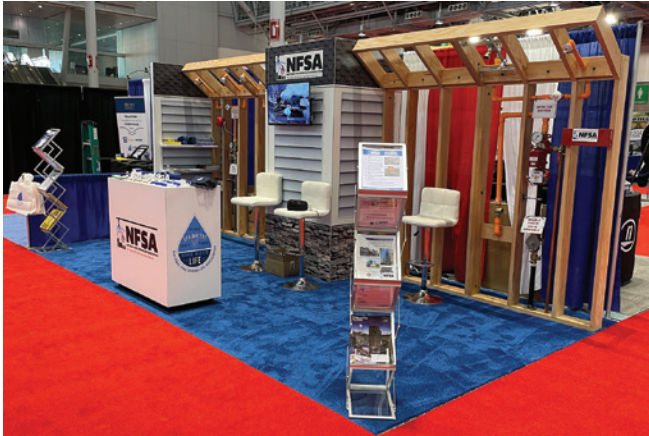
Photos courtesy of HFSC

NFSA, one of HFSC's founding members, donated all resources to prepare and set up the rooms. Each and every time we participate in burns like this, we are reminded that fire is indeed fast and seeing that fire sprinkler activate inspires us all. We are proud to support HFSC and play a major role in creating this next level of technology that we can all share.

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2021 BOMA International Conference & Expo, Boston, MA



A warm welcome back as NFSA debuted its new expo booth to great reviews at the 2021 BOMA International Conference & Expo in Boston, MA. We were excited to be back in person interacting with building owners and their representatives from all over the country. NFSA had a great two days talking about fire sprinkler protection and widespread acceptance of the fire sprinkler concept. We are looking forward to seeing everyone again in 2022 at the Nashville Tennessee Music City Center.

Meet John Swanson, NFSA's New Codes and Standards Specialist

Team NFSA welcomes **John Swanson** as our new Codes and Standards Specialist. John will be focusing on NFSA codes, standards, and learning and development content.

John has worked in the fire protection industry on many sides as a firefighter, inspector/plans examiner, fire marshal, and deputy state fire marshal for the State of Minnesota. His background includes developing, enforcing, and interpreting codes and standards at the state and national level. As a deputy state fire marshal, he was actively involved in codes and standards development as a Principal member of the NFPA 72, National Fire Alarm and Signaling Code technical committee and as a past member of the ICC IBC Fire Safety Committee and IFC Interpretation Committee.

John enjoys sharing his interest in fire protection through training and education on codes and standards. In 2013, John was appointed by Governor Mark Dayton, to serve a four-years term on the Minnesota Board of Architecture and Engineering. John lives in Lakeville, Minnesota with his wife, Teresa, and three boys, David, Ben, and Micah.



NFSA Welcomes New Event Coordinator

We are pleased to announce that **Dani Francis** joined Team NFSA in October as our new Event Coordinator. Dani's role combines the Training Coordinator position with a much-needed Chapter and Event Coordinator support.

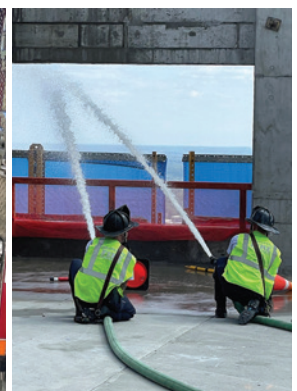


Dani graduated from Michigan State University's top-tier hospitality business program. As a student, she gained experience in many different areas of hospitality, including hotels, restaurants, and private clubs and events. She spent four years working for a non-profit that works with university students. While much of her time was spent mentoring students, her administrative skills and hospitality background lead her to take on increasing administrative responsibilities over the four years.

Dani handled such areas as budget management, data tracking, event planning, and fundraising. All these skills are ones she is excited to translate and use to contribute to the NFSA as the new Event Coordinator. She will be working to help organize learning opportunities and events across the country.

Very Tall Buildings

NFSA was on-hand assisting the Charlotte Fire Department with understanding buildings above the level of fire department pump capabilities. Charlotte Fire Department successfully provided total system demand at 532 feet, supplied from the fire department connection (FDC). This was done by a single engine equipped with a two-stage Darley 2000 gpm 600/600 pump, providing 515 psi, flowing 500 gpm on the roof and an additional 500 gpm on the ground for a total system demand of 1000 gpm. Fantastic to see departments working to determine pump capabilities and addressing operational needs for very tall structures. •



CHAPTERS IN ACTION

Capital Region

The Capital Region Fire Sprinkler Association (CRFSA) held its October meeting at Guinness Open Gate with a presentation entitled Credentials and Administration, from NICET Senior Director, Chip Hollis. Fantastic fall weather, beer, and industry news! The meeting was well attended. Chapter members were pleased to be joined by members of the Greater Baltimore Chapter of ASCET.



Connecticut Connecticut Chapter Donates to Local Food Pantry

The Plainville Community Food Pantry received a donation of \$2,500 and 1,110 pounds of food from the NFSA Connecticut Chapter in memory of the late Troy Orsini.

John Abbate Jr., president of the Chapter, said this was the second year a donation was made in memory of Orsini. Orsini was a former co-worker of Abbate Jr., when both worked at W&M Fire Protection Services and a NFSA member. He died of COVID-19.

“I came up with the idea thinking of what to do in memory of Troy,” Abbate Jr. said. “Troy worked there for many years, and

we became close friends. This year the collection was even better than last year. W&M is a subsidiary of APi Group and we had a couple hundred members from Connecticut, Massachusetts and New York donate.”

Wisconsin Another Successful Side-by-Side!



The NFSA Wisconsin Chapter, in cooperation with the Wisconsin Fire Sprinkler Coalition and Madison Fire Department, hosted a side-by-side demonstration at the Department of Safety and Professional Services, a Wisconsin state agency, on October 5th for Department Secretary Dawn Crim and staff. The staff, about 60 attended the demo, were mostly building and fire code people. While the demo lasted only about 15 minutes, Secretary Crim and her staff stayed almost 45 minutes asking questions about fire sprinkler systems. We were also invited to present at the annual building code update seminar run by the department in Feb/Mar for building code officials.

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CHAPTERS IN ACTION

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Texas

The NFSA Texas Chapter hosted its last meeting of 2021 with a topic of “Best Practices for Underground Fire Lines.” The Chapter Meeting with Lunch was hosted at the Grapevine, Texas Fire Department on December 8, 2021, at 11:00 a.m.

The expert Presentation Panel for Underground Fire Lines included Pete Schwab from Wayne Automatic and the Florida Fire Sprinkler Association and several other NFPA 24 Technical Standard Committee Members from Texas including Bob Morgan, Senior Fire Protection Engineer with Fort Worth Fire Department, Conor Kauffman, President of Kauffman Company and Moderator John Pecot Design Manager of JCI – Johnson Controls, Inc.

The Texas State Fire Marshals – Assistant State Fire Marshal Ernest McCloud and SFMO Engineer Kelley Stalder attended the meeting to answer any state licensing questions regarding Underground Rules and Contractor Licensing.

Discussion items during the meeting:

- What is best practice Underground Fire Line Design and Installation?
- Do changes in the AWWA C-900 relate to Texas and How?
- Should license contractors bail out (by signing off) owners or General contractors that have hired unlicensed installers? How can we try to hold our general contractors and owners responsible for correctly installed underground work?
- How should we communicate or negotiate with our customers once they choose the “cheap way out”?
- Can we create documentation to better educate our customers and AHJs – flyers, white papers, etc.?

The December 8, 2021 Underground Meeting was hosted by NFSA Texas, the Grapevine Fire Department and Lunch was provided by the NFSA Texas Chapter.

NFSA Texas Chapter hosted two virtual trainings during the Fall 2021 including NFPA 14 Standpipe Updates on November 10, 2021, and Fundamentals of Fire Sprinkler Installation on October 13, 2021. •

In Person Trainings from North to South Texas



Pharr (South), Texas

Sprinkler Protection of Rack Storage

When: March 1, 2022, from 08:00 AM to 06:00 PM (CT)

Where: Pharr Fire Department, 118 S. Cage, Pharr, TX 78577



Pumps for Fire Protection (NFPA 20 2019)

When: March 2, 2022, from 08:00 AM to 06:00 PM (CT)

Where: Pharr Fire Department, 118 S Cage, Pharr, TX 78577



Understanding, Applying and Enforcing NFPA 25 (2020)

When: March 3, 2022, from 08:00 AM to 06:00 PM (CT)

Where: Pharr Fire Department, 118 S. Cage, Pharr, TX 75877



Lubbock (North), Texas

Sprinkler Installation Requirements

When: March 29, 2022, from 08:00 AM to 05:00 PM (CT)

Where: Lubbock Fire Rescue’s Training Facility, 1515 E Ursuline St, Lubbock, TX 79403



Fire Service Mains and Their Appurtenances

When: March 30, 2022, from 08:00 AM to 05:00 PM (CT)

Where: Lubbock Fire Rescue’s Training Facility, 1515 E Ursuline St, Lubbock, TX 79403



Rough and Final Inspections of Fire Sprinkler Systems

When: March 31, 2022, from 08:00 AM to 05:00 PM (CT)

Where: Lubbock Fire Rescue’s Training Facility, 1515 E Ursuline St, Lubbock, TX 79401



Register For All Events Here



Ray Fremont, Sr.

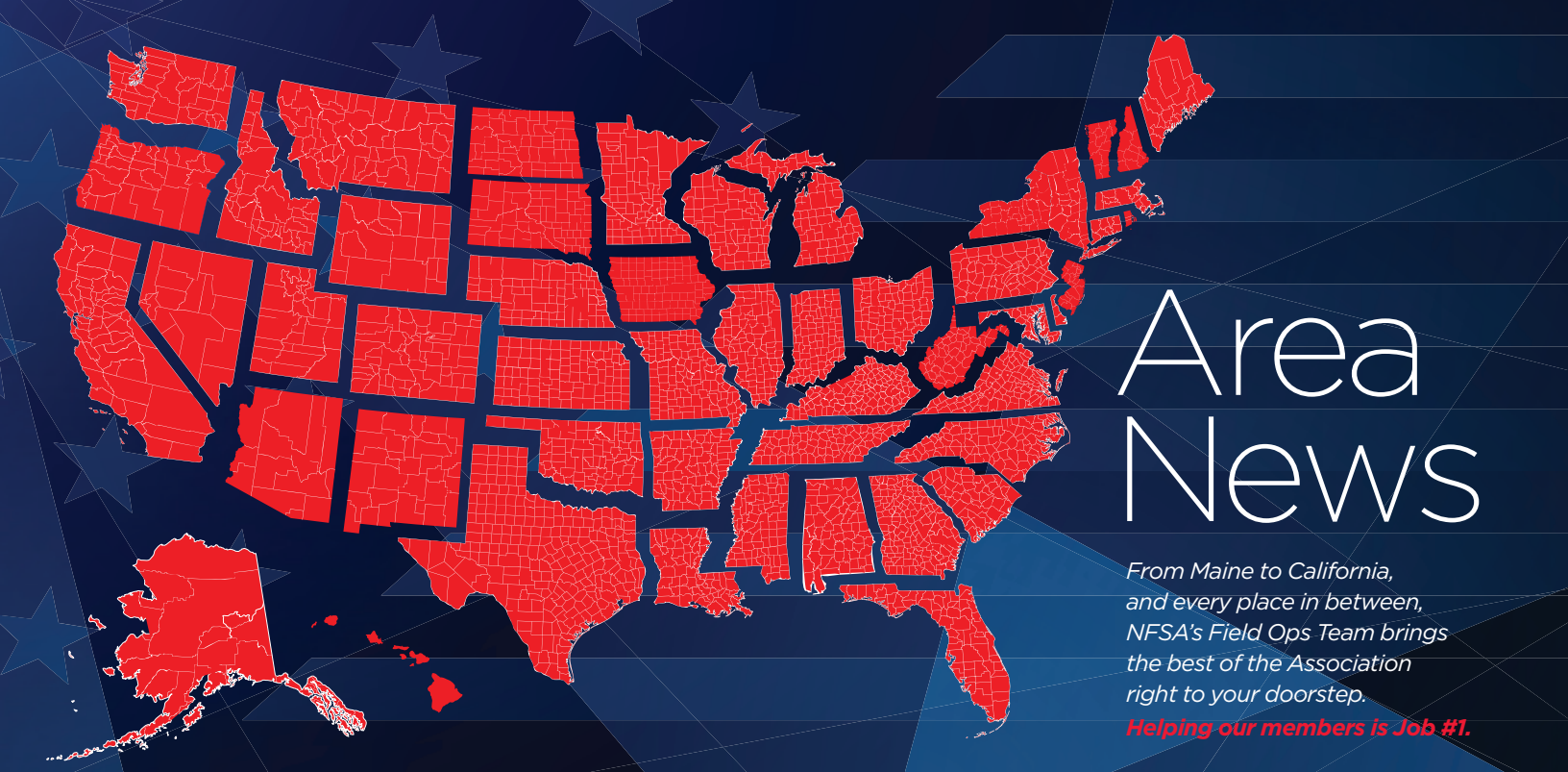
Raymond Michael Fremont, Sr., age 66, passed away in his home in Media, PA on October 24, 2021, after a long battle with pulmonary fibrosis.

After graduating from High School, Ray began working with his father in the fire protection industry, making equipment out of the garage of their house. Ray, along with his father and brothers, built General Air Products, a manufacturing business that would eventually do work across the globe and employ over 75 people. As President and CEO of General Air, Ray served on numerous boards across the industry, such as the International Fire Sprinkler Association and the National Fire Sprinkler Association, where he was honored with the 2020 Golden Sprinkler Award for his lifetime contributions.

He leaves behind his beloved wife Eileen (Wiess) with whom he spent 44 years raising their family in Drexel Hill, where he was always involved with sports and activities - coaching football, baseball, and being a spectator at too many games to count. He leaves behind five children - Raymond Jr., Scott (Kimberly), Margaret, Alexander (Amanda), and David (Kara) – as well as 11 grandchildren. He would insist on listing them all as they were a source of unending joy for him: Justin, Jacob, Dean, Charlotte, Robert, Maxwell, Ryan, Alexander Jr., Jane, Whitney, and Ruth. He especially enjoyed dotting on his daughter and daughters-in-law and was a proud and loving uncle to 13 nieces and nephews.

Contributions in Ray's memory can be made to Common Voices, PO Box 162, Pleasant View, TN 37146 •





Area News

From Maine to California, and every place in between, NFSA's Field Ops Team brings the best of the Association right to your doorstep.

Helping our members is Job #1.

AREA 2

MID-ATLANTIC 2021 Recap

The NFSA Mid-Atlantic Regional Team had a very successful fire prevention season. 2021's NFPA fire prevention theme was the "sounds of fire safety". This message was carried to all the outings the team attended. The theme went hand-in-hand with the fire sprinkler concept and how paying attention to smoke alarms is so important. During the live burn trailer events the spectators were able to see how fast smoke develops with so little burning material. These demonstrations paved the road for the sprinkler concept to be seen in real time as the fire sprinkler activated over the seat of the fire, thus controlling the threat and buying time for the simulated homeowners to evacuate. The two themes tied together well and gave kids a real life look at why they need to listen, get low and get out if there is a fire. The parents loved the fire sprinkler concept when the vivid picture was painted for them as to how effective a fire sprinkler really can be at protecting their family.

The NFSA Mid-Atlantic Regional Team stayed busy this fire prevention season in both New Jersey, Pennsylvania and Delaware. The team grinded their way through several fire prevention outings, as well as NFPA 13e training sessions with AHJs. More specifically, the team provided 23 NFPA 13e training sessions reaching over 400 firefighters in seven fire departments. In addition, they attended 20 fire prevention events with the fire sprinkler demonstration trailers performing over 90 fire sprinkler demonstrations reaching nearly 3400 people. Lastly, the team attended a fire prevention event with the large side-by-side burn trailer reaching 300 people in the township of Upper Merion Pennsylvania.

The team saturated the northern part of New Jersey and the Philadelphia area for the 2021 burn season. The plan for 2022 is to strike out and strive to capture NJ beach towns in "Tour the Shore" and more of the Philadelphia / Pocono / Delaware areas.

With a new member on the team, both burn trailers will be hitting the pavement next year, hopefully reaching larger crowds and spreading the fire sprinkler concept across the region.

VIRGINIA

NFSA partnered with 275 Building Code Officials for the Virginia Building and Code Officials Association Conference in Virginia Beach, VA. Booth staff took the opportunity to talk automatic fire sprinklers with building code officials from all over the Commonwealth of Virginia.



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AREA 4

FLORIDA-2021 A Year in Review

The Florida Fire Sprinkler Association (FFSA) had a busy 2021, with many successes and sold-out events. We have traveled throughout the state, and even outside of Florida, as we worked for the fire sprinkler industry to educate about life safety through the widespread acceptance of the fire sprinkler concept.

FFSA held five Virtual Area Interest Meetings which allowed us to offer classes not only in Florida but also for industry professionals from across the country.

FFSA held eight live in-person Area Interest Meetings across Florida. To accomplish these meetings, we traveled over 1600 miles to connect with more than 300 contractors, vendor, and AHJs.

FFSA held Two Virtual and Seven Live ITM Inspector Training Classes with close to 150 Water based Inspectors attending these classes.

The 26th Annual Buddy Dewar Golf Skeet Classic was held on April 29th, which had the largest attendance in our history with more than 310 participants.

FFSA held four board meetings in 2021, including one in June where we were invited to Reliable Sprinkler Products in South Carolina. There, we were treated to a tour of the factory and the production of a fire sprinkler from beginning to end.

In July, the FFSA joined other trades at a three-day camp held by Future Builders of America for high schoolers looking toward the future and possible opportunities to learn a trade. At this event, home builders, electricians, pool servicers, carpenters, drywallers, landscapers, and, for the first time, the Fire Sprinkler industry were all represented. Over 50 kids got to learn firsthand the opportunities of working in life safety.

August 2021 Legislative Day in St Augustine was held jointly with AFSA-Florida. Members from the Florida Fire Marshals and Inspectors Association, Alarm Association of Florida, Florida Automatic Fire Alarm Association, Society of Fire Protection Engineers, the fire sprinkler industry’s lobbyists and fire marshals’ and fire chiefs’ lobbyists, along with contractors from around the state and legislators representing different areas of the state joined together to discuss legislation and ways we can partner together.

In July, the FFSA once again exhibited at the Southeastern Builders Conference where thousands of people had an opportunity to learn about residential fire sprinklers. In addition, the conference offered us the opportunity to present a class on fire sprinkler tradeoffs.

FFSA Hawks Cay Conference 2021 had the largest attendance in its history with 269 total attendees. Speakers from across the country inspired and educated us, and the one and only Fire Product Challenge was a huge success.

2022 is shaping up to be a very busy time. It’s a renewal year for contractors, and we are offering lots of opportunities starting in January in the Panhandle, and February in Daytona. As always, all in-person training is free to AHJs as a result of the Buddy Dewar Golf/Skeet classic planned for April 4, 2022. We will be walking the halls meeting our legislators in February; every member of NFSA is invited. And we are updating our online training opportunities in January. Please check out our website for more details www.floridafiresprinkler.com.

Tagging for Success

This year FFSA is offering “Tagging for Success!” This event and will be offered in January in Ft. Walton Beach and February in Daytona Beach, and includes two full days of training for Waterbased Inspectors. Classes are also approved for Contractor I & II and AHJs



Tagging for Success takes participants out of the classroom and into an interactive learning environment including:

- Hands-on training in the Reliable Sprinkler learning trailer, NFSA Valve Trailer and local training trailers.
- The game “Name That Standard”-testing your knowledge of NFPA standards with chances to win prizes.
- The Fire Sprinkler Challenge- testing your knowledge of the different types of fire sprinklers.
- Tag that System- giving participants the opportunity to put their knowledge to use identifying which systems need to be tagged and why.
- A full day of classes designed to educate and inspire participants.

Along with Tagging in Daytona we will be offering a four-day conference for Contractor I & II that will offer all 32 CEUs required by the state including those mandate.



Advertising Members:
Our 2022 Media Kit
now available online at
<https://bit.ly/22MediaKit>.
Get all the info you need
to hit your target market
all year round!

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**AREA 6
WISCONSIN**

Sprinkler Saves

We had numerous saves reported by fire departments across Wisconsin the past couple weeks. This includes positive statements about fire sprinklers. Here is a synopsis of a few:

October 24, 2021- In Butler, Wisconsin, there was an early morning fire on the second floor of an apartment building. The initial fire was in a bedroom closet and controlled by a single fire sprinkler located outside the closet. Butler Fire Chief Zoulek stated ‘This fire is a perfect example of how sprinklers are supposed to work and how they save lives. Only one sprinkler head was activated. That single activation contained the fire to one relatively small area and prevented any further spread of the fire.’

On October 31, 2021-In Brookfield, Wisconsin, a kitchen fire was reported in the TownePlace Suites. The fire sprinkler system was credited with controlling and extinguishing the fire.

On November 12, 2021-In Two Rivers, Wisconsin a garbage cart fire was reported at an assisted living center. The fire was extinguished by the fire sprinkler system.

On November 14, 2021-In Beaver Dam, Wisconsin a fire was reported in a third-floor apartment. Fire Captain Braunschweig stated, ‘The presence of a sprinkler system within the apartment unquestionably prevented further spread and damage to neighboring apartments.’ The department further released this statement ‘The Beaver Dam Fire Department would like to take this time to remind our citizens the importance and benefits of having sprinkler systems in multi- family apartments as well as the importance of closing your door in the event of a fire.’

NFSA Attends State Fire Inspectors Conference

NFSA attended the Wisconsin State Fire Inspectors Association Conference in Green Bay in October. NFSA Wisconsin Chapter was a Conference and Break sponsor. During Vendor Day, WI Assistant Coordinator Mike Gundersen staffed the NFSA booth and engaged with around 120 people who visited the booth and asked questions. State Coordinator Marty King presented twice at the conference. The first presentation was a fire sprinkler grab bag that discussed education, engineering and enforcement as it related to the fire sprinkler industry. About 80 people attended. The second presentation was regarding the antifreeze issue and Wisconsin adopted codes/standards. Discussed were the issues with temperature, confusion with solutions, costs of moving to listed or alternative options, contractor issues, and what will be enforced. There were about 50 – 60 people attending this presentation.



**AREA 8
TEXAS**

Ignite The Night – October 28, 2021



Mock apartment fire – Ignite the Night

NFSA assisted Firetron Fire Protection and the Bryan and College Station Fire Departments with resources and best practices to implement a Side X Side Burn demonstration and a Mock Fire Apartment Response for Multi-family occupants held on October 28, 2021.

Texas Fire Marshals Conference – November 1-5, 2021

It’s All About Fire Protection!

by Kim Denson, DJ Sutterfield and Cindy Giedraitis

The annual Texas Fire Marshals Conference was held in San Marcos, Texas November 1- 5, 2021. NFSA South Central assisted with the Keynote Session, awarding of the Texas Fire Sprinkler Saves Award, Texas Fire Sprinkler Coalition Meeting, and a two-day vendor show.

Keynote Session: What Does a Fire Survivor Really Want? Burn Me Once – Don’t Burn Me Again



Zack, DJ and Karl Sutterfield, Kim Denson, Texas Fire Marshals Association – What Does a Fire Survivor Really Want?

A panel of Texas Fire Marshals who successfully adopted retrofit ordinances and two fire survivor families presented “What Does a Fire Survivor Really Want? – Burn Me Once - Don’t Burn Me Again.” The Fire Survivors were from apartment fires in Austin and San

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Fire Marshals Bryan Parker, Kelly Kistner, David Kerr, Christopher Monestier, Texas Fire Marshals Association – What Does a Fire Survivor Really Want?

Marcos, Texas and the fire chiefs work in Frisco/San Marcos, San Antonio, and Grapevine, Texas. Each fire chief presented amendments that were initiated, implemented, and adopted into code for each of their cities.

Chief David Kerr (Retired) Plano, Texas

Chief Kerr moderated the presentation as he initiated the first Multi-family Retrofit Ordinance in Texas – “Burn Me Once-Don’t Burn Me Twice” adopted amendment (2008 in Plano, TX). The intent of this amendment is to increase the protection of life and property by retrofitting fire sprinklers in buildings that would require them today as if it were a new building. It is to address significant fires that displace one or more occupants for an extended duration while the unit/building is reconstructed. If a fire sprinkler had been in place prior to a fire event, a significant fire would have been avoided. Since adoption in 2008, over 20 existing buildings have been retrofitted with sprinklers.

Chief Kelly Kistner Frisco Fire Department/ San Marcos Fire Department May 2018 – July 2021

Chief Kistner was the new fire marshal in San Marcos (having just served for 3 months) when the Iconic Village fire happened on July 20, 2018 in San Marcos that resulted in five off-campus Texas State University students not surviving. Chief Kistner initiated and completed a property inventory and risk assessment of all residential properties in San Marcos in 2018. City leadership and the San Marcos City Council approved an annual inspection program with two additional inspectors and OT budget to supplement with Op’s inspectors. Multiple meetings were conducted with property management. Average inspections were seven (most were 14) to bring up to code. The Plano Code amendment was adopted, as well as codes requiring fire extinguishers in each unit and in all Common areas, and no heat producing devices on balconies or within 15 feet of a structure.

Chief Christopher Monestier San Antonio Texas

Castle Hills Texas experienced a deadly high-rise fire December 30, 2015, at the Wedgwood Towers, which was being operated as a senior living facility. San Antonio Fire Department provided mutual fire response to the Wedgwood Towers and because of their proximity and the disastrous losses in the Wedgwood Tower, San Antonio Fire Department and the City of San Antonio leadership became committed to examining and improving their own high-rise building fire safety. Chief Monestier coordinated a stakeholder process to consider new fire protection strategies. The San Antonio Public safety committee approved a feasibility study. The San Antonio high-rise stakeholder group was established with 35 buildings identified as non-sprinklered high rises. Multiple meetings were held with the diverse group of stakeholders, and a 12-year phase in plan was adopted.

Chief Bryan Parker Grapevine Texas

Grapevine City Council Implemented a downtown historical fire protection retrofit program to install fire sprinklers in all historical district buildings. The City of Grapevine met with local business owners, educated them about fire safety and prevention and the importance of fire sprinkler installation. The business owners were offered a low interest loan to install fire sprinklers in the historic district, which was agreed upon and completed.

Kim Denson, Woods of Barton Creek Fire, Austin

Kim is the mother of Kaitlyn Denson who died in an Austin Apartment Fire (along with her friend Joseph Tarin) on July 15, 2019. Kim, her family, and friends formed a non-profit foundation named KaitKares with the goal to never let this happen to another family. Kim and KaitKares have been speaking at fire protection events, public family events and participating in Texas state legislative bills.

Zach and DJ Sutterfield, Iconic Village, San Marcos

Zach was one of the few survivors from the Iconic Village apartment fire on July 20, 2018. Zach has had 32 surgeries to date, a traumatic brain injury and is a double amputee. Zach’s mom DJ has been his advocate and caregiver. Zach has been cared for at The US Army Institute of Surgical Research Burn Unit, Brooke Army Medical Center San Antonio, Texas and at the University of South Florida, Tampa, Florida. The Sons of the Flag Charitable Foundation has been assisting the Sutterfield Family. Their courage to speak out, share their story, and advocate for fire safety and prevention is unprecedented. Please follow them on Zach Sutterfield’s recovery page and support their non-profit “Brighter than the Fire.”

Vendor Show

NFSA provided a Fire Sprinkler Information display along with several NFSA Members including Victaulic and Spears Manufacturing.

Texas Fire Marshal’s Municipal Forum

Multi-family retrofit, Third Party Rentals, and Animal Housing were both topics placed on the Municipal Fire Marshal Forum.

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Cindy was asked to speak about both and reminded fire marshals that if they wanted to see retrofit ordinance language or data of what cities and counties have retrofit ordinances; that NFSA gathers and shares this data. Many city councils want to know what other cities around them are doing. Additionally, NFSA has data on fire sprinkler successes and losses that can be provided.

Texas Fire Sprinkler Coalition Meeting

NFPA's Regional Manager Kelly Ransdell introduced the Texas Fire Sprinkler Coalition Chair – Fire Chief Scott Marion. Next, Peg Paul provided an overview of HFSC resources for education including the new Virtual Reality headsets.

It is truly an honor to be a part of the Texas Fire Marshals annual conference and continued commitment to fire safety.

**AREA 9
COLORADO**



Fire Prevention Week

The NFSA side-by-side sprinkler trailer was highlighted at two events during Fire Prevention Week (10/3-9) with one in Grand Junction and the other in Aurora. The events were sponsored by the Colorado Division of Fire Prevention & Control. Several media outlets attended and reported on the demonstrations and provided significant positive coverage.

Colorado Fire Commission

NFSA has been actively involved with several committees of the Colorado Fire Commission. The Commission was established by the legislature to get to the root of the State's fire problem and identify solutions. These are presented back to the legislature with the intent of developing legislation which will address these solutions.

One thread was a constant though many of the committees—that fire sprinklers are a key to addressing many of the identified problems. This was recognized by the Residential, High-Risk Occupancies and Wildland Subcommittees.

NFSA's involvement culminated in a side-by-side sprinkler demonstration for the benefit of the Commission in conjunction with the Colorado Fire Chiefs Association Annual Fire Leadership Challenge (10/18-21). The demonstration had a significant impact on the Commission members. The trailer remained up for the remainder of the Conference as a visual aid to demonstrate the benefits of sprinklers for firefighter life-safety.

WAFM Conference

We were proud to attend the Annual Conference of the Wyoming Association of Fire Marshals (11/3-5) in Lander. While there, your regional field service coordinator had the opportunity to present on overcoming barriers to adoption of fire sprinkler ordinances. We were also able to present a side-by-side demonstration for the benefit of the city's elected officials, who are considering the adoption of the 2021 IRC.

**AREA 12
NORTHWEST**

The Northwest region finished out 2021 strong and is anticipating a busy first quarter in 2022.

With legislative sessions starting in Olympia, Salem, Juneau and Boise, NFSA Northwest Manager Suzanne Mayr is currently monitoring proposed legislation and rules that could potentially affect the sprinkler industry.

We are planning to bring a new NFSA class in early summer in the Puget Sound and Portland areas. The class, entitled Estimating and Proposals for Installation of Water-Based Fire Protection Systems, will use an interactive format and promises there are no power point slides used. Watch your in-box or log onto the NFSA website for more information on this resource-rich class.

If you have other trainings you'd like brought to your corner of the Northwest, please contact Regional Manager Suzanne Mayr. NFSA's newly reorganized and re-energized Learning Development team is ready to bring fire sprinkler training to our members.

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MONTANA

Timely Message to Montana Fire Chiefs: Sprinklers are Important Prevention Strategy

As part of the 2021 Montana Fire Service Convention, Bozeman, MT Fire Dept. and NFSA partnered with Missoula, MT Fire Dept. to conduct a side-by-side burn demonstration.

The demonstration helped reinforce the importance of residential fire sprinklers to the leaders in the Montana fire service at a time when fire sprinklers are under attack in the state. The 2021 legislature passed a bill to prohibit the state's building code committee from including the residential sprinkler requirement in the state's building code. This makes education and awareness among local fire districts more important than ever.

Chief Josh Waldo of Bozeman, who has committed to bring the NFSA-provided trailer to groups around the state, reminded the audience of how quickly residential fires can get out of control, and how quickly fire sprinklers activate to control fire. •



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.

Illustrations

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.

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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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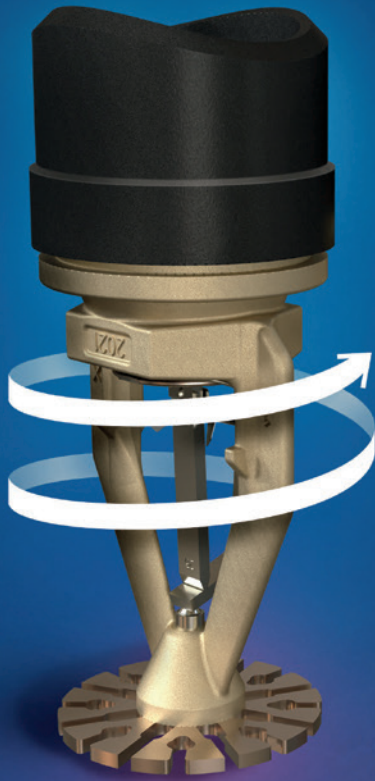


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