

SQ

MAY/JUNE 2013 / No. 178

Journal of the
National Fire Sprinkler
Association

Fire Sprinkler System WATER SUPPLIES



2012 MarCom Gold Award Winner

INSIDE THIS ISSUE:

- A Brand New Department: ITeM
- How to Perform Hydrant Flow Tests
- Vertical Staging of Fire Pumps
- Water Supplies for Very Tall Buildings in the IBC

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ON THE COVER

A reliable water supply is a vital component to every fire sprinkler system installation. As such, the technical articles in this issue submitted by NFSA's Engineering Department all follow the theme "Water Supplies."



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

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

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Second-Class postage paid at Mahopac, NY.

POSTMASTER: Send address changes to:
NFSA, 40 Jon Barrett Road, Patterson, NY 12563



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Winning in Las Vegas



Russell P. Fleming, P.E.

I recently read an on-line discussion in which participants debated the percentage of people who gamble in Las Vegas and leave as winners. The most popular answer was 5%. Everyone seems to agree that it is possible and that it periodically happens, but that in the long run the odds are against it. The practical side of this is that you are more likely to leave a winner if you gamble for only a short period of time.

In the case of our recent NFSA annual seminar in Las Vegas, we were fortunate that the NFSA events were of such quantity and quality that there wasn't much time to gamble, so everyone should have been able to leave a winner. Aside from the gambling, everyone attending certainly left as winners, due to a program that included many of the top names in fire protection, great social events, and the participation of the Canadian and Mexican fire sprinkler associations in the first-ever North American Fire Sprinkler Expo™. With more than a thousand people in attendance, the event was a spectacular success, everything that we hoped it would be. Kudos to Kent Mezaros and Chuck Kitts, the Seminar & Exhibition Committee co-chairs, along with the members of their committee: Jim Boulanger, Buck Buchanan, Randy Greenslate, John Kauffman, Suzanne Rowland, Don Smith, Dean Taylor, and of course all the members of the NFSA staff that worked with the committee to ensure success. A full annual seminar review will be included in the Jul/Aug '13 issue of SQ.

I also have to report that in the aftermath of the seminar a number of members have told me that they sensed a new spirit in the air in Las Vegas, a very positive feeling about the Association and where it is headed. There is an appreciation for the new directions being taken by the NFSA Board of Directors

under the calm and steady leadership of Chair Dennis Coleman and Vice-Chair Larry Thau, who was appointed to head up the Association's new Governance Committee. The Governance Committee recommended some groundbreaking changes that were accepted by the By-Laws Committee and adopted at the February 2013 meeting of the Board of Directors. As I noted in my State of the Industry address, these changes better distribute decision-making within the organization, helping to ensure that it serves its function as the "voice of the fire sprinkler industry." As I've been telling NFSA chapters around the country, these changes are moving us in the direction of increased transparency, fairness and simplicity.

If you are an NFSA member, we hope you've started to notice the difference. If you talk to anyone in the fire sprinkler industry that is not currently a member of the Association, we hope that you will tell them about the differences you are noticing, and ask them to join the cause. As I mentioned in Las Vegas, ours is a fairly straightforward cause: we want to see properly designed, installed and maintained fire sprinkler systems in all buildings and structures. It's both reasonable and necessary, and something we can accomplish more easily if we have the full support of the industry. 📞

A handwritten signature in black ink, appearing to read "Russ Fleming". The signature is fluid and cursive.

Russell P. Fleming, *President*

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EVENTS OF INTEREST TO NFSA MEMBERS

calendar

May 1-2, 2013	Sprinkler Protection of Storage	Woodinville, Washington
May 3, 2013	Understanding, Applying and Enforcing NFPA 25	Menomonee Falls, Wisconsin
May 7, 2013	Antifreeze in Sprinkler Systems	ONLINE
May 7-8, 2013	NFPA 13 Overview	Rogers, Arkansas
May 9, 2013	Fire Pump Layout & Sizing/Commissioning & Acceptance Testing	Rogers, Arkansas
May 14, 2013	NFPA 13, 13R & 13D Update 2013	Meridian, Idaho
May 15-17, 2013	Inspection & Testing for the Fire Sprinkler Industry	Baton Rouge, Louisiana
May 16, 2013	Understanding, Applying and Enforcing NFPA 25	Nampa, Idaho
May 21, 2013	Water Supplies	ONLINE
May 21, 2013	Understanding, Applying and Enforcing NFPA 25	Mitchell, South Dakota
May 22-23, 2013	Sprinkler Plan Review Hydraulics & Acceptance Testing	Mitchell, South Dakota
June 4, 2013	2013 Edition Criteria for Residential Sprinkler Systems	ONLINE
June 18, 2013	Pump Criteria in the 2013 Edition of NFPA 20	ONLINE
June 19, 2013	Hydraulics for Fire Sprinkler Systems	Corona, California
June 20, 2013	Basic & Advanced Seismic Protection	Corona, California

These seminars qualify for continuing education as required by NICET. Meet mandatory Continuing Education Requirements for Businesses and Authorities Having Jurisdiction. To register or for more information, contact: Michael Repko at (845) 878-4207, E-Mail: seminars@nfsa.org. Or register ONLINE at www.nfsa.org.

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Dedication

Dennis C. Coleman



I was pleased to hear of the honors bestowed on Buddy Dewar and Tom Lia for their outstanding accomplishments in the fire protection field. They are both well deserving of these honors. Buddy has been tremendously successful in Florida for many years in promoting legislation that encourages fire safety and helps contractors to be successful. Tom Lia has done wonders in northern Illinois in helping pass local ordinances that require sprinklers in homes and other buildings. It is impossible to totally measure how many lives have been saved and how much property has been protected through their efforts.

Buddy and Tom also represent many others who have worked tirelessly and been the champions of public safety through the fire sprinkler concept. There are thousands of fire chiefs, fire marshals, legislators, mayors, code officials and other public servants who had the courage and dedication to make these life-saving codes, ordinances, and laws come to pass.

Buddy and Tom also symbolize the efforts of manufacturers, suppliers, sprinkler fitters, engineers, and contractors who work hard and dedicate their lives to life safety through fire protection. Of course, many of us earn our living in the fire protection industry. Some may say that we do what we do for salaries and profits. This is true to some extent, but it is obvious to me that there is another motivation that surpasses our need to earn a living. Throughout our industry there are so many who are dedicated to saving lives. We really believe in what we are doing and the end result of our efforts.

How many fire officials have risked their careers in trying to get more fire protection in their cities and fire districts? How many engineers have fought for the proper design of fire protection systems to properly protect structures and hazards? How many sprinkler fitters have insisted on installing systems in the proper way and according to the established codes when it would have been easier to look the other way or save themselves some trouble and headaches during the installation? How many contractors have taken a financial loss on a project, but have still done what was required to provide a system that was complete

and done according to the codes? How many manufacturers have spent enormous sums on testing and developing new products to improve the quality of fire protection?

I think Buddy and Tom also represent the NFSA staff, whom work so hard to support and promote fire sprinklers. There is a sense of urgency and passion in their work. They are motivated by a higher cause and a nobler ideal. When you hear about a firefighter who risks their life to save someone in a burning building that they don't even know, when you hear about a contractor who donates their time and money to do a burn trailer demonstration without any compensation, when you hear of an NFSA Regional Manager who drives all day to attend a meeting or a training session in a remote place, you realize that they are not doing it for the money. They are doing it for a greater cause. They are driven by a deeper motivation.

Finally, I truly believe that the NFSA employees are a dedicated and motivated group. When I compare them to some other organizations that I am familiar with, they are fantastic. When I hear them talk about fire protection, I know they believe in what they are preaching. From the engineering department to the regional managers, from the people who plan the conventions and exhibitions to the leaders who organize and motivate us, everyone does their part with passion and enthusiasm. There is an entire industry who believes in the great cause of fire safety. We all work a little harder and dedicate our lives to the concept that we believe in so much. We are truly dedicated to saving lives and protecting property from fire.

Again, I congratulate Buddy and Tom for their well-deserved recognition. But I know that they would agree that they represent all of us in our quest to protect everyone and everything from the destruction of fire. We are the fire sprinkler industry, and we truly believe in what we are doing. Thanks to everyone who works in our great quest to rid the world of tragic fire deaths and devastating fire losses. ①

Dennis C. Coleman, *Chairman of the Board*

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Northeast	<i>Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont</i>	Associate Director of Regional Operations - North Dominick G. Kasmauskas, NFSA 1436 Altamont Ave. Suite 147 Rotterdam, New York 12303 (518) 937-6589 FAX (518) 836-0210
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Inadequate Insurance Coverage – Who's Responsible?

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

In the aftermath of super storm Sandy, there have been and will be many pieces of litigation dealing with issues of insurance coverage.

In a recent case handled by our firm, the New York Court of Appeals permitted a claim against an insurance broker after the insurance company refused to cover the underlying claim. In that decision, the Court held that an insured is not barred as a matter of law from asserting a claim against an insurance broker even if the

insured failed to read and examine the content of its insurance policy if a specific request for insurance was made by the insured.

Despite the insured's failure to read and examine and then complain about the policy upon receipt, the Court held that the insured could maintain an action against the insurance broker for failure to procure adequate insurance coverage if the insured requested specific coverage. The key aspect is whether a specific type of coverage was requested and whether the insured looked to the expertise of the broker with respect to insurance matters.

In the wake of super storm Sandy, many insurance companies have disclaimed coverage. People who might have otherwise been left without a legal remedy

under prior New York law many now be able to assert a viable claim against their insurance broker.

This ruling does not address the issue of whether an insured has a valid claim against the insurance carrier itself. That type of claim needs to be reviewed and determined on a case-by-case basis. The Court only addressed the claim against the insurance broker and the requirements needed to be successful.

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Training and Communications by the Numbers

By James D. Lake

W

ith the publication of the 2012 Annual Report I thought it would be interesting to look behind the numbers of the Training and Communications portion of the report and show you just how busy you have been as an association.

Starting off with training, your association is the leader in developing and delivering technical and informational training sessions geared towards the needs of contractors, engineers, architects and AHJs.

As I have detailed before, NFSA delivers training both in-class and live on-line. We also provide recorded on-line sessions and produce numerous educational materials for purchase through our Resource Center.

Training and Education

87 – Number of in-class seminars NFSA delivered in 2012. This is not training days, this is actual separate seminars.

200 – Number of training days with many new and updated topics.

36 – Number of new on-line training events led by our Tech Tuesdays sessions, including a multi-week curriculum course on hydraulics.

100+ – Number of topics we currently

have recorded and available in the NFSA.tv archive.

1300+ – Number of contact hours for training delivered in 2012.

5000 – Individuals participating directly through our training and education seminars and products.

Social Media

Through the efforts of our Marketing Manager Joanne Genadio, NFSA's social media outreach increased markedly in 2012.

5555+ – Facebook friends

957 – Twitter followers

3777 – LinkedIn contacts

150,000+ contacts when compounded by these networks through the connections to our connections up to with a single message.

Publications

NFSA has top-flight member publications that are watched over by Director of Membership and Communications David Vandeyar. Each time we put out a newslet-


ter, bulletin or **SQ** the number of people that receive them is incredible.

3000+ E-Tech/Tech Notes with each distribution.

9300 E-Bulletins

1200 Labor Line distributions

The award-winning **SQ** magazine has a circulation of over 20,000 per issue.

These numbers demonstrate that the NFSA truly is the Voice of the Fire Sprinkler Industry. 



Vice President
of Training and
Communications

James D. Lake

MAY 7, 2013

Antifreeze in Sprinkler Systems – Revising 70 Years of Conventional Wisdom

INTERMEDIATE/ADVANCED

James D. Lake

Antifreeze has been permitted in sprinkler systems for decades. It has become a commonly utilized alternative for the protection of sprinkler piping in unheated spaces. As a result of two tragic fire events the use of antifreeze in sprinkler systems has undergone intense scrutiny and research that has resulted in a series of sweeping changes in how it can be used. This webinar will explore the history of antifreeze in sprinkler systems, provide an overview of the research that influenced the changes in the requirements, and the final results of numerous amendments as they appear now in the NFPA standards.

MAY 21, 2013

Water Supplies

INTERMEDIATE

Karl Wiegand, E.I.T.

The 2013 Editions of NFPA 13, NFPA 22, and NFPA 24 have brought about some changes to the water supply requirements. Some of these include changes on suggested backflow protection requirements and water supply safety factors. This presentation will cover all of the major updates to the water supply requirements for fire sprinkler systems.

JUNE 4, 2013

2013 Edition Criteria for Residential Sprinkler Systems

INTERMEDIATE

Victoria B. Valentine, P.E.

With the growing installation of sprinklers in residential occupancies, it is important to be aware of the changes made for the 2013 editions of NFPA 13, NFPA 13R and NFPA 13D. Although residential sprinklers are used in all three standards, there are differences in the criteria for each type of system. This presentation will cover the changes in the spacing and location of sprinklers in residential spaces, including shadow areas, dry sprinklers and obstructions.

JUNE 18, 2013

Pump Criteria in the 2013 Edition of NFPA 20

INTERMEDIATE

Kenneth E. Isman, P.E.

The 2013 Edition of NFPA 20 was released by the

NFPA in September of 2012 with many changes to the rules for the design and installation of fire pumps. This seminar will focus on the major changes including testing arrangements for systems with meters, evaluating reliability of water supplies and limited service controllers. The presentation will also look at trends in the industry such as the vertical staging of pumps in series that generated a great deal of discussion during the revision cycle, but ultimately resulted in no changes to the document.

JULY 9, 2013

What Materials Can You Use in NFPA 13D?

BASIC

Victoria B. Valentine, P.E.

Many products have specifications that need to be met in order to be used in a fire sprinkler system. NFPA 13D is not as strict as the other sprinkler installation standards, but there are still minimums to be met for the materials that are used. This program will discuss the permitted materials, such as sprinklers, pipe, fittings, pumps, valves, and tanks along with their limitations.

JULY 23, 2013

NFPA 13D Layout and Detailing

BASIC/INTERMEDIATE

Roland Asp

NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, was originally developed in 1975 as a response to the 1973 report "America Burning". Approximately 80% of the structure fires in this country occur in residential occupancies along with approximately 80% of the fire deaths. NFPA 13D was developed to combat these staggering statistics while allowing the systems to remain economical to install. NFPA 13D systems provide some unique challenges to the layout technician due to limited water supply, ceiling configurations, and specific listing requirements of residential sprinklers. This presentation will focus on applying the requirements of NFPA 13D as they relate to the layout of fire sprinkler systems in one- and two-family dwellings.

AUGUST 6, 2013

NFPA 13D Discharge and Calculations

BASIC

Kenneth E. Isman, P.E.

Anyone planning a sprinkler system for a one or two family home will need to know how many sprinklers might open if there was a fire, the flow needed for those sprinklers, the pressure

needed at the water supply to push that flow through the system piping, and the duration that the flow needs to last. This seminar will cover the various methods that NFPA 13D and IPC P2904 use to make those determinations and size the piping in the system to prove that it will work with the water supply.

AUGUST 20, 2013

NFPA 14 Update

BASIC/INTERMEDIATE

John Corso

Standpipe systems play a key role in the fire protection of many buildings. NFPA 14 has released a 2013 Edition. This program will focus on the changes and updates that have been made to this new version of the standard. Updates include the addition of definitions to clarify the standard along with new figures to help understand the intent.

SEPTEMBER 10, 2013

NFPA 25 Update

BASIC/INTERMEDIATE

Jason Webb

In order for fire protection systems to function properly over the life of the building, the inspection, testing and maintenance must be done on a regular basis. NFPA 25 is the standard that provides inspection, testing and maintenance guidelines. A new version will be published for 2014. Attend this program to learn what changes and updates have been made to the standard.

SEPTEMBER 24, 2013

Signs & Certificates

BASIC

Jeffery M. Hugo, CBO

NFPA 13 has numerous requirements for the installation of signage for fire sprinkler systems. NFPA 13 also has three certificates that are required for each fire sprinkler system: Owner's Certificate, Underground Piping Certificate and the Aboveground Piping Certificate. This seminar will discuss all the requirements for types and locations of signs along with the installation details that are needed to complete the certificates. Every contractor, building manager, and AHJ will not want to miss this seminar.

OCTOBER 8, 2013

Foam-water Sprinkler Systems

INTERMEDIATE

Victoria B. Valentine, P.E.

Although water is a great agent for controlling and extinguishing fires, some hazards benefit from the use of low expansion foam as the agent



discharging from the sprinklers to achieve the desired level of control. These foam-water systems have similarities to standard sprinkler systems but are installed according to NFPA 16. This seminar will review the use and installation requirements of these systems.

OCTOBER 22, 2013
Common Mistakes

INTERMEDIATE
Roland Asp

Fire sprinklers have a long and successful history of protecting lives and properties. The key to this success is a properly designed, installed and maintained sprinkler system. This presentation will focus on commonly encountered mistakes in fire sprinkler industry. The role of the layout technicians is to produce clear plans that will result in cost effective fire sprinkler systems while meeting the project specifications and the applicable requirements of the codes and standards. By highlighting common errors, the layout technician will learn to avoid the errors, saving time and money, yet helping to ensure the effectiveness of fire sprinkler systems will continue and improve.

NOVEMBER 5, 2013
Protection of Aircraft Hangars

INTERMEDIATE
Kenneth E. Isman, P.E. and Scott Enides

Fire protection system requirements for aircraft hangars are found in their own document, NFPA 409. The rules in this standard are very different from NFPA 13 or NFPA 16 regarding discharge criteria and water supply requirements. During the program, the differences between these standards will be compared and contrasted and the participant will be able to avoid the pitfalls often encountered in laying out, detailing and calculating a sprinkler system or foam/water system for an aircraft hangar.

NOVEMBER 19, 2013
Exposure Systems

INTERMEDIATE
James D. Lake

Exposure protection systems have different goals than water curtains or window/glass protection, yet they are often confused with these other types of systems. This program will cover the goals and objectives of exposure protection systems and show how their requirements differ from those of water curtains or window/glass protection systems. Information for this program will be taken from both NFPA 13 and NFPA 80A.

DECEMBER 3, 2013
Sprinklers on Glass
INTERMEDIATE/ADVANCED

Jeffery M. Hugo, CBO

A window sprinkler is a special sprinkler according to NFPA 13 and this type of special sprinkler is intended for the protection of glazing in fire resistance rated walls for many types of applications. There are also times when standard spray sprinklers are used to protect glazing, such as in atriums. This seminar will cover how all these sprinklers comply with the requirements of NFPA 13, the building code, where and when to use specific sprinklers and the installation criteria for these products. This seminar will also discuss the recent changes in the International Building Code concerning using fire sprinklers in fire resistance walls.

DECEMBER 17, 2013
Ask the Experts

BASIC/INTERMEDIATE
James D. Lake, Moderator

The NFSA Engineering Department Staff have developed expertise in a wide range of fire protection activities including pumps, hydraulics, sprinkler spacing issues, seismic protection of systems, backflow, residential systems, and

water supplies. Ask any question that you want of our experts on these or other topics. They will either answer the question live on the program or research the answer and get back to you and everyone that takes the seminar after the program is over. Reference standards for this session are NFPA 13, NFPA 13R, NFPA 13D, NFPA 20, and NFPA 25.

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Vertical Staging of Fire Pumps

By Kenneth E. Isman, P.E.

In many very tall buildings, the pressure demand for the fire protection system is very high. Rather than meet this demand with a single pump, many designers choose to meet the demand with two or more pumps in series. When pumps are installed in series, it means that the discharge from one pump goes into the suction of the next pump, continuing to increase the pressure. For example, if two fire pumps are the same, with a net pressure of 120 psi at 1000 gpm and the water arrives at the first pump with a pressure of 50 psi from the supply (at a flow of 1000 gpm), the water will discharge from the first pump at 170 psi ($50 + 120 = 170$) and then go into the second pump at 170 psi (assuming that the second pump is very near the first pump and on the same elevation) finally exiting the second pump at 290 psi ($170 + 120 = 290$).

The use of two fire pumps in series solves a number of problems. In very tall buildings, it is common to divide the building into two or more vertical zones. NFPA 14 encourages each vertical zone to have its own fire pump. So, multiple fire pumps help designers comply with NFPA 14. In addition, multiple pumps help to control the water pressure at lower floors. For the lower floors in the building, the fire protection system can be fed from the first pump before the water goes into the second pump. This helps to control the water pressure in the lower floors. In the example above, the discharge from the first pump was at 170 psi, which should be

usable for a standpipe system for many floors. This is much better than putting 290 psi into the system on the lower floors, which would require pressure reducing valves at the lower hose outlets. The higher pressure of 290 psi can be directed to the higher floors where the pressure will decrease due to elevation loss and fewer (if any) pressure reducing valves will be needed.

Note that the definition of pumps in series only deals with a pump taking suction from the discharge of another pump. A pump taking discharge from a tank is not considered "in series," even if the tank is filled by a fire pump at a lower elevation in the building.

Pumps in the Same Pump Room

There are tremendous advantages to putting pumps in series in the same pump room. During a fire situation, a person is sent to the pump room to monitor the operation of the fire pumps. If both pumps are in the same room, this task can be handled by a single individual. If anything goes wrong while the pumps are running it is easier to coordinate adjustments to the pumps if the pumps are in the same room. Another point in favor of putting the pumps in series in the same room is that there needs to be some inter-control wiring between the two pumps' controllers. This wiring can easily be protected when it is in the same room as the pumps in series.

Another problem with putting pumps in

series at different elevations in a building can be flow testing the higher pump. During the test, significant quantities of water (thousands of gallons) will need to be used. That water has to go somewhere. If drains to ground level are chosen to help get rid of the water, the piping system needs to be designed to handle the pressure that will build up. If the discharge from the test is going to go up to the roof, then the roof drains need to be able to handle the discharge, or permission may need to be obtained to flow water off the roof.

The last, and most convincing, reason to have pumps in series in the same pump room is that if the pumps are separated by too much elevation, severe damage can occur to the second pump if the second pump is running and the first pump does not start or fails while it was running. In the situation where significant elevation is between the two pumps, the first pump is responsible for delivering water to the second pump. If the first pump fails to start or breaks down while it is running, the flow of water to the second pump will stop. If the second pump is running

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

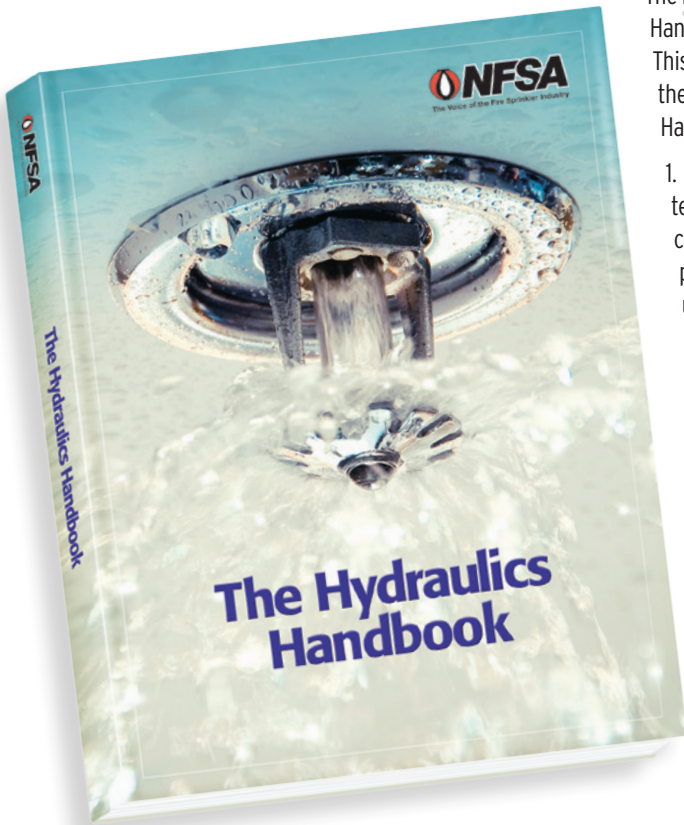
Kenneth E. Isman, P.E.

NFSA's New Hydraulics Handbook is Here!

The National Fire Sprinkler Association is proud to announce the release of The Hydraulics Handbook, an overhaul and update of a publication originally put out in the early 1990's. This new updated edition is a comprehensive discussion of everything having to do with the hydraulic calculation of sprinkler systems. There are three distinct parts to the new Handbook:

1. Excerpts from the NFSA textbook Layout, Detail, and Calculation of Fire Sprinkler Systems that deal with hydraulics. These comprehensive chapters cover the methods and concepts involved with calculating a fire sprinkler system by hand or with a computer program. Each chapter ends with a series of questions to make sure that the user understood the concepts in the chapter.
2. A brief discussion of conducting hydraulic calculations from the perspective of a code enforcement official. This discussion is helpful for the plan review of calculations that have been submitted. A sprinkler technician can also use this information in spot checking the output from a computer program.
3. Friction loss tables. There are many different types of pipe and tube used in sprinkler systems. For each type of pipe, this book has a page with the friction loss per foot of pipe at a variety of different flows. Each page also contains the equivalent length of the fittings (tees, elbows, control valves, and check valves). These pages substitute for performing the Hazen-Williams friction loss calculation on a calculator and save time for people performing hydraulic calculations by hand or for people wanting to spot check calculations performed by a computer.

With almost 400 pages of text, this book is a "must have" for anybody that performs hydraulic calculations of fire sprinkler systems or performs plan review and approval of hydraulic calculations. **Order your copy at www.nfsa.org at the Resource Center or fill out and return the order form below.**



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>> CONTINUED FROM PAGE 15

while the flow of water to it stops, it will run dry, which causes a centrifugal pump to overheat and do all sorts of damage to the impeller and the bearings. All of these problems can be avoided by putting pumps in series in the same room.

While there are no requirements in NFPA 20 for pumps in series to be in the same pump room, as this portion of the article has explained, there are a number of good reasons to keep the pumps in the same room. But that is not always possible. For a variety of reasons, it might be necessary for pumps to be separated vertically.

Vertical Separation of Pumps in Series

The reasons for vertically separating fire pumps are many and varied. In some instances, architects do not want to give up room on the first floor of a building for a large pump room. In these cases, they may provide room for a single pump on the first floor and then free up space on an upper floor for a second pump room.

Another reason for vertically separating the pumps is to deal with the higher pressure from the second pump. In the example at the beginning of this article, the second pump is discharging water at a pressure of 290 psi. This is in excess of the 175 psi pressure rating for many of the components of standpipe and sprinkler systems. While it is true that equipment can be purchased that has higher pressure ratings, or that pressure reducing valves can be used to drop the pressure from the pump before the water gets to equipment that is rated at 175 psi, these choices also have cost and reliability implications. Sometimes, it is cost effective to put the pump on a higher floor to avoid having to purchase higher pressure rated equipment or pressure reducing valves.

A third reason for not putting the pumps in series in the same room is a security concern. There are places in the world and certain types of buildings where locating all of the critical equipment for a building in a single room is discouraged. If all of the critical equipment is in a single room, it is too easy to take it all out with a single act like a car bomb (which might be effective since we tend to put pump rooms on out-

>> CONTINUED ON PAGE 18



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side walls). Instead, putting at least one of the pumps at a higher level keeps that pump away from a potential single event. In order for this design to meet all of its objectives, there will need to be some redundancy, especially for the lower zone pump, but this can be met with a lower zone pump in another location to eliminate a single event taking out all of the pump equipment.

As discussed above, the suction pressure to the second pump can be a concern. If the second pump is so high up that water cannot get to the second pump without the first pump running, the second pump can be damaged if the first pump fails to start. This needs to be a consideration of any decision to put pumps at different elevations. If the decision is made to put the second pump at an elevation where it will not get water if the first pump does not start, then the first pump needs to be impeccably maintained to make sure that it will start and run properly under all conditions. A full risk analysis needs to be performed before making this decision. The risks can seriously be reduced by putting the second pump at an elevation where water will get to the pump even if the first pump is not running.

In these cases where the designer wants to vertically separate the fire pumps, the following conditions need to be dealt with:

- The suction pressure to the second pump should be considered. If at all possible, the second pump should be located at an elevation where it will get water from the water supply, even if the first pump does not start. In the example at the beginning of this article, a water supply was mentioned that can get water to the first pump at 50 psi with a flow of 1000 gpm. If a second pump was going to be located higher up in the building, it could be located as high as 105 ft above the first pump. This allows for 45 psi for elevation loss ($0.433 \times 105 = 45$) and another 5 psi of friction loss (which is plenty for 6-inch pipe, which would typically be used in such a situation). This would ensure that the second pump would receive water at a positive gage pressure, even if the first pump did not start.

- The interconnection wiring between the pumps' controllers needs to be protected. NFPA 20 requires that pumps in series have the interconnection wiring protected with at least a 2-hr fire resistance rating on the cable or the wires need to be in two hour rated conduit.
- There needs to be communication between the pump rooms. Wireless, cell phone, or radio communication can be problematic in a steel building. The structure of the building tends to interfere with signals, and during emergencies, cell phone use can be problematic as many people are trying to use the cell phones in a small space and there is a limit to how many calls a tower can handle. Direct wired communication between the pump rooms is the best way to handle the situation.
- There has to be a solid plan on how to test the pumps, including the second (higher) pump. You cannot plan on using closed loop metering to test the higher pump. There has to be a plan for flowing water and dealing with the discharge from the pump.

Changes to NFPA 20

Over the last two cycles of NFPA 20 (2010 and 2013), the Committee on Fire Pumps (responsible for NFPA 20) took the stand that they wanted to eliminate vertical staging of fire pumps. They are concerned with all of the issues raised here, especially the concerns of running the higher zone pump dry and communicating between the pump rooms (including the interconnection wiring). For both the 2010 edition and the 2013 edition of NFPA 20, the committee proposed a ban on vertical staging of pumps. For the 2013 edition, there was an exception proposed that would have allowed vertical staging of fire pumps if the second pump would get water at a positive gage pressure without the first pump running.

But before a change can be made to an NFPA standard, the NFPA membership needs to vote on the subject. During the development of the 2010 and the 2013 editions of NFPA 20, the NFPA member-

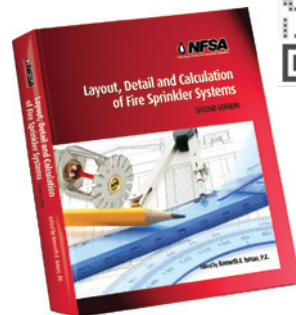
ship voted to overturn the committee. A group of fire protection contractors and members of the NFPA Committee on Standpipes and Hose Streams argued that vertical staging of fire pumps should be allowed in those situations where the risks and costs have been weighed and it has been determined that separation of the pumps is the best option.

While the NFPA membership agreed with the contractors and the NFPA Committee on Standpipes and Hose Streams to overturn the Committee on Fire Pumps, this issue is far from over. The concerns that the Committee on Fire Pumps have raised are real and worthy of consideration. It is entirely possible that the vertical staging of fire pumps will be limited or banned in future editions of NFPA 20.

Summary

Right now, NFPA 20 permits vertical staging of fire pumps, but there are a number of issues that need to be addressed if the designer wants to separate the fire pumps at different elevations. Suction pressure, interconnection between controllers, communication between pump rooms, and testing of the pump at the higher elevation all need to be addressed if the pumps are going to be separated.

It is possible that this rule will change in the future. The NFSA will keep its members up to date in the SQ and e-TechNotes publications as this situation develops and evolves. Proposals are due for the 2016 edition of NFPA 20 later this year, so we will have a better idea of what the committee is thinking as the committee takes action on these proposals towards the end of 2013. ☺



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The Fire Sprinkler Guide - 2009 Codes Edition is Now Available!

Produced by NFSA, this second edition of The Fire Sprinkler Guide defines those sections of the three model building codes, the Life Safety Code (NFPA 101) and International Building Code where fire sprinkler systems are required, including partial requirements and construction incentives. The guide includes comparison tables to clarify many of the code requirements. The guide is a valuable tool for architects and engineers, plan reviewers, fire and building inspectors, as well as sprinkler contractors, and serves well as a workbook for students at the NFSA's Design Advantage Seminar. With almost 400 pages of text, this book is a "must have" for anybody that performs hydraulic calculations of fire sprinkler systems or performs plan review and approval of hydraulic calculations.

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Water Supply for Very Tall Buildings in the IBC

By Jeff Hugo, CBO

A very tall building is one that is described by the International Building Code as being more than 420 feet in height. Since 9/11 and since the recession, resulting in a slow recovery, the construction of these buildings has been slow in the U.S. During this down time, building codes and standards are evolving to meet a new threshold or safety perception to serve the public. After 9/11, the collapse of the World Trade Center towers was studied by National Institute of Standards and Technology (NIST) and several recommendations came out of the final report (*Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers, September 2005*). The biggest impact on the fire sprinkler industry comes from Recommendation 12 of this report. Recommendation 12 calls for the redundancy of active fire protection systems, such as sprinklers and standpipes for high rises, or more specifically, very tall buildings.

This article is before its time, meaning, as codes and standards evolve, there is always some part that is lagging behind or another part that hasn't quite been perfected. This article is before its time because I believe the 2015 International Building Code (IBC) which will reference the 2013 NFPA standards, such as NFPA 20 (*Standard for the Installation of Stationary Pumps for Fire Protection*) and NFPA 14 (*Standard for the Installation of Standpipe and Hose Systems*) has solved some problems that earlier editions of

both have either caused or have been silent. Does looking at the "future" codes and standards make today's currently adopted code enforcement irrelevant? No, we can learn what these improvements are and apply them to the current documents and current projects.

In the 2009 IBC, the recommendations of NIST were inserted as a couple of sections for high rises and very tall buildings: Sections 403.3.1 and 403.3.2. The 2012 edition remains the same, but it appears that the 2015 IBC (currently in development) may have some clarifications (if approved by the membership later in 2013).

Underground Water Supply

Section 403.3.2 of the IBC states that the water supply to required fire pumps (very tall buildings will have "required" fire pumps) shall be supplied by at least two water mains that are located on different streets. The code does not stipulate whether or not these two water mains need to be connected or separate from each other, the only criteria is to be on different streets.

The IBC also requires the supply piping from each connection (water main to fire pump) to be independent from each other. This would require separate piping for each connection to enter the building, and not be tied together in the street. The purpose here is to have redundancy in case one connection fails or is damaged.

When the water mains are gridded or looped, the section does have an exception which permits two connections to the same main as long as the main has valves to permit isolation in case of troubles with the water supply.

Aboveground Water Supply

As with the underground water supply, when it comes to very tall buildings, the key word is redundancy. Redundancy in this case applies to risers, water tanks, and fire pumps. This conversation can go in several directions depending on how all the systems are piped or designed. What I would like to do is outline the requirements from the IBC.

IBC Section 403.3.1 requires that very tall buildings have each vertical zone supplied by two risers. These risers need to be located in interior exit stairways according to Section 403.3.1.1 This section (403.3.1.1) uses the terminology "remotely located", which means that each riser needs to be in a different stairwell so that if one event takes out a

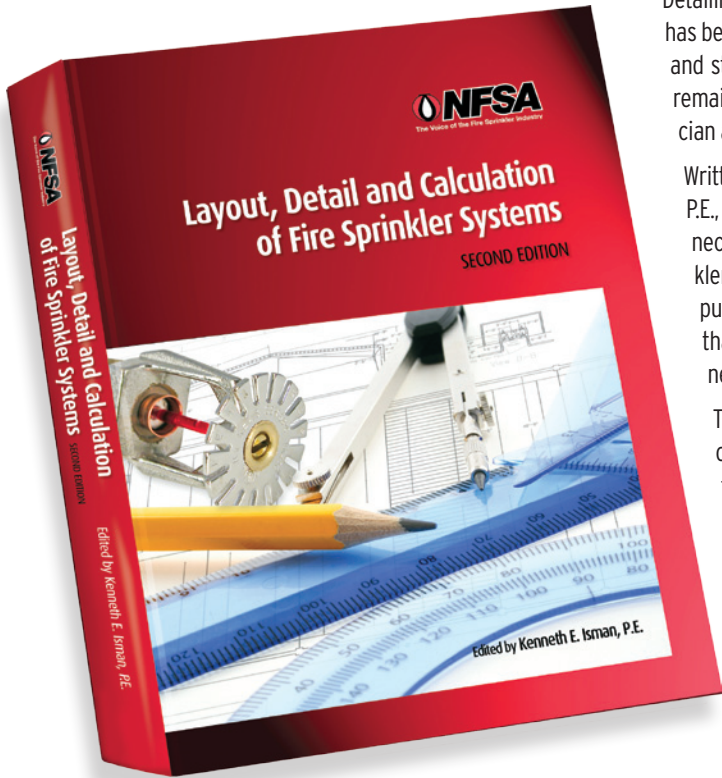
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NFSA's Manager
of Codes

Jeff Hugo, CBO

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



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

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

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

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

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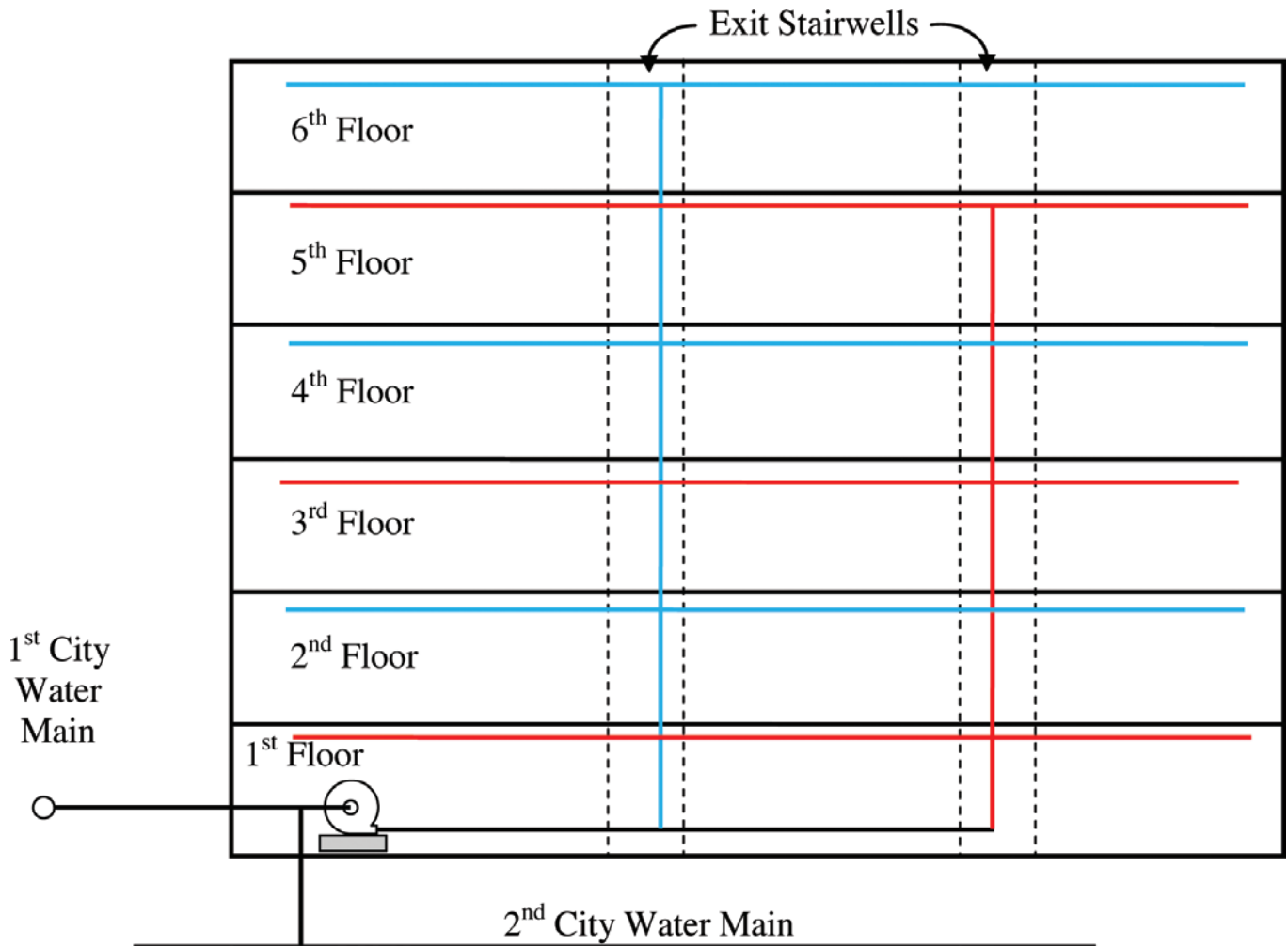
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“As with the underground water supply, when it comes to very tall buildings, the key word is redundancy.”



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riser, the other riser still has a chance of remaining intact. Section 403.3.1 goes on to say that adjacent floors within the vertical zone are not allowed to be fed by the same riser. The IBC requires the risers on adjacent zones (one floor above and one floor below) to be supplied by alternate risers. To keep this simple, consider a very tall building with two interior exit stairways, each stairway

would have a riser feeding alternate floors. Figure 1-1 shows what this section of the IBC is requiring along with the requirements of section 403.3.2 regarding the fire pump being fed from two different street mains. The red riser in one stairway is supplying floors 1, 3, and 5. The blue riser in the other stairway is supplying the adjacent floors 2, 4 and 6.

What I've done here is a very brief

walk through on these two sections of the IBC. When one starts to add the requirements and redundancies of NFPA 14 and NFPA 20, the article and conversation grows considerably. In future SQ articles, we will continue to unpack all the requirements from these other standards and discuss how they are interpreted and put to use in very tall buildings. ①

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Darley offers a full line of NFPA 13D compliant stainless steel packaged fire sprinkler pumps featuring the only Self Testing System (STS) on the market. The STS patent-pending technology will change the standard in residential fire protection.



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Supplier's Showcase:

Note: Supplier's Showcase is a little known SAM member benefit. All SAM members in good standing are invited to submit an article that helps our members get to know them better; a little history, a little product, a little personnel. One of our newest SAM members, W.S. Darley & Co. has taken advantage of this great benefit. If you would like your company to be featured here, please contact me at genadio@nfsa.org. I look forward to hearing from you. —Joanne Genadio

By Joanne Genadio

Since 1908, W.S. Darley & Co. has been dedicated to serving the world's fire and emergency services. Darley's involvement in the Fire Industry spans over a century and four generations of Darleys. Darley not only has a rock solid reputation for building quality products, but also for building strong relationships with fire fighting organizations around the world. Darley draws their strength from being a financially stable company with a unique industry position. Darley builds fire trucks, manufactures Champion Fire Pumps and sells fire fighting and emergency equipment through its international catalog.

W.S. Darley & Co. recently acquired Self Testing Systems (STS) of Albuquerque, New Mexico. STS is a premier manufacturer of packaged residential fire sprinkler pump systems and is an exciting new partner for Darley. According to Jeremy Taylor, President of STS, "The acquisition by Darley was very synergistic. Darley has a first-rate reputation in the fire and emergency markets built upon their decades of emphasis on quality products and long-lasting relationships with their customers. It is a unique, family-held company and being a part of it is an honor."

Darley now provides a full line of packaged fire sprinkler pump systems to accommodate any NFPA 13D application. Darley's patent pending Self Testing System (STS) technology will forever change the standard for residential fire protection. The Self Testing




Packaged 'plug & play' pump and manifold.



Darley self testing system panel

System (STS) is designed to provide homeowners with the most convenient, safe and affordable option ensuring complete fire safety of their home. STS features the markets only control panel with push button calibration, bi-monthly self testing and web-email integration. Paul Darley, CEO of W.S. Darley & Co. feels Darley's existing fire protection history complements the emerging Darley presence in the residential market. "With the amount of fires going down and the growing importance of sprinkler systems, we recognize the value that fire sprinkler systems add to saving lives. We also see the growth potential of this market as states pass laws mandating fire sprinkler systems in new residential construction."

Darley is committed to customer satisfaction and excellence. They offer a diverse line of quality products and services through progressive design, manufacturing and distribution. No project is too big and Darley is committed to help you with your fire protection needs. To learn more visit us at www.firesprinklerpumps.com. **CALIBRATED - TESTED - READY.** 



NFSA's
Marketing Manager

Joanne Genadio

Home Fire Sprinklers Save Lives and Water

**YOUR LOCAL WATER PURVEYORS
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Of course home fire sprinklers save lives and property. They also save water and reduce pollution. Those are vital improvements to your community. But your local water purveyors may not realize these benefits. If not, they'll charge too much for sprinkler connections. You can help them learn the facts.

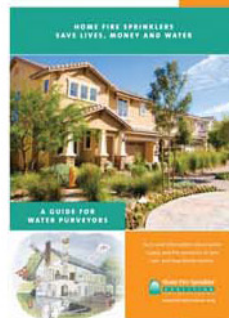
Fire sprinklers control home fires using 90% less water than fire departments use, with fewer persistent pollutants in wastewater. No other home fire protection feature can do the same.

- Home sprinkler systems discharge an average 341 gallons per fire* – not a significant demand on municipal water.
- A ¾" meter will accommodate most 1- and 2-family houses.
- Many communities are now offering water supply incentives to reward homeowners for protecting their homes with sprinklers.

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* Visit HomeFireSprinkler.org for sources.



WHAT YOU NEED TO KNOW

Help water purveyors in your community learn the facts about home fire sprinkler installations and water usage. HFSC's Guide for Water Purveyors contains the information they need right now.

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Performing Hydrant Flow Tests

Imagine this scenario: A fire sprinkler system installation has just been completed. The contractor performed the required steps and great care was taken with the project. The project specifications and all applicable codes and standards were reviewed and a sprinkler system layout plan was prepared. The sprinkler layout, pipe sizing and configuration was determined and sized per the hydraulic calculations. A drawing was produced and approved by the authority having jurisdiction and the project engineer. The system was installed per the plans and specifications and was connected to the new water service which was fed from the municipal water system. It was the big day, the AHJ had already approved the installation of the system and the final step was the acceptance testing. The contractor, the owner and the AHJ were all present when disaster struck. The main drain test was performed and the pressures noted were substantially less than expected.

Needless to say, the system failed the test. Based upon the strength of water supply noted, the system will not be able to provide the required flow at the specified density. What happened? The plans and calculations were reviewed and no problems were noted. The hydrant flow test results were searched for and could not be located. The file simply noted that the water company was contacted and "John" of the water company thought that the water pressure at this location was "about 75 psi at around 1500 gpm." These were the figures used on the hydraulic

calculations. The problem was clear. Hydrant flow tests were not performed and assumptions on the strength of the water supply led to a fire sprinkler system that would not work with the actual water supply. This disaster could have easily been avoided by the performance of a hydrant flow test.

Fire sprinkler systems require at least one automatic water supply. A common and convenient water supply is a connection to a reliable water works system. As per NFPA 13, the volume and pressure of a public water supply shall be determined from water flow test data or other approved methods. Other approved methods include projections from the water authority or engineer but the most common method of determining the strength of the available water supply is to perform a hydrant flow test. The importance of accurate water supply information is vital to the proper operation of an automatic fire sprinkler system and can save substantial money for the installing contractor and building owner. Pipe sizes may be reduced and fire pumps may be eliminated if the water supply is determined to be strong enough. This article will outline the steps and procedures for performing a hydrant flow test. The methods for performing water flow tests are not new and the methodology has not changed in recent memory. The 1940 edition of NFPA 13 contains the same flow test procedures that we still use today. These procedures are clearly outlined in NFPA 13 with more in-depth information found in NFPA 291,

Recommended Practice for Fire Flow Testing and Marking of Hydrants.

Preparation for Water Flow Test

Before performing the water flow test it is important to think about the safety of personnel, property and bystanders. During a flow test the water streams can discharge water with enough pressure and volume to cause damage and even injury. The site needs to be surveyed to make sure that the path of water flow is clear. The water stream may discharge water with a force that will damage cars, injure people and destroy property. The person taking the flow readings should wear safety glasses. If hoses are to be used to redirect the flow, these hoses need to be restrained to prevent them from whipping around and striking people or objects. The site grading must also be considered. During the test several hundred or even thousands of gallons of water will flow. This water must be able to drain and not cause flooding or washout of the road and landscaping of the area.

>> CONTINUED ON PAGE 28



Manager of
Technical Services

Roland Asp

Prior to performing a hydrant flow test, the proper equipment needs to be assembled. You will need, at minimum, the following:

- **Pitot gauge** - This is a device that when placed in the flow stream of the fire hydrant, will provide the velocity pressure in psi. This reading can be converted into flow in gallons per minute using a mathematical formula or more commonly, a pitot gauge conversion table. This will determine the flow of the test.
- **Hydrant cap with gauge** - This gauge

will be attached to the 2-1/2 inch fire hydrant outlet and will record the static water pressure of the system and the residual water pressure. Remember that the thread type of your equipment must match those of the hydrants to be flowed

- **Ruler** - used to measure the diameter of the hydrant outlet.
- **Safety glasses** - to protect the eyes of the person recording the pitot pressure.
- **Flashlight** - used to look into hydrant outlets for obstructions.

- **2-way radios or cell phones** - to communicate between personnel at the two hydrants.

Other useful equipment includes a flow diffuser, a pad and pencil and a sketch of the water supply being tested.

Once the necessary equipment has been collected you will need to select the hydrants to be used in the testing. You will be using at least two fire hydrants to perform this test. The first hydrant is known as the test or pressure hydrant. This will be the hydrant closest to the facility being protected and will be used to determine both the static and residual pressures of the water system. The second hydrant is known as the flow hydrant and is the hydrant next closest to the property in the line of normal water flow in the main. As normal flow in a circulating water system is from larger to smaller mains, a map of the water system is useful in determining the location of the flow hydrant. The flow hydrant is the one where water will actually flow. In some cases we will need to use multiple flow hydrants which we will discuss later in this article.

Next we need to contact the water purveyor (or in the case of a private fire main - the owner) and set up a date and time for testing. At this time, find out the size, material, configuration and elevation of the water system in the area being tested. Testing of public water supplies should be conducted at times of normal demand; however there are times where the water department will not allow the tests to be performed during this optimal period. The nature of hydrant flow testing tends to discolor the water. The high flows generated may stir up the sediments present in the system and the water will turn brown or cloudy. Although this discolored water is not a health concern, the water authority may be concerned about complaints from users and it is not unusual for the water purveyors to require the test be performed after hours.

Before we discuss the procedures of conducting a flow test, let's review what we are trying to determine and some necessary concepts that we need to understand. During the flow test we will be collecting three important pieces of data: the static water pressure, the re-

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sidual water pressure and the flow from the hydrant(s). The static water pressure is the pressure (which we measure at the pressure hydrant) with no water flowing in the system. In reality, as there are other customers using water, there is always water flowing in the system. So for the purposes of the test, static water pressure is the pressure measured at the pressure hydrant before we have opened the flow hydrant. The fact that there is water being utilized in the system is actually a good thing as this will more accurately reflect the water system at the time of a potential fire. We cannot expect that a fire will happen when no one else is using water.

The residual pressure is the pressure in the system when the flow hydrant is open and flowing water. Residual pressure and flow go hand in hand and you cannot talk about residual pressure without also talking about the flow needed to create the residual pressure. The residual pressure is measured at the pressure hydrant during the flow from the flow hydrant. We use the same gauge that we use to measure the static water pressure.

The flow is the quantity of water flowing out of the flow hydrant over a period of time. This is measured by the pitot gauge which is placed in the hose stream. As the pitot gauge measures the velocity pressure in psi, we need to convert this value to flow in gallons per minute. This conversion may be performed using the following formula:

$$Q = 29.83cd^2 \sqrt{P_p}$$

Q = Flow from hydrant in gallons per minute

c = hydrant coefficient (0.9, 0.8 or 0.7) depending on hydrant configuration

d = inside diameter of hydrant butt (outlet) from which water is flowing

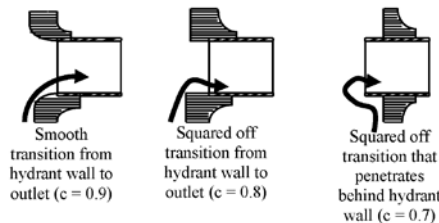
P_p = velocity pressure from Pitot Gauge

More commonly, the contractor will use a Pitot Gauge Conversion Table to perform this conversion. A Typical Conversion Table is shown in Table 1.

Velocity Pressure from Pitot Gauge (psi)	Hydrant Coefficient 0.9	Hydrant Coefficient 0.8	Hydrant Coefficient 0.7
1	168	149	131
2	237	211	185
3	291	258	226
4	336	298	261
5	375	334	292
6	411	365	320
7	444	395	345
8	475	422	369
9	503	447	392
10	531	472	413
12	581	517	452
14	628	558	488
16	671	597	522
18	712	633	554
20	750	667	584
25	839	746	653
30	919	817	715

As you can see, both the mathematical formula and the conversion table use a variable called "hydrant coefficient." A hydrant coefficient is simply a measure of how easy it is for water to flow out of an outlet. The smoother the path that the water needs to flow from the hydrant out the outlet, the higher the coefficient. As different hydrant manufacturers make this transition between the hydrant and the outlet differently, different hydrants have different coefficients.

Luckily the vast majority of fire hydrants have one of three hydrant coefficients as illustrated in Figure 1.



In order to determine which hydrant coefficient to use, you simply stick your hand into the hydrant outlet and feel the transition from the outlet to the hydrant barrel:

- If the transition is smooth and rounded as illustrated by the diagram on the left in Figure 1, the coefficient would be 0.9.
- If the transition is squared off and does not protrude past the hydrant barrel as illustrated by the middle diagram in Figure 1, the coefficient would be 0.8.

- If the transition is squared off and does protrude past the hydrant barrel as illustrated by the diagram to the right in Figure 1, the coefficient would be 0.7.

If the hydrant does not meet one of these three examples, then you must contact the hydrant manufacturer and ask them what flow test coefficient to use.

Performing the Water Flow Test

Now it is time to perform the water flow tests. Remember you are usually there to observe and record the readings, not to turn hydrants on or off. This is typically the responsibility of water department personnel or owner's representative in the case of a private water main. I stress this point so as you will not be responsible for damage to the fire hydrant or surrounding property. There is too much liability in today's world, do not take on more when it can be avoided. I purposely left out hydrant wrenches from the list of supplies needed. The water department should supply the wrenches as they should be operating the hydrants.

There are seven basic steps in water flow testing. For the most accurate results, a test should proceed in this order:

1. On the pressure hydrant, first ensure that the hydrant is fully closed. Remove one of the 2-1/2 inch hydrant caps and install the fire hydrant cap and gauge to the open hydrant butt. Open the gauge bleeder valve.
2. Have the water department personnel partially open the hydrant. This allows the trapped air to escape through the open bleeder valve. Once water begins to flow out of the bleeder valve, close the bleeder valve and fully open the hydrant. Never stand directly in front of the hydrant gauge in case the gauge is blown out of the hydrant cap.
3. The gauge on the pressure hydrant will show the static water pressure of the system. Write this static pressure reading in your notebook.
4. Now we go to the flow hydrant but an

assistant should stay at the pressure hydrant to record the residual pressure during flow. Again, ensure that the flow hydrant is fully closed and remove one of the 2-1/2 inch hydrant caps. Measure the inside diameter of the open hydrant butt and record. Using a flashlight, look into the hydrant outlet and make sure there are no foreign objects or conditions that may cause problems during the flow test.

5. Next feel the inside of the hydrant outlets to determine the hydrant coefficient. If the outlet is smooth and rounded use a 0.90 coefficient, if the outlet is square and sharp use a 0.80 coefficient and if the outlet is square and projecting into the barrel the coefficient is 0.70. Refer to Figure 1. Record the hydrant coefficient.
6. We are now going to open the fire hydrant and flow out of the open 2-1/2 inch outlet. Before we do, we must recheck the area to ensure that the flow will not cause damage or cause an unsafe condition. A hydrant stream can tear up a lawn or even damage a car. It is sometimes necessary to close the road and sidewalk for the duration of the test. A diffuser is very useful in these situations. A diffuser will disperse the flow stream and avoid damaging surrounding property. Now have the water department personnel fully open the fire hydrant and let the flow stream stabilize. Contact the assistant at the pressure hydrant to record the residual pressure while we measure the flow stream's pressure with the pitot gauge. Place the pitot gauge in the center of the stream approximately at a distance of half the diameter of the outlet. For the 2-1/2 outlet butt we are using, we would place the pitot about 1-1/4 inches from the end of the hydrant butt. Record the pressure on the pitot gauge (if the needle fluctuates, record the average of the high and low readings).
7. Now both hydrants may be shut down and the gauges removed. It is good practice to ensure that the hydrants drain properly.

There are a few other factors that must be taken into consideration. First, in order for the results to be as accurate as possible, the flow needs to be sufficient to cause a drop in the residual pressure at least 25% from the static pressure. In other words if the static pressure is 80 psi, the residual pressure with the hydrant flowing needs to be 60 psi or lower. If this cannot be achieved with the flow from a single 2-1/2" inch hydrant butt, the test should be performed with a greater flow. This can be accomplished by rerunning the test with both 2-1/2 inch hydrant butts on the flow hydrant open and flowing. If this is still not enough flow to drop the residual pressure 25% or more, then additional hydrants must be flowed. Each flowing stream must be measured with the pitot gauge and recorded. The total flow at the final residual pressure is the sum of the flow quantities from all of the hydrant streams running. Multi-stream testing requires a lot of running back and forth but it may be required to achieve accurate flow test results. If for some reason you cannot get a sufficient flow from the 2-1/2 inch outlets as described above, you may have to flow water from the 4 inch or pumper connection. Note that this is not recommended and should be used only when there is no other option. When using the 4 inch outlet, additional correction factors will need to be factored into the formulas. Refer to NFPA 291 for this method.

One last factor must be mentioned, the pitot gauge reading is accurate for water velocity pressures between 10 psi and 30 psi. If the pitot gauge reads below 10 psi, then the conversion formula and tables may not be valid. In this case, you will need to shut the flow from the outlet and install a reducer. This will increase the velocity pressure and the accuracy of the test. If the pitot gauge reads a velocity pressure in excess of 30 psi, then open additional outlets on the hydrant. This will decrease the discharge at an individual outlet and increase the accuracy of the test results. As we stated above when discussing multi-stream testing, the total flow at the final residual pressure is the sum of the flow quantities from all of the hydrant streams running.

Recording the Data

Now that we have performed the flow test our final step is to record the results and evaluate the data. The data that we collected should be recorded in a Hydrant Flow Test Report, an example of which can be found in NFPA 291 (2013), Figure 4.11.2. This report will list all pertinent data recorded during the flow test. A location sketch should be included on the back of this form. The location sketch should include the location of the property to be protected, the locations of the pressure and flow hydrants, the size and material of the water mains, the street names and direction of north.

We also need to plot the results on graph paper. This will help us to evaluate our results and determine if the available water supply is sufficient for the fire sprinkler system. To graph our results, we use a special graph paper called "log 1.85" graph paper. This graph paper will allow us to plot the test results as a line with the two data points that we obtained from the flow test (static and residual pressures).

Log 1.85 paper typically will have several scales representing flow so we need to indicate which scale we are using. Once we have plotted the static pressure and the residual pressure from the flow test, we draw a line between our data points and extend it to a theoretical 20 psi. This is the water supply curve of the system.

Consider the following flow test results in order to see how log 1.85 graph paper is used. The flow test was performed following the procedures described above and the results were:

- Static Pressure is 80 psi
- Residual Pressure of 47 psi
- Velocity pressure of 14 psi measured on pitot tube
- Hydrant outlet coefficient of 0.9
- Hydrant outlet inside diameter of 2.5 inches.

Before we can plot this information the velocity pressure reading from the Pitot

Gauge needs to be converted to a flow in gpm. This can be accomplished using the mathematical formula:

$$Q = 29.83cd^2 \sqrt{P_p}$$

This conversion may also be obtained using the Pitot Gauge Conversion Table. Either method will result in a flow of 628 gpm.

To plot this flow test on Log 1.85 graph paper, the two data points from the flow test need to be plotted on the graph. Start by plotting the static pressure of 80 psi at 0 gpm flow. Then plot the residual pressure of 47 psi at 628 gpm. For this test use Scale B and circle this scale on the Log 1.85 graph paper. Next draw a line between the two points. This curve should be extended to show the flow at

a theoretical residual pressure of 20 psi. This value is important to water utilities as they typically do not want the water supply drawn below 20 psi. This is the water supply curve for this flow test example. With this flow curve we can determine the pressure at any flow and the flow available at any pressure. See Figure 2 for the completed flow test graph.

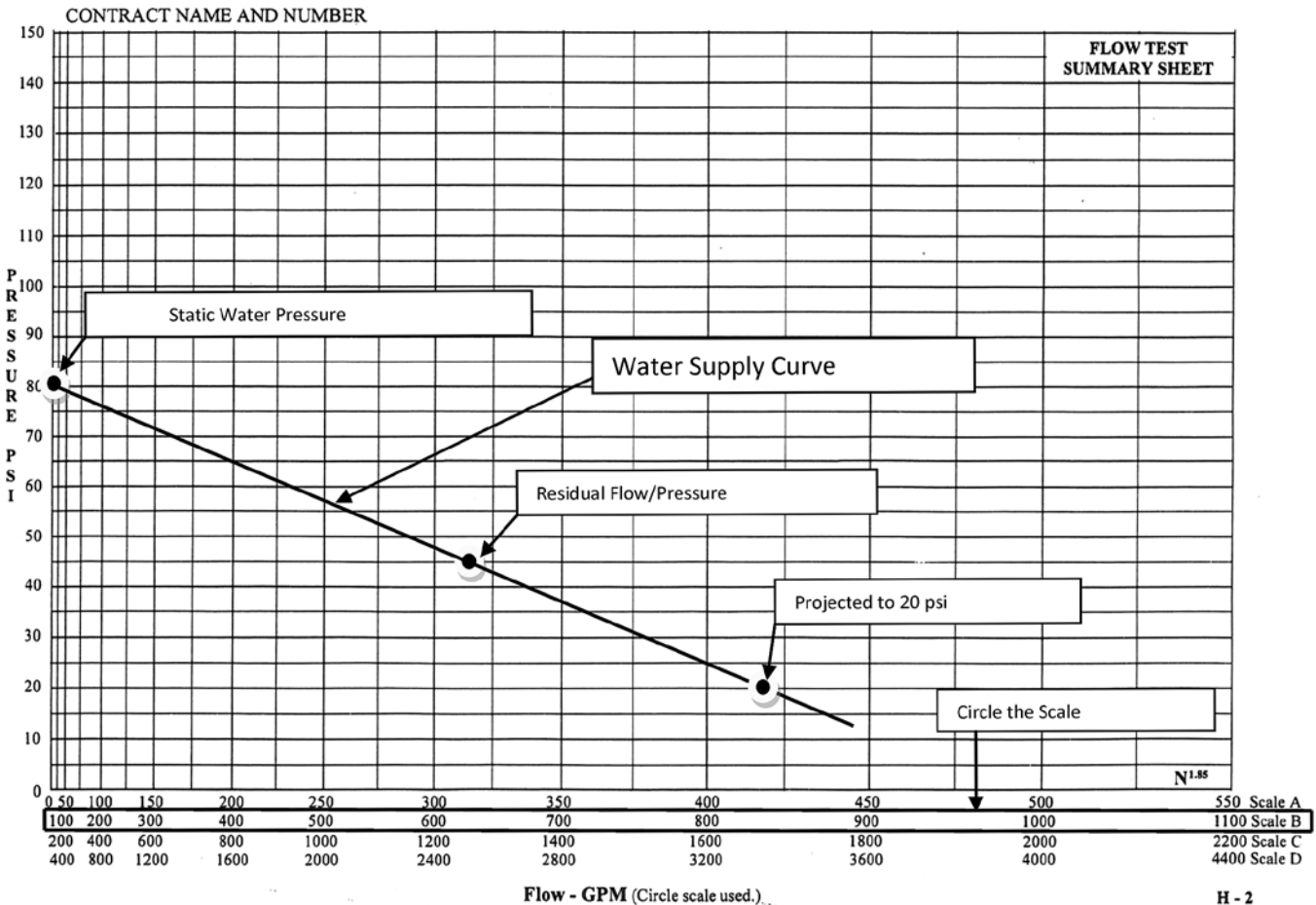
Conclusion

This is the water supply curve of the system. With this information we can accurately determine the adequacy of the water supply to provide the required flow and pressure for a fire sprinkler system. However, this data only indicates the conditions at the time of the water flow test. As we want the system we are working on to perform at all times, we should adjust

the flow test results to reflect a reasonable "worse-case scenario."

NFPA 13 – 2007 requires that adjustments be made to the waterflow test data to account for daily and seasonal fluctuations, large industrial use, future demand or any other conditions that could affect the water supply. Although the 2010 and 2013 editions of NFPA 13 have moved this requirement to the annex, it is good practice to apply these adjustments. Remember a sprinkler system is only as good as the water supply and we need the system to work at all times. For this reason I believe including these adjustments is a requirement for a responsible installation. For more information on these adjustments and how to apply them, see the article in **SQ**, "Water Supplies, How Low Should You Go?"

FIGURE 2.



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Initial Thoughts

By Jason Webb

It seems that no matter where I go, whenever I tell people I am the new Director of ITM for the National Fire Sprinkler Association, it always leads to the question “what does ITM stand for?” Whether you realize it or not, the answer isn’t so simple.

Very few initials mean as much to folks in the fire protection industry as do I, T & M. The importance of Inspection, Testing and Maintenance, or ITM, to those directly involved in the sprinkler business can’t be overstated and is pretty well understood. However, that’s not always the case for other stakeholders. The significance of ITM to important players like AHJs and building owners sometimes gets lost in their day-to-day grind of making communities safe and keeping the lights on.

When NFSA asked me to come on board as their primary advocate for the inspection, testing and maintenance of sprinkler systems I jumped at the opportunity. In my nearly 25 years of fire service experience, I always felt like I was one of those AHJs who “got-it” when it came to the value of sprinklers. I also knew, sadly from experience, that enforcement of NFPA 25 was seldom a top priority.

Convincing AHJs and building owners to recognize the importance of ITM is a discussion that must take place. Unfortunately, sometimes it takes a tragedy to get the conversation started. For me it was more subtle. I began to realize just how much the fire safety of the community I was being paid to look after relied on the fact that most commercial properties

were protected by automatic sprinkler systems, and more importantly, the assumption that those systems were going to work when the time came.

I also thought about all the incentives I had used over the years to encourage developers to provide sprinklers. Those design options directly affected my fire departments ability to defend the property, and the people in it, when it mattered. Access, water supply, construction type, height, area, occupancy, you name it...nearly everything about the sprinkler protected property is different from those that aren’t. But clearly that’s a good thing. We know that history and data are on our side and allowing those trades result in safer buildings. Everyone involved... including the building owner, wins.

We must acknowledge that nothing can affect the high degree of reliability we have come to expect faster than a lack of ITM. NFPA’s research on when and why sprinklers are ineffective at controlling fires clearly reflects the value of ITM. In the unlikely event that there is a failure of a sprinkler system, an effective ITM program following NFPA 25 would have prevented it in the vast majority of cases. It only makes sense that if we fail to provide ITM we can ultimately expect an erosion of the confidence people have in the protection sprinklers offer.

So the next time someone asks you what the initials “ITM” stand for, don’t just say inspection, testing and maintenance. Let them know they stand for helping ensure the reliability of life-saving sys-

tems, protecting an owner’s investment, maintaining economic stability and most importantly they stand for keeping communities safe. ☺



Jason Webb

Director of
Inspection, Testing
& Maintenance

Buddy Dewar & Tom Lia Honored

In April, **Tom Lia** was recognized by NFPA for his outstanding work in support of fire sprinklers in homes. The "Home Fire Sprinkler Champion Award" was presented at the NFPA's Fire Sprinkler Summit, and was apparently a total surprise to Tom, who currently serves as the Executive Director of the Northern Illinois Fire Sprinkler Advisory Board as well as the NFSA Regional Manager for Illinois.

In other news, the NFSA Florida Chap-



Tom Lia (right) receives NFPA's first awarded "Home Fire Sprinkler Champion Award" at the NFPA Fire Sprinkler Summit in Chicago, Illinois.

ter, The Florida Fire Sprinkler Association, held a special reception in honor of **Buddy Dewar** as it renamed its annual golf tournament the Buddy Dewar Classic. More than 200 people participated in the event honoring our NFSA Vice President of Regional Operations for his hard work and many successes over the years on behalf of the fire sprinkler industry. Alan Wiginton, Buck Buchanan, Randy Greenslate, and Bob Bussiere were among the current Council and Board members that joined NFSA President Russ Fleming in attendance. Two former NFSA Golden Sprinkler Award winners, Joe Wiginton and Wayne Gey, were also on hand to honor Buddy.

Congratulations to both of these NFSA employees in this well-deserved recognition of their talents and dedication!



NFSA President Russ Fleming presents Vice President of Regional Operations Buddy Dewar with a gift of golf memorabilia.

Russ Fleming Testifies Before Legislative Commission in Brazil

James Golinveaux of Tyco Fire Protection Products and NFSA President **Russ Fleming** represented IFSA at last month's meetings of the ABSpk Board and Annual Membership Meeting. Russ spoke to the Engineers Institute in Sao Paulo about the 2003 Station Nightclub fire, which bore a lot of similarities to last month's Kiss Nightclub fire in Santa Maria for which the death toll now stands at 241. He also testified before the special legislative commission investigating the fire in the state where it took place, Rio Grande do Sol.

NFSA Contractors Committee Reach Tentative Agreement with Road Sprinkler Fitters Local 669

A new three-year agreement, which is subject to ratification by Local 669 membership, will be in effect from April 1, 2013 through March 31, 2016. The NFSA Contractors Committee sincerely appreciates the many contractors throughout the United States who supported the effort. The NFSA Labor Staff would like to thank the Contractors Committee, who worked tirelessly to achieve the Tentative Agreement.

The members of the Contractors Committee are as follows:

Jon Ackley

Dalmatian Fire, Inc., Indianapolis, IN

Ted Angelo

Grunau Co., Inc., Oak Creek, WI

Steve Comunale

S.A. Comunale Co., Inc., Barberton, OH

Marty Corcoran

Wolverine Fire Protection Co., Mount Morris, MI

David Dixon

Security Fire Protection Co., Inc., Memphis, TN

Keith Fielding

Cosco Fire Protection, Irvine, CA

Kamran Malek

(nternational Fire Protection, Inc., Madison, AL

Aus Marburger

Fire Protection Industries, Inc., Bensalem, PA

Andy McCleery

Viking Automatic Sprinkler Co., St. Paul, MN

Bill Meyer

Shambaugh & Son, L.P., Fort Wayne, IN

Jim Paben

Continental Fire Sprinkler Co., Omaha, NE

Gene Postma

Western States Fire Protection Co., Centennial, CO

Mark Tate

Northstar Fire Protection of Texas, Austin, TX

Gary Willms

Patriot Fire Protection, Inc., Spokane, WA

Steve Ulmer

Davis-Ulmer Sprinkler Co., Inc., Amherst, NY

The members of the NFSA Labor Staff are as follows:

Fred Barall (Chief Spokesperson), Senior Vice President of Industrial Relations and General Counsel

Jim Lynch, Vice President of Industrial Relations and Corporation Counsel

Carla Gunther, Manager of Labor Relations and Associate Counsel. ☎

IN MEMORIAM

Tom Gillmore, a Founding Member of the Coalition for Responsible Fire Protection

Tom Gillmore, 60, of Suamico, Wisconsin, died Tuesday, March 19, 2013. He was born May 25, 1952, in Lamar, Colorado and graduated from Colorado State University with a degree in Fire Protection Engineering. He spent most of his career in the Middle East and Asia and was a founding member of the Coalition for Responsible Fire Protection.

Tom is survived by his wife, Nicky; three children and their spouses, six grandchildren, brothers and sisters-in-laws, nieces, nephews, many relatives, and friends.

Visitation was held at Blaney Funeral Home, 1521 Shawano Ave., Green Bay, Wisconsin, on Monday, March 25, followed by a Memorial Service. To send online condolences please go to www.BlaneyFuneralHome.com. ☎

NFPA NEWS

New Research Reveals Opportunity to Educate Consumers on Green Value of Fire Sprinklers

In celebration of Earth Day, Green Builder® Media (GBM) has released new consumer research on green living revealing that “respondents like green, think they live a green life, and understand that updating their homes to incorporate more green features increases the value of their homes.”

According to the company, the results also highlight its VISION House® projects that offer “essential, forward-thinking ideas and educational information about how people can live a more sustainable lifestyle.” NFPA partnered with GBM to launch the VISION House in INNOVENTIONS in Epcot® at the Walt Disney World® Resort to show the environmental benefits of home fire sprinklers.

The main purpose of home fire sprinklers is to save lives; and they also protect property and the environment. The

findings of a groundbreaking study – a collaborative effort of FM Global and the Home Fire Sprinkler Coalition – show that greenhouse gases released by burning buildings can be reduced by 98% when automatic fire sprinklers are installed. The study also found that automatic fire sprinklers: reduce fire damage by up to 97%; reduce water usage to fight a home fire by upwards of 90%; and reduce the amount of water pollution released into the environment.

GBM emphasizes that “these engaged and information-hungry consumers represent a prime market opportunity... to provide innovative solutions for improving quality of life, enhancing the health and safety of our housing stock... increasing home values, reducing pollution, and mitigating environmental damage.” As such, it represents an opportunity to educate consumers on the green value of home fire sprinklers.

Download “The Environmental Impact of Automatic Fire Sprinklers” study from the FM Global website. ☎



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firefighter on duty in
your home 24/7!

REGIONAL ROUNDUP

NORTHEAST REGION



DOMINICK KASMAUSKAS
Associate Director of Regional Operations - North

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

New Research Reveals Opportunity to Educate Consumers on Green Value of Fire Sprinklers

In celebration of Earth Day, Green Builder® Media (GBM) has released new consumer research on green living revealing that "respondents like green, think they live a green life, and understand that updating their homes to incorporate more green features increases the value of their homes."

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Download "The Environmental Impact of Automatic Fire Sprinklers" study from the FM Global website.

Dominick Kasmauskas is the NFSA's Associate Director of Regional Operations-North and Regional Manager for the Northeast Region. He can be reached at Kasmauskas@nfsa.org or 1436 Altamont Ave. Suite 147 Rotterdam, New York 12303, Phone 518.937.6589, Fax 518.836.0210.

MID-ATLANTIC REGION



RAYMOND W. LONABAUGH
Regional Manager

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

New Jersey Home Fire Safety Act

The Residential Fire Sprinkler Bill, New Jersey Assembly Bill 1570, was heard, voted on and passed by the New Jersey Assembly Housing and Local Government Committee on December 6, 2012. The bill was voted on and passed the full New Jersey Assembly on January 28th with 44 members voting for the bill, 30 members voting against and six non-voting.

Pennsylvania Uniform Construction Code Review and Advisory Council to Work on Legislative Change for 2015 Code Adoption

The Chair of the Pennsylvania Uniform Construction Code Review and Advisory Council (RAC) has charged the RAC Legislative Working Group with resolving problems that will arise with the adoption of the 2015 ICC Building Codes. Problems are anticipated because the 2012 code revisions will be precluded from the adoption of the 2015 edition of the revised codes.

The Legislative Working Group is charged with coming up with a legislative recommendation to the Pennsylvania Legislature. The RAC has been reviewing ways to change the ICC Code revision cycle from three to six years. The next RAC meeting is May 29th.

Raymond W. Lonabaugh is the NFSA Regional Manager for the Mid Atlantic Region. He can be reached at: lonabaugh@nfsa.org

>>CONTINUED ON PAGE 38

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REGIONAL ROUNDUP

>> CONTINUED FROM PAGE 37

nfsa.org or P.O. Box 126, Ridley Park, Pennsylvania, 19078. Phone: 610.521.4768

SOUTHEAST REGION



WAYNE WAGGONER
Associate Director of Regional Operations - South

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

Tennessee Fire Marshal Andy Kings Promote Fire Sprinklers

A family of three in Franklin, Tennessee escaped a townhouse apartment fire unharmed but their pets perished in the blaze. The home, which was the end unit of seven adjoining townhomes, was heavily damaged.

Franklin Fire Marshal Andy King said the fire started on the first floor, vented out the first floor rear window and was extending up the exterior vinyl siding to the roof and attic when firefighters arrived. With the exception of one adjacent unit that had some exterior heat damage, firefighters prevented the fire from spreading to the other units.

King said all three family members were on the third floor when smoke alarms activated throughout the home. One resident was treated for smoke inhalation at the scene and released.

King estimated damage at \$150,000. He said the family may be displaced for up to nine months during reconstruction. King said the units were built in 1998 with firewalls and interconnected smoke alarms, but without an automatic fire sprinkler system. He commented, "A fire sprinkler system would have likely kept the damage to \$10,000 or less and allowed the pets to survive."

The cause of the fire is under investigation.

Wayne Waggoner is the NFSA Associate Director of Regional Operations South. He can be reached at Waggoner@nfsa.org or PO Box 9, Andersonville, Tennessee 27705, Phone 865.755.2956, Fax 865.381.0597.

FLORIDA & PUERTO RICO



LORELL BUSH
Regional Manager

FLORIDA, PUERTO RICO

Opportunity to Mentor not to be Missed!

Last month, Sarah Kelly, Vice President at NFSA Member Wayne Automatic Fire Sprinklers had the privilege to have Stephen Holt, a senior at ACT (Academy of Construction Technology) High School, shadow her for the day. Stephen, while a student, also serves as the President of Eagle Construction. Eagle Construction is an ACT program which allows students to design, build and sell sheds, tables, chairs, and other items all made by the students. The program's success is highly attributed to the students teacher, Mr. Inwood, who enables the students to learn and live the construction industry. As one day isn't nearly enough time for full exposure to the fire sprinkler industry, Stephen is scheduled to return to Wayne Automatic Fire Sprinklers to discuss design mentoring.

Job shadowing is a great way for students to get real life exposure to how the industry works. If you are interested in a mentoring program in your company, please contact Florida Regional Manager Lorrell Bush.

Lorrell Bush is the NFSA Regional Manager for the Florida Region. She can be reached at bush@nfsa.org or 2025 Droylsden Lane, Eustis, FL 32726. Phone: 352.589.8402 Cell: 954.275.8487 Fax: 561.327.6366.

GREAT LAKES REGION



RON BROWN
Regional Manager

INDIANA, MICHIGAN, OHIO,
WEST VIRGINIA, KENTUCKY

Michigan Residential Fire Sprinkler Coalition

Working with NFPA and NFSA, the state of Michigan is in the early stages of forming

a Residential Fire Sprinkler Coalition for the purpose of addressing issues and obstacles that stand in the way of adopting a residential fire sprinkler requirement. There is currently considerable opposition to residential fire sprinklers in the state. While many of the points of opposition are unfounded and related to a lack of knowledge, there are some issues that are valid and need to be addressed.

Fire Chief Mike O'Brian is chairing the Coalition, assisted by Jeffery Hudson, Residential Fire Sprinkler Specialist for NFPA. Representing the Industry is Bob Jagenberg; John E. Green Company; Greg Herman, Business Manager / Financial Secretary Sprinkler Fitters UL 704; Bob Johnson, Business Agent Road Local 669 and Ron Brown, NFSA Regional Manager. They look forward to putting together a strategic plan leading toward broad-based acceptance of the fire sprinkler concept in the state of Michigan.

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

ILLINOIS REGION



TOM LIA
Regional Manager

ILLINOIS

Sprinkler Save at Illinois High School

No injuries were reported when a small fire broke out at Wheaton North High School in Illinois on April 11th. According to a news release from the Wheaton Fire Department, the fire started about 7:00 a.m. in a science storeroom before students arrived.

Upon arrival, firefighters discovered that the school's sprinkler system activated and had already stopped the fire.

All students were directed to the school's field house during the incident, but because of the fire sprinkler system,

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REGIONAL ROUNDUP

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classes were able to resume as normal.

The cause of the fire is undetermined, and is being investigated by the Wheaton Fire Department, Wheaton Police Department and the DuPage County Fire Investigation Taskforce.

Tom Lia is the acting NFSA Regional Manager for the Illinois Region. He can be reached at lia@nfsa.org or 62 Orland Square Dr Ste 201, Orland Park, IL 60462. Phone: (708) 403-4468, Fax: (708) 403-4771.

NORTH CENTRAL REGION



BOB KLEINHEINZ
Regional Manager

MINNESOTA, WISCONSIN, NORTH DAKOTA,
SOUTH DAKOTA

Sprinkler System Douses Fire at North Dakota Business

A fire sprinkler system received credit for putting out a fire before it could cause significant damage to a Fargo business that makes building materials.

Firefighters responded to the Lavelle Co. for a report of a commercial fire alarm and sprinkler flow switch activation.

When crews arrived, they found that the sprinkler system had extinguished a fire in a room used for staining and spray-finishing wood products, Assistant Fire Chief Gary Lorenz stated in a news release.

The fire involved a work bench with tools and staining supplies on it. It caused no structural damage to the building, and there was only minor smoke and water damage estimated at \$1,000.

No one was in the building at the time of the fire.

The cause of the fire is under investigation, but one possible cause is spontaneous combustion of oily rags that were discarded in a metal container next to the portable work station, Lorenz stated.

The Fargo Fire Department encourages all businesses that have sprinkler systems to make sure they are professionally inspected and functioning properly, the

release stated.

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

CENTRAL REGION



CHRIS GAUT
Regional Manager

IOWA, KANSAS, MISSOURI

Maryville, Missouri City Council Debates City Building Codes

A Maryville City Council discussion session prompted by Mayor Glenn Jonagan brought up the question of municipal building codes, last updated in 2006. Jonagan said the city should work with the local construction and real estate community to strike a balance between the need for safety and regulations that help fuel economic growth.

Code Enforcement Officer Jim Wiederholt said the current code book contains provisions designed to ensure "minimum standards for the life, safety and welfare of the community." He said building codes were first adopted in Maryville around 1960 and last updated in 2006.

The introduction of new products, materials and techniques is one of the main reasons that the ICC issues a new code book every three years, meaning that Maryville codes are currently six years behind those set forth in the most recent edition.

City Manager Greg McDanel suggested that it may be time for Maryville to start considering a code update. Jonagan urged that part of that process include an effort by the city to reach out to the local construction and real estate community to determine preferences and needs.

One sticking point that has come up several times in recent years, for example, is a requirement for sprinkler systems in multi-unit housing developments, which,

>> CONTINUED ON PAGE 40

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REGIONAL ROUNDUP

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of course is facing opposition from local homebuilders.

Phil Rickabaugh, Maryville Public Safety's fire division supervisor, is an advocate of sprinklers, and noted that such systems, along with improved building materials, have made a "dramatic difference" in terms of the number of structures damaged or destroyed by fire.

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

SOUTH CENTRAL REGION



CYNTHIA GIEDRAITIS
Regional Manager

ARKANSAS, LOUISIANA,
OKLAHOMA, TEXAS

Texas Legislative Proposals Affecting Fire Sprinkler Contractors

HB 2179/SB1456 – Backflow licensing is proposed to move from the Texas Commission of Environmental Quality to the Texas State Board of Plumbing. If passed, Fire Sprinkler Contractors would not be allowed to inspect backflow prevention

devices.

HB 559 - Employment of Illegals - Fire Sprinkler Contractors could be liable for employee fraudulent documents

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Location:

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NFSA Vice President of Training and Communications Jim Lake will be presenting a one-day session on Hydraulics and Acceptance Testing on May 21, 2013.

Register at <http://bit.ly/bpilake>

Cindy Giedraitis is the NFSA Regional Manager for the South Central Region. She can be contacted at giedraitis@nfsa.org or PO Box 10403, College Station, Texas 77842. Phone: 979.324.8934.

GREAT PLAINS REGION



ERIC GLEASON
Regional Manager

Colorado, Nebraska, Utah, Wyoming

Colorado Anti-Freeze News

The City and County of Denver have prohibited the introduction of new anti-freeze systems. However, existing systems where anti-freeze is captured may reintroduce it back into the system.

The Denver Fire Department must be contacted before testing or installation. It has been noted that other jurisdictions and municipalities in Colorado are following suit.

Wyoming Conference

The Wyoming Conference of Building Officials is schedule for June 12-14 at the Best Western in Gillette, Wyoming.

Eric Gleason is the NFSA Regional Manager for the Great Plains Region. He can be contacted at gleason@nfsa.org or P.O. Box 62157, Littleton, CO. 80162. Tel: 720.470.4894

SOUTHWEST REGION



BRUCE LECLAIR
Regional Manager

ARIZONA, NEVADA, NEW MEXICO,
CALIFORNIA, HAWAII

Astounding Sprinkler Save in Glendale, California

Even though sprinkler control valves were shut off, the sprinkler system still controlled the fire. An early morning fire was reported at 2:11 a.m. on January 28, 2013 initially as a fire alarm requiring only a single engine company to be dispatched. Upon arrival the engine found a two-story commercial/retail structure with alarm bells ringing. The crew discovered smoke and water coming from the involved unit.

The engine company found the two front entry doors to the unit unlocked

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FUTURE NFSA ANNUAL SEMINAR SCHEDULE



NFSA Annual Seminar
Atlantis, Bahamas
May 8 - 10, 2014

NFSA Annual Seminar & Exhibition
Hilton Bonnet
Creek Resort
Orlando, Florida
April 30 -
May 2, 2015

REGIONAL ROUNDUP

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and initially found an activated sprinkler system and two chairs smoldering within the front of the office unit. The chairs were removed through the entry doors to the outside for complete extinguishment. Four additional and separate fires within the office unit were discovered. These fires occurred upon two additional chairs and within two waste cans. Four of the fires within the main office were extinguished by the sprinkler system

Examination of the fire sprinkler system revealed intentional deactivation of the system prior to fire department arrival on scene. The main inlet valve was found in the closed position. Both isolation valves for the first and second floors were found in the closed position. Though the system was shut down in an apparent attempt to prevent the sprinkler system from extinguishing the fire, residual pressure in the system provided enough water for extinguishment. The quick action of the fire sprinkler system was demonstrated by the fact that the fires failed to ignite the large quantity of papers found on every desk in close proximity to each separate fire start.

Damage was estimated at \$15,000 to the structure and \$65,000 to contents. The origin of these fires was atop the cushions of each chair involved and within the waste cans. A flammable liquid believed to be lighter fluid was used as an accelerant with an undetermined open flame device utilized for ignition. The tremendous heat generated immediately by this fuel combination is what led to the rapid activation of the fire sprinkler system.

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

NORTHWEST REGION



SUZANNE MAYR
Regional Manager

ALASKA, IDAHO, MONTANA, OREGON,
WASHINGTON

Ten Silverdale, Washington Businesses Saved by Fire Sprinklers

A sprinkler system saved ten Silverdale, Washington businesses from being destroyed by fire in the early morning hours of March 14th.

Fire crews received a call for alarm activation at the King's Wok Buffet. On arrival, crews discovered light smoke throughout the restaurant and found the alarm system showing a sprinkler flow activation.

Firefighters found that a fire had started on a food cart in the rear of the kitchen and had activated the sprinkler system. The sprinkler system extinguished the majority of the fire and firefighters were able to extinguish the remaining fire with just a fire extinguisher. Ceiling tiles were removed and the overhead area was checked to ensure there had been no extension.

"Fire sprinklers are responsible for containing the fire to a small corner of the kitchen," said fire department spokesperson Ileana LiMarzi. "The fire was significant enough that three sprinklers were activated. Without the activation of the sprinkler system this fire would have quickly spread throughout the structure and potentially destroyed the nine other businesses housed in the building."

LiMarzi noted that in 1998 this same tenant space, with a different restaurant at the time, had a fire and sustained a \$1.2 million loss due to not having a sprinkler system. The fire today is estimated to have caused only \$5,000 in content loss and no structural damage. The current total value of the building today is over \$5 million.

"This is because in just the last 90 days the King's Wok Buffet had completed a remodel and while doing so had retrofitted the business with the fire sprinkler system," LiMarzi added.

The County Fire Marshal responded and determined the fire to be accidental and to have been caused by spontaneous combustion.

Suzanne Mayr is the NFSA Regional Manager for the Northwest Region. She can be contacted at mayr@nfsa.org or 3411 North 19th St. Tacoma, Washington 98466, phone: 253.208.8467.

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SPRINKLING OF NEWS

■ Fire Solutions to Become Minimax Fire Solutions

MX Fire Solutions, a California-based fire protection contractor providing tailored solutions for various vertical markets, has been renamed to Minimax Fire Solutions, Inc. The name change emphasizes the company's membership in the international Minimax Group, a global supplier of complete fire protection solutions headquartered in Bad Oldesloe, Germany.

By leveraging the technologies and know-how of the Group, Minimax Fire Solutions, Inc. can offer Engineering Procurement Construction (EPC) firms options in highly complex Power Generation projects. In addition, the company focuses on the Data Center and Museum markets. Minimax Fire Solutions, Inc. can design, fabricate, install, and commission fire protection systems including: gas-based and water mist suppression, alarm & detection, and fire sprinkler.

To serve a growing customer demand in North America, Minimax Fire Solutions, Inc. has expanded corporate offices by moving into a larger office complex in Livermore, California. Minimax Fire Solutions has substantially expanded its engineering capabilities in the fire suppression and fire alarm and detection areas as well. This expansion allows the company to provide coast-to-coast service to its customers.

For more information, please visit: www.mxfire.com



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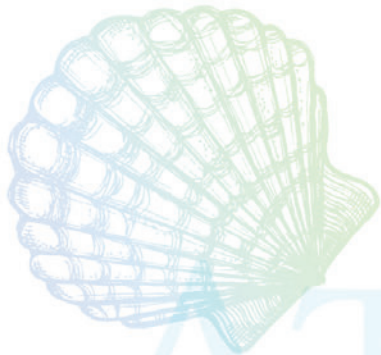
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ATLANTIS

PARADISE ISLAND, BAHAMAS

May 8-10, 2014



To: **Rob Krier**

Vice President/Chief Operating Officer
Griffin Communications – News on 6
Tulsa, Oklahoma

Dear Mr. Krier,

On March 5, 2013; News On 6 – Television Station reported about an apartment fire at the Stonegate Village Apartments near 71st and Memorial in Tulsa, Oklahoma. Unfortunately, in this news story and many others, the News Reporter created a negative perception about the life saving technology of the fire sprinkler system that extinguished the fire: *“The fire happened just after midnight. It was minor, but the flames activated the complex’s sprinkler system, damaging two apartment units.”*

I would like to help your media companies to provide more comprehensive coverage about fire sprinkler technology both proactively and when a fire happens in your coverage area. The National Fire Sprinkler Association (NFSA), the Oklahoma Fire Sprinkler Association (OFSA) and I would be willing to assist you with “quick response” after the fire interviews, live demonstrations, facts and any expert information. Please let your reporters know that they are welcome to call me at 979-324-8934 or Ron Edwards in Tulsa at 918-851-2416.

To put things in perspective regarding water damage, fire sprinklers flow 20 gallons of water a minute while a firefighter’s hose flows 200 gallons of water a minute. Most fire departments in the US arrive within 10 minutes of a call and stabilize the situation within an average time of 20 minutes. Sprinkler water damage and response time is always substantially less than fire damage and fire department water application. Fire Sprinklers and Fire Departments are on the same team! They work together.

Many of the apartment occupants could have died in this fire since it occurred after midnight when most people are asleep. The combination of the fire sprinkler system with smoke alarms; gave all of the apartment occupant’s early warning of a fire and early extinguishment of the fire (to keep the fire small until the fire department arrives).

To date, the U.S. has never seen a multiple loss of life due to fire in a structure that has a fully installed and properly maintained fire sprinkler system. Also, statistics show that automatic fire sprinkler systems and smoke alarms cut the risk of dying in a home fire by 82%, relative to having neither present.

I bring this to your attention because this recent fire could have been a devastating tragedy if the building had not been equipped with fire sprinklers. Fire sprinklers provide added protection for Oklahoma’s most vulnerable populations - including children, elderly and disabled citizens – who are often without the capabilities to escape in the event of a fire. Research shows that fires can double in size every second, and can overtake a room in as little as two minutes. Fire sprinklers are effective in preventing loss of property and, most importantly, loss of life.

I urge you to review the film footage sprinkler demonstration at this link; <http://youtu.be/CXZQWQf1iIU> and to consider includ-

ing the positive benefits of fire sprinkler technology when a fire happens. I also encourage you to learn more about how you can protect yourself, your family and your home. Fire sprinklers save lives and property.

Sincerely,
Cindy Giedraitis
NFSA South Central Regional Manager

.....

To: **Dom Kasmauskas**, NFSA Assistant Director
Regional Operations – North

Dear Mr. Kasmauskas,

The Association of Towns of the State of New York is proud to have conducted our 80th Training School and Annual Meeting. Many attendees have taken the time to compliment us on the courses presented at the 2013 conference. Your participation, and the extra effort involved in assembling a training session, was an important factor in the success of the event.

On behalf of the staff of the Association and its membership, I would like to extend to you our sincerest thanks. As you well know, the issues facing towns are complex and dynamic. Without your assistance, it would be impossible to provide the necessary education and training that our town officials need to provide quality governmental services to their constituents.

Again, thank you so much, I hope you will be able to be part of our future training sessions as well.

Gerald K. Geist
Executive Director
Association of Towns
State of New York

.....

To: **Lorrell Bush:**

Good Morning Lorrell,

I wanted to let you know that I enjoyed the class (*Pumps for Fire Protection*) very much, it was very informative lots of details that I didn't know about pumps. The instructor (*Jim Lake*) was great, kept the class motivated and answered any and all questions that we had, I would definitely recommend this class to my friends and colleagues. Thank you again for having this class and hope to take more in the future.

Thank you,
Marcus Coleman
Fire inspector 1
Polk County Fire Marshal’s Office
Polk County, Florida

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Fire sprinkler systems are designed to minimize fire damage and protect places and people where they live and work. But if they don't operate as expected, the results can be costly and tragic.

With System Sensor waterflow detectors, if a sprinkler head is activated and water begins to flow, a signal is sent to the fire alarm control panel or notification device. This enables personnel to respond quickly, minimizing damage from fire or the water used to put it out.



For over 25 years, System Sensor has provided innovative products that save lives and protect property. To learn more about our waterflow detectors or our complete line of sprinkler monitoring products, visit systemsensor.com/wf.



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