

## Did you make it to NFPA's 2015 Conference?

The educational sessions at NFPA's Conference cover a wide variety of fire protection topics. This year's gathering took place in Chicago, IL in June. The following highlights show a glimpse of the educational program summarized by the NFSA technical staff. We have selected 9 sprinkler related topics to share.

### **Storage Protection for Distilled Spirits**

*Presented by John LeBlanc and Christopher Wieczorek*

Requests for criteria to protect high proof alcohols stored in wooden barrels beyond 6 tiers were common enough to investigate further. Attempts at stacking the barrels beyond existing criteria revealed that the existing 6-tier guidelines were not adequate. The FM guidelines were eventually withdrawn in favor of developing new protection schemes based on new full scale fire tests. This new fire tests led to criteria for 7-tier palletized stacking of barrels using both K-14 and K-25 ESFR sprinklers.

### **Pre-Fire Planning in Sprinklered Warehouses**

*Presented by Christina Francis*

By remotely monitoring the flow from the fire pump Proctor and Gamble is able to determine general fire characteristics based on the increase of flow over time. With timely responses, the fire sprinklers have the opportunity to suppress a fire without fire department intervention. Proprietary remote monitoring allows Proctor and Gamble to record fire pump data which allows more efficient response and flow regulation to mitigate fire situations as well as reduce business interruption. This type of action plan can be of great value, but does require significant coordination with the fire department and local authorities.

### **NFPA 13-2016, Standard for the Installation of Sprinkler Systems, Changes**

Panels included: Matt Klaus, William Koffel, James Golinveaux, Ken Linder, Russ Leavitt, Kerry Bell, Matt Klaus, Ken Isman, and David Lowrey

The modifications made for the 2016 Editions of NFPA 13, NFPA 13R and NFPA 13D were discussed over three panel sessions. The major changes to the documents were reviewed. Some of the major changes include updating the metric values, adding cloud ceiling spacing criteria, reinstalling of dry sprinklers, component compatibility, system air venting, requirements for floor control valve assemblies, improvements to obstruction rules, concealed space openings, window sprinkler language, protection guidance for expose expanded group A plastics and more.

Watch for upcoming detailed information on the updates for the 2016 Edition in future NFSA publications and training programs.

### **Design Strategies for Corrosion Control in Fire Sprinkler Systems**

*Presented by Jeff Kochelek and Lucas Kirn*

When water sits in steel pipes some corrosion is inevitable. Common corrosion myths were discussed, most notably indicating that microbiologically influenced corrosion (MIC) accounts for less than 10% of failures due to corrosion. The corrosion is tied to the amount of oxygen in the system. Dry pipe systems typically corrode faster than wet pipe systems and higher temperatures will also increase the rate of corrosion. It has also been shown that galvanized steel has had corrosion issues similar to black steel under the same conditions.

By minimizing trapped air in wet pipe systems and trapped water in dry pipe systems and preaction systems corrosion can be reduced. However, the only way to eliminate corrosion is to eliminate the oxygen. Replacing the air in a system with nitrogen has also been shown to practically eliminate corrosion in the piping.

### **Fire Protection Water Supplies, The Most Critical Component**

*Presented by Bruce Clarke*

This presentation emphasized the importance of water supply analysis especially in drought conditions. The insurance industry perspective was shown. In order to ensure a functioning water supply, NFPA 25 was the focus and specifically fire pump tests. The first step is to make sure the appropriate inspection, testing and maintenance is being done. The next step is to make sure they are done correctly. Without the anticipated water supply the fire protection systems will not function as intended to meet the system demand.

### **In-Rack Sprinkler Fundamentals and the Future of Protection**

*Presented by Wes Baker and Kristen Jamison*

FM has been researching possible advancements with in-rack sprinkler protection schemes. This research has the potential to drastically change the current guidelines for in-rack sprinklers. Proposals will be made for incorporation into NFPA 13 in the future. These new guidelines are being developed because to expand current design guidelines beyond empirical testing with small K-factor sprinklers. It is possible that this research will maximize vertical increments for the in-rack sprinklers and increase storage height permitted above in-rack sprinklers. In addition, there is a possibility for independent ceiling and in-rack sprinkler designs. Further investigation will be done to determine if longitudinal-only in-rack sprinkler design can be utilized with the ever increasing trend towards storing uncartoned unexpanded plastics. The hope is that these efforts will reduce the cost of in-rack sprinkler installations.

### **Earthquake Protection: In the Lab and Around the World**

*Presented by Russ Fleming and Victoria Valentine*

Earthquakes have made international news in the last decade. These natural events have demonstrated how important earthquake protection is for fire protection systems. With the earthquakes 6.0 and higher, great damage can be seen to the built environment, yet if the building fares well and protection methods of recent years are used, the fire sprinkler system fares well too.

In addition to current events, there have been many research projects examining the impact of an earthquake on nonstructural building components such as fire sprinkler systems. The results of these tests have shown that current practices perform decently under significant seismic loads. One of the main concerns remains the interaction between sprinklers and the ceiling or surrounding equipment.

### **High-Rise Standpipe Systems and NFPA 14 Update**

*Presented by David Hague and Steve Leyton*

This session primarily reviewed changes to NFPA 14 in the upcoming 2016 edition but also had some interesting discussions about high pressure standpipe systems in the future and also about closer coordination with the local fire department when determining the design pressure for hose connections. Emphasis was placed on recognizing that standpipes are a firefighting system and should be coordinated with the local fire department as the appropriate “AHJ”.

### **NFPA 25, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, Dealing with Deficiencies**

*Presented by Bob Caputo and Matt Klaus*

This session focused on a general discussion about what factors warrant deficiencies. There were no surprises in the consensus of deficiency criteria but it was surprising to hear one of the speaker’s state emphatically that inspectors have an obligation to notify the AHJ when significant deficiencies are found. An interesting discussion on the groups’ varied opinions on the interrelationships of the building owner, contractor, and AHJ ensued.

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Many of the sessions noted above, along with others from the conference, are available on NFPA’s website, [www.nfpa.org](http://www.nfpa.org). Follow the links for the conference.

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