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**DEPARTMENT OF STATE**  
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April 28, 2014

The attached documents have been received from Frank McGarry, a proponent of a proposal to amend the Uniform Fire Prevention and Building Code to include electronically monitored portable fire extinguishers. These documents have been transmitted to the Uniform Fire Prevention and Building Code Council for consideration at their scheduled meeting of May 7, 2014. The accuracy of this information has not been verified by the New York State Department of State (DOS) and the DOS has not taken any formal position in this matter.

## **NY CODE COUNCIL QUESTIONS --- PARAPHRASED**

***Question 1: Chief Martin***

***Are the proper occupancies being called out?***

(Text to be determined, based on Chief Paul Martin's clarification of the occupancies he recommends for inclusion)

**Question 2: Mayor Kennedy**

**What is the Cost Impact?**

- The technology is cost positive for occupancy owners within a few years of installing the technology. Nothing else within the Fire / Building Code offers Occupancy Owners increased life safety a direct tangible ROI.
- Current installation costs of monitored fire extinguishers to the occupancy owner are estimated at \$0.1217 per square foot. (Average of one fire extinguisher every 3,000 sq. ft. @ \$365 per unit.
- The cost of \$0.1217 a square foot for monitored fire extinguishers is considerable less when compared to the cost of automatic sprinklers at \$2.00 - \$5.00 per square foot depending on construction.
- 24/7 monitoring minimizes threat of tampering, vandalism and theft by giving real time notice of any movement or disruption to the extinguisher
- Minimizes business interruption when extinguishers are ready and available to control incipient fire
- Reduces exposure to liability claims and minimizes insurance payouts in the event of a fire.
- Continual monitoring of fire extinguishers meets code mandated monthly inspection requirements for all fire extinguishers and thus eliminates all 132 monthly inspections over the lifetime of an extinguisher in 12 yrs.
- By meeting code inspection requirements the technology actually reduces costs for occupancy owner.
- The existing installation of monitored fire extinguishing systems has found that the costs of such systems can be amortized over a period of 3.5 to 4.5 years. After the amortization period, operational savings revert to building owner/management

**Question 2: Mayor Kennedy**  
**What is the Cost Impact? (cont.)**

***End User Quotes Regarding Cost***

- *“The only time a fire extinguisher is removed from its location is for a fire or a tampering, either way you want to know immediately. Between labor savings and all costs associated with tampered and missing extinguishers the University has seen a pay back in less than 4 years.” University of Utah, Salt Lake City UT*
- *“Our return on investment has been a little over 3 years.” John D. Dingell VA Medical Center, Detroit, Michigan*
- *“Another large benefit to having the system is that we no longer have to go around checking the extinguishers once a month. You figure we have 22 extinguishers, and if it takes 2 minutes to check it and write on the tag that’s almost an hour a month of labor. If you have a large building and they are spread apart that number can grow and cost you more, never mind the fact of if they are in difficult to reach areas. The biggest cost of not having this system though can be a surprise safety inspection comes and some of your fire extinguishers are not up to date or worse they have lost all pressure. The fine for having multiple broken or not safe extinguishers could almost out way the cost of putting this system in place.” American Tire Distributors, Londonderry NH*

**Question 3: Mayor Kennedy**

**What are the monthly compliance requirements?**

The state of New York references the International Building / Fire Code which in turn references the National Fire Protection Association Codes & Standards. The required monthly inspection requirements listed in NFPA 10, the *Standard for Portable Fire Extinguishers* mandates a 30-day inspection and documentation for every fire extinguisher (NFPA 10 7.2.1.2) of the following conditions:

- (1) Location in designated place
  - (2) No obstruction to access or visibility
  - (3) Pressure gauge reading or indicator in the operable range or position
  - (4) Fullness determined by weighing or hefting for self-expelling type extinguishers, cartridge-operated extinguishers, and pump tanks
- (NFPA 10 7.2.2)

Technology is capable of continually meeting the inspection requirements for all types of fire extinguishers requiring a pressure gauge. Technology is capable of continually meeting the location (removal) and obstruction requirements for non-gauged units but is unable to meet the monthly hefting requirement. Obstruction and removal are the two key conditions that accessibility advocates are most concerned about. Non-gauged extinguishers represent a very small percentage of extinguishers installed today.

**Question 4: Mayor Kennedy**

**What does *this* mean to everyone in terms of how does *this* get implemented?**

- Fire alarm and fire extinguisher equipment are sold and serviced through authorized distributors. The technology to monitor fire extinguishers is sold through this same distribution chain. For instance, 100% of the fire alarm systems and extinguisher distributors in New Hampshire (which mandates the technology within all new commercial construction requiring a fire alarm) are capable of selling and servicing such the extinguisher monitoring technologies.
- From the designing and specifying side, designers and architects will have to begin to specify extinguisher locations in the same manner as they specify pull stations and detection devices. CSI Specifications are available for designers to utilize for correctly specifying the extinguisher monitoring technology.
- As with any modification to the code, building and fire inspectors will need to learn about the technology. Training programs through such as NYS Building Officials Conference and NYS Association of Fire Marshals & Inspectors will be very helpful. It is the responsibility of the distributors and their manufacturing partners to work with these organizations.
- Occupancy owners will be relieved from having to conduct the mandatory eleven monthly inspections and will be relieved from maintaining the ongoing paperwork as well. The technology will hold occupancy owners/managers accountable and will not allow extinguishers to be inaccessible nor removed for non-life safety situations.

**Question 5: Mr. Altieri**

**What are some examples of other states that have already implemented this requirement?**

- In 2005, New York became the second state in the country to recognize monitored fire extinguisher technology as an alternate to the mandated 30-day physical inspection and documentation process. Code bodies such as The ICC, NFPA and Joint Commission soon followed suit.
- Many key businesses and occupancies specify the technology in much of their new construction including but not limited to the Pentagon, Microsoft, The Veterans Administration, Duke University and others.
- In 2011, the State of New Hampshire became the first state to mandate monitored fire extinguisher technology for all new commercial construction in occupancies requiring a fire alarm.
- In 2013, the disabled communities in numerous states have recognized the technology as a way to solve a crucial life safety oversight regarding barriers to access and barriers to communication and are addressing the various building code bodies to require the technology in all buildings.
- Chief J. William Degnan, **State Fire Marshal from the State of New Hampshire** has provided a response to questions regarding their experience and success in implementing the monitoring of fire extinguishers in their state for the past two years.

*The adoption of the electronically monitored fire extinguishers in my opinion has been a success for public safety and a financial success for the property owner or occupant responsible for maintaining fire extinguishers.*

***Has there been an adverse impact within the state of NH regarding the cost impact of the technology?***

*There has not. The original amendment passed by our legislature was challenged by the House Commerce Committee because of cost and after the public hearing where the cost benefit of the installations to the property owners was debated they voted unanimously to leave it in place. There clearly is a benefit to the owner long term.*

***How has the technology impacted those involved in the fire alarm chain? (designers, installers, end users, inspectors)***

*There was only a small learning curve in regards to the installations where some settings were not done correctly. The rest of the installation is no different than installing a smoke detector or pull station. The end user has seen no additional impact from the installations.*

**Question 5: Mr. Altieri**

**What are some examples of other states that have already implemented this requirement? (cont.)**

***How are the signals handled?***

*The signals are transmitted through the already established fire alarm.*

*The low pressure or blockage would send a trouble alarm and the removal of the extinguisher from the hanger is recommended to send a fire alarm.*

*I look at the removal as being no different than a person pulling a pull station. There has to be a reason to pull the pull station so one should not be removing a fire extinguisher from the hanger unless there is a fire.*

***Do you think the adoption of the technology was the right move to make?***

*Absolutely! I first looked at this to make sure these devices were accessible and in a ready state for the public during the early stages of a fire. I have since learned from some people with disabilities that this is a huge benefit to them as this may be their only ability to save themselves in a fire.*

*The review of this technology started almost a decade ago when I applied for being a beta test site in one of our schools. With the success of that installation I then secured a system for the State House and Legislative Office Building and the legislatures Upham Walker House on the grounds of the State House. These three buildings were tied together with wireless technology to the security desk where if someone removes an extinguisher they can immediately focus on a camera to see if it is a fire, vandalism or a terrorist act. These installations along with the other benefits to public safety are why I worked to secure the legislative action adopting this requirement in New Hampshire.*

**Question 6: Mr. Flannigan**

**How does the technology work?**

- A smoke detector is an electronic alarm system component that is part of an addressable loop that provides 24/7 communication to an intelligent alarm panel. Monitored fire extinguisher technology is an electronic component that is part of that same addressable loop that provides 24/7 communication to an intelligent alarm panel about the condition of an extinguisher. Addressable smoke detectors and monitored fire extinguishers are an apple-to-apple comparison with regards to the ease in which they are installed and report back to a fire alarm system panel. The technology is not the fire extinguisher; rather the technology increases the value and accountability of a fire extinguisher.
- NFPA's monthly physical inspection requires that a fire extinguisher be inspected for pressure, location & position and access. Multiple versions of the technology meet a number of these requirements.
- An example of the technology that meets all NFPA monthly inspection requirements: An intelligent gauge on the fire extinguisher monitors the cylinder for pressure. It's connected to a tether that is secured behind the head of the extinguisher which is connected to an interface module below the extinguisher. The interface module interconnects with the fire alarm system panel and provides the ability to detect a continued obstruction of the 36 inch area in front of the extinguisher.



### **Question 7: Mr. Sauerwein**

#### **How are signals from the extinguisher handled?**

*“Some of the comments this morning, the public comments were that if extinguishers were used, like as in to extinguish a fire in the incipient stages, right now nobody knows that, but with the technology, a signal would be sent someplace. And that's fine as long as the custodian who picks it up to drop it off doesn't initiate somehow an alarm to the fire department. By the same token, if somebody does use it to extinguish a fire, we don't want it going to a central station who, when they get around to it, will notify somebody who maybe lives five or 15 miles or minutes away. Those are the type of specifics I think we really have to gather or get gathered for us so we can consider the merits of the system.”*

- There is a recognizable difference between maintenance and usage. If a custodian or anyone authorized to perform fire extinguisher service wants to remove an extinguisher, they would first disable the signal at either the fire alarm control unit or locally at the unit to avoid a false signal. These bypass options allows a person time to complete the necessary maintenance task without causing a false signal to be initiated.

Furthermore, technology distinguishes the difference between a maintenance infraction (low pressure, blocked access and low power) and a removal (on par with an activation of other monitored fire alarm system components). Maintenance related issues send a supervisory signal while removal sends a signal that can either initiate an alarm signal or a trouble signal. In the case of either of these signals, as referenced in NFPA 72, “where the signal goes” is really up to the AHJ and the specific site operational requirements.

- For example, on a college campus the signal could be sent to Campus Police. If a hospital had the system the signal could be treated as an alarm or supervisory signal depending on the capability of the internal hospital staff response. Any time an alarm signal is chosen then the signal would be transmitted to the fire department or supervising station and then to the fire department (all of this is dependent on the required reporting protocol for the site and the community.)
- The University of Utah once said regarding the removal of a fire extinguisher, *“With the exception of maintenance, the only time a fire extinguisher should be removed from its location is for a fire or a tampering, either way you want to know immediately.”*
- With the provision to temporarily disable the signal to allow for simple maintenance, the ability to differentiate notifications and the ability for the local AHJ to determine the required response of the signal gives all involved all stakeholders ample opportunity to manage extinguishers for better life safety.

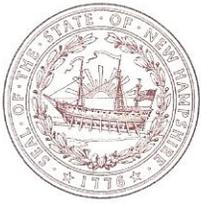
### **Question 8: Mayor Kennedy**

#### **Is the technology proven?**

The technology to monitor fire extinguishers has been recognized and proven across the entire United States for more than a decade.

- 2003 U.L .listed
- 2004 First state recognizes technology as an equivalent to the mandatory 30-day inspection

- 2005 NY & the ICC recognizes the technology as an equivalent to the mandatory 30-day inspection
  - 2007 NFPA recognizes the technology as an equivalent
  - 2010 The Joint Commission recognizes the technology as an equivalent
  - 2010 Worcester Polytechnic Institute releases their study on the effectiveness of fire extinguishers in academic institutions which recognizes the value of the technology
  - 2011 Liberty Mutual installs the technology in their fire safety labs and recommend use to their insureds
  - 2012 New Hampshire becomes the first state to mandate the technology for new construction
  - 2013 The disabled community nationwide recognizes the value the technology plays in removing physical and communication barriers associated with fire extinguishers.
- Listed with Underwriters Laboratories and recognized since 2004 in state and national codes, the technology provides life safety coverage exponentially greater than 30-day physical inspections left up to chance. Continuous smoke detection technology did away with watchmen patrolling a building looking for any signs of fire, as a result fire deaths have decreased, buildings are exponentially safer and no one would ever argue that it would be prudent to go back to the old watchman system. Monitored fire extinguishers are the same exact scenario; 24/7 accountability that will replace the once a month inspection and documentation ensuring a safer more secure building for all occupants.
- Academic institutions, healthcare facilities, hospitality occupancies, areas of public assembly, government facilities and other occupancies with large square footage and liability concerns continue to successfully deploy the technology. Examples of occupancies utilizing the technology include but is not limited to; Comcast, The Veterans Administration, Boeing, Baylor HealthCare, Duke University, Microsoft, City of Boston, Austin Bergstrom Airport, Goldman Sachs, The Pentagon, Walmart, Santee Cooper Power, Dartmouth College, Hampton Inn, CVS, Hospital Corporation of America and the University of Utah.



STATE OF NEW HAMPSHIRE DEPARTMENT OF SAFETY

John J. Barthelmes, Commissioner

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**Office of the State Fire Marshal**

J. William Degnan, State Fire Marshal

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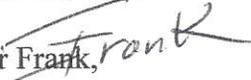
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March 31, 2014

Dear Frank, 

Good to hear from you and hope all is well. The adoption of the electronically monitored fire extinguishers in my opinion has been a success for public safety and a financial success for the property owner or occupant responsible for maintaining fire extinguishers.

I will answer your questions as presented below in bold italics,

- Has there been an adverse impact within the state of NH regarding the cost impact of the technology?

***There has not. The original amendment passed by our legislature was challenged by the House Commerce Committee because of cost and after the public hearing where the cost benefit of the installations to the property owners was debated they voted unanimously to leave it in place. There clearly is a benefit to the owner long term.***

- How has the technology impacted those involved in the fire alarm chain (designers, installers, end users, inspectors)

***There was only a small learning curve in regards to the installations where some settings were not done correctly. The rest of the installation is no different than installing a smoke detector or pull station. The end user has seen no additional impact from the installations.***

- How are the signals handled?

***The signals are transmitted through the already established fire alarm. The low pressure or blockage would send a trouble alarm and the removal of the extinguisher from the hanger is recommended to send a fire alarm. I look at the removal as being no different than a person pulling a pull station. There has to be a reason to pull the pull station so one should not be removing a fire extinguisher from the hanger unless there is a fire.***

- Do you think the adoption of the technology was the right move to make?

***Absolutely! I first looked at this to make sure these devices were accessible and in a ready state for the public during the early stages of a fire. I have since learned from some people with disabilities that this is a huge benefit to them as this may be their only ability to save themselves in a fire.***

The review of this technology started almost a decade ago when I applied for being a beta test site in one of our schools. With the success of that installation I then secured a system for the State House and Legislative Office Building and the legislatures Upham Walker House on the grounds of the State House. These three buildings were tied together with wireless technology to the security desk where if someone removes an extinguisher they can immediately focus on a camera to see if it is a fire, vandalism or a terrorist act. These installations along with the other benefits to public safety are why I worked to secure the legislative action adopting this requirement in New Hampshire.

Please don't hesitate to call upon me if I may be of any assistance as you move forward towards adoption in New York.

Regards,

  
Bill