

# Tuesday e-Tech Alert

## January 17, 2006



### Elevator Protection

The NFSA is contributing to a series of short articles that will be featured in the March/April 2006 issue of the *NFPA Journal* on the subject of elevator protection. The NFSA article focuses on NFPA 13 requirements, but some of the other articles can be expected to raise concerns about sprinkler protection, particularly the fact that NFPA 13 does not permit omission of sprinklers from all elevator hoistways, or from any elevator machine rooms. At least one state, Massachusetts, has passed legislation to specifically remove sprinklers from hoistways and from machine rooms that meet specified requirements of smoke detection, signage prohibiting storage, and control of combustibles.

The current NFPA 13 rules were written into the 1994 edition of the standard based on information obtained in a 1991 *Symposium on Elevators and Fire* sponsored by the ASME, NFPA and Council of American Building Officials, and the efforts of a subsequent code coordination committee. Contained in Section 8.14.5 of the 2002 edition of NFPA 13, the rules make specific accommodations for elevators:

Pit sprinklers - Sidewall sprinklers are to be placed within 2 ft of the floor of an elevator pit, without regard to the normal required distances below a ceiling. Annex guidance suggests that the sidewall sprinklers be placed near the side of the pit below the elevator doors, and that care be taken to avoid interference with the elevator toe guard. The pit sprinklers can be omitted for enclosed noncombustible shafts that do not contain combustible hydraulic fluids. These sprinklers at the base of the shaft are not expected to discharge onto operating components of the elevator and therefore can be connected directly to the building sprinkler system with no special valving or delay mechanism.

Hoistway sprinklers – Upright or pendent sprinklers are required at the tops of elevator hoistways, except noncombustible hoistways for passenger elevators with car enclosure materials meeting ASME A17.1– *Safety Code for Elevators and Escalators*.

Machine room sprinklers – The standard has no special rules for elevator machine rooms, except to require that machine room sprinklers and sprinklers at the tops of hoistways be of ordinary or intermediate temperature rating. In other words, high temperature rated sprinklers that would be delayed in operation are not permitted. Sprinkler protection of elevator machine rooms is expected as part of a complete sprinkler system since these spaces are not specifically excluded from the need for sprinklers.

Annex section A.8.14.5 discusses the ASME A17.1 requirement that power to the elevators be shut down upon or prior to the application of water in elevator machine rooms or hoistways. It suggests this can be accomplished by a sufficiently sensitive detection system or by using devices that effect power shutdown immediately upon sprinkler activation, such as a waterflow switch with no time delay. NFPA 72 contains additional requirements in this area.

The NFPA Committee on Automatic Sprinklers is now completing work on the next, 2007, edition of NFPA 13. One of the proposals tentatively accepted in this cycle allows the option of sidewall sprinklers at the top of hoistways rather than upright or pendent sprinklers. A proposal that would have required the hoistway sprinklers to be part of a preaction system was rejected on the basis that there are other ways to meet the ASME A17.1 requirements. Another proposal would have eliminated sprinklers from the elevator machine room under the conditions of smoke detection, signage prohibiting storage, and control of combustible contents now permitted in Massachusetts. The Committee rejected this proposal on the basis that "buildings are to be fully sprinklered which includes these types of spaces. Storage can occur in these types of spaces regardless of signage."

### **Some recent NFSA Engineering staff interpretations on the subject of elevator protection:**

Q: Is sprinkler piping allowed to pass through elevator mechanical rooms?

A: No. Like the National Electrical Code (NFPA 70), the ASME A17.1 Elevator Code contains wording that prohibits water piping from passing through certain rooms it does not serve, in this case the hoistway and elevator machine room.

Q: Is there any code that clarifies whether or not control valves are required when sprinklering hoistways, pits or machine rooms?

A: Earlier editions of ASME A17.1 required sectional control valves so as to be able to isolate sprinklers in the hoistway. This requirement was removed from the code, but inadvertently retained in A17.3 – *Safety Code for Existing Elevators*. Because the sprinklers in elevator machinery rooms and hoistways are somewhat controversial, it would be considered prudent to arrange the sprinklers with valves in the event they are required to be removed at some future date.

Q: Can a 1-inch sprinkler line (riser) be run in the elevator shaft from the "pit" sprinkler up to the top sprinkler?

A: No. Section 2.8.2.3.1 of ASME A17.1 (2000 edition) states, "All risers and returns shall be located outside these spaces. Branch lines in the hoistway shall supply sprinklers at not more than one floor level..."

Q: Is a hard piped drain to an acceptable location required to test a 1-inch flow switch for a single elevator sprinkler? Would a 1-inch valve with a hose bib and cap be acceptable?

A: NFPA 13 Section 8.16.4.2.3 (2002 edition) states, "The discharge shall be to the outside, to a drain connection capable of accepting full flow under system pressure, or to another location where water damage will not result." This indicates there are options. One option is to hard-pipe the connection to drain, another would be to run a hose line from the outlet to a collection tank. The standard offers some flexibility so long as testing and maintenance for the device can be completed and a means has been allowed to remove the water without damage to the building.

### **Upcoming NFSA Technical Tuesday Online Seminar**

**Topic: Standard Spray Upright and Pendent Sprinklers**

**Instructor: Kenneth E. Isman, NFSA Assistant Vice President of Engineering**

**Date: January 24, 2006**

The history of the development of the standard spray sprinkler will be explored along with the fundamental concepts that underlie the requirements for installation. Answers will be provided for frequently asked questions regarding sprinkler spacing and location as well as selecting sprinklers for specific occupancies.

Information and registration for this seminar is available at [www.nfsa.org](http://www.nfsa.org).

## Spring 2006 Onlines Announced

For the On Line Seminar Series in the first half of 2006, the NFSA has decided to focus on the devices on the system that discharge the water (sprinklers and nozzles). Over the course of 10 programs, the use of different kinds of sprinklers will be explored. Each program will take a slightly different slant, but each one will look at the situations unique to that kind of sprinkler. The programs will be:

| Date    | Topic  | Instructor                  |
|---------|--|-----------------------------|
| Jan. 24 | Standard Spray Upright and Pendent Sprinklers        | Kenneth E. Isman, P.E.      |
| Feb. 7  | Standard Spray Sidewall Sprinklers                   | Kevin J. Kelly, P.E.        |
| Feb. 21 | Extended Coverage and Quick Response Sprinklers      | Kenneth E. Isman, P.E.      |
| Mar. 7  | Residential Sprinklers                               | Victoria B. Valentine, P.E. |
| Mar. 21 | ESFR, Large Drop and Specific Application Sprinklers | Kevin J. Kelly, P.E.        |
| Apr. 4  | Dry Sprinklers                                       | Russell P. Fleming, P.E.    |
| Apr. 18 | Special Sprinklers                                   | Cecil Bilbo, Jr.            |
| May 9   | Sprinkler Aesthetics and Protective Coverings        | Russell P. Fleming, P.E.    |
| May 23  | Spray Nozzles and Directional Sprinklers             | Cecil Bilbo, Jr.            |
| June 13 | Water Mist Nozzles                                   | Victoria B. Valentine, P.E. |

The level of all seminar topics is considered intermediate. Because these seminars are being offered as a complete program on NFPA 13, a 30% discount is available when signing up for all ten seminars in the series. To register visit [www.nfsa.org](http://www.nfsa.org).

## 2006 Basic and Advanced Technician Training, NICET Inspection Seminars

The NFSA is the only organization that offers two-week basic technician training seminars, 3-day advanced technician training seminars, and NICET-oriented inspection and testing review seminars at various locations across the United States. The 2006 schedule has been set for the following dates and locations:

### 2-week Basic Technician Training

**March 6-17, 2006 – Chicago, IL**  
**August 14-25, 2006 – Seattle, WA**  
**October 16-27, 2006 – Philadelphia, PA**

### 3-day Advanced Technician Training

**April 18-20, 2006 – Chicago, IL**  
**May 16-18, 2006 – TBD**  
**October 3-5, 2006 – Minneapolis, MN**

### 3-day NICET Inspection and Testing Certification Review

**January 24-26, 2006 – Piscataway, NJ**  
**February 22-24 – Phoenix, AZ**  
**June 27-29, 2006 - Anchorage, AK**  
**July 11-13, 2006 - Edwards, CO**

For more information, contact Nicole Sprague using [Sprague@nfsa.org](mailto:Sprague@nfsa.org)

## **Are You Aware of CPFST?**

More than a hundred students are currently enrolled in the NFSA's Certificate Program for Fire Sprinkler Technicians (CPFST). This 2-year program, initiated in 2004, has become the industry standard for technician training. It starts with the NFSA's two-week basic technician training seminar, and continues with a planned sequence of proctored on-the-job training, online training, chat rooms, and advanced training. The program includes periodic testing to monitor progress, and a certificate is awarded to recognize successful completion of the program. There are two "entry points" to the program each year, with the next entry point coming up in February/March of 2006. More information is available at the NFSA website or by contacting Ken Isman at [isman@nfsa.org](mailto:isman@nfsa.org).

*NFSA Tuesday e-Tech Alert is c. 2006 National Fire Sprinkler Association, and is distributed to NFSA members on Tuesdays for which no NFSA Technical Tuesday Online Seminar is scheduled. Statements and conclusions are based on the best judgment of the NFSA Engineering staff, and are not the official position of the NFPA or its technical committees except as noted. Please send comments to Russell P. Fleming, P.E. [fleming@nfsa.org](mailto:fleming@nfsa.org).*