NFSA
The Voice of the Fire Sprinkler Industry

Tuesday e-Tech Alert

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Conducting Forward Flow Tests of Backflow Preventers

The wording of Section 8.17.4.6.1 of NFPA 13 (2010 edition) can give the false impression that forward flow testing of a system backflow preventer involves a test to determine the adequacy of the system water supply:

> *8.17.4.6.1 Backflow Prevention Valves. Means shall be provided downstream of all backflow prevention valves for flow tests at system demand.*

This has led to questions as to whether the downstream valve should be throttled until the flow rate exactly equals the system demand, at which point the residual pressure might be compared to that for the original design demand.

Checking the system design demand through the backflow test was never the intent of the NFPA Sprinkler Committee, and the wording of NFPA 25 (2008 edition) is much clearer in terms of what is expected of the annual test:

> *13.6.2.1 All backflow preventers installed in fire protection system piping shall be tested annually in accordance with the following:*
>
> *(1) A forward flow test shall be conducted at the designed flow rate, including hose stream demand, of the system, where hydrants or inside hose stations are located downstream of the backflow preventer.*
> *(2) A backflow performance test, as required by the authority having jurisdiction, shall be conducted at the completion of the forward flow test.*

Even this language could be improved, since it could be interpreted to mean that the forward flow test is not needed unless there are downstream hose stations or hydrants. But the intent is to make sure that both the forward flow capability and the backflow prevention capability of the device are tested. Lacking a forward flow test or other exercise, the backflow preventer might be successfully tested year after year, yet fail to fully open in the event of a fire.

A curiosity in NFPA 25 is the fact that a second paragraph in the annex section for 13.6.2.1 states that the tests required by 13.6.2 are only for backflow prevention, and that forward flow tests are required elsewhere in the standard. This is obviously not the case.

As with a 2-inch drain test, the pressure noted during the forward flow test might provide important information about the condition of the internal check valves, especially as compared with previous test results, but the forward flow test of the backflow preventer is basically only concerned with sufficient flow, not pressure. For this reason, NFSA will be proposing that the term “system demand” be replaced with “system flow rate” in Section 8.17.4.6.1 of NFPA 13, bringing it in line with NFPA 25.

Upcoming NFSA "Technical Tuesday" Seminar – January 18th

Topic: Antifreeze Systems
Instructor: Russell P. Fleming, P.E., NFSA Executive Vice President
Date: January 18, 2011

Antifreeze systems generated more controversy than any other fire sprinkler topic during 2010. With the dust settled, this seminar will discuss the current requirements relative to both new and existing systems. It will explore design alternatives, including the status of dry residential sprinkler systems and new candidate antifreeze solutions. It will also address contractor obligations with regard to the evaluation of existing systems.

To register or for more information, click HERE or contact Michael Repko at (845) 878-4207 or e-mail to seminars@nfsa.org.

Upcoming In-Class Training Seminars

The NFSA training department also offers in-class training on a variety of subjects at locations across the country. Here are some seminars scheduled for 2011:

Feb 1	Poughkeepsie, NY	Sprinkler Protection for Special Storage
Feb 1	Howland Township, OH	Inspection, Testing & Maintenance
Feb 2	Poughkeepsie, NY	Sprinklers for Dwellings
Feb 2	Howland Township, OH	Sprinkler Protection for General Storage
Feb 3	Poughkeepsie, NY	Residential Sprinklers: Homes to High-Rise
Feb 3	Howland Township, OH	Underground Piping (1/2 day a.m.)
Feb 3	Howland Township, OH	Fire Pump Layout & Sizing (1/2 day p.m.)

These seminars qualify for continuing education as required by NICET, and meet mandatory Continuing Education Requirements for Businesses and Authorities Having Jurisdiction.

To register for these in-class seminars, click HERE. Or contact Michael Repko at (845) 878-4207 or e-mail to seminars@nfsa.org for more information.

About the National Fire Sprinkler Association
Established in 1905, the National Fire Sprinkler Association (NFSA) is the voice of the fire sprinkler industry. NFSA leads the drive to get life-saving and property protecting fire sprinklers into all buildings; provides support and resources for its members – fire sprinkler contractors, manufacturers and suppliers; and educates authorities having jurisdiction on fire protection issues. Headquartered in Patterson, N.Y., NFSA has regional operations offices throughout the country. www.nfsa.org.