SPRINKLER MAINTENANCE TIPS

As part of the voluntary replacement initiative that is being undertaken by Central Sprinkler, we are utilizing our resources to communicate the importance and necessity of proper inspection, testing and maintenance of sprinklers and sprinkler systems by building owners.

As a member of the fire protection community, you play an important role in this effort. Central strongly recommends that you promote the need to routinely inspect, test and maintain sprinklers and sprinkler systems. We look to you – our customers and industry professionals – to help get the word out to building owners that sprinklers are susceptible to environmental factors that can negatively affect performance. This message applies to all sprinklers, not just those that contain O-ring seals. Sprinklers can have their performance affected when they are installed in environments that are aggressive, such as those with harsh water supplies.

Just like a building's heating and cooling systems, sprinkler systems must be properly maintained to ensure that they are in good working order and will activate in the event of a fire. Owning a sprinkler system without having it inspected and maintained is like owning a car and never changing the oil. NFPA Standards 13 and 25 contain requirements related to installation and inspection/maintenance of sprinklers and sprinkler systems that affect the long-term integrity of sprinklers.

Factors Affecting Sprinkler Performance

There are many factors that can affect the performance of a sprinkler and system components. These factors include: water quality, atmospheric and environmental conditions, water bacteria such as microbiological influenced corrosion (MIC), physical damage, extreme changes in temperature, and piping system debris such as rust and scale.

The NFPA 25 Committee has suggested changes for the upcoming 2001 Edition of the Standard to provide additional requirements for more frequent sprinkler inspections and testing. NFPA 25 proposals are also in place to more adequately test for and treat water sources and water environments that are deemed aggressive and may reduce the useful life of sprinkler components and system piping. Most of the proposed changes are targeted to increasing the inspection and maintenance criteria for sprinklers and for controlling environmental conditions that negatively affect installed sprinklers and sprinkler system components.

NFPA Standards

The sprinkler industry is continuing to learn from situations where sprinklers have reduced performance characteristics due to site-specific characteristics that affect the installed sprinklers. From the review of products and installations this effort will develop stronger codes and test standards for fire protection products. A number of current NFPA 13 and 25 code sections should be referenced when performing sprinkler system maintenance. Some of these code sections are identified below for your use with building owners.

Although Central Sprinkler Company produces state-of the-art sprinklers that conform to existing industry test standards published by Underwriters Laboratories, Underwriters Laboratories Canada, Factory Mutual, and various international test standards in certified ISO 9000 facilities, we strongly recommend that sprinklers be inspected, removed and physically tested in accordance with the National Fire Protection Association guidelines, or every 10 years, whichever is less.

Dry Sprinklers

The Tentative Interim Amendment 98-1 in the NFPA 25 Standard1998 Edition section 2-3.1.1 Exception Number Five (5) states: "Dry Sprinklers that have been in service for 10 years shall be tested or replaced. If maintained and serviced, they shall be tested at 10-year intervals." Dry Sprinklers are often subjected to harsh environments that experience large temperature variations, are installed in exposed conditions, and are prone to corrosion from the conditions they encounter. Frequent and routine inspection and maintenance of all Dry Sprinklers is necessary to ensure performance of installed Dry Sprinklers.

Corrosion and Leaking

Central recommends that sprinklers installed in aggressive water and/or reactive environments should be tested and replaced frequently to ensure performance. NFPA 25 1998 Edition section 2-2.1.1 states: "Sprinklers shall be inspected from the floor level annually. Sprinklers shall be free of corrosion, foreign materials, paint, and physical damage and shall be installed in the proper orientation. Any sprinkler shall be replaced that is painted, corroded, damaged, loaded or in the improper orientation."

Most sprinkler manufacturer's technical and informational instructions that are included with new sprinklers caution the sprinkler owner and/or sprinkler maintenance contractor to remove sprinklers that are found to be leaking or exhibiting visible signs of corrosion.

Building Owner's Responsibility

As you know, testing and inspection of fire protection systems and devices is the responsibility of the building owner. NFPA 25 1998 Edition section 1-4.2 states "the responsibility for properly maintaining a water-based fire protection system shall be that of the owner(s) of the property. By means of periodic inspections, tests, and maintenance, the equipment shall be shown to be in good operating condition, or any defects or impairments shall be revealed. Inspection, testing, and maintenance shall be implemented in accordance with procedures meeting or exceeding those established in this document [NFPA 25] and in accordance with the manufacturer's instructions. These tasks shall be performed by personnel who have developed competence through training and experience."

Any sprinkler system deficiency or performance related issue shall be repaired by the building owner. NFPA 25 1998 Edition section1-4.4 states that "the owner or occupant promptly shall correct or repair deficiencies, damaged parts, or impairments found while performing the inspection, test, and maintenance requirements of this standard. Corrections and repairs shall be performed by qualified maintenance personnel or a qualified contractor."

Water Supply and Quality

Water supplies should be tested prior to sprinkler installation to reduce the likelihood of contamination from water source bacteria. Additionally, the quality of the water should be understood to reduce corrosion that is induced from highly alkaline or acidic water supplies. NFPA 13 1999 Edition states in section 9-1.5 that "in areas with water supplies known to have contributed to microbiologically influenced corrosion (MIC) of sprinkler system piping, water supplies shall be tested and appropriately treated prior to filling or testing of metallic piping systems."

NFPA 13 1999 Edition section 10-2.1 states "Fire service mains (from water supply to system riser) and lead-in connections to system risers shall be completely flushed before connection is made to sprinkler piping. Water supplies should be flushed to ensure that pipe scale and debris is not introduced into the sprinkler system at the time of installation. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning."

Please Join Us in This Important Effort

As an industry, we can uphold the performance and integrity of fire sprinklers by ensuring that they are not just installed and forgotten. Should you have questions regarding the maintenance of sprinklers, please contact Central Sprinkler's Technical Services Department at 1-800-381-9312.