

NFPA 25 and 72 Inspection, Testing and Maintenance

The Same Yet Different

RUSS LEAVITT, S.E.T., C.R.P.S. | Telgian Corporation

Over the two decades since the initial publication of NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, many fire sprinkler contractors have entered the market for the inspection, testing, and maintenance (ITM) of water-based suppression systems, with sprinkler systems being the most common. Along the way, a growing number of contractors have benefited from the synergy that can be had by adding the capability to inspect, test, and maintain fire alarm systems to their menu of services. Other contractors are just beginning to investigate and evaluate the benefits that can come from expanding their service offerings to include all fire and life safety systems.

On the surface, it seems logical that the purpose and methodology for the ITM of water-based suppression and fire alarm systems would be closely aligned. However, the differences between the two documents are significant and important to understand when making the decision to add fire alarm systems to a fire sprinkler contractor's list of services. Failure to understand the differences can lead to unintended negative consequences.

NFPA 25 and NFPA 72, *National Fire Alarm and Signaling Code*, both contain ITM requirements; however, NFPA 72 is a document that covers the "application, installation, location, [and] performance," of alarm systems along with "testing, and maintenance."¹ NFPA 72 devotes one chapter (14) to inspection, testing, and maintenance and this single chapter covers both initial, reacceptance, and periodic inspections and tests. On the other hand, NFPA 25 is a standard dedicated solely to the periodic ITM of water-based suppression systems. As a result, NFPA 25 goes into much greater detail regarding issues such as the system owner's responsibilities, descriptions of tasks, and corrective actions that must be taken for deficiencies. With this foundation, let's review some of the ways ITM is the same and different between the two standards.

Scope NFPA 25 and 72 fundamentally differ in how each approaches the scope of system inspections. For example, NFPA 25 addresses the "operating condition" of fire protection systems and specifically states that it "does not require the inspector to verify the adequacy of the design of the system."² NFPA 72 however, has no such

directive and does not restrict inspections and tests to verifying the operating condition of a system or component. To the contrary, Table 14.3.1 directs that all equipment is annually inspected to ensure that there are no changes that affect equipment performance and to inspect for items such as building modifications, occupancy changes, and device location."

NFPA 25 is not totally silent regarding design issues as it requires the owner to have the system evaluated before making any changes to the building including its occupancy, use, or the materials stored. The annex however, explains that when the inspections are contracted to a qualified inspection provider or contractor, it is not the responsibility of the inspector or contractor to determine if any changes have been made or the subsequent evaluation of the fire protection system.³ This difference in scope between the two standards is important to understand when providing ITM services for both fire suppression and fire alarm systems.

Purpose NFPA 25 and NFPA 72 have distinctly different purpose statements, which helps explain why the documents are the same yet different. NFPA 72 states its purpose in objective terms that include defining the "means" of signals, the "levels" of performance," and the "reliability" of the various types of alarm systems along with establishing the minimum levels of performance, redundancy, and quality of installation.⁴ Regarding ITM activities, NFPA 72 states the purpose for periodic inspections is to "assure that obvious damages or changes that might affect the system operability are visually identified"⁵ and to "statistically assure operational reliability."⁶

The purpose of NFPA 25 is much more subjective in its tone. It describes its purpose as providing "requirements that ensure a *reasonable* [italics added] degree of protection for life and property from fire through minimum inspection, testing, and maintenance methods for water-based systems."⁷ NFPA 25 is written with a great deal of consideration towards the costs of ITM and the lowered risk that results from following its requirements.

There is also a practical reason behind the difference. Alarm systems designs and installation are much more

straightforward than suppression systems. Once a system is in place, there are relatively few things that can have a negative impact on its operation and performance as long as it is maintained. In addition, most modern systems are addressable and self-monitor their status and operating condition. However, suppression systems are subject to numerous issues that can affect their performance, including changes as divergent as water supplies, building use, storage commodities and arrangement, and building environmental conditions.

An example of how the difference between the purposes of the two standards affects their application can be seen in the difference between the inspection of sprinklers and alarm devices. NFPA 25 permits sprinklers to be inspected from the floor level and sprinklers that are located in concealed spaces, such as above suspended ceilings are exempt from inspection.⁸ NFPA 72 has no such qualifications or exemptions regarding the inspection of alarm systems or associated equipment. In fact, for the most part, the method of inspection is the same for both the initial acceptance and periodic inspections.⁹

Reporting and Record Keeping NFPA 25 and 72 are the same in that both require records to be kept of all ITM activities. The requirements for the retention of the records are very similar. Both require records to be retained for one year after the next scheduled activity, although the only activity NFPA 72 specifies is testing. However, the requirements for the records themselves are different.¹⁰

NFPA 25 has no required reporting format or forms. Annex B gives guidance on how reporting should be organized and provides information regarding where sample forms can be found. AFSA (firesprinkler.org) is listed as one of the sources for forms. On the other hand, NFPA 72 has very specific requirements regarding reporting format. Records of all ITM activities must either be completed on the forms found in Chapter 7 or provide the minimum required content as found on those forms.¹¹

Qualifications NFPA 25 and 72 use the same definition for qualified. However, NFPA 25 does not elaborate on the definition, leaving it much more subjective in its application. A major reason behind this is that it is assumed that many of the inspections required by NFPA 25 can and will be performed by non-technical individuals such as the property owner or the owner's personnel. This assumption is based on the fact that many of the inspections required by NFPA 25 are significantly more frequent than those required by NFPA 72. Virtually all fire alarm inspections and tests are performed annually or semiannually while systems covered by NFPA 25 have many daily, weekly, and monthly inspections and tests.

Therefore, to keep the costs of ITM reasonable for suppression systems, it is expected that many lower skilled tasks will be performed by non-technical individuals. An

excellent example is the weekly or monthly inspection of system control valves. It is assumed that any competent person can be trained to perform this task along with other similar type inspections.

However, NFPA 72 goes into much more specific qualifications by segmenting personnel into categories of activity. It has specific requirements for the qualifications for inspection personnel, testing personnel, and service personnel. The requirements graduate, with inspection personnel having the least amount of training to service personnel having the highest level of knowledge and training, and with all qualifications being subject to the approval of the AHJ.

Summary There are significant benefits to a contractor providing ITM services for both water-based fire protection and fire alarm systems. However, as with everything we do, the success of the venture is largely dependent on making sure sufficient due diligence is performed to adequately prepare for the differences between these two service offerings. As the old saying goes, "We don't know what we don't know." Do not make unsupported assumptions. Do not be under the mistaken notion that an inspection is an inspection regardless of whether it is a fire sprinkler or an alarm initiating device. Nothing could be further from the truth, and the failure to recognize the difference can very well be the difference between a successful venture and a failure. ■

REFERENCES:

1. NFPA 72 2013 Edition. Section 1.1.1
2. NFPA 25 2014 Edition. Section 1.1.3.1
3. NFPA 25 2014 Edition. Section 4.1.6
4. NFPA 72 2013 Edition. Section 1.2
5. NFPA 72 2013 Edition. Section 14.2.1.3
6. NFPA 72 2013 Edition. Section 14.2.1.4
7. NFPA 25 2014 Edition. Section 1.2.1
8. NFPA 25 2014 Edition. Sections 5.2.1.1 and 5.2.1.1.4
9. NFPA 72 2013 Edition. Table 14.3.1
10. NFPA 72 2013 Edition. 14.6.2.1
11. NFPA 72 2013 Edition. 7.8.2 and 7.8.1.2

ABOUT THE AUTHOR: Russell Leavitt S.E.T., C.F.P.S., is the executive chairman of Telgian Corporation, an international fire protection and life safety services organization. He holds a Level IV certification from NICET in Fire Sprinkler Layout, is a Certified Fire Protection Specialist, and a licensed contractor with 32 years of experience. He currently serves as the chair for the Technical Correlating Committee on Sprinkler System Discharge Criteria (NFPA 13), and is a member of the Technical Committee for Sprinkler System Installation (NFPA 13), NFPA 25, NFPA 3 and 4, and the NFPA 5000 Technical Correlating Committee. He may be reached at: Telgian Corporation, 2615 S Industrial Park Avenue, Tempe, AZ 85282; 480-282-5361, rleavitt@telgian.com, website: telgian.com.



EDITOR'S NOTE: The above comments have not been processed as formal interpretations of NFPA standards in accordance with the NFPA Regulations Governing Committee Projects and should therefore not be considered, nor relied upon, as the official position of the NFPA.