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Verifying Code Compliance

by Dean K. Wilson, P.E.

Question: In reading the National Fire Protection Association's *Report on Proposals,* I noticed that the NFPA Technical Committee on Supervising Station Fire Alarm Systems has voted to extend the requirements for verification of code compliance. It has been proposed that the requirements for verification of code compliance by means of a certificate or placard now also apply to proprietary supervising station fire alarm systems and remote supervising station fire alarm systems. What is behind this proposed change?

Answer: By the time you read this article, the Technical Committee portion and the Technical Correlating Committee portion of the NFPA 1999 Annual Meeting Revision Cycle will have concluded. The publication of the *Report on Comments*, the presentation to the May, 1999, NFPA Annual Meeting, the voting by the membership and the presentation to and action by the NFPA Standards Council at their July, 1999, meeting remains.

The Technical Committee on Supervising Station Fire Alarm Systems has taken a bold step by extending the requirements for verification of code compliance to all supervising station fire alarm systems. By this action, the Committee has asserted that where a fire alarm system transmits alarm, supervisory, and trouble signals from a protected premises to a central station, proprietary supervising station, or remote supervising station, such a system must achieve a benchmark of

quality to assure the system will perform the intended function. This supervising station fire alarm system, by design, summons emergency response from public or private agencies. The system also serves to assist the management of a facility in overseeing the integration and operation of the many fire protection systems installed at a facility. Thus, the assurance that any particular fire alarm system meets this quality benchmark becomes critically important.

For well over 25 years, various insurance organizations have gathered statistics to support the allegation that a code-complying fire alarm system performs more consistently with minimal false signals. Therefore, in helping to manage and provide life safety, property protection, mission continuity, heritage preservation, environmental protection or any combination of these, the need to assure code compliance of the fire alarm system is reinforced even more strongly.

Factory Mutual Research Corporation of Norwood, MA, led the way in gathering these statistics. FMRC gained the cooperation of one of its sister organizations, Factory Mutual Engineering Association, to have the FM field engineers witness and report on successful fire alarm system tests at literally thousands of FM-insured properties. Because these statistics reported both successful and unsuccessful tests, the FM Approvals Department could use standard methods of statistical analysis to study the collected data.

Very early in gathering the data, a trend emerged. This trend continued to receive support as field engineers supplied more and more data. Fire alarm systems that complied with the requirements of the fire alarm standards had a statistically significant higher level of operational

reliability. In addition, these standards-complying systems generated fewer unnecessary (false alarms.

Another insurance company that provided property insurance for highly protected risks (HPR), Industrial Risk Insurers, also gathered field data on fire alarm system failures. Field engineers would file an "Unsatisfactory Performance Report" when they discovered fire protection systems that either failed during a witnessed test, or failed during an actual fire incident. IRI transmitted these statistics on a case-by-case basis to the follow-up services department at Underwriters Laboratories for possible action.

Yet a third HPR property insurer, CIGNA Corporation, conducted a lengthy field survey of fire alarm systems installed at insured facilities. CIGNA Vice President, Dr. Bill Jenaway, summarized their findings in several publications, including *The Voice,* published by the International Society of Fire Service Instructors. He also made several presentations to groups at NFPA Annual and Fall Meetings.

Both the IRI statistics and those gathered by CIGNA supported the FMRC findings. Fire alarm systems that comply with the code have a higher degree of operational integrity and produce fewer false alarms. So how can we help assure code compliance?

In virtually all phases of our society, where persons, professionals, or organizations must meet quality benchmarks, the success in reaching those benchmarks is measured by some type of

verification. For supervising station fire alarm systems, the requirement for verification by providing either a certificate or placard achieves this objective.

The NFPA Technical Committee on Supervising Station Fire Alarm Systems found no one who would argue that systems should be installed that will not meet the requirements of the *National Fire Alarm Code.* The requirement for verification of this compliance merely assures—by some independent means—that a fire alarm system has, indeed, met those requirements.

It is also important to note that the requirements for verification of code compliance embrace a wide range of system implementation: manufacture—including equipment compatibility, specifications, design, installation, monitoring, testing, maintenance, and use.These are the same issues we discussed in this column in the last two issues of *IMSA Journal.*

It necessarily takes profound expertise to assure compliance in all of these areas. How much more reasonable it becomes to seek assistance from nationally-recognized testing laboratories which can supply personnel who are familiar with the rigorous practices of verification. Such individuals can substantially help the owner of the protected property, and both public and private authorities having jurisdiction, in the process of assuring compliance with the *National Fire Alarm Code.*

The benefits of verified code compliance, and, thus, verified fire alarm system quality, far outweigh the rather minimal costs associated with using the expertise of the nationally-recognized testing laboratories. Further, the more universal the requirement for verification becomes, the more

likely this requirement will become a market driver. As a result, other competing organizations will likely enter the marketplace to provide verification services. In fact, this may well become a service that IMSA members may wish to perform.

The Technical Committee further noted that providing a choice between at least two service providers nullifies the accusation some had made that verifying that a fire alarm system met the requirements of the code constituted "restraint of trade." The current two nationally-recognized testing laboratories offer their services to all customers interested in employing their separate methods of verification. And, as suggested previously, it is quite likely that other organizations will offer such service.

Finally, the technical substantiation for this change to NFPA 72-1999, *National Fire Alarm Code*, rests largely with the history of these requirements. The verification of compliance has been a part of the requirements for central station systems since 1989. During the ensuing 9 years, a large volume of anecdotal evidence exists in the public domain to support the value of central station fire alarm systems whose code-compliance has been verified. The extension of this vital service to all supervising station fire alarm systems becomes a logical recommendation.

The NFPA Technical Committee on Supervising Station Fire Alarm Systems did recognize that in a Household Fire Warning Equipment System, the local alarm function provides primary life safety protection. These systems historically have required that local alarm function, and have permit ted a connection to a supervising station as a secondary provision. Thus it is reasonable to provide an exception to the requirement for verification of code compliance for these systems.

Many individuals within the fire alarm industry, believe that the requirements for verifying the code compliance should apply to all fire alarm systems, not simply to supervising station fire alarm systems. But everyone will acknowledge that the action taken by the NFPA Technical Committee on Supervising Station Fire Alarm Systems represents an important step on the path toward applying these requirements to all systems.

We applaud the steadfastness of this Committee. And express the sincere hope that this new requirement will prevail through the remainder of the 1999 Annual Meeting Revision Cycle.

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