

## **Highlights of the New NFPA 72-2002 - Part 4**

**by Dean K. Wilson, P.E.**

The NFPA Standards Council has recently released NFPA 72-2002, *National Fire Alarm Code*, with an effective date of August 8, 2002. In the last three issues of *IMSA Journal*, I have been giving you my summary of the most significant changes to the *Code*. That summary continues in this issue, as well.

**Chapter 7**, Notification Appliances for Fire Alarm Systems, covers the requirements previously contained in Chapter 4 in the 1999 edition. The Committee has revised the application section to indicate the requirements of the Chapter apply where required by the Authority Having Jurisdiction or other governing codes or standards. (Please refer to Section 7.1.1)

The Committee has added a new Purpose statement to clarify the use of notification appliances. This Section states that, “Notification appliances for fire alarm systems shall contribute to fire protection by providing stimuli for initiating emergency action and by providing information to users, emergency response personnel, and occupants.” (Please refer to Section 7.2)

The Committee has expanded the Section on connection to the fire alarm system to include “addressable communication,” in addition to “terminals” and “leads.” (Please refer to Section 7.3.6)

The Committee has deleted 1999 Section 4-3.1.4, which contained requirements for mechanical equipment rooms. They have also deleted 1999 Section 4-3.2.1, which required public mode audible notification appliances to produce a minimum sound pressure level of 75 dBA at 10 ft, but not more than 120 dBA at the minimum hearing distance from the appliance. (Please refer to the Section deletion mark after Section 7.4.1.3 and after Section 7.4.2)

The Committee has added two new requirements that permit the reduction or elimination of the requirements for public mode and private mode audible signaling where visible signaling is provided, subject to the approval of the Authority Having Jurisdiction or other governing codes or standards. (Please refer to Sections 7.4.2.2 and 7.4.3.3)

The Committee has expanded the requirement that permits a system that will stop or reduce ambient noise level to apply to both public mode and private mode audible signaling. (Please refer to Section 7.4.3.4)

As an alternative to the traditional method of providing audible notification, the Committee has introduced new requirements that permit the use of narrow band tone signaling to exceed masked thresholds of ambient noise. This method requires a careful engineering analysis and documentation. (Please refer to Section 7.4.5)

With regard to the location of audible appliances, the Committee has added a new requirement concerning appliances that are an integral part of an initiating device. This requires that the location conform to the requirements for that device, rather than to the requirements for the location of the notification appliance. (Please refer to Section 7.4.6.4)

The Committee has deleted the requirement that appeared as 1999 Section 4-4.3.1. This required the intended viewers to see operating effect of a visible notification appliance regardless of the viewer's orientation. (Please refer to the Section deletion mark after Section 7.5.3)

The Committee has revised the requirements for coverage of visible appliances. The requirements have eliminated the option of having more than two nonsynchronized appliances in an 80 ft X 80 ft room a minimum of 55 ft from each other. This leaves the options of a single appliance, two appliances located on opposite walls, or more than two synchronized appliances in the same field of view. (Please refer to Section 7.5.4.1.2)

The Committee has revised the Table for room spacing of wall-mounted visible appliances. They have added some new rows to the Table, and revised some of the values. At least one misprint appears in the version of the Code we used to answer this question. In the row for 50 ft X 50 ft room, the two lights per room column has a value of "6." This likely should read "60." (Please refer to Table 7.5.4.1.1(a))

The Committee has deleted the Table for corridor spacing of visible appliances that appeared in the 1999 edition as Table 4-4.4.2.1. In its place, the Committee has included equivalent requirements for locating appliances within 15 ft of the end of the corridor and spacing them no more than 100 ft apart. Once again, the Committee has revised the requirements to delete the reference to keeping multiple appliances more than 55 feet apart or providing synchronization in favor of requiring synchronization. (Please refer to Section 7.5.4.2)

As a major new addition, the Committee has included requirements for a performance-based alternative for visible notification appliances. Using calculations and providing documentation to the Authority Having Jurisdiction, a designer can use this alternate method in place of meeting the prescriptive requirements. (Please refer to Section 7.5.4.3)

For sleeping rooms, the Committee has deleted the requirement that where visible notification appliances are required, a minimum of one appliance shall be installed. (Please refer to the Section deletion mark after Section 7.5.4.4.3)

**Chapter 8**, Supervising Station Fire Alarm Systems, contains the requirements previously found in Chapter 5 of the 1999 edition. Under contract requirements, the Committee has added a fourth option for providing central station service. This option permits a listed central station to work in conjunction with a second listed central station to provide service. (Please refer to Section 8.2.3(4))

The Committee has deleted the optional requirement to provide a supervised primary means of retransmission for central station service. (Please refer to the Section deletion mark after Section 8.2.6.1.6(B))

With respect to disposition of signals received by a central station, the Committee has increased the runner response time to an alarm signal or a test signal to reset the system from one hour to two hours. They have also increased the time for a runner or service person to respond to a supervisory signal from one hour to two hours. (Please refer to Sections 8.2.7.1.2(2), 8.2.7.3(2), and 8.2.7.5.4)

The Committee has added a requirement for proprietary supervising station fire alarm systems that the means of designating the origin of the signals received at the proprietary supervising station must use private-mode notification appliances approved by the Authority Having Jurisdiction. (Please refer to Section 8.3.4.1.4)

The Committee has eliminated the requirement that appeared as 1999 Section 5-3.4.7. This Section specified a maximum time of 90 seconds from sensing a fire alarm at an initiating device or initiating device circuit until it was recorded or displayed at the proprietary supervising station. Similarly, the Committee has deleted the 200 seconds receipt time from the requirements for receiving trouble signals. (Please refer to the Section deletion mark after Sections 8.3.4.3(B) and 8.3.4.5)

With regard to runner service for proprietary supervising station fire alarm systems, the Committee has added an *Exception* regarding the communication availability of a runner located at a noncontiguous protected premises when that runner has no responsibility for another protected premises. (Please refer to Section 8.3.4.6.2 *Exception*)

As they did with the requirements for disposition of central station signals, the Committee has modified the requirements for disposition of proprietary supervising station signals. They have extended the runner or technician response to an alarm signal or supervisory signal from one hour to two hours. They have also extended the runner response to trouble signals from one hour to four hours. (Please refer to Sections 8.3.5.6.1(2), 8.3.5.6.3(2), and 8.3.5.6.4(2))

The Committee has rewritten the requirements for the location receiving remote supervising station fire alarm signals to provide additional clarity. (Please refer to Sections 8.4.2.1, 8.4.2.2, 8.4.2.3, and 8.4.2.4)

The Committee has deleted the *Exception* for power supplies when a remote supervising station uses a listed one-way radio system. This *Exception* appeared as 1999 5-4.4.2 *Exception*. The reduction in the secondary power supply requirement for remote supervising station systems to 24 hours in the normal quiescent mode has eliminated the need for this *Exception*. (Please refer to Section deletion mark after Section 8.4.3.2)

Moving on to the Section that covers communications methods, the Committee has deleted the list of acceptable communications methods that followed the statement regarding the co-location of a master control unit with a supervising station. (Please refer to Section deletion mark after Section 8.5.2.1)

The Committee has revised the Section dealing with the loading capacities for an active multiplex system to recognize a modification to the loadings when the supervising station provides duplicate receiving, processing, display, and recording equipment. (Please refer to Section 8.5.3.1.7)

The Committee has revised the Section covering transmission paths for a digital alarm communicator transmitter (DACT) to clarify the use of integrated services digital network (ISDN)

and derived local channel as a means of monitoring the integrity of a single telephone line. (Please refer to Section 8.5.3.2.1.4(A))

In order to clarify the action intent of the requirements, the Committee has slightly modified the wording of the Section that deals with DACT operations and digital alarm communicator receiver (DSCR) failure to receive the 24-hour operational test signal. (Please refer to Sections 8.5.3.2.1.5 and 8.5.3.2.2(G))

Recognizing that few, if any, telephone utilities remain willing to provide leased lines—referred to as private line, or PL service—to support the McCulloh transmission method, the Committee has added a new requirement that prohibits the installation of McCulloh systems after June 30, 2003, unless accepted by the Authority Having Jurisdiction. This will effectively begin the final phase out of this transmission technology. (Please refer to Section 8.5.3.3.4)

The Committee has slightly revised the wording of the requirements for supervisory and control functions for the two-way radio frequency (rf) multiplex systems. Please note that currently no manufacturers provide equipment specifically listed for this service. The one manufacturer who did provide such equipment, Repco, Inc., has apparently chosen not to maintain the listing of their equipment. This means that while the *Code* continues to recognize this technology, without any listed equipment, no one can really use it. (Please refer to Section 8.5.3.4.2)

As they did with active multiplex systems, the Committee has revised the Section dealing with the loading capacities for an two-way radio frequency (rf) multiplex systems to recognize a modification to the loadings when the supervising station provides duplicate receiving, processing, display, and recording equipment. The Committee has also slightly revised the loading Table to correct the error of a misplaced footnote marking in the previous edition. (Please refer to Section 8.5.3.4.5(C) and Table 8.5.3.4.5)

With regard to one-way private radio alarm systems, the Committee has revised the requirements for independent receivers to clarify that two independent radio alarm repeater station receivers (RARSRs), or two independent radio alarm supervising station receivers (RASSRs), or one of each will satisfy the requirement. (Please refer to Section 8.5.3.5.1)

The Committee has revised the requirements for loading capacities for one-way private radio alarm systems to place some of the footnotes from the loading Table into actual document text and to remove a misplaced footnote marking in the previous edition. (Please refer to Sections 8.5.3.5.6(A) and (B), and Table 8.5.3.5.6)

With regard to the directly connected noncoded system, the Committee has effectively removed the reference to the two types of circuits used for this service. They have done this by changing 1999 Section 5-5.3.6.1, which required one of two types of circuit. In the 2002 version, the Committee has made the alternative methods apply to all types of directly connected noncoded systems. They have also eliminated an *Exception* in 1999 Section 5-5.3.6.2 to the requirement that alarm signals and supervisory signals transmit over separate circuits. Thus, the Committee now requires alarm signals and supervisory signals to always transmit over separate circuits in all cases. (Please refer to Section 8.5.3.6.1)

The Committee has acted to revise the requirements regarding the maintaining of spare parts. They have eliminated the requirement that supervising stations must maintain a ratio of 1 spare for every 5 active units. They have revised the wording to reference “time limitations specified in this *Code*. ” (Please refer to Section 8.5.4.5)

In the matter of signal priority, the Committee has revised the requirement to specify that alarm, supervisory, and trouble signals, in that specific order, must take precedence over other signals when the fire alarm system shares communications methodologies with other systems. They

have also completely revised the *Exception*. The new *Exception* requires the supervising station to receive fire alarm signals within 90 seconds if the shared transmission methodology cannot assure the precedence of alarm signals. Thus, the Committee has eliminated the previous *Exception* which permitted holdup signals and signals indicating other life-threatening situations to take precedence over fire alarm signals where permitted by the Authority Having Jurisdiction. (Please refer to Section 8.5.4.11)

Next issue, I will continue to offer my summary of the important changes to NFPA 72-2002, *National Fire Alarm Code*, by presenting the changes to Chapters 9, 10, and 11.

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