

Get Ready for NFPA 72, 2010 Edition

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Having represented NAFED on the Notification Appliances Technical Committee since the late 80s, I have had the pleasure of seeing this document grow from a part of the old alphabet soup of pamphlets into a major component of NFPA 72. These have been exciting times, especially with the addition of intelligibility and the advent of mass notification systems (MNS).

The history of this code can be traced back as far as 1899 when it was only nine pages. Its original title was "General Rules and Requirements for the Installation of Wiring and Apparatus for Automatic Fire Alarms, Hatch Closers, Sprinkler Alarms and Other Automatic Alarm Systems and Their Manual Auxiliaries." What a mouthful.

The 2010 edition of NFPA 72 represents the most significant changes to the

code since the NFPA detection and signaling documents were combined in 1993. Systems used for weather emergencies, terrorist events, biological, chemical or nuclear emergencies, and other threats are being directly incorporated into the new NFPA 72. Because of these multiple uses, the name of the code will change to *National Fire Alarm and Signaling Code*.

The evolution of the 2010 edition began with the Standards Council's decision in November 2003 to establish a new project on MNS at the request of the U.S. Air Force. A new annex, which provides guidance for the design of MNS, was added to the 2007 edition along with a number of changes in the requirements to allow fire alarm systems and MNS to work together.

Concerning the Notification Appliances

chapter specifically, the introduction of mass notification generated a renewed interest in intelligibility, which was first introduced for the 1999 Edition of NFPA 72 with a requirement of 0.7 CIS (Common Intelligibility Scale) in the body of the code.

A Task Group was formed at the end of the 2007 code cycle to develop an approach for mandating quantifiable measurement of intelligibility. This Task Group recommended adoption of ISO 7240-19, *Design, Installation, Commissioning and Service of Sound Systems for Emergency Purposes*.

As a direct result of work done by the Fire Protection Research Foundation (FPRF), several new definitions have found their way into the code.

Intelligible: Capable of being understood; comprehensible; clear

Intelligibility: The quality or condition of being intelligible.

Acoustically Distinguishable Space (ADS): An emergency communication system notification zone, or subdivision thereof, that might be an enclosed or otherwise physically defined space, or that may be distinguished from other spaces because of different acoustical, environmental or use characteristics such as reverberation time and ambient sound pressure level.

Intelligibility can be measured by one of the following methods:

Subject-based techniques for measuring intelligibility are defined by ANSI S3.2, *Method for Measuring the Intelligibility of Speech Over Communications Systems*. ANSI S3.2 should be considered an acceptable alternative to ISO TR 4870, where referenced in IEC 60268, Part 16.

Voice intelligibility measured in accordance with the guidelines in ISO 7240-19, *Design, Installation, Commissioning and Service of*

The NFPA 72, National Fire Alarm Code, is a large, complicated code that has several technical committees responsible for specific areas of the document. NAFED has several volunteers that serve on these committees. Dave Becker is the principal representative on the Technical Committee (TC) responsible for Notification Appliances for Signaling Systems, and Bob Pikula of Reliable Fire Equipment is his alternate.

Also serving on the NFPA 72 are Rick Malady of Fire Fighter Sales & Service, principal on the Technical Committee (TC) responsible for Fundamentals of Signaling Systems; Norb Makowka of NAFED staff, principal, and Mark Agar of Fire Equipment Company, Inc., alternate, on the TC for Initiating Devices for Signaling Systems; and George Seymour of Total Safety, principal, and Bill Isemann of Guardian Fire Protection Services, alternate, on the TC for Testing and Maintenance of Signaling Systems.

These individuals, and all NAFED volunteers that represent the association on NFPA technical committees, do a great job of representing our industry and give up time and expenses to serve on these committees.

The NFPA 72, Fire Alarm and Signaling Code, 2010 edition, has gone through the full revision cycle and should be available by the end of 2009. Look for more information on changes to other applicable chapters of the document in a future issue of Firewatch!. You can also check www.nfpa.org for updates. The NFPA Journal has frequently featured articles on the many changes to the NFPA 72. Firewatch! will share more targeted information on the changes that matter most to our industry.

Sound Systems for Emergency Purposes and ISO 7240-16, Sound System Control and Indicating Equipment. The system should exceed the equivalent of a common intelligibility scale (CIS) score of 0.7 or an alternative approved scoring method.

Another significant change relates to low frequency sounders and sleeping areas. The committee added language where audible appliances that produce signals for sleeping areas need to produce a low wave fundamental frequency signal of 520 Hz.

This will require the use of audible signaling devices that are not currently in the mix of most available product lines.

Because of the time required to ramp up manufacture of these devices and to process them through the listing agencies, an effective date of January 1, 2014, was set.

Finally, the Notification Appliances Technical Committee added a new Annex I again to reflect the work of the Fire Protection Research Foundation's project on intelligibility. This Annex, for the first time, provides real guidance for the planning, design, installation, and testing of voice communication systems. The majority of this annex contains recommendations for testing of the intelligibility of voice systems. ♦