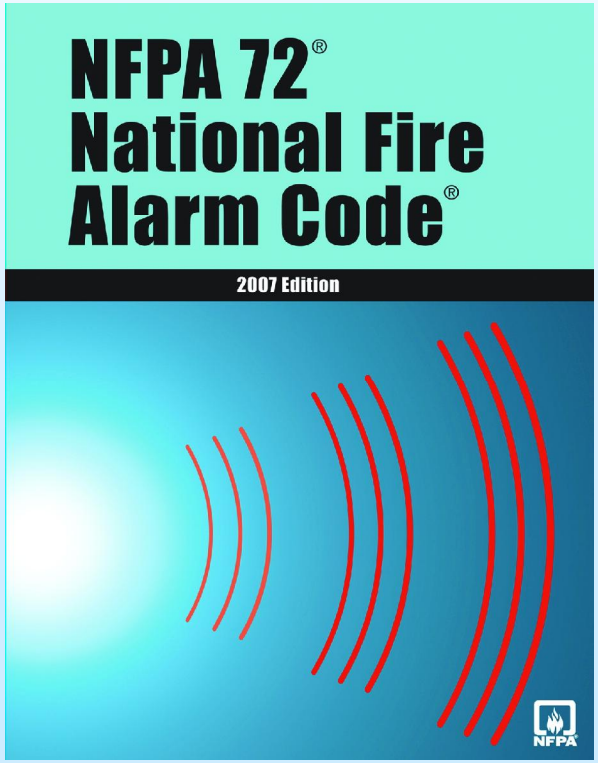
The National Fire Alarm Code – More Than It Used To Be!

September 26, 2006

The National Fire Alarm Code – More Than It Used To Be!

Overview of Changes to NFPA 72 2007 Edition

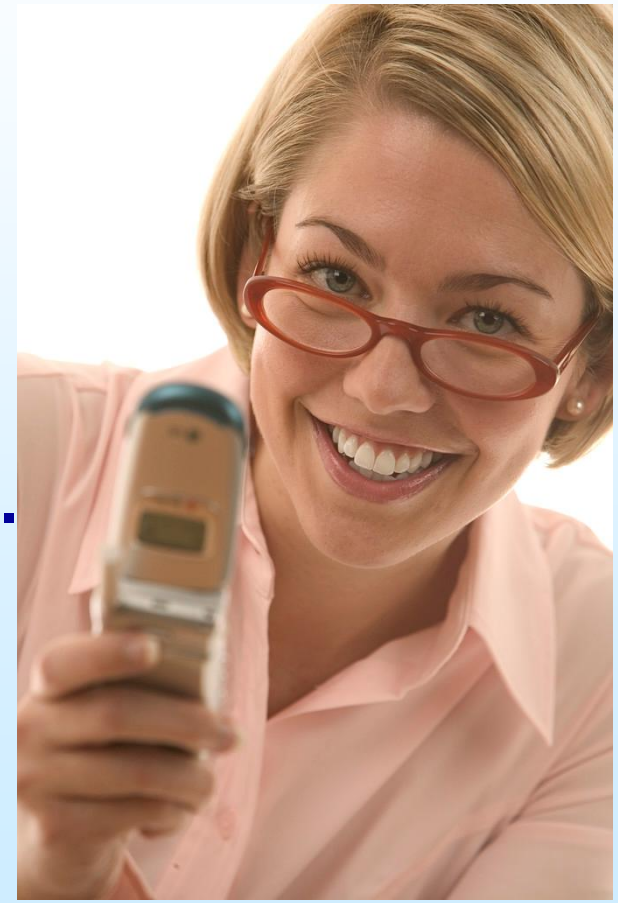


Wayne D. Moore, P.E., FSFPE, CFPS, SET
Hughes Associates, Inc.
2374 Post Road, Suite 102
Warwick, RI 02886
401-736-8992 – wmoore@haifire.com

Seminar Etiquette

PLEASE:
Turn Off Pagers!
Turn Off Cell Phones!
DO NOT Answer Cell Phones In Class!
DO Not Talk on Cell Phones In Class!
Talk to Each Other Only During Breaks.

Respect Each Others Need To Learn from the Presentation



NFPA 72-2007

NFPA Liaison – Lee Richardson

Report on Proposals –
203 Pages – Approximately 650 Proposals

Report on Comments –
316 Pages – Approximately 800 Comments

Chapter 1- Administration

Chapter 1 - Administration

Revise **1.1.1 Scope** to read as follows:
1.1.1 NFPA 72 covers the application, installation, location, performance, inspection, testing and maintenance of fire alarm systems, fire warning equipment, and emergency warning equipment and their components.

Chapter 2 – Referenced Publications

Minor Additions & Changes

Chapter 3 - Definitions

Chapter 3 - Definitions

3.3.195.3 Remote Supervising Station Service. The use of a system including the protected premises fire alarm system(s) in which the operations of circuits and devices are signaled to, recorded in, and supervised from a supervising station that has competent and experienced operators who, upon receipt of a signal, take such action as required by this Code. Related activities at the protected premises, such as equipment installation, inspection, testing, and maintenance, are the responsibility of the owner. (SIG-SSS)

Chapter 3 - Definitions

3.3.214 Wide Area Signaling. Signaling intended to provide alerting or information to exterior open spaces of campuses, neighborhood streets, a city, town or community. (To Accommodate MNS)

Chapter 3 - Definitions

3.3.102 Mass Notification System. A system used to provide information and instructions to people, in a building, area site or other space.

A.3.3.102 Annex Material:
A Mass Notification System may use intelligible voice communications, visible signals, text, graphics, tactile or other communications methods. The system may be used to initiate evacuation, relocation, or to provide information to occupants. The system may be intended for fire emergencies, weather emergencies, terrorist events, biological, chemical or nuclear emergencies or any combination of these. The system may be automatic, manual, or both.
Access to and control of the system may be from a single, on-site location or may include multiple command locations, includes some remote from the area served. Systems may be wired, wireless or some combination of the two.

Chapter 3 - Definitions

Revised Definitions – (continued):

3.3.43.11* Multi-Criteria Detector. A device that contains multiple sensors that separately respond to physical stimulus such as heat, smoke, or fire gases, or employs more than one sensor to sense the same stimulus. This sensor is capable of generating only one alarm signal from the sensors employed in the design either independently or in combination. The sensor output signal is mathematically evaluated to determine when an alarm signal is warranted. This evaluation can occur either in the detector or in the fire panel. This detector has a single listing that establishes the primary function of the detector.

Chapter 3 - Definitions

Revised Definitions – (continued):

A.3.3.43.11 Single output utilizing signal processing of two or more sensing methods. A Multi-Criteria Detector is a detector that contains multiple sensing methods that respond to fire signature phenomena and utilizes mathematically evaluation principles to determine the collective status of the device. Typical examples of Multi-Criteria Detectors are a combination of a heat detector with a smoke detector, or a combination rate-of-rise and fixed-temperature heat detector that evaluates both signals using an algorithm to generate an output such as pre-alarm or alarm. The evaluation can be performed either at the detector or at the fire panel. Other examples are detectors that include sensor combinations that respond in a predictable manner to any combination of heat, smoke, carbon monoxide, or carbon dioxide.

Chapter 3 - Definitions

Revised Definitions – (continued):

3.3.43.12* Multi-Sensor Detector. A device that contains multiple sensors that separately respond to physical stimulus such as heat, smoke, or fire gases, or employs more than one sensor to sense the same stimulus. A device capable of generating multiple alarm signals from any one of the sensors employed in the design, independently or in combination. The sensor output signals are mathematically evaluated to determine when an alarm signal is warranted. This evaluation can occur either in the detector or in the fire panel. This detector has companion listings covering all sensing methods employed. (SIG-IDS)

Chapter 3 - Definitions

Revised Definitions – (continued):

A.3.3.43.12 Typical examples of Multi-Sensor Detectors are a combination of a heat detector with a smoke detector, or a combination rate-of-rise and fixed-temperature heat detector that evaluates both signals using an algorithm to generate an output such as pre-alarm or alarm. The evaluation may be performed either at the detector or at the fire panel. Other examples are detectors that include sensor combinations that respond in a predictable manner to any combination of heat, smoke, carbon monoxide, or carbon dioxide.

Chapter 3 - Definitions

Revised Definitions – (continued):

3.3.67.5.1 Building Fire Alarm System. A protected premises fire alarm system that includes any of the features identified in Section 6.3 and that serves the general fire alarm needs of a building or buildings and that provides fire department or occupant notification or both.

3.3.67.5.2 Dedicated Function Fire Alarm System. A protected premises fire alarm system installed specifically to perform fire safety function(s) where a building fire alarm system is not required.

Chapter 3 - Definitions

3.3.69 **Fire Extinguisher Monitoring Device**. A device connected to the fire alarm control unit that automatically monitors the pressure levels of agents in a fire extinguisher, obstructed access and the presence of the fire extinguisher.

3.3.111 **Nonrequired.** As used in this Code, nonrequired refers to a fire alarm system component or group of components that is installed at the option of the owner, and is not installed due to a building or fire code requirement.

Chapter 3 - Definitions

New Definitions to Accommodate New Technology:
3.3.113.1.2* **Exit Marking Audible Notification Appliance**. An audible notification appliance that marks building exits and areas of refuge by the sense of hearing for the purpose of evacuation or relocation.

A.3.3.113.1.2 **Exit Marking Audible Notification Appliance**. These sounders can be located and identified in an emergency situation due to the broadband frequency content of their sound. Broadband frequencies are those that contain a large spectrum of frequencies in the human hearing range, 20Hz to 20,000 Hz. These types of sounders are used to aid evacuation through the use of hearing and are sometimes referred to as directional sounders.

Chapter 3 - Definitions

New Definitions to Accommodate New Technology:

3.3.180.5* Video Image Smoke Detection (VISD). The principle of using automatic analysis of real-time video images to detect the presence of smoke. **A.3.3.180.5** Video Image Smoke Detection (VISD) is a software based method of smoke detection that has become practical with the advent of digital video systems. Listing agencies have begun testing VISD components for several manufacturers. VISD systems can analyze images for changes in features such as brightness, contrast, edge content, loss of detail, and motion. The detection equipment can consist of cameras producing digital or analog (converted to digital) video signals and processing unit(s) that maintain the software and interfaces to the fire alarm control unit.

Chapter 4
Fundamentals

Chapter 4
Fundamentals

4.3.1 Equipment. Equipment constructed and installed in conformity with this Code shall be listed for the purpose for which it is used. Fire alarm system components shall be installed, tested and maintained in accordance with the manufacturers' published instructions and this Code.

Chapter 4
Fundamentals

4.3.3 System Installer. Installation personnel shall be qualified or shall be supervised by persons who are qualified in the installation, inspection, and testing of fire alarm systems. Evidence of qualifications and/or certification shall be provided when requested by the Authority Having Jurisdiction. Qualified personnel shall include, but not be limited to, the following:

(1) Factory trained and certified for fire alarm system installation of the specific type and brand of system being installed

(2)* Certified by a nationally recognized fire alarm certification organization acceptable to the Authority Having Jurisdiction

(3) Personnel that are registered, licensed or certified by a state or local authority

Chapter 4
Fundamentals

A.4.3.2.2(2) Nationally recognized fire alarm certification programs might include those programs offered by the International Municipal Signal Association (IMSA) and National Institute for Certification In Engineering Technologies (NICET). NOTE: These organizations and the products or services offered by them have not been independently verified by the NFPA, nor have the products or services been endorsed or certified by the NFPA or any of its Technical Committees.

Chapter 4
Fundamentals

Revise the proposed text read as follows:
4.4.3.7.2 " When an alarm signal deactivation means is actuated, both audible and visible notification appliances shall be simultaneously deactivated."
In addition, add the following Annex new material:

"A.4.4.3.7 It is the intent that both visual and audible appliances are shut off when the signal silence feature is activated on the fire alarm control unit. Per the ADA, it is important to not provide conflicting signals for the hearing impaired."

It was never the intent of this committee for this section to be interpreted as requiring strobe operation after audibles have been silenced.
The Annex material was developed to provide additional information to the user.

Chapter 4
Fundamentals

4.4.5* Protection of Fire Alarm System. In areas that are not continuously occupied, automatic smoke detection shall be provided at the location of each fire alarm control unit(s), notification appliance circuit power extender(s) and supervising station transmitting equipment to provide notification of fire at that location.

Exception (1)*: Where ambient conditions prohibit installation of automatic smoke detection, automatic heat detection shall be permitted.
Exception (2): Fully sprinklered buildings shall not require protection in accordance with 4.4.5.

Chapter 4
Fundamentals

CAUTION: The exception (1) to 4.4.5 permits use of a heat detector if ambient conditions are not suitable for smoke detection. It is important to also evaluate whether the area is suitable for the control unit. Where the area or room containing the control unit is provided with total smoke-detection coverage, additional smoke detection is not required to protect the control unit. Where total smoke-detection coverage is not provided, the Code intends that only one smoke detector is required at the control unit even when the area of the room would require more than one detector if installed according to the spacing rules in Chapter 5. The intent of selective coverage is to address the specific location of the equipment.

Chapter 4
Fundamentals

A.4.4.5 The fire alarm control unit(s) that are to be protected are those that provide notification of a fire to the occupants and responders. The term fire alarm control unit does not include equipment such as annunciators and addressable devices.

Requiring smoke detection at the transmitting equipment is intended to increase the probability that an alarm signal will be transmitted to a supervising station prior to that transmitting equipment being disabled due to the fire condition.

Chapter 4
Fundamentals

A.4.4.5 (continued)
“Location of the required detection should be in accordance with one of the following:
(1) Where the ceiling is 4.6 m (15 ft) in height or less, the smoke detector should be located on the ceiling or the wall within 6.4 m (21ft) of the centerline of the fire alarm control unit being protected by the detector in accordance with 5.7.3.2.1.
(2) Where the ceiling exceeds 4.6 m (15 ft) in height, the automatic smoke detector should be installed on the wall above and within 1.8 m (6 ft) from the top of the control unit.”

Chapter 4
Fundamentals

A.4.6 The term *impairments* encompasses a broad range of circumstances wherein a fire alarm system or portion thereof is taken out of service for a variety of reasons. Fire alarm systems are routinely impaired in order to perform hot work (e.g., open flame operations) in areas with automatic detection, construction, painting, etc., as well as to conduct normal fire alarm system maintenance and testing. Impairments can be limited to specific initiating devices and/or functions (e.g., disconnecting the supervising station connection during system testing), or they can involve taking entire systems or portions of systems out of service. This section is intended to help building owners control impairments of the fire alarm system(s) in their building(s) and to ensure that systems are restored to full operation and/or returned to service afterward. Additional requirements for impairments and out-of-service conditions exist in 10.2.1.2.

Chapter 4
Fundamentals

A.4.6.3 The need for mitigating measures is typically determined on a case-by-case basis. This considers the building, occupancy type, nature and duration of impairment, building occupancy level during impairment period, active work being conducted on the fire alarm system during the impairment, condition of other fire protection systems and features (i.e., sprinklers, structural compartmentation, etc.), and hazards and assets at risk.

Chapter 4
Fundamentals

A.4.6.3 (continued)
Appropriate mitigating measures range from simple occupant notification to full-time fire watch. Determining factors vary from testing-related impairments and maintenance activities during normal business through extensive impairments to high-value, high-hazard situations.

Chapter 4
Fundamentals

"Record of Completion"

Revisions & Additions

Examples of Completed Forms in Annex

Chapter 5 – Initiating Devices

Chapter 5 – Initiating Devices

The requirement for RTI (TRC) was removed from the 2002 Edition of the Code due to the lack of acceptable testing criteria. This has now been achieved. The requirement is now valid.

5.6.1.4* Spot-type heat detectors shall include in their installation instructions, technical data, and listing documentation the operating temperature and RTI (Response Time Index) as determined by the organization listing the device. The requirement for RTI documentation shall have an effective date of July 1, 2008.

Chapter 5 – Initiating Devices

A.5.6.1.4 In order to predict the response of a heat detector using current fire modeling programs and currently published equations describing plume dynamics, two parameters must be known: operating temperature and response time index (RTI). The RTI is the quantification of the rate of heat transfer from the ceiling jet to the detector sensing element per unit of time, expressed as a function of ceiling jet temperature, ceiling jet velocity, and time.

The Proposed language has been modified to address only spot-type heat detectors since the methodology of RTI testing for line-type heat detectors has not been developed yet. The acceptance of this new requirement is based on successful research and testing that has been completed using the sprinkler plunge test.

Chapter 5 – Initiating Devices

Smoke Detector Placement – Beams & Pockets
5.7.3.2.4(B) For level ceilings the following shall apply:

(1) For ceilings with beam depths of less than 10 percent of the ceiling height (0. 1 H), smooth ceiling spacing shall be permitted.

(2) For ceilings with beam depths equal to or greater than 10 percent of the ceiling height (0. 1 H) and beam spacing equal to or greater than 40 percent of the ceiling height (O.4H), spot-type detectors shall be located on the ceiling in each beam pocket.

Chapter 5 – Initiating Devices

5.7.3.2.4(B) (continued)

(3)* For waffle or pan-type ceilings with beams or solid joists no greater than 600 mm. (24 in.) deep and no greater than 3. 66 m. (12 ft.) center- to-center spacing, the following shall be permitted:
(a) Smooth ceiling spacing including those provisions permitted for irregular areas in Section 5.6.5.1.2, substituting "selected spacing" for " listed spacing
(b) Location of spot-type smoke detectors can be on ceilings or on the bottom of beams.

Chapter 5 – Initiating Devices

5.7.3.2.4(B) (continued)
(4)* For corridors 4. 5 m (15 ft.) in width or less having ceiling beams or solid joists perpendicular to the corridor length , the following shall be permitted:
(a) Smooth ceiling spacing including those provisions permitted for irregular areas in Section 5.6.5.1.2, substituting "selected spacing " for " listed spacing
(b) Location of spot-type smoke detectors on ceilings, sidewalls or on the bottom of beams or solid joists.
(5) For rooms of 84 m2 (900 ft2) area or less, only one smoke detector shall be required.

Chapter 5 – Initiating Devices

A.5.7.3.2.4(B)(3) The geometry and reservoir effect is a significant factor that contributes to the development of velocity, temperature and smoke obscuration conditions at smoke detectors located on the ceiling in beam pocket areas or at the bottom of beams as smoke collected in the reservoir volume spills into adjacent pockets. The waffle or pan type ceilings created by beams or solid joists, although retarding the initial flow of smoke, results in increased optical density, temperature rise and gas velocities comparable to unconfined smooth ceilings.

Chapter 5 – Initiating Devices

A.5.7.3.2.4(B)(4) Corridor geometry is a significant factor that contributes to the development of velocity, temperature and smoke obscuration conditions at smoke detectors located along a corridor. This is based on the fact that the ceiling jet is confined or constrained by the nearby walls without opportunity for entrainment of air. For corridors of approximately 4. 5 m (15 ft.) in width and for fires of approximately 100 kW or greater modeling has demonstrated that the performance of smoke detectors in corridors with beams has been shown to be comparable to spot smoke detector spacing on an unconfined smooth ceiling surface.

Chapter 5 – Initiating Devices

Add new Section 5.7.6 to read as follows:
5.7.6 Video Image Smoke Detection.

5.7.6.1 Video image smoke detection systems and all of the components thereof, including hardware and software, shall be listed for the purpose of smoke detection.

5.7.6.2. Video image smoke detection systems shall comply with all of the applicable requirements of Chapters 1, 4, 5, 6 and 10 of this Code.

Chapter 5 – Initiating Devices

5.7.6 Video Image Smoke Detection. (continued)

5.7.6.2.1 Systems shall be designed in accordance with the performance-based design requirements of 5.3.

5.7.6.2.2 The location and spacing of video image smoke detectors shall comply with the requirements of 5.10.5

Chapter 5 – Initiating Devices

5.7.6 Video Image Smoke Detection. (continued)

5.7.6.3* Video signals generated by cameras that are components of Video Image Smoke Detection Systems shall be permitted to be transmitted to other systems for other uses only through output connections specifically for that purpose by the video system manufacturer.

Chapter 5 – Initiating Devices

5.7.6 Video Image Smoke Detection. (continued)

A.5.7.6.3 Facility owners and managers might desire to use cameras and their images for purposes other than smoke detection. The intent of this paragraph is not to prohibit additional uses, but to assure the integrity of the life safety smoke detection mission of the equipment.

Same requirements for 5.8.5 Video Image Flame Detection.

Chapter 5 – Initiating Devices

5.14 Fire Extinguisher Monitoring Device.

A fire extinguisher monitoring device shall indicate those conditions for a specific fire extinguisher required by NFPA 10, *Standard for Portable Fire Extinguishers* to a fire alarm control unit or other control unit.

Chapter 5 – Initiating Devices

A.5.14.5.2 Where duct detectors are used to initiate the operation of smoke dampers, they should be located so that the detector is between the last inlet or outlet upstream of the damper and the first inlet or outlet downstream of the damper. In order to obtain a representative sample, stratification and dead air space should be avoided. Such conditions could be caused by return duct openings, sharp turns, or connections, as well as by long, uninterrupted straight runs. In return air systems, the requirements of 5.14.4.2.2 take precedence over these considerations. (See Figure A.5.14.5.2.(a) and Figure A.5.14.5.2.(b))

Chapter 5 – Initiating Devices

A.5.14.5.2 (continued)
Usually it is necessary to manage smoke flow in buildings. Duct smoke detectors are used to shut down HVAC systems or initiate smoke management. Filters have a serious effect on the performance of duct smoke detectors. The location of the filter and the source of smoke must be considered during the design process. Where smoke detectors are installed downstream from the filters, they should be deemed to serve the purpose of providing an alarm indication of the occurrence of a fire in the HVAC Unit (filters, belts, heat exchangers, etc.).

Chapter 5 – Initiating Devices

A.5.14.5.2 (continued)

These detectors usually serve the purpose of protecting building occupants from the smoke produced by the HVAC unit fire, or smoke ingress via the fresh air intake of the unit. They cannot be expected to serve the purpose of providing detection for the return side of the system.

Where return side detection is required, that requirement should be fulfilled with separate detectors from those monitoring the supply side. In order to be effective, return air duct smoke detectors should be located such that there are no filters between them and the source of smoke.

Chapter 5 – Initiating Devices

A.5.14.5.2 (continued)
Sampling tubes should be oriented to overcome thermal stratification due to buoyancy of the smoke in the upper half of the duct. This condition occurs where duct velocities are low, buoyancy exceeds flow inertia or the detector is installed close to the fire compartment. A vertical orientation of sampling tube overcomes the effects of differential buoyancy.

Chapter 5 – Initiating Devices

A.5.14.5.2 (continued)
Where a detector is installed on a duct serving a single fire compartment, where the buoyancy exceeds the flow inertia of the air in the duct and the sampling tube cannot be oriented vertically, then the effects of the thermal stratification can be minimized by locating the detector sampling tube in the upper half of the duct.
The thermal stratification is not a concern where the detector is installed far from the fire compartment or where the smoke is at or close to the average temperature in the duct.

Chapter 6 – Protected Premises Fire Alarm Systems

Chapter 6 – Protected Premises Fire Alarm Systems

6.2.3* Nonrequired (Voluntary) Systems and Components.

6.2.3.1 Nonrequired protected premises systems and components shall meet the requirements of this Code.

6.2.3.2 Nonrequired systems and components shall be identified on the record drawings required in 4.5.2.3(2).

Chapter 6 – Protected Premises Fire Alarm Systems

A.6.2.3 Nonrequired fire alarm features are defined in 3.3.111. These are fire alarm systems or components that are not required by the building or fire codes, and are installed voluntarily by a building owner to meet site-specific fire safety objectives. There is a need to properly document the nonrequired system and components. Nonrequired components must be operationally compatible in harmony with other required components and shall not be detrimental to the overall system performance.

Chapter 6 – Protected Premises Fire Alarm Systems

A.6.2.3 (continued) It is for this reason that 6.2.3.1 mandates that nonrequired (voluntary) systems and components meet the applicable installation, testing and maintenance requirements of this code. It is not the intent of the code to have the installation of nonrequired (voluntary) systems or components trigger a requirement for the installation of additional fire alarm components or features in the building.

Chapter 6 – Protected Premises Fire Alarm Systems

A.6.2.3 (continued) For example, if a building owner voluntarily installs a fire alarm control panel to transmit sprinkler waterflow signals to a central station, that does not trigger a requirement to install other fire alarm system components or features, such as manual fire alarm boxes, occupant notification, or electronic supervision of sprinkler control valves. See also A.5.5.2.4 and A.7.1.5. Alternatively, supervision and power requirements are required to be taken into account for the nonrequired components/systems on the required fire alarm systems.

Chapter 6 –
Protected Premises
Fire Alarm Systems

Revise Section 6.3 to read as follows:

6.3 System Features. The features required for a protected premises fire alarm system shall be documented as a part of the system design and shall be determined in accordance with 6.3.1 through 6.3.3.

6.3.1 Required Systems. Features for required systems shall be based on the requirements of other applicable codes or statutes that have been adopted by the enforcing jurisdiction.

Chapter 6 –
Protected Premises
Fire Alarm Systems

6.3.2 Non-Required Systems. The features for a non-required system shall be established by the system designer based on the goals and objectives intended by the system owner.

Chapter 6 – Protected Premises Fire Alarm Systems

6.3.3.2* Dedicated Function Fire Alarm Systems.

6.3.3.2.1 In facilities without a building fire alarm system, a dedicated function fire alarm system shall be permitted and shall not be required to include other functions or features of a building fire alarm system.

6.3.3.2.2 Where a dedicated function fire alarm system exists and a building fire alarm system is subsequently installed, the systems shall be interconnected and comply with 6.8.2.

Chapter 6 – Protected Premises Fire Alarm Systems

A.6.3.3.2 Examples of dedicated function fire alarm systems would include an elevator recall control and supervisory panel, as addressed in 6.15.3.2 or a system used specifically to monitor sprinkler water flow and supervisory functions.

Chapter 6 – Protected Premises Fire Alarm Systems

6.8.4 Combination Systems. (continued)
A.6.8.4.7 Examples of signal classification are provided in Table A.6.8.4.7. This is not all-inclusive or prescriptive but is meant to illustrate a potential classification scheme. Actual schemes may vary depending upon the response plan and/or requirements of the authority having jurisdiction. Mass notification systems are allowed to take priority over the fire alarm audible notification message or signal. This is intended to allow the mass notification system to prioritize emergency signals on the basis of risk to building occupants. The designer should specify the desired operation, in particular, as to what should occur immediately after the mass notification message has completed.

Chapter 6 –
Protected Premises
Fire Alarm Systems

Add a new Section A.6.8.4.7 to read as follows:

A.6.8.4.7 (continued)

For instance:

In a fire situation...audible and visibles (strobes) resound (reactivate) upon release of the microphone. Or upon release of the microphone, the visibles (strobes) only reactivate, or upon release of the microphone, both the audible and visibles are turned “off” and will activate upon a subsequent alarm.

For Mass Notification situation... strobes continue to flash after release of microphone, or strobes follow the activation of microphone (only flashing when microphone is keyed).

Other variations can be considered.

Chapter 6 –
Protected Premises
Fire Alarm Systems

Add a new Section 6.8.4.11 to read as follows:
6.8.4.11* Live voice instructions originating from the protected premises fire or mass notification systems shall override all previously initiated signals and shall have priority over:
1) Any subsequent automatically initiated signals on that channel and,
2) Remotely generated mass notification messages.

Chapter 6 –
Protected Premises
Fire Alarm Systems

Add a new A.6.8.4.11 to read as follows:
A.6.8.4.11 When interfacing fire alarm and mass notification functions, The system designer should evaluate the proximity of the individual operating locations (controls/microphone). This requirement applies where mass notification systems are installed in buildings that do not have emergency voice alarm systems (in accordance with 6.9.2), otherwise, the provisions of 6.9.5.5 apply.

Chapter 6 – Protected Premises Fire Alarm Systems

6.8.5.5* Alarm Signal Initiation — Sprinkler Systems.
6.8.5.5.1 Where required to be electronically monitored, Waterflow alarm-initiating devices shall be connected to a dedicated function fire alarm control unit designated as "sprinkler waterflow and supervisory system," and permanently identified on the control unit and record drawings.
Exception: Where waterflow alarm-initiating devices are connected to a building fire alarm system, a dedicated function fire alarm control unit shall not be required.

The major purpose of this code change was to distinguish the difference between connecting sprinklers and other fire suppression systems to fire alarm systems that are required by code, but not creating the need for a fire alarm system by virtue of having a sprinkler/fire suppression system. This concept is similar to the concept of an elevator recall and supervisory system.

Chapter 6 – Protected Premises Fire Alarm Systems

Bi-Directional Amplifier Systems

6.10.2* Two-Way In-Building Radio Communications Enhancement Systems.

6.102.1 Installation of two-way in-building radio communications enhancement systems shall be permitted.

6.10.2.2 Two-way in-building radio communications enhancement systems shall be permitted to be monitored by the building fire alarm system.

Chapter 7 – Protected Premises Fire Alarm Systems

RECOMMENDATION: Delete “fire alarm system” from the text to read as follows:
7.1.3 The performance, location, and mounting of notification appliances used to initiate evacuation or relocation of the occupants, or for providing information to occupants or staff, shall comply with this chapter.
SUBSTANTIATION: The proposal does not alter the intent, but does make the application more generic and applicable to other systems such as Mass Notification Systems.

Similar Changes Made Throughout Chapter 7 to Accommodate MNS

Chapter 7 – Notification Appliances for Fire Alarm Systems

Add new 7.4.6 to read as follows and renumber existing section 7.4.6 to 7.4.7.

7.4.6 Exit Marking Audible Notification Appliance Requirements.

7.4.6.1* Exit marking audible notification appliances shall meet or exceed the frequency and sound level settings and guidelines specified in the manufacturer's documented instructions.

Chapter 7 – Notification Appliances for Fire Alarm Systems

7.4.6.2* In addition to 7.4.6.1, as a minimum, to ensure that exit marking audible notification appliance signals are clearly heard and produce the desired directional effects for 15.24 m (50 ft) within an unobstructed egress path, they shall meet the audibility requirements of 7.4.6.1, Narrow Band Tone Signaling for Exceeding Masked Thresholds, in at least one 1⁄3 octave band or one octave band within the effective frequency ranges of the interaural time difference (ITD), interaural level or intensity difference (ILD or IID), and anatomical transfer function or head-related transfer function (ATF or HRTF) localization cues. The signal shall penetrate both the ambient noise and the fire alarm signal.

Chapter 7 – Notification Appliances for Fire Alarm Systems

7.4.6.3 Where required, exit marking audible notification appliances shall be installed, tested, and maintained in accordance with the manufacturers instructions.

7.4.6.4* Where required, exit marking audible notification shall be located at the entrance to all building exits and areas of refuge as defined by the applicable building or fire code.

7.4.6.5 Where exit marking audible notification appliances are utilized to mark areas of refuge, they shall provide an audible signal distinct from that used for other exits that do not have areas of refuge.

Chapter 7 – Notification Appliances for Fire Alarm Systems

Add new section to read as follows:
7.5.2.6* The strobe synchronization requirements of this Chapter shall not apply where the visible notification appliances located inside the building are viewed from outside of the building.

Chapter 7 – Notification Appliances for Fire Alarm Systems

A.7.5.2.6 It is not the intent to establish viewing and Synchronization requirements for viewing locations outdoors. As an example, there is no need for floor No. 1 to be synchronized with floor No. 2 if there is no visible coupling as in an atrium.
Studies have shown that the effect of strobes on photosensitive epilepsy lessens with distance and viewing angle. As long as the composite flash rate is no greater than that produced by two listed strobes as allowed by 7.5.4.3.2, compliance is achieved.

Chapter 7 – Notification Appliances for Fire Alarm Systems

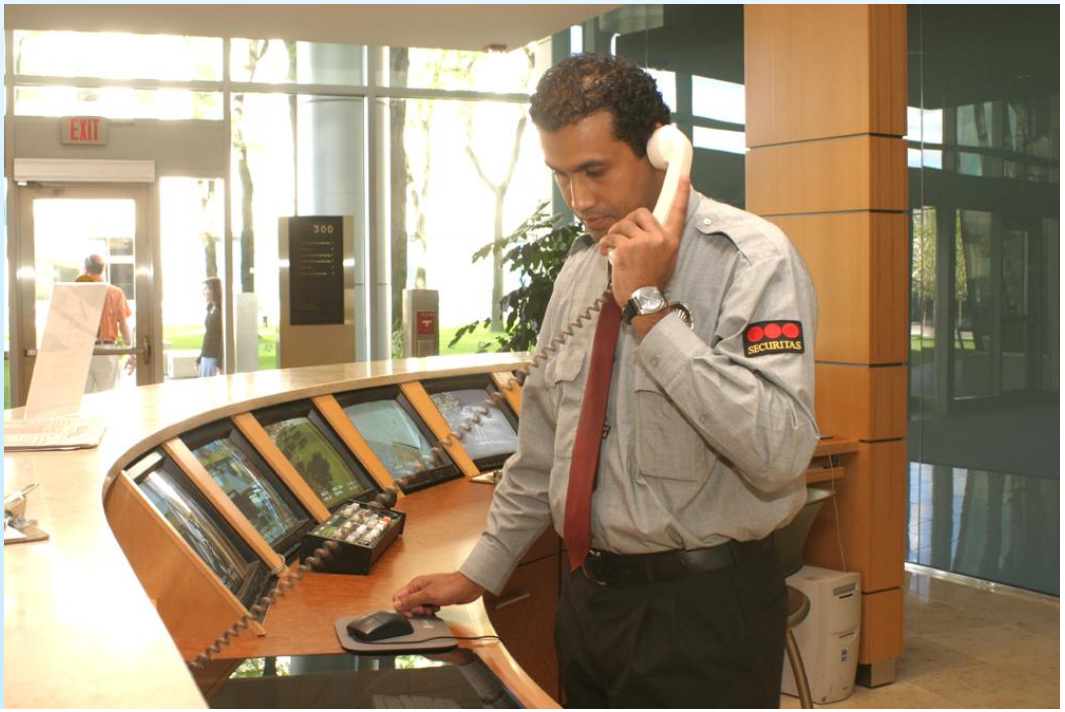
MNS Strobes Must Be Synchronized With FA Strobes

Strobes Shall Not Be Installed In Exit Stairways and Elevators

Chapter 8 – Supervising Station Fire Alarm Systems

Numerous Changes Granting More Discretionary Power to the AHJ

Coordination Of MNS Interfaces



Chapter 8 – Supervising Station Fire Alarm Systems

8.1.1* Where a protected premises alarm system has its fire signals sent to a supervising station, the entire system shall become a supervising station fire alarm system.

A.8.1.1 Supervising station fire alarm systems include the equipment at the protected premises as well as the equipment at the supervising station itself. While the operational requirements relating to the signals sent off-premises fall under the scope Chapter 8, the requirements of Chapter 6 also apply.

Refer to Figure A.8.1.1.

Chapter 8 – Supervising Station Fire Alarm Systems

8.2.3* Change of Service.

8.2.3.1 Supervising station customers or clients shall be notified in writing of any scheduled change in service that results in signals from their property being handled by a different supervising station facility.

Chapter 8 – Supervising Station Fire Alarm Systems

A.8.2.3 Changing where signals go from an existing to a new or different supervising station facility is sometimes done simply by changing a call-forward phone number. Or, within a supervising station, a new receiving computer and software can be constructed and lines changed over. Often, the account data is manually entered into the new system. Sometimes the data are transferred electronically. Errors can be made, causing the supervising station to get undefined alarms or incorrect account data, resulting in incorrect response by the supervising station. When such changes are made, the only visible way to ensure correct operation is to conduct an end-to-end test.

Chapter 9 – Public Fire Alarm Reporting Systems

10 Proposals All Acted in The Affirmative

Coordination of PRS With MNS

Chapter 10 – Inspection, Testing and Maintenance

Changes Made to Ensure Operational Integrity of Fire Alarm Systems

New Testing Requirements for Elevator and Other Interfaces

Chapter 10 – Inspection, Testing and Maintenance

Requirements Added to Accommodate:

Exit Marking Audible Notification Appliances

Video Image Smoke and Flame Detectors

Fire Extinguisher Monitoring Devices

Chapter 11 – Single- and Multiple-Station Alarms and Household Fire Alarm Systems

Balance of New Requirements:

Smoke Alarm With Voice!

Interconnection of Smoke Alarms in Existing and New Homes

Expanded to Cover Larger Homes

Less Occupancy Specific –
Allows Generic Application and Requirements for
AC Interconnect Smoke Alarms

Chapter 11 – Single- and Multiple-Station Alarms and Household Fire Alarm Systems

11.6.3:
(5) Operation of a switch (other than a circuit breaker), or a ground-fault circuit interrupter shall not cause loss of primary (main) power. Smoke alarms powered by AFCI-protected circuits shall have a secondary Power source.

11.8.2.2 The interconnection of smoke or heat alarms shall comply with the following:
(4) Smoke or heat alarms shall not be interconnected with alarms from other manufacturers unless listed as being compatible with the specific model.

ANNEXES

New Additions, Corrections and Changes were made to Annex B

Chapter 4
Fundamentals

ANNEX E

Annex E is not a part of the requirements of this NFPA document but is included for informational purposes only.

NFPA 72 contains requirements that can impact the application of Mass Notification Systems.

Coordination of the functions of a mass notification [*Uniform Facilities Criteria* (UFC); UFC 4-021-01 DRAFT 20 September 2006 , Design and O&M: Mass Notification Systems] system with those of a fire alarm system is essential in order to provide effective communication in an emergency situation.

Chapter 4
Fundamentals

ANNEX E

Conflicting or competing signals or messages from different systems could be very confusing to occupants, and have a negative impact on the intended occupant response.
Where independent systems are used, the mass notification system would need to interface with the fire alarm system to effect related control actions such as temporary silencing of notification appliances.

Chapter 4
Fundamentals

ANNEX E

The use of a single integrated combination system might offer both economic and technical advantages. In any case coordination between system functions is essential.

NFPA 72-2007 Was Voted On By The NFPA Membership World Fire Safety Congress June 8, 2006 And Has Been Ratified By The Standards Council.

The Code Will be Available Late September – Early October