

An Update

NFPA 72 - 2010

National Fire Alarm & Signaling Code

Take Fire out of NFPA 72?

Why the change?

NFPA 72 now covers many issues in addition to Fire Alarm Systems.

- Combination Systems
- Video Imaging Detection
- Carbon Monoxide Detection
- Supervisory Service of Sprinkler Control Valves
- Water Level Supervisory – 5.15.3
- Water Temperature Supervisory – 5.15.4
- Room Temperature Supervisory – 5.15.5
- Fire Extinguisher Monitoring – 6.8.4.11



NFPA TCC Directive for 2010

Remove the word fire wherever possible

- Chapter 4 – Fundamentals of Fire Alarm Systems
- Chapter 8 – Supervising Station Fire Alarm Systems
- 8.3.7.1.1 Alarm signals initiated by manual fire alarm boxes, automatic fire detectors, waterflow from the automatic sprinkler system, or actuation of other fire suppression system(s) or equipment shall be treated as fire alarms.



NFPA 72 Name Change?

- Today – National Fire Alarm Code
- New Name
 - National Fire Alarm and Signaling Code



What is changing in 2010 of 72?

NFPA 72, 2010

Chapter Re-Organization

2007 edition had 11 Chapters

2010 edition will have 29 Chapters

- Administrative Chapters
- Support Chapters
- System Chapters
- Usability Chapters



NFPA 72 Chapters – Currently in 2007

- Chapters 1 – 4 Administration, Definitions & Fundamentals
- Chapter 5 – Initiating Devices
- Chapter 6 – Protected Premises Fire Alarm Systems
- Chapter 7 – Notification Appliances
- Chapter 8 – Supervising Stations
- Chapter 9 – Public Fire Alarm Reporting Systems
- Chapter 10 – Inspection, Testing & Maintenance
- Chapter 11 – Single & Multiple Station Alarms Household Systems



Administrative Chapters

- Chapter 1 Administration – 2007 Existing
- Chapter 2 Referenced Publications – 2007 Existing
- Chapter 3 Definitions – 2007 Existing
- Chapter 4 Reserved
- Chapter 5 Reserved
- Chapter 6 Reserved
- Chapter 7 Reserved
- Chapter 8 Reserved
- Chapter 9 Reserved



Support Chapters

- Chapter 10 Fundamentals – 2007 Chapter 4
- Chapter 11 Reserved
- Chapter 12 Circuits and Pathways – New
- Chapter 13 Reserved
- Chapter 14 Insp, Test & Maint. – 2007 Chapter 10
- Chapter 15 Reserved
- Chapter 16 Reserved
- Chapter 17 Initiating Devices – 2007 Chapter 5
- Chapter 18 Notification Appliances – 2007 Chapter 7
- Chapter 19 Reserved



Systems Chapters

- Chapter 20 Reserved
- Chapter 21 Emergency Control Functions – New
- Chapter 22 Reserved
- Chapter 23 Protected Premises Fire Alarm Systems – 2007 Chapter 6
- Chapter 24 Emergency Communications Systems - New
- Chapter 25 Reserved



Systems Chapters

- Chapter 26 Supervising Station Alarm Systems – 2007 Chapter 8
- Chapter 27 Public Emergency Alarm Reporting Systems – 2007 Chapter 9
- Chapter 28 Reserved
- Chapter 29 Single- and Multiple-Station Alarms and Household Fire Alarm Systems – 2007 Chapter 11



Usability

- Annex A Explanatory Material
- Annex B Engineering Guide for Automatic Fire Detection
- Annex C System Performance Design Guide
- Annex D Speech Intelligibility
- Annex E NEMA SB 30
- Annex F Sample Ordinance for Adopting NFPA 72
- Annex G Informational References
- Annex H Cross References



Fundamentals
Chapter 10

- The Chapter has been renamed Fundamentals. “Fire Alarm” deleted.
- The Chapter includes requirements for Emergency Communications Systems.
- The word “fire” has been removed throughout in relation to fire alarm systems, as the Code also covers Emergency Communications Systems.



Fundamentals
Chapter 10

- 10.4 Personnel Qualifications.**
- 10.4.1 System Designer.**
- 10.4.2 System Installer.**
- 10.4.3 Inspection, Testing, and Maintenance Personnel. (SIG-TMS)**
- 10.4.4 Supervising Station Operators. (SIG-SSS)**



Fundamentals
Chapter 10

- 10.5.6.1.2** Secondary circuits that provide power to the control unit and are not integral to the unit shall be protected against physical damage.
- *Added the protection of secondary power circuits.*



Fundamentals
Chapter 10

- 10.5.6.3 Capacity**
- 10.5.6.3.1.(A)** Battery calculations shall include a 20 percent safety margin to the calculated amp-hour rating
- *This provides alignment with UL 864 9th edition and the realization that over the life of a battery, it will decay.*



Fundamentals
Chapter 10

- 10.6 Signal Priority.** The priority of signals shall be in accordance with 10.6
- 10.6.1** ECS priority signals when evaluated by stakeholders through a risk analysis in accordance with 12.2.2.12 shall be permitted to take precedence over all other signals.
- *This includes fire alarm signals.*



Fundamentals
Chapter 10

- 10.15 Protection of Fire Alarm Systems.**
- *Exception (2) has been removed. This exempted the requirement for smoke or heat detector protecting the FACU, NAC's or DACT's if the building is fully sprinklered per NFPA 13.*



Fundamentals Chapter 10

10.18.2.1.2.7 Where not stored at the main fire alarm control unit, the location of these documents shall be identified at the main fire alarm control unit.

- *Requires the location of the Record of Completion to be identified at the FACU.*

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Fundamentals Chapter 10

10.18.2.1.2.8 If the documents are located in a separate enclosure or cabinet, the separate enclosure or cabinet shall be prominently labeled FIRE ALARM DOCUMENTS.

- *Documents related to the fire alarm system can no longer be hidden until found by an archeological expedition.*

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Fundamentals Chapter 10

Record of Completion.

- *Has been expanded to 12 pages to enhance its usability.*

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Circuits and Pathways - Chapter 12

- Wiring tables being replaced with a new system for specifying wiring redundancy and survivability
- Includes removal of all of the old class and style tables and designations and the implementation of new Classes that will be applicable to any type of fire alarm circuit, not just SLCs, IDCs, and NACs as in the past.
- The term "pathway" is used instead of circuit to account for the use of optical fibers, radio, hardwires, and anything else that may appear in the marketplace.

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Circuits and Pathways - Chapter 12

12.1 Application.

12.1.1 Paths (interconnections) shall be designated based upon the performance characteristics defined in this chapter.

12.2 Purpose.

12.2.1 This chapter describes the performance and survivability characteristics for defined class designations of signaling paths (interconnections).

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Circuits and Pathways - Chapter 12

12.2.2 A path's (interconnection's) class designation is dependant on the path's (interconnection's) capability to continue to operate during specified fault conditions.

12.2.3 The designation of the paths can also include the performance of the path (interconnection) to survivability from attack by fire.

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Circuits and Pathways -
Chapter 12

12.4.2.1 Pathway Class Designations

Pathways shall be designated as Class A, B, C, D, E, or X, depending on their performance as follows:

Class A*. A pathway with a redundant path. Operational capability continues past a single break. Conditions that affect the intended operation of the path are annunciated.

Class B. A pathway without a redundant path. Operational capability stops at a break. Conditions that affect the intended operation of the path are annunciated.

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Circuits and Pathways -
Chapter 12

Class C. One or more pathways where operational capability is verified via end-to-end communication, but the integrity of individual paths is not monitored. A loss of end-to-end communication is annunciated.

Class D. A pathway that has fail-safe operation, where no fault is annunciated, but the intended operation is performed instead.

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Circuits and Pathways -
Chapter 12

Class E. A pathway which is not monitored for integrity.

Class X. A pathway with a redundant path. Operational capability continues past a single break or short-circuit. Conditions that affect the intended operation of the path are annunciated.

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Circuits and Pathways -
Chapter 12

Survivability has also been assigned "levels" in recognition that one size does not fit all. For example:

12.1.2.5 Pathway Survivability Level 0

12.1.2.5.1 Pathway survivability Level 0 shall consist of the following:

- a. Pathways shall comply with the requirements of NFPA 70 Articles 760, 770 or 800

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Circuits and Pathways -
Chapter 12

12.1.2.7 Pathway Survivability Level 1

12.1.2.7.1 Pathway survivability Level 1 shall consist of the following:

- a. Pathways in buildings fully protected by an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems and with the interconnecting wiring or cables installed in metal raceways

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Circuits and Pathways -
Chapter 12

12.1.2.8 Pathway Survivability Level 2

12.1.2.8.1 Pathway survivability Level 2 shall consist of the following:

- a. 2-hour fire rated circuit integrity (CI) cable or,
- b. 2 hour fire rated cable system (electrical circuit protective system (s) or,
- c. 2-hour fire rated enclosure or protected area or,
- d. 2-hour performance alternatives approved by the authority having jurisdiction

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Circuits and Pathways - Chapter 12

12.1.2.9 Pathway Survivability Level 3

12.1.2.9.1 Pathway survivability Level 3 shall consist of the following:

- a. Pathways in buildings fully protected an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems and 2-hour fire rated circuit integrity (CI) cable or,
- b. Pathways in buildings fully protected an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems and 2 hour fire rated cable system (electrical circuit protective system(s)) or,



Circuits and Pathways - Chapter 12

- c. Pathways in buildings fully protected an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems and 2-hour fire rated enclosure or protected area or,
- d. Pathways in buildings fully protected an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems and 2-hour performance alternatives approved by the authority having jurisdiction



Circuits and Pathways - Chapter 12

Pathway Class Designations

- A, B, C, D, E, X

Survivability Levels

- 0, 1, 2, 3



Inspection, Testing, and Maintenance Chapter 14

- Includes Emergency Communications Systems.
- Revised requirements for the testing of intelligible voice communications.
- New allowance for automated testing.
- New requirements for the testing of gas detectors.



Inspection, Testing, and Maintenance Chapter 14

- New requirement for the replacement of combination smoke/carbon monoxide alarms after ten years.
- New requirements for the commissioning and testing of in-building emergency radio communication systems.



Inspection, Testing, and Maintenance Chapter 14

14.2.4 System Documentation.

14.2.4.1 The provided documentation shall include the current revisions of all fire alarm software and the revisions of software of any systems with which the fire alarm software interfaces.



Inspection, Testing, and Maintenance Chapter 14

14.2.4.2 The revisions of the fire alarm software, and the revisions of the software in the systems with which the fire alarm software interfaces, shall be verified for compatibility in accordance with the requirements of 23.2.2.1.1.

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Inspection, Testing, and Maintenance Chapter 14

14.2.7 Automated Testing.

14.2.7.1 Automated testing arrangements that provide equivalent means of testing devices to those specified in Table 14.4.2.2 at a frequency at least equivalent to those specified in Table 14.4.5 shall be permitted to be used to comply with the requirements of this chapter.

14.2.7.2 Failure of a device on an automated test shall result in an audible and visual trouble signal.

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Inspection, Testing, and Maintenance Chapter 14

14.2.8 Performance-Based Inspection and Testing. As an alternate means of compliance, subject to the authority have jurisdiction, components and systems shall be permitted to be inspected and tested under a performance-based program.

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Inspection, Testing, and Maintenance Chapter 14

14.4.4 Gas detectors shall be inspected, tested, and maintained in accordance with the manufacturers' published instructions.

➤ *Correlates with the addition of gas detection in Chapter 17.*

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Inspection, Testing, and Maintenance Chapter 14

14.4.7 Household Fire Alarm Systems.

14.4.8 Replacement of Smoke Alarms in One- and Two-Family Dwellings.

14.4.8.2 Combination smoke/carbon monoxide alarms shall be replaced when the end-of-life signal activates or 10 years from the date of manufacture, whichever comes first.

➤ *The Code now recognizes that these type of alarms are being used.*

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Inspection, Testing, and Maintenance Chapter 14

14.4.12 In-Building Emergency Radio Communication Systems.

This section was expanded from 2007 to cover:

- *Signal level testing.*
- *System commissioning testing.*
- *Test procedures*
- *Measurement parameters*
- *Acceptance Test*
- *Annual Tests*

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Inspection, Testing, and Maintenance Chapter 14

Record of Inspection and Testing

- Has been expended to 12 pages
- Includes mass notification system interface

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Initiating Devices Chapter 17

17.4.6 Initiating devices shall be installed in all areas, compartments, or locations where required by other NFPA codes and standards or as required by other governing laws, codes, or standards.

- This replaces AHJ, and has been added through the body of NFPA 72®.

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Initiating Devices Heat-Sensing Fire Detectors

17.6.2.2.2 Operating Temperature.

17.6.2.2.2.2 Heat-sensing fire detectors where the alarm threshold is field adjustable shall be marked with the temperature range.

17.6.2.2.2.3 Spot-type heat detectors shall also be marked with their RTI.

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Initiating Devices Heat-Sensing Fire Detectors

17.6.3.3 Beam Construction.

17.6.3.3.1 Spacing

17.6.3.3.1.3 Where the beams project more than 18 in (460 mm) below the ceiling and are more than 96 in. (2.44 mm) on center, each bay formed by the beams shall be treated as a separate area.

- This is a change from 8 feet.

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Initiating Devices Smoke-Sensing Fire Detectors

17.7.1.11 Protection During Construction.

17.7.1.11.1 Where detectors are installed for signal initiation during construction, they shall be cleaned and verified to be operating in accordance with the listed sensitivity, or they shall be replaced prior to the final commissioning of the system.

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Initiating Devices Smoke-Sensing Fire Detectors

17.7.1.11.2 Where detectors are installed but not operational during construction, they shall be protected from construction debris, dust, dirt and damage in accordance with the manufacturer's recommendations and verified to be operating in accordance with the listed sensitivity, or they shall be replaced prior to the final commissioning of the system.

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Initiating Devices Smoke-Sensing Fire Detectors

17.7.1.11.3 Where detection is not required during construction they shall not be installed until after all other construction trades have completed cleanup.

- *This is an expansion over previous text.*

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Initiating Devices Smoke-Sensing Fire Detectors

17.7.3.2 Spot-Type Smoke Detectors

17.7.3.2.1 Spot-type smoke detectors shall be located on the ceiling or, if on a sidewall, between the ceiling and 12 in. (300 mm) down from the ceiling to the top of the detector.

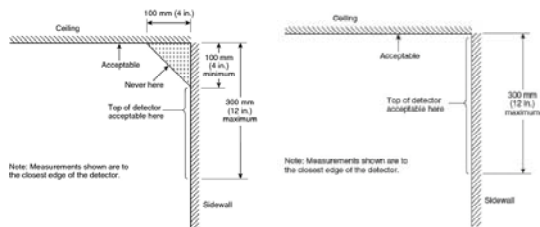
- *The 4 inch restriction has been removed.*

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Spacing of Smoke Sensors

72, 2007

72, 2010



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Initiating Devices Smoke-Sensing Fire Detectors

17.7.3.2.4.2 For level ceilings with beam depths of less than 10 percent of the ceiling height ($0.1 H$), smooth ceiling spacing shall be permitted. Spot-type smoke detectors shall be permitted to be located on ceilings or on the bottom of the beams.

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Initiating Devices Smoke-Sensing Fire Detectors

(2) (b) Where beam spacing is less than 40 percent of the ceiling height ($0.4 H$), the following shall be permitted for spot detectors:

- Smooth ceiling spacing in the direction parallel to the beams and at one-half smooth ceiling spacing in the direction perpendicular to the beams.
- Location of detectors either on the ceilings or on the bottom of the beams.

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Initiating Devices Smoke-Sensing Fire Detectors

The requirements for the following uses of spot-type smoke fire detectors have been made:

- Beam pockets formed by intersecting beams, including waffle or pan-type ceilings.
- Sloping ceilings with beams running parallel up slope.
- Sloping ceilings with beams running perpendicular across slope.
- Sloping ceilings with beam pockets formed by intersecting beams.

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Initiating Devices Chapter 17

17.10 Gas Detection.

17.10.1 General. The purpose and scope of Section 17.10 shall be to provide requirements for the selection, installation, and operation of gas detectors.

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Initiating Devices Chapter 17

17.10.2 Gas Characteristics and Detector Selection.

17.10.2.1 Gas detection equipment shall be listed for detection of the specific gas or vapor to be encountered.

17.10.2.2 Any gas detection system installed on a fire alarm system shall comply with all the applicable requirements of Chapters 1,10,14,17 and 23 of this Code.

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Initiating Devices Chapter 17

17.10.2.3 The requirements of this Code shall not apply to gas detection systems used solely for process control.

17.10.2.4 The selection and placement of the gas detectors shall be based on an engineering evaluation.

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Notification Appliances Chapter 18

18.4.2 Distinctive Evacuation Signal

➤ *Moved from Protected Premises to Notification Appliances.*

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Notification Appliances Chapter 18

18.4.5 Sleeping Area Requirements.

18.4.5.3 Effective January 1, 2014, where audible appliances are provided to produce signals for sleeping areas, they shall produce a low frequency alarm signal that complies with the following:

- (1) The alarm signal shall be a square wave or provide equivalent awakening ability.
- (2) The wave shall have a fundamental frequency of 520 Hz ± 10 percent.

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Notification Appliances Chapter 18

18.4.10 Voice Intelligibility. Within the acoustically distinguishable spaces (ADS) where voice intelligibility is required, voice communications systems shall reproduce prerecorded, synthesized, or live (e.g., microphone, telephone handset, and radio) messages with voice intelligibility.

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Notification Appliances Chapter 18

18.4.10.1 Acoustically distinguishable spaces (ADS) shall be determined by the system designer during the planning and design of all emergency communications systems.

18.4.10.2 Each ADS shall be identified as requiring or not requiring voice intelligibility.

18.4.10.3 Where required by the authority having jurisdiction, ADS assignments shall be submitted for review and approval.

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Notification Appliances Chapter 18

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

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Emergency Control Functions and Interfaces – Chapter 21

- Used to be Fire Safety Functions in Chapter 6
- Name changed to include non-fire alarm emergency functions
- Includes requirements for elevator recall

Protected Premises Chapter 23

- All voice communications material is moving out of chapter 6 and into chapter 24
- Fire Safety Functions are also moving to chapter 21
 - Generalizes material in chapter 21 and allows for both fire alarm and mass notification correlation

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Protected Premises Chapter 23

- Requirements for combination systems revised
 - Sharing wiring for robust systems will be easier
- Language added to Annex confirming that the Chapter is applicable to fire alarm systems used for mass notification.
- Language revised to not limit application to fire emergencies only.

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Protected Premises Chapter 23

23.8.5.1.2* Where connected to a supervising station, fire alarm systems employing automatic fire detectors or waterflow detection devices shall include a manual fire alarm box to initiate a signal to the supervising station.

Exception: Fire alarm systems dedicated to elevator recall control and supervisory service as permitted in Section 21.3.

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Protected Premises Chapter 23

A.23.8.5.1.2 The manual means required by 23.8.5.1.2 is intended to provide a backup means to manually activate the fire alarm system when the automatic fire detection system or waterflow devices are out of service due to maintenance or testing, or where human discovery of the fire precedes automatic sprinkler system or automatic detection system activation.

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Protected Premises Chapter 23

The manual fire alarm box required by 23.8.5.1.2 should be connected to a separate circuit that is not placed "on test" when the detection or sprinkler system is placed "on test." The manual means is only intended for use by the system technician or the building owner and should be located by the sprinkler riser or fire alarm control unit.

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Supervising Station Fire Alarm Systems – Chapter 26

8.6.3.2.1.4 Transmission Channels.

(A)* A system employing a DACT shall employ one telephone line (number). In addition, one of the following transmission means shall be employed:

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Supervising Station Fire Alarm Systems – Chapter 26

- (1) A second telephone line (number)
- (2) A cellular telephone connection
- (3) A one-way radio system
- (4) A one-way private radio alarm system
- (5) A private microwave radio system
- (6) A two-way RF multiplex system
- (7) A transmission means complying with 8.6.4

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Supervising Station Fire Alarm Systems – Chapter 26

8.6.4.4 Communications Integrity

Provision shall be made to monitor the integrity of the transmission technology and its communications path. The following requirements shall apply:

- (1) Any failure shall be annunciated at the supervising station within 5 minutes of the failure.
- (2) If communications cannot be established with the supervising station, an indication of this failure to communicate shall be annunciated at the protected premises.

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Supervising Station Fire Alarm Systems – Chapter 26

- (3) If a portion of the communications path cannot be monitored for integrity, a redundant communications path shall be provided.
- (4) Provision shall be made to monitor the integrity of the redundant communications path.
- (5) Failure of both the primary and redundant communications paths shall be annunciated at the supervising station within not more than 24 hours of the failure.

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Supervising Station Fire Alarm Systems – Chapter 26

- Certain legacy technologies (active multiplex, McCulloh, directly connected non-coded and private microwave) have been removed from the text of the document.
- Existing systems utilizing these technologies are acceptable, because all these technologies also comply with the general provisions of 26.6.3.1.



Public Emergency Alarm Reporting Systems - Chapter 27

- 2007 Edition
 - Public Fire Reporting
- 2010 Edition
 - Public Emergency Alarm Reporting Systems
 - changes in scope to clearly identify requirements already covered by the chapter and now include “emergency alarms” in addition to fire.



Public Emergency Alarm Reporting Systems - Chapter 27

- Clarification of the way users should apply Chapter
- Declaring in 27.1.7 that when a protected premises transmits signals to a communications center via a public emergency alarm reporting system, the entire alarm system becomes classified as an auxiliary alarm system.
- Section 27.4.1.1 describes the types of communications pathways that a public emergency alarm reporting system may use.
- Section 27.4.1.2 grants permission to use a public emergency alarm reporting system with emergency communications systems covered by Chapter 24



Single- and Multiple-Station Alarms and Household Fire Alarm Systems – Chapter 29

- **29.3.7.1*** Where notification for the hearing impaired is required by governing laws, codes or standards, or where otherwise provided in sleeping rooms occupied by people with mild to severe hearing loss, a low frequency alarm signal shall be provided. The low frequency alarm signal output shall comply with the following:



Single- and Multiple-Station Alarms and Household Fire Alarm Systems – Chapter 29

- (1) The alarm signal shall be a square wave or provide equivalent awakening ability.
- (2)* The wave shall have a fundamental frequency of 520 Hz + / - 10% .
- (3) The minimum sound level at the pillow shall be 75 dBA, or 15 dB above the ambient noise level, whichever is greater.



Single- and Multiple-Station Alarms and Household Fire Alarm Systems – Chapter 29

29.7.8.1.3 A Voice over Internet (VoIP) telephone circuit can be connected to a DACT when the following conditions are met:

(1)* The DACT shall be connected and perform as required in 26.6.3.2.1.3.

(2) The power supply battery backup of all VoIP equipment and related transmission equipment shall comply with the standby time requirements of Chapter 10.



Single- and Multiple-Station Alarms and Household Fire Alarm Systems – Chapter 29

29.7.8.1.4 A dedicated cellular telephone connection shall be permitted to be used as a single means to transmit alarms to a constantly attended remote monitoring location.

29.7.8.1.5 A MFVN shall be permitted to be connected to a DACT when the following conditions are met:

- (1) * The DACT shall be connected and perform as required in 26.6.3.2.1.3.
- (2) The power supply battery backup of all MFVN equipment and related transmission equipment shall comply with the standby time requirements of Chapter 10.

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Single- and Multiple-Station Alarms and Household Fire Alarm Systems – Chapter 29

29.8.2.2 (5) In multiple station configurations that are comprised with multiple purpose alarms, smoke only, and CO only alarms, if the multiple purpose alarm detects an abnormal amount of CO the product will need to sound the CO alarm signal on the remaining interconnected alarms. The smoke only alarm will have an option of remaining silent or to sound the CO alarm signal.

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Mass Notification and NFPA

NFPA and Mass Notification

- Air Force Civil Engineering petitioned NFPA in June 2003
 - Added Mass Notification to Annex of 72-2007
- NFPA Standards Council approved new Chapter in 72-2010
- Technical Committee formed
- Several meetings have taken place
 - Draft document created
 - ROP, Report on Proposals
 - ROC, Report on Comments

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NFPA and Mass Notification

New Technical Committee

Technical Committee Scope:

This Committee shall have primary responsibility for documents on the installation and performance of emergency communications systems (including mass notification systems), and their components.

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Chapter reference for MNS currently in NFPA 72, 2007

Chapters 4 thru 11 currently ends with:
Mass Notification Systems. See Annex E.

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NFPA and Mass Notification

Current NFPA 72 Annex E, Mass Notification Systems replaced by Chapter 24 **Emergency Communications Systems**

- Content from Chapter 6, Protected Premises Fire Alarm Systems
 - Emergency Voice Alarm Communications
 - Two-Way Communication Service



NFPA and Mass Notification

Chapter 24 Emergency Communications Systems

24.1 Introduction

Emergency Communications Systems (ECS) shall consist of two classifications of systems, one-way and two-way.



NFPA and Mass Notification

Chapter 24 Emergency Communications Systems

24.2 One-Way Emergency Communications Systems

24.2.1 In-Building Emergency Voice/Alarm Communications Systems

24.2.1.1* Section 24.2.1 shall be used in the design and application of emergency voice/alarm communications for fire alarm systems.



NFPA and Mass Notification

Chapter 24 Emergency Communications Systems

24.2.1.8 Priority.

24.2.1.8.1 When the fire alarm system has been activated, and mass notification has been given priority, an audible and visible indication shall be provided at the building fire alarm control unit.

24.2.1.8.2 The fire alarm system shall not automatically override emergency mass notification messages.



NFPA and Mass Notification

Chapter 24 Emergency Communications Systems

24.2.1.11* Relocation and Partial Evacuation.

The requirements of 24.2.1.11 shall apply only to systems used for relocation or partial evacuation.



NFPA and Mass Notification

- Chapter 24 will be a complete set of requirements for emergency communications systems – including requirements from other chapters by reference.
- Will include EVAC and Two-way communications relocated from Chapter 6.
 - Fire Fighter phones
 - Fire Alarm Voice Evacuation



One-Way ECS In-Building EVACs

- Relocation of section 6.9 and other requirements
- Survivability requirements to reference new chapter
- Permits a mass notification control unit to take control of fire alarm notification appliances including amplifiers, speakers, and strobes
- Will require a tone or voice message any time the priority is granted to the mass notification control unit
- Strobes used for dual purposes shall not be marked 'FIRE', strobes to be blank or 'ALERT'

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Strobes and NFPA



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One-Way ECS In-Building MNS

- Operation of MNS system is based on the emergency response plan
- Intelligibility of voice messages are required to meet the requirements of chapter 18 (notification)
- Visual notification to be completed through strobes, textual, graphic or video displays
- Re-labeling of existing strobes labeled fire is required to be completed in a manufacturers approved method

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One-Way ECS Wide Area MNS

- High powered speaker arrays (HPSA) for large outdoor areas
- Mounted at heights to prevent hearing damage to nearby persons
- Are not permitted to provide mass notification to occupants inside structures or buildings

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One-Way ECS Distributed Recipient MNS

- Communication to a wide range of targeted individuals or groups
- Systems include mass dialing systems, reverse 911, email, SMS (mobile phone text messages), and other directed communication methods

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Two-Way ECS Wired Emergency Services

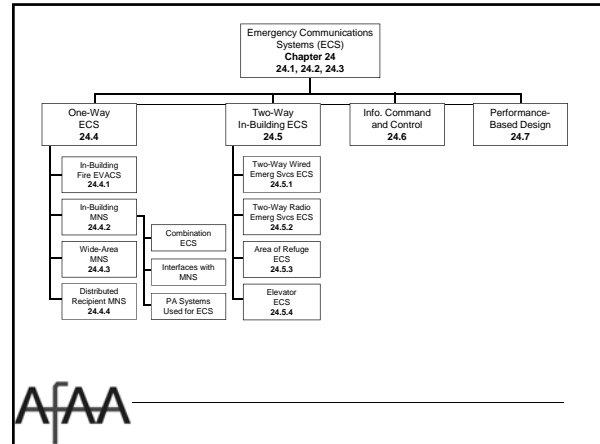
- Firefighter and warden telephones
- Elimination of common talk

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Two-Way ECS Radio Emergency Services

- In Building amplifiers
- Bidirectional amplifiers

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