

F62-06/07

803.7.3

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

803.7.3 Trim. Foam plastic shall be allowed for trim in accordance with Section 804.2, not in excess of 10 percent of the wall or ceiling area, provided such trim is not less than 20 pounds per cubic foot (320 kg/m³) in density, is limited to 0.5 inch (12.7 mm) in thickness and 8 inches (203 mm) in width, and exhibits a flame spread index not exceeding 75 when tested in accordance with ASTM E 84. The smoke developed index shall not be limited.

Reason: The wording in section 803.7.3 has the potential of creating a conflict with the wording in 804.2 and is basically superfluous.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F63-06/07

804.1, 804.2.3

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

804.1 Interior trim. Material, other than foam plastic, used as interior trim shall have a minimum Class C flame spread index and smoke-developed index, when tested in accordance with ASTM E 84, as described in Section 803.1.1. Combustible trim, excluding handrails and guardrails, shall not exceed 10 percent of the aggregate wall ~~or~~ and ceiling area areas in which it is located.

804.2.3 Area limitation. The interior trim shall not constitute more than 10 percent of the aggregate wall and ceiling ~~area~~ areas of a room or space.

Reason: As written, the text of 804.1 is unclear. It appears that the intent of the section is that the area trim not exceed 10% of the sum of the areas of the wall and the ceiling, and the proposal would accomplish that. This is consistent with section 804.2.3. The change in 804.2.3 is made for consistency.

If the committee believes that the intent is that the area of trim not exceed 10% of each individually, the text in 804.1 needs to be changed to delete the word "aggregate" and the change in 804.2.3 needs to be changed to replace the word "and" by the word "or" and to delete the word "aggregate". The sections would then read:

804.1 Interior trim. Material, other than foam plastic, used as interior trim shall have a minimum Class C flame spread index and smoke-developed index, when tested in accordance with ASTM E 84, as described in Section 803.1.1. Combustible trim, excluding handrails and guardrails, shall not exceed 10 percent of the ~~aggregate~~ wall or ceiling area in which it is located.

804.2.3 Area limitation. The interior trim shall not constitute more than 10 percent of the ~~aggregate~~ wall ~~and~~ or ceiling area of a room or space.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F64-06/07

804.1.1 (New), 804.2.5 (New)

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Add new text as follows:

804.1.1 Alternate testing When the interior trim material has been tested in accordance with NFPA 286 and complies with the acceptance criteria in 803.1.2.1 it shall not be required to be tested for flame spread index and smoke-developed index in accordance with ASTM E 84.

804.2.5 Heat release. When the interior trim material has been tested in accordance with NFPA 286 and complies with the acceptance criteria in 803.1.2.1, it shall not be required to be tested for flame spread index in accordance with ASTM E 84.

Reason: This proposal is really only clarification. Chapter 8 of the IBC (and Section 803.1.2) already make it clear that any material that meets the criteria of 803.1.2.1 is permitted to be used for interior finish. The criteria for interior trim (whether a foam plastic or not) are basically just a less severe requirement, that applies to smaller areas only. If the material is allowed to be used covering the entire wall or ceiling, it is also allowed to be used covering 10% of it.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F65-06/07

804.3 (IBC [F] 806.6), 802.1 (IBC 802.1)

Proponent: Jesse J. Beitel, Hughes Associates, Inc., representing Armstrong World Industries, Inc.

1. Add new text as follows:

804.3 Interior floor-wall base. Interior floor-wall base that is 6 inches (152 mm) or less in height shall be tested in accordance with NFPA 253 and shall not be less than Class II. Where a Class I floor finish is required, the floor-wall base shall be Class I. The classification referred to herein corresponds to the classifications determined by NFPA 253 as follows: Class I, 0.45 watt/cm² or greater; Class II, 0.22 watts/cm² or greater.

Exception: Interior trim materials that comply with Section 804.1.

802.1 General. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

INTERIOR FLOOR-WALL BASE. Interior floor finish trim used to provide a functional and/or decorative border at the intersection of walls and floors.

2. Add new text as follows:

IBC [F] 806.6 Interior floor-wall base. Interior floor-wall base that is 6 inches (152 mm) or less in height shall be tested in accordance with Section 804.2 and shall not be less than Class II. Where a Class I floor finish is required, the floor-wall base shall be Class I.

Exception: Interior trim materials that comply with Section 806.5.

IBC 802.1 General. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

[F] INTERIOR FLOOR-WALL BASE. Interior floor finish trim used to provide a functional and/or decorative border at the intersection of walls and floors.

Reason: The purpose of this proposal is to add a new definition and application of a test to clarify requirements of the Code.

This code proposal addresses the issue of testing and regulation of interior floor-wall base trim materials. In many cases, the floor covering material is just seamlessly turned-up or used at the intersection of the floor and the wall and thus it becomes the floor-wall base trim.

Currently, these materials could be considered as interior trim per Sections 804.1 and 806.5 and would be required to be tested per ASTM E 84 even though the floor covering may be required to be tested per NFPA 253. Based on the small amount of material used, it is very difficult to test these materials in a reliable manner, upside down in the ASTM E 84 test method.

Because of their location, at the floor-line, floor-wall base materials are not likely to be involved in a fire until the floor covering is also involved, usually at room flashover. Thus, it is reasonable that floor-wall base materials meet the same criteria as floor coverings. The proposal specifies that floor-wall base materials 6 in. or less in height be tested per NFPA 253 and the proposal provides requirements for this application.

The exception recognizes that some materials used as interior finish trim and that meet the flammability requirements of Section 804.1 can be used in this specific application without the need for additional testing.

The addition of the definition for Floor-Wall Base provides an understanding and clarification of these types of products versus other interior trim materials.

The reference to NFPA 253 is provided and NFPA 253 is currently referenced by the IBC.

A similar proposal was submitted in the 2004/2005 Code Cycle – FS152-04/05. In the Final Action Hearing in Detroit, a public comment was discussed and the membership voted to uphold the public comment and defeat the proposed code change. We have worked with the maker of the public comment and have in this proposal, incorporated changes which address their concerns.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F66-06/07

805.1.1.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

805.1.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following: (a) mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261 or (b) the components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260 and shall meet the requirements of Class I .

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1

Reason: This change is for consistency with 805.2.1.1 and 805.3.1.1. This offers an alternative test method (NFPA 261) for approval of cigarette ignition resistance of newly introduced upholstered furniture in Group I-1 occupancies (board and care facilities). The same test method is already permitted for use in Groups I-2 and I-3 occupancies. The difference between NFPA 260 and NFPA 261 is that NFPA 260 tests individual materials while NFPA 261 tests mocked-up composites. In fact, results from NFPA 261 are more likely to be predictive of real fire behavior.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F67-06/07

805.1.1.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

805.1.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following: (a) mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261 or (b) the components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260 and shall meet the requirements of Class I .

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

Reason: The proposal deletes the exception because: (a) sprinklers have no effect on controlling smoldering ignition (ignition by cigarettes), since they require an increase in room temperature to act and there will be no increase in room temperature until well after the upholstered furniture which fails the cigarette test has erupted into flames and (b) newly introduced upholstered furniture is very likely to meet smoldering ignition requirements since both the trade association for manufacturers of residential upholstered furniture (UFAC, Upholstered Furniture Action Council or its sister organization, the American Furniture Manufacturers Association) and the trade association for manufacturers of institutional and contract upholstered furniture (BIFMA, Business and Institutional Furniture Manufacturers Association) have been demanding that all their members comply with the smoldering resistance test. UFAC requires NFPA 260 (equivalent to ASTM E 1353 and the UFAC test) and BIFMA requires NFPA 261 (equivalent to ASTM E 1352). This proposal does not affect existing upholstered furniture.

The change to the charging section is for consistency with 805.2.1.1 and 805.3.1.1. This offers an alternative test method (NFPA 261) for approval of cigarette ignition resistance of newly introduced upholstered furniture in Group I-1 occupancies (board and care facilities). The same test method is already permitted for use in Groups I-2 and I-3 occupancies. The difference between NFPA 260 and NFPA 261 is that NFPA 260 tests individual materials while NFPA 261 tests mocked-up composites. In fact, results from NFPA 261 are more likely to be predictive of real fire behavior.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F68-06/07

805.1.2.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

805.1.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

Exception: Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

Reason: The proposal deletes the exception because: (a) sprinklers have no effect on controlling smoldering ignition (ignition by cigarettes), since they require an increase in room temperature to act and there will be no increase in room temperature until well after the mattress which fails the cigarette test has erupted into flames and (b) newly introduced mattresses will have to meet smoldering ignition requirements since the Federal Government has required compliance with 16CFR1632 since 1972. This proposal does not affect existing mattresses.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F69-06/07

805.2.1.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

805.2.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following: (a) mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261 or (b) the components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

Exceptions:

1. Upholstered furniture belonging to the patient in sleeping rooms of nursing homes (Group I-2), provided that a smoke detector is installed in such rooms. Battery-powered, single-station smoke alarms shall be allowed.
2. ~~Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

Reason: The proposal deletes the exception because: (a) sprinklers have no effect on controlling smoldering ignition (ignition by cigarettes), since they require an increase in room temperature to act and there will be no increase in room temperature until well after the upholstered furniture which fails the cigarette test has erupted into flames and (b) newly introduced upholstered furniture is very likely to meet smoldering ignition requirements since both the trade association for manufacturers of residential upholstered furniture (UFAC, Upholstered Furniture Action Council or its sister organization, the American Furniture Manufacturers Association) and the trade association for manufacturers of institutional and contract upholstered furniture (BIFMA, Business and Institutional Furniture Manufacturers Association) have been demanding that all their members comply with the smoldering resistance test. UFAC requires NFPA 260 (equivalent to ASTM E 1353 and the UFAC test) and BIFMA requires NFPA 261 (equivalent to ASTM E 1352). This proposal does not affect existing upholstered furniture.

This proposal does not affect the exception that allows patients in nursing homes to bring their own upholstered furniture, provided there is a smoke detector.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F70-06/07

805.3.1.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

805.3.1.1 Ignition by cigarettes Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following:

1. Mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261, or
2. The components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

Exception: ~~Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

Reason: The proposal deletes the exception because: (a) sprinklers have no effect on controlling smoldering ignition (ignition by cigarettes), since they require an increase in room temperature to act and there will be no increase in room temperature until well after the upholstered furniture which fails the cigarette test has erupted into flames and (b) newly introduced upholstered furniture is very likely to meet smoldering ignition requirements since both the trade association for manufacturers of residential upholstered furniture (UFAC, Upholstered Furniture Action Council or its sister organization, the American Furniture Manufacturers Association) and the trade association for manufacturers of institutional and contract upholstered furniture (BIFMA, Business and Institutional Furniture Manufacturers Association) have been demanding that all their members comply with the smoldering resistance test. UFAC requires NFPA 260 (equivalent to ASTM E 1353 and the UFAC test) and BIFMA requires NFPA 261 (equivalent to ASTM E 1352). This proposal does not affect existing upholstered furniture.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F71-06/07

805.3.1.2, 805.3.2.2

Proponent: Carl M. Ogburn, Chestnut Ridge Foam

Revise as follows:

805.3.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537, as follows:

1. The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.

Exceptions:

1. In Use Condition I, II and III occupancies, as defined in the *International Building Code*, upholstered furniture in rooms or spaces protected by approved smoke detectors that initiate, without delay, an alarm that is audible in that room or space.
2. ~~Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.

~~**Exception:** Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

805.3.2.2 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.

~~**Exception:** Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.

~~**Exception:** Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

Reason: Mattresses and furniture in detention and correction environments should not be allowed a "sprinkler exception" because of the way the cell environment is laid out, where steel bunks and other metal or concrete areas permit furniture (and especially mattresses) to be hidden in a way that the sprinkler lacks effectiveness. There is abundant evidence that prisoners start fires in cells, often by destroying the furniture or mattress items they have in their cells, and place them, together with other personal combustible items, in protected environments (such as underneath the steel metal pans), outside the reach of the water jet from the automatic sprinklers. Such items are usually placed underneath a bunk or lower bunk of solid steel, and intentionally ignited. When fires occur in cells the people in danger are not just the prisoners but also the guards and other prisoners, since the smoke spreads from the fire in the cell that has not been contained.

The difference in cost between a mattress that has fire performance complying with the existing code and a traditional prison mattress is negligible, so this will have little to no economic impact.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F72-06/07

805.3.2.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

805.3.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

~~**Exception:** Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

Reason: The proposal deletes the exception because: (a) sprinklers have no effect on controlling smoldering ignition (ignition by cigarettes), since they require an increase in room temperature to act and there will be no increase in room temperature until well after the mattress which fails the cigarette test has erupted into flames and (b) newly introduced mattresses will have to meet smoldering ignition requirements since the Federal Government has required compliance with 16CFR1632 since 1972. This proposal does not affect existing mattresses.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F73-06/07

805.4 (New)

Proponent: Bob Eugene, Underwriters Laboratories, Inc.

Add new text as follows:

805.4 Group R-1 facilities. The requirements in Sections 805.4.1 shall apply to all Group R-1 occupancies.

805.4.1 Mattresses. Newly introduced mattresses shall meet the requirements in Sections 805.4.1.1 through 805.4.1.3.

805.4.1.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

~~**Exception:** Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

805.4.1.2 Heat-release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E1590 or California Technical Bulletin 129 as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.

~~**Exception:** Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.

~~**Exception:** Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.~~

805.4.1.3 Identification. Mattresses shall bear a label of an approved agency, confirming compliance with the requirements of Sections 805.4.1.1 and 805.4.1.2.

Reason: The purpose of the change is to add requirements for mattresses in R-1 occupancies similar to those for health care and detention facilities.

Existing mattresses used in the hotels present a potential high fire load. This proposal requires new mattresses being introduced into these locations to comply with the same mattress flammability requirements as those provided in Health Care and Detention Centers. This is due to the transient nature of the persons using this type of space. The proposal only affects newly introduced mattresses, not existing mattresses.

Mattresses complying with these flammability requirements are readily available, and the cost of the mattresses is not prohibitive compared to mattresses that have not been found to comply with these requirements. Enforcement of these requirements by campus fire officials should not be a problem, especially if the facility replaces all existing mattresses at one time, which is often the case.

Bibliography: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=c21cd6194ae975d8514face5c5b7e765&rgn=div5&view=text&node=16:2.0.1.4.74&idno=16>

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F74-06/07

805.4 (New)

Proponent: Bob Eugene, Underwriters Laboratories, Inc.

Add new text as follows:

805.4 Group R-2 facilities. The requirements in Sections 805.5.1 shall apply to all Group R-2 occupancies.

805.4.1 Mattresses. Newly introduced mattresses shall meet the requirements in Sections 805.4.1.1 through 805.4.1.3.

805.4.1.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

Exception: Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

805.4.1.2 Heat-release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E1590 or California Technical Bulletin 129 as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.

Exception: Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.

Exception: Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

805.4.1.3 Identification. Mattresses shall bear a label of an approved agency, confirming compliance with the requirements of Sections 805.4.1.1 and 805.4.1.2.

Reason: Add requirements for mattresses in R-2 occupancies similar to those for health care and detention facilities.

Existing mattresses used in the dormitories present a potential high fire load. This proposal requires new mattresses being introduced into these locations to comply with the same mattress flammability requirements as those provided in Health Care and Detention Centers. This is due to the transient nature of the persons using this type of space. The proposal only affects newly introduced mattresses, not existing mattresses.

Mattresses complying with these flammability requirements are readily available, and the cost of the mattresses is not prohibitive compared to mattresses that have not been found to comply with these requirements. Enforcement of these requirements by campus fire officials should not be a problem, especially if the facility replaces all existing mattresses at one time, which is often the case.

Bibliography: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=c21cd6194ae975d8514face5c5b7e765&rgn=div5&view=text&node=16:2.0.1.4.74&idno=16>

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: The action on this proposal should be consistent with the action on code changes F75- and F76-06/07.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F75-06/07

805.4 (New)

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Add new text as follows:

805.4 Group R-2 dormitories and non-transient hotels and motels. The requirements in Sections 805.4.1 through 805.4.2.3 shall apply to dormitories and non-transient hotels and motels classified in Group R-2.

805.4.1 Upholstered furniture. Newly introduced upholstered furniture shall meet the requirements of sections 805.4.1.1 through 805.4.1.3

805.4.1.1 Ignition by Cigarettes Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following:

1. Mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261, or
2. The components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

805.4.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537, as follows.

1. The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 megajoules (MJ).

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

805.4.1.3 Identification. Upholstered furniture shall bear the label of an approved agency, confirming compliance with the requirements of Sections 805.4.1.1 and 805.4.1.2.

805.4.2 Mattresses. Newly introduced mattresses shall meet the requirements of sections 805.4.2.1 through 805.4.2.3.

805.4.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2.0 inches (51 mm).

805.4.2.2 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows.

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.

Exception: Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 megajoules (MJ).

Exception: Mattresses in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

805.4.2.3 Identification. Mattresses shall bear the label of an approved agency, confirming compliance with the requirements of Sections 805.4.2.1 and 805.4.2.2.

Reason: Upholstered furniture and mattresses in dormitories and in non-transient hotels and motels should comply with the same requirements on fire performance as institutions (Group I-1, I-2 and I-3 occupancies) and that is what this proposal recommends. The recommended test methods and criteria are identical to those in sections 805.1, 805.2 and 805.3 of the IFC.

This is particularly important now that CPSC is requiring that all residential mattresses sold in the US from July 1, 2007, must comply only with a test equivalent to CA TB 603 (16 CFR 1633). The CA TB 603 or 16 CFR 1633 tests can be "passed" with nothing more than a good ticking (cover fabric) or a barrier and with padding that is not fire safe. Therefore, mattresses that meet CA TB 603 or 16 CR 1633 are unsafe for dormitories and for non transient hotels and motels, where it is not uncommon to have individuals drunk in bed, falling asleep with a cigarette in their hand, and who have candles too. Nowadays, many travelers bring along 'mood candles' and leave them lit when they go to sleep and the same is true for students in dormitories and residents in non-transient hotels and motels. The proposal recommends the criteria and the test method in CA TB 129 (ASTM E 1590 is technically identical to CA TB 129 but was passed by a consensus standards organization and has no pass/fail criteria), which is a requirement that is met by a fire-safe mattress.

There is still no regulation for upholstered furniture in institutions nationwide, but the proposal is identical to what is being required in California (and has been required for many years). The proposal recommends the criteria and the test method in CA TB 133 (ASTM E 1537 is technically identical to CA TB 133 but was passed by a consensus standards organization and has no pass/fail criteria), which is a requirement that is met by a fire-safe upholstered furniture item.

Several major hotel chains have had informal requirements that their upholstered furniture comply with CA TB 133 and that their mattresses comply with CA TB 129 for many years. It is important that similar requirements apply to those R2 occupancies where the fire risk problem is higher.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: The action on this proposal should be consistent with the action on Code Changes F74- and F76-06/07.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F76-06/07

805.4 (New)

Proponent: Nancy Van Voorhees, New York State Office of Fire Prevention and Control

Add new text as follows:

805.4 Group R-2, college and university dormitories. The requirements in Section 805.4.1 shall apply to college and university dormitories classified in Group R-2.

805.4.1 Upholstered furniture. Newly introduced upholstered furniture shall meet the requirements of Sections 805.4.1.1 and 805.4.1.2.

805.4.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with NFPA 260 and shall meet the requirements for Class I.

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

805.4.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537 or California Technical Bulletin 133, as follows:

1. The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.

Exception: Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

Reason: Upholstered furniture can be a contributing factor in fatal fires in college and university dormitories. It has functioned as the material first ignited or as fuel fostering smoke production and fire development and spread in fatal dormitory fires including fatal fires in New Jersey and Illinois (see: [Fire Ruled Accidental In Which Southern Adventist Student Died, Blaze Started On A Third-Floor Couch In Thatcher Hall](http://www.chattanooga.com/articles/article_65999.asp), http://www.chattanooga.com/articles/article_65999.asp; and January 19, 2000 – Seton Hall University – Boland Hall. Three fatalities; 54 student, 2 firefighters, and 2 police officers sustained injuries. Essex County Prosecutor, Don Campolo said the fire was contained to the common area and was quickly extinguished, but that smoke and heat traveled through the dorm, which houses more than 600 students. "The couches were the primary combustible materials," said Campolo, <http://archives.cnn.com/2000/US/01/19/seton.hall.fire.05/#1>.

Often upholstered furniture is in common areas and where its burning can affect egress. Any fire involving upholstered furniture has the potential for injuries and deaths (see: February 2, 2000 Chapel Hill Fire Department crews were dispatched to Morrison Dorm on an automatic fire alarm. Upon arrival, fire crews discovered heavy smoke conditions in the lobby area on the ninth floor. Further investigation revealed a couch on fire in a student study lounge. Damage was estimated at \$5000 and no injuries were reported. The fire was contained to the room of origin. <http://www.sfpe-newengland.org/Firebrand%2009-00/article-collfiresafety.html>.

Concern for the size of fire that can be developed by upholstered furniture led the New York State Governor's Task Force on Campus Fire Safety to recommend an upholstered furniture flammability standard for colleges and universities.

Regulation of upholstered furniture flammability is presently addressed by the Fire Code for certain occupancies in Section 805. This proposal would add similar requirements for upholstered furniture used in college and university dormitories.

The inclusion of college and university dormitories with the occupancy groups addressed by Section 805 is similar to the grouping of dormitories with Group I in Section 807.1. As there is equal concern for flame propagation of curtains, drapes, hangings and other decorative materials used in both Group I occupancies and dormitories evidenced by the same requirements prescribed in Section 807.1, there should be equal concern (and requirements) for upholstered furniture flammability in both these occupancy groups.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: The action on this proposal should be consistent with the action on code changes F74- and F75-06/07.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F77-06/07

807.2

Proponent: William Conner, ASTC, Bill Conner Associates LLC, representing American Society of Theatre Consultants

1. Revise as follows:

807.2 Acceptance criteria and reports. Where required to be flame resistant, decorative materials shall be tested by an approved agency and meet the flame propagation performance criteria of NFPA 701, or such materials shall be noncombustible. Reports of test results shall be prepared in accordance with NFPA 701 and furnished to the fire code official upon request.

Exception: The fire code official is authorized to test existing draperies and drops on stages of Group A-1 occupancies using the field test complying with NFPA 705.

2. Add standard to Chapter 45 as follows:

NFPA

705-03 Recommended Practice for a Field Flame Test for Textiles and Films

Reason: The problem is that stage draperies and drops are moved from stage to stage and from storage to stage and it is impractical to have the curtains retested by a testing lab in each venue or jurisdiction each time they are used. There needs to be a simple means for a building or fire official to have an indication of the flame resistance of the draperies and drops without cutting a piece off and having it tested. This test does provide the official a means to safely test the material in the field and determine if the certificates are probably valid or determine that the material is obviously flammable and must be removed. While far from perfect, this test will permit current practices to continue even though the field test is no longer in NFPA 701.

Not permitting the field test will substantially increase costs to determine if materials comply.

Cost Impact: Not permitting the field test will substantially increase costs to determine if materials comply.

Analysis: Results of review of the proposed standard will be posted on the ICC website by August 20, 2006.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F78-06/07

807.4.2.1

Proponent: Marcelo M. Hirschler, GBH International, representing American Fire Safety Council

Revise as follows:

807.4.2.1 Foam plastics. Exposed foam plastic materials and unprotected materials containing foam plastic used for decorative purposes or stage scenery or exhibit booths shall have a maximum heat release rate of 100 kilowatts (kW) when tested in accordance with UL 1975.

Exceptions:

1. Individual foam plastic items or items containing foam plastic where the foam plastic does not exceed 1 pound (0.45 kg) in weight.
2. Cellular or foam plastic shall be allowed for trim ~~in accordance with Section 804.2 not in excess of 10 percent of the wall or ceiling area, provided it is not less than 20 pounds per cubic foot (320 kg per cubic meter) in density, is limited to 0.5 inch (12.7 mm) in thickness and 8 inches (204 mm) in width, and complies with the requirements for Class B interior wall and ceiling finish, except that the smoke developed index shall not be limited.~~

Reason: The wording in Section 807.4.2.1 exception 2 has the potential of creating a conflict with the wording in 804.2 and is basically superfluous.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F79-06/07

807.4.3.2

Proponent: Steve Cook, Washington State Association of Fire Marshals

Revise as follows:

807.4.3.2 Artwork. Artwork and teaching materials shall be ~~limited on the walls of corridors to not more than 20 percent of the wall area.~~ allowed to be attached directly to walls according to the following criteria:

1. The artwork and teaching materials shall not exceed 20 percent of the wall area in a room or corridor that is not protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1.
2. The artwork and teaching materials shall not exceed 50 percent of the wall area in a room or corridor that is protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Reason: The amount of combustible materials hung as decoration and display in school classrooms can be excessive. The excessive nature of these combustible materials significantly increases the danger to occupants in the event of a fire. These materials will contribute to the fuel loading without a method of controlling the quantity. This proposal will give the fire code official the means to limit artwork and similar materials hung on classroom walls that is absent from the current code language. It also recognizes the benefits of sprinkler protection by increasing the amount of materials allowed on corridor walls if sprinklers are provided. This proposal was passed by the ICC/IAFC Western/Canadian Code Action Committee, and narrowly defeated by the Joint Fire Service Review Committee.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F80-06/07

901.4.2; IBC 901.2

THIS PROPOSAL IS ON THE AGENDA OF THE IFC AND THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

Proponent: Robert J. Davidson, Davidson Code Concepts, LLC, representing himself

PART I – IFC

Revise as follows:

901.4.2 Nonrequired fire protection systems. Any fire protection system or portion thereof not required by this code or the *International Building Code* shall be allowed to be furnished for partial, selective or complete protection provided such installed system meets the requirements of this code and the *International Building Code*. Partial or selective systems shall be installed throughout the fire area in which they are located.

PART II – IBC FIRE SAFETY

Revise as follow:

901.2 Fire protection systems. Fire protection systems shall be installed, repaired, operated and maintained in accordance with this code and the *International Fire Code*.

Any fire protection system for which an exception or reduction to the provisions of this code has been granted shall be considered to be a required system.

Exception: Any fire protection system or portion thereof not required by this code shall be permitted to be installed for partial, selective or complete protection provided that such system meets the requirements of this code. Partial or selective systems shall be installed throughout the fire area in which they are located.

Reason: Where the code requires the installation of a fire protection system the intent is to protect the entire building, the portion of the building with the occupancy requiring protection or a specific hazard. In the case of automatic sprinkler systems the code defines those 'portions' of the building to be protected through the use of the term 'fire area'.

The application of this concept is a simple one as explained by the NFPA Automatic Sprinkler Systems Handbook, 2002 edition, page 77, "The success of sprinkler systems largely depends on the size of a fire when the first few sprinklers activate. ...Sprinkler systems designed in accordance with NFPA 13 are not intended to prevent a fire in an unsprinklered area from spreading into a sprinklered area."

When we specify a 'portion' of a building to be protected we define the perimeter of that 'portion' through the use of exterior walls and fire resistance rated wall or floor/ceiling construction components to define a 'fire area' in recognition of this design issue.

The application of automatic fire detection concepts is the same as those for automatic fire sprinkler protection in that the referenced standard, (NFPA 72), defaults to 'Total (Complete) Coverage' of the entire building unless the relevant code, standard, law or authority having jurisdiction require 'partial' or 'selective' coverage. This is because not putting detection throughout a building will allow a fire to grow undetected in the building compartment that is not equipped with detection to the point it will pose a threat to the 'protected' compartments with a substantial delay of warning to the occupants. NFPA 72 requires that even in the case of partial or selective coverage that the 'compartment' involved is thoroughly protected.

A form of construction needs to define the 'compartment' in this case and the recommended language will define that compartment as a 'fire area' providing needed guidance on the type of construction to use in the delineation of the 'compartment'.

When nonrequired systems are installed there is an expectation on the part of building users and occupants as well as emergency responders that a defined level of protection is present in that area and that the system will function as designed. Both NFPA 13 and NFPA 72 caution that the effectiveness of partial or selective systems can be negatively affected by unprotected areas of a building. Requiring the area to be partially or selectively protected to be defined by a 'fire area' allows the installed system to function as designed for that fire area and provides for an improved level of safety to occupants from a fire that occurs in the unprotected compartment by requiring fire resistant rated construction as a barrier to the spread of the fire, allowing additional time for escape.

The addition of the term 'selective' to the existing language of both the IBC and the IFC will provide correlation with the terms utilized by the referenced standard for fire alarm systems, NFPA 72.

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IBC FIRE SAFETY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F81–06/07

901.6.1.1 (New), 901.6.1.2 (New)

Proponent: Wayne R. Jewell, CBO, Chairman, ICC Hazard Abatement in Existing Buildings Committee

Add new text as follows:

901.6.1.1 Unsafe conditions requiring component replacement. The following conditions shall be deemed unsafe and shall cause the related component(s) to be replaced to comply with the provisions of this code:

1. Sprinkler heads having any of the following conditions:
 - 1.1. Signs of leakage;
 - 1.2. Paint or other ornamentation that is not factory applied;
 - 1.3. Evidence of corrosion including, but not limited to, discoloration or rust;
 - 1.4. Deformation or damage of any part;
 - 1.5. Improper orientation of sprinkler head;
 - 1.6. Empty glass bulb;
 - 1.7. Sprinkler heads manufactured prior to 1920;
 - 1.8. Replacement sprinkler heads that do not match existing sprinkler heads in orifice size, K-factor, temperature rating, coating or deflector type; or
 - 1.9. Sprinkler heads for the protection of cooking equipment that have not been replaced within one year.
2. Water pressure and air pressure gauges that have been installed for more than five years and have not been tested to within 3 percent accuracy.

901.6.1.2 Unsafe conditions requiring component repair or replacement. The following conditions shall be deemed unsafe and shall cause the related component(s) to be repaired or replaced to comply with the provisions of this code:

1. Sprinkler and standpipe system piping and fittings having any of the following conditions:
 - 1.1. Signs of leakage;
 - 1.2. Evidence of corrosion;

- 1.3. Misalignment; or
 - 1.4. Mechanical damage.
2. Sprinkler piping support having any of the following conditions:
 - 2.1. Materials resting on or hung from sprinkler piping;
 - 2.2. Damaged or loose hangers or braces;
3. Class II and Class III standpipe systems having any of the following conditions:
 - 3.1. No hose or nozzle, where required;
 - 3.2. Hose threads incompatible with fire department hose threads;
 - 3.3. Hose connection cap missing;
 - 3.4. Mildew, cuts, abrasions, and deterioration evident;
 - 3.5. Coupling damaged;
 - 3.6. Gaskets missing or deteriorated; or
 - 3.7. Nozzle missing or obstructed.
4. Hose racks and cabinets having any of the following conditions:
 - 4.1. Difficult to operate or damaged;
 - 4.2. Hose improperly racked or rolled;
 - 4.3. Inability of rack to swing 90 degrees out of the cabinet;
 - 4.4. Cabinet locked, except as permitted by this code;
 - 4.5. Cabinet door will not fully open; or
 - 4.6. Door glazing cracked or broken;
5. Portable fire extinguishers having any of the following conditions:
 - 5.1. Broken seal or tamper indicator;
 - 5.2. Expired maintenance tag;
 - 5.3. Pressure gauge indicator in "red";
 - 5.4. Signs of leakage or corrosion;
 - 5.5. Mechanical damage, denting or abrasion of tank;
 - 5.6. Presence of repairs such as welding, soldering or brazing;
 - 5.7. Damaged threads; or
 - 5.8. Damaged hose assembly, couplings or swivel joints.
6. Fire alarm and detection control equipment, initiating devices and notification appliances having any of the following conditions:
 - 6.1. Corroded or leaking batteries or terminals;
 - 6.2. Smoke detectors having paint or other ornamentation that is not factory-applied;
 - 6.3. Mechanical damage to heat or smoke detectors; or
 - 6.4. Tripped fuses.
7. Fire department connections having any of the following conditions:
 - 7.1. Fire department connections are not visible or accessible from the fire apparatus access road;
 - 7.2. Couplings or swivels are damaged;
 - 7.3. Plugs and caps are missing or damaged;
 - 7.4. Gaskets are deteriorated;
 - 7.5. Check valve is leaking; or
 - 7.6. Identification signs are missing.
8. Fire pumps having any of the following conditions:
 - 8.1. Pump room temperature is less than 40 degrees F;

Exception: Pump room housing a diesel pump equipped with an engine heater.
 - 8.2. Ventilating louvers are not freely operable;
 - 8.3. Corroded or leaking system piping;
 - 8.4. Diesel fuel tank is less than two-thirds full; or
 - 8.5. Battery readings, lubrication oil or cooling water levels are abnormal.

Reason: The ICC Board approved the development of a new code with the scope including a compilation of current provisions in the I-Codes which address hazards such as those from fire as well as the development of new requirements relative to issues such as hazardous conditions due to structural issues. This would provide a single source code book for all disciplines to be used by building owners to bring their existing building stock up to minimum standards and enforcing agencies when performing inspections of existing buildings. The Hazard Abatement of Existing Buildings Committee (HAEB) was formed to develop this code.

During this 06/07 cycle, the committee is proposing multiple unsafe conditions requirements for inclusion within the text of the existing International Codes, predominately the *International Property Maintenance Code* and the *International Fire Code*. These requirements will later be extracted from these International Codes and placed into a new International Code dealing primarily with unsafe conditions and the abatement

thereof. It is intended that the maintenance of these provisions remain with the committee of origin. The draft of this new International Code is currently scheduled to be put through the 07/08 code change process for both public proposals and public comments. The first edition of this new code is currently scheduled for 2009.

The purpose of this proposal is to afford the code official a list of conditions that are readily identifiable by the fire code official during the course of an inspection utilizing the *International Fire Code*. The specific conditions identified in this proposal are primarily derived from applicable NFPA standards, and represent conditions that are readily identifiable by the fire code official during the course of an inspection. All of the identified conditions pose a hazard to the proper operation of the respective systems. While these do not represent all of the conditions that pose a hazard or otherwise may impair the proper operation of fire protection systems and are currently enforceable by reference to the applicable standards, identification of conditions directly in the IFC will provide a more direct path for enforcement by the fire code official.

Conditions affecting sprinkler heads, and sprinkler and standpipe system piping and fittings are from Chapter 5 of NFPA 25. Conditions affecting Class II and Class III standpipe systems, hose racks and cabinets are from Chapter 6 of NFPA 25. Identified impairments of portable fire extinguishers are from Chapter 6 and 7 of NFPA 10. Conditions affecting fire alarm systems is primarily from Chapter 10 of NFPA 72. Impairments to fire department connections are from Chapter 12 of NFPA 25, and those related to fire pumps are from Chapter 8 of NFPA 25.

Section 901.6.1.1: This section describes the unsafe conditions that would require component replacement.

Section 901.6.1.2: This section describes the unsafe conditions that would require component repair or replacement.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F82–06/07 901.9

Proponent: Kevin Kelly, National Fire Sprinkler Association

Revise as follows:

901.9 Recall of fire protection components. Any fire protection system component regulated by this code that is the subject of a voluntary or mandatory recall under federal law shall be replaced within the time frame established by the CPSC, with approved, listed components in compliance with the referenced standards of this code. The fire code official shall be notified in writing by the building owner when the recalled component parts have been replaced.

Reason: Time frames have been established based on priority of the occupancy, the risk of the component recalled and the resources of the manufacturer. It is not reasonable to assume that all manufacturers will have the resources to provide replacement for all recalled products immediately upon discovery of a problem. The CPSC can establish time frames for compliance and the ICC codes need to allow the flexibility for building owners to replace components in accordance with the CPSC directives.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F83–06/07 902.1 (New) [IBC [F] 902.1 (New)]

Proponent: Ed Donoghue, Edward A. Donoghue Associates, Inc., representing National Elevator Industry, Inc.

Add new definition as follows:

902.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ELEVATOR GROUP. A grouping of elevators in a building located adjacent or directly across from one another that respond to a common hall call button(s).

Reason: Defines "elevator group" for application with Section 907.2.12.2. The term elevator group needs to be defined in order to more clearly designate areas requiring separate paging zones.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F84–06/07 902.1 (IBC [F] 902.1)

Proponent: John Guhl, Office of the State Fire Marshal, Sacramento, California

1. Revise definitions as follows:

902.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

AVERAGE AMBIENT SOUND LEVEL. The root mean square, A-weighted sound pressure level measured over a 24-hour period, or the time any person is present, whichever time period is less.

DETECTOR, HEAT. A fire detector that senses heat produced by burning substances, either abnormally high temperature or rate-of-rise or both. ~~Heat is the energy produced by combustion that causes substances to rise in temperature.~~

FIRE ALARM CONTROL UNIT. A system component that receives inputs from automatic and manual fire alarm devices and may be is capable of supplying power to detection devices and transponder(s) or off-premises transmitter(s). The control unit may be is capable of providing a transfer of power to the notification appliances and transfer of condition to relays or devices.

MULTIPLE-STATION SMOKE ALARM. Two or more single-station alarm devices that are capable of interconnection such that actuation of one causes the appropriate alarm signal to operate in all interconnected alarms. ~~all integral or separate audible alarms to operate.~~

SMOKE ALARM. A single- or multiple-station alarm responsive to smoke, ~~and not connected to a system.~~

2. Add new definition as follows:

ZONE, NOTIFICATION. An area within a building or facility covered by notification appliances which are activated simultaneously.

Reason: The definitions are intended to reflect the language used in the industry. These changes are in keeping with definitions in NFPA 72. The proposal is an effort made by a group of people from various segments of the industry and code application to improve usability of the code. Before addressing the specific technical issue involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),
Shane Clary (Bay Alarm)
John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hoppie (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is one in a series of code changes. This one incorporates a specific technical issue identified by the group. It is identified here separately in case the composite proposal is deemed too extensive.

AVERAGE AMBIENT SOUND LEVEL: This change is required for correlation with the definition and requirements used in NFPA 72 (2002).

DETECTOR, HEAT: This change is required for correlation with the definition and requirements used in NFPA 72 (2002). This revised definition includes all heat sources, not just limited to burning substances.

FIRE ALARM CONTROL UNIT: This change is required for correlation with the definition used in NFPA 72 (2002). In this case the word "may" is appropriate. The Fire Alarm Control Unit could have the capability to supply power or, alternately, that power could be supplied by an external source. Likewise, if the power supply is external, then the control for it is external as well.

MULTIPLE-STATION SMOKE ALARM: This change is required for correlation with the definition and requirements used in NFPA 72 (2002). This change requires the appropriate alarm signal to operate in all interconnected alarms, and will insure the approved type and synchronization of the notification signals.

SMOKE ALARM: This change is required for correlation with the definition and requirements used in NFPA 72 (2002). This change would allow the connection to a fire alarm system for annunciation if required.

ZONE, NOTIFICATION: This definition is being added to define the term used in the IBC & IFC. This term and definition also correlates with the definition and requirements used in NFPA 72 (2002).

Bibliography:

NFPA 72 – National Fire Alarm Code; 2002 edition.
NFPA 72 – National Fire Alarm handbook; 2002 edition

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F85–06/07

903.2.1, 903.2.2 (IBC [F] 903.2.1, [F] 903.2.2)

Proponent: Maureen Traxler, City of Seattle, Washington, Department of Planning & Development

Revise as follows:

903.2.1 Group A. An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3, and A-4 occupancies, the automatic sprinkler system shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is

located, and in all floors between the Group A occupancy and the highest level of exit discharge. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.

903.2.2 Group E. An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 20,000 square feet (1858 m²) in area.
2. Throughout every portion of educational buildings below the lowest level of exit discharge.

Exception: An automatic sprinkler system is not required in any fire area or area below the level of exit discharge where every classroom throughout the building has at least one exterior exit door at ground level.

Reason: "Level of exit discharge" is defined as "The horizontal plane located at the point at which an exit terminates and an exit discharge begins." Buildings on sloping sites often have more than one level of exit discharge. Unless a particular level of exit discharge is specified, these sections are ambiguous. This proposal specifies the highest level of exit discharge in Section 903.2.1, and the lowest level in Section 903.2.2 because those levels provide the occupants the earliest opportunity to leave the building.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F86–06/07

903.2.1.4 (IBC [F] 903.2.1.4)

Proponent: Greg Rogers, South Kitsap Fire & Rescue, representing ICC Joint Fire Service Review Committee

Revise as follows:

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²);
2. The fire area has an occupant load of 300 or more; or
3. The fire area is located on a floor other than the level of exit discharge.

~~**Exception:** Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.~~

Reason: If the facility is used exclusively for as participant sport area it is an A-3 and the exception is not needed.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F87–06/07

903.2.2 (IBC [F] 903.2.2)

Proponent: Kevin Kelly, National Fire Sprinkler Association

Revise as follows:

903.2.2 Group E. An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all ~~Group E fire areas~~ educational buildings greater than 20,000 square feet (1858 m²) in area.
2. Throughout every portion of educational buildings below the level of exit discharge.

Exception: An automatic sprinkler system is not required in any fire area or area below the level of exit discharge where every classroom throughout the building has at least one exterior exit door at ground level.

Reason: This proposal is intended to limit the size of an unsprinklered school to 20,000 square feet. This will increase the level of safety for occupants and reduce property damage by providing sprinkler protection for large schools. The current language would result in very large unsprinklered schools which would relying on multiple fire areas as the only built in means of controlling a fire.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F88–06/07 **903.2.7 (IBC [F] 903.2.7)**

Proponent: Ron Nickson, National Multi Housing Council/National Apartment Association

Revise as follows:

903.2.7 Group R. An automatic sprinkler system installed in accordance with Section ~~903.3~~ 903.3.1.1, 903.3.1.2 or 903.3.1.3, as applicable shall be provided throughout all buildings with a Group R fire area.

Exception: An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in Group R occupancies up to and including four stories in height above grade plane.

Reason: To clarify the application of NFPA 13R sprinkler system and that the height measurement is to be taken from the grade plane. The proposal is the result of an official ICC interpretation that clearly defines that the height measurement and the number of stories permitted with the NFPA 13R sprinkler system are to be measured from the grade plan.

ICC Official Interpretation:

Q: Is an NFPA 13R sprinkler system permitted in a Group R occupancy where four stories of the building are located above grade plane and one story is located below grade plane?

A: Yes. The definition of Building Height ' the vertical distance from grade plane to the average height of the highest roof surface ' establishes the grade plane as the reference point for determining building height and number of stories. Section 503 and Table 503 establish the maximum building height and number of stories permitted for all occupancies above the grade plane. The maximum number of stories and building height in Table 503 can be modified as permitted by Section 504.2, Automatic sprinkler increases, when a sprinkler system is installed throughout in accordance with NFPA 13R. With the modification in Section 504.2 the building above the grade plane can be four stories provided the overall building height does not exceed 60 feet, measured to the average height of the highest roof surface. The type of occupancy permitted in the basement, including residential, is not controlled by the Code provided the basement is separated from the residential portions of the building in accordance with the mixed-use provisions of the Code. S-2 occupancies can also be installed in the lower level of an R occupancy if they comply with the requirements of Section 508. The lower level, or basement, of the building must comply with the code definition for basement.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F89–06/07 **903.2.9 (IBC [F] 903.2.9)**

Proponent: Michael E. Dell'Orfano, South Metro Fire Rescue, representing Fire Marshal's Association of Colorado

Revise as follows:

903.2.9 Group S-2. An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.4 of the *International Building Code* ~~or where located beneath other groups~~ as follows.

1. Where the fire area of the enclosed parking garage exceeds 12,000 square feet (1115 m²); or
2. Where the enclosed parking garage is located beneath other groups.

Exception: Enclosed parking garages located beneath Group R-3 occupancies.

Reason: The purpose of this code change proposal is to address an inconsistency in the IFC with respect to sprinkler thresholds for S-1 and S-2 occupancies. Currently, in IFC Section 903.2.8 there are sprinkler thresholds established for S-1 occupancies; particularly, the fire area needs to reach a certain square footage before sprinklers are required. But, in IFC Section 903.2.9 there is no square footage threshold for S-2 enclosed parking garages; they all need to be sprinklered regardless of square footage. Then, IFC Section 903.2.9.1 brings back in a square footage threshold for commercial parking garages. So currently, the sprinkler requirements for S-2 enclosed parking garages are the most restrictive of the Group S occupancies, yet they are the least hazardous use. It appears then, that a square footage threshold is "missing" in IFC Section 903.2.9. This assumption is supported by the 2003 IFC Commentary which states that it was not the intent for an enclosed parking garage to be more restrictive than a repair garage. Therefore, this code change establishes a sprinkler threshold for S-2 parking garages that is similar to S-1 occupancies.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F90–06/07

903.2.10.1 (IBC [F] 903.2.10.1), 2306.6.1.1

Proponent: Gregory G Victor, Fire Department, Glendale, Arizona

Revise as follows:

903.2.10.1 Stories and basements without openings. An automatic sprinkler system shall be installed in every story or basement of all buildings where the floor area exceeds 1,500 square feet (139.4 m²) and where there is not provided at least one of the following types of exterior wall openings:

1. Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1009 or an outside ramp complying with Section 1010. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet.
2. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m²) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet.

2306.6.1.1 Number of doors required. A minimum of one access door shall be provided in each 100 lineal feet (30 480 mm), or fraction thereof, of the exterior walls ~~which~~ that face required fire apparatus access roads. The required access doors shall be distributed such that the lineal distance between adjacent access doors does not exceed 100 feet.

Reason: The purpose of the proposed change is to provide guidance to the reader regarding the separation of the access openings and doors required by the IFC.

This proposal intends to give the reader direction regarding the separation requirements for these doors and openings and to coordinate these two sections with official ICC interpretations on this issue. The current code language does not expressly state what the ICC publishes as the intent of the code. This proposal will correct that by inserting the appropriate language in each section.

The two ICC interpretations on this issue read as follows:

Q: A building is provided with openings in the exterior wall in lieu of the automatic fire suppression system in accordance with Section 903.2.10.1. Is the spacing between the jambs of adjacent openings in the exterior wall permitted to exceed 50 feet?

A: No. Section 903.2.10.1 requires that either exterior stairways, outside ramps or above-ground openings at least 20 square feet in size be located in each 50 linear feet or fraction thereof of exterior walls. The required openings must be distributed such that the lineal distance between adjacent openings does not exceed 50 feet. The distribution of openings provides fire fighters with ready access to the interior of the building as well as multiple locations to vent smoke from the story in a fire situation.

If the openings in the exterior wall are located without regard to the location of adjacent openings, it is possible that segments of the exterior wall are not provided with the required access to the interior of the building for fire-fighting purposes. Any arrangement of required stairways, ramps or openings that results in a portion of the wall 50 feet or more in length with no openings to the exterior does not meet the intent of the code that access be provided in each 50 lineal feet.

Section 2306.6.1.1 Number of Doors Required

Q: Where fire department access doors are required by Table 2306.2, Section 2306.6.1.1 requires the doors to be provided in each 100 lineal feet of exterior wall, or fraction thereof. Are the access doors required to be located such that the maximum distance between each door does not exceed 100 lineal feet?

A: Yes. The required openings must be distributed such that the lineal distance between adjacent openings does not exceed 100 feet.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F91–06/07

903.2.10.1.4 (IBC [F] 903.2.10.1.4) (New)

Proponent: Robert J. Davidson, Davidson Code Concepts, LLC, representing himself

Add new text as follows:

903.2.10.1.4 Security and hurricane protection. Window or door openings constructed of, or covered by security glazing, hurricane glazing or similar protective materials or components permanently installed on the opening shall not be considered as an opening for the purpose of this section.

Reason: When assessing the adequacy of an opening in a story pursuant to Section 903.2.10 Windowless story, the intent is that an opening be readily available for firefighting, rescue and ventilation. Though an opening may be closed at the time of the fire, the basis of this section is that the opening can be readily accessed with ordinary firefighting hand tools such as a pry bar, halligan tool or an axe used to break out glazing and clear the opening.

With the increased use of security protection and hurricane protection firefighters can no longer access these openings easily or quickly. Increased effort and the use of power tools is required in most cases. The delay in access not only endangers firefighters, but may endanger occupants requiring rescue. Because of this impact on ready access, openings with this level of protection should not receive credit when assessing a building under the windowless story provision. The proposed language will eliminate the use of such openings for credit under the windowless story provisions of Chapter 9.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F92-06/07

903.2.10.2 (IBC [F]903.2.10.2)

Proponent: Kevin Kelly, National Fire Sprinkler Association

Revise as follows:

903.2.10.2 Rubbish and linen chutes. An automatic sprinkler system shall be installed in at the top of rubbish and linen chutes and in their terminal rooms in accordance with NFPA 13. ~~Chutes extending through three or more floors shall have additional sprinkler heads installed within such chutes at alternate floors.~~ Chute sprinklers shall be accessible for servicing.

Reason: NFPA 13 and the IBC/IFC contradict on sprinkler protection of chutes and vertical shafts. The philosophy of section 8.14.2 of the 2002 edition of NFPA 13 is based on the combustibility of the chute or vertical shaft.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F93-06/07

903.3.1.1.1 (IBC [F]903.3.1.1.1)

Proponent: Kevin Kelly, National Fire Sprinkler Association

Revise as follows:

903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas, that would normally require sprinkler protection in accordance with NFPA 13, where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the fire code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.
4. In rooms or areas that are of noncombustible construction with wholly noncombustible contents.

Reason: The intent of this section was never to require detection equipment in areas which would not normally require sprinkler protection in the first place, but rather to require detection equipment as a replacement for sprinklers in areas where sprinkler protection could be inappropriate or undesirable. As currently written this section is being misapplied to require detectors in concealed spaces of non-combustible construction which would normally be exempt from sprinkler protection by NFPA 13.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F94-06/07

903.3.1.1.1 (IBC [F] 903.3.1.1.1)

Proponent: Michael Perrino, Code Consultants, Inc.

Revise as follows:

903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the fire code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.
4. In rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. In atriums and participant sports areas in accordance with the exceptions to Sections 914.4.1, 903.2.1.3 and 903.2.1.4.

[Note: For the coordinating change to the IBC, the atrium section is 404.3]

Reason: The purpose of the proposed change is to permit code allowances for fully sprinklered buildings when sprinkler systems are designed in accordance with the information in this change.

In atriums and participant sports areas, the installation of sprinklers provides little if any added benefit. The unique characteristics of these very high spaces create inherent conditions that improve life safety. Smoke and hot gases rise upward and away from the fire seat and where occupants would be on the floor. In very large spaces the volume of the space acts to dilute the products of combustion to less than hazardous levels. In effect, in every location where sprinklers can be effective, sprinklers would still be required. Thus, the building can still be considered as "equipped throughout" from a practical perspective, which should allow the other provisions in the code to be applied.

This proposal is no different than the omission of sprinklers as noted in exception 4 of this section. In both cases, the presence of sprinklers would be of no benefit.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F95-06/07

903.3.1.2 (IBC [F] 903.3.1.2)

Proponent: Ron Nickson, National Multi Housing Council/National Apartment Association

Revise as follows:

903.3.1.2 NFPA 13R sprinkler systems. Where allowed in buildings of Group R, up to and including four stories in height above grade plane, automatic sprinkler systems shall be installed throughout in accordance with NFPA 13R.

Reason: To clarify the application of NFPA 13R sprinkler system and that the height measurement is to be taken from the grade plane. The proposal is the result of an official ICC interpretation that clearly defines that the height measurement and the number of stories permitted with the NFPA 13R sprinkler system are to be measured from the grade plan. See attached official interpretation.

ICC Official Interpretation:

Q: Is an NFPA 13R sprinkler system permitted in a Group R occupancy where four stories of the building are located above grade plane and one story is located below grade plane?

A: Yes. The definition of Building Height ' the vertical distance from grade plane to the average height of the highest roof surface ' establishes the grade plane as the reference point for determining building height and number of stories. Section 503 and Table 503 establish the maximum building height and number of stories permitted for all occupancies above the grade plane. The maximum number of stories and building height in Table 503 can be modified as permitted by Section 504.2, Automatic sprinkler increases, when a sprinkler system is installed throughout in accordance with NFPA 13R. With the modification in Section 504.2 the building above the grade plane can be four stories provided the overall building height does not exceed 60 feet, measured to the average height of the highest roof surface. The type of occupancy permitted in the basement, including residential, is not controlled by the Code provided the basement is separated from the residential portions of the building in accordance with the mixed-use provisions of the Code. S-2 occupancies can also be installed in the lower level of an R occupancy if they comply with the requirements of Section 508. The lower level, or basement, of the building must comply with the code definition for basement.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F96–06/07

903.3.1.2.1 (IBC [F]903.3.1.2.1)

Proponent: Kevin Kelly, National Fire Sprinkler Association

Revise as follows:

903.3.1.2.1 Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units where the building is of Type V construction, provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch (25 mm) to 6 inches (152 mm) below the structural members and a maximum distance of 14 inches (356 mm) below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

Reason: This will clarify that these exterior sprinklers are to be installed below a roof or deck above. For the sprinkler to operate correctly they must have a roof to collect the heat and fuse the sprinkler open, otherwise the sprinkler would be of limited value and could potentially decrease the reliability of the interior sprinkler system. This appears to be the intent of this section since it provides sprinkler installation procedures below structural members and decks.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F97–06/07

903.3.1.3 (IBC [F] 903.3.1.3)

Proponent: Ron Nickson, National Multi Housing Council/National Apartment Association

Revise as follows:

903.3.1.3 NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems installed in one and two-family dwellings and congregate residences of Group R-3 and R-4 shall be installed throughout in accordance with NFPA 13D.

Reason: The code is not clear on when 13D sprinkler systems can be used in congregate residences and group homes. Congregate residence of Groups R-3 and R-4 are limited to 16 occupants maximum. This is consistent with the requirements in NFPA 13D. The code should be revised to reflect this.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F98–06/07

903.3.5.2 (IBC [F] 903.3.5.2)

Proponent: John C. Neal, Design Strategies, LLC

Revise as follows:

903.3.5.2 Secondary water supply. A secondary on-site water supply equal to the hydraulically calculated sprinkler demand, using the Density/Area Curves found in NFPA 13; and including the combined inside and outside hose stream requirement, shall be provided for high-rise buildings in Seismic Design Category C, D, E or F as determined by the *International Building Code*. The secondary water supply shall have a duration of not less than 30 minutes ~~as determined by the occupancy hazard classification in accordance with NFPA-13.~~

Exception: Existing buildings.

Reason: This change is needed to clarify the purpose of section 903.3.5.2.

If the intent of the code is to provide a water supply of at least 30 minute duration, the above proposed changes will accomplish that. Sprinkler demand in gallons per minute (gpm) can be determined by using the Density / Area Curves from NFPA 13. Then the combined outside and inside hose stream can be added in and multiplied by 30 to obtain a 30 minute duration. By specifically mentioning the combined hose stream, you remove any confusion whether to use the inside or outside hose stream.

As far as the water supply goes, typically most buildings that fall into the category of needing a secondary water supply, are going to have to install a water storage tank.

By referencing the occupancy hazard classification in accordance with NFPA 13, you open the floor to interpretation by the Fire Marshal. Now the Fire Marshal is going to make his interpretations based on sprinkler shop drawings. Based on experience, he will choose the most demanding remote area, and in many cases that is a mechanical room in the penthouse. That means that an otherwise light hazard building has just become an ordinary hazard building, thus increasing the size of the tank and costing the owner additional dollars that should not be required. Also, by referencing NFPA 13, the Fire Marshal can also point to the hose stream requirement found in NFPA 13 for Ordinary hazard, and make the tank large enough to provide 60 to 90 minute run time. By removing the part of section 903.3.5.2 that references the occupancy hazard classification, and just referencing the Density/Curve table, you have defined more clearly to the Fire Marshal what the code has intended.

Cost Impact: This change proposal should provide a savings in construction costs.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F99-06/07

903.4, 903.4.1 (IBC [F] 903.4, [F] 903.4.1)

Proponent: Greg Rogers, South Kitsap Fire & Rescue, representing ICC Joint Fire Service Review Committee

Revise as follows:

903.4 Sprinkler system monitoring supervision and alarms. All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures, and water-flow switches on all sprinkler systems shall be electrically supervised by a listed fire alarm control unit.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area systems serving fewer than 20 sprinklers.
3. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided.
4. Jockey pump control valves that are sealed or locked in the open position.
5. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

903.4.1 Signals Monitoring. Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved central station, remote supervising station or proprietary supervising station ~~as defined in NFPA 72~~ or, when approved by the fire code official, shall sound an audible signal at a constantly attended location.

Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

Reason: Clarifies the equipment requirements for supervision and monitoring of fire sprinkler systems. Reference to NFPA 72 is unnecessary because of the required approval for central, remote or proprietary stations.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F100-06/07

903.4.2 (IBC [F]903.4.2)

Proponent: Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc.

Revise as follows:

903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest

orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

Exception: Where a dedicated function fire alarm system is installed exclusively to transmit waterflow signals to a remote monitoring location, only one alarm notification appliance shall be installed in the vicinity of the required manual fire alarm box and will sound upon actuation of the waterflow alarm device or the manual fire alarm box.

Reason: There is a great deal of confusion about the requirements for occupant notification when a fire alarm system is only installed to provide supervising station monitoring for a sprinkler system. The last sentence in paragraph 903.4.2 states that when a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. NFPA 72 added a new definition for this type of fire alarm system and will be called a "dedicated function fire alarm system". The intent of that change was to avoid confusion with all the requirements of a "building fire alarm system." This exception is needed to clearly indicate that when a fire alarm system is only installed for monitoring the sprinkler system, full occupant notification is not required. Since the primary purpose of this fire alarm control unit is to provide a means for monitoring the sprinkler system and not provide occupant notification, adding a single audible alarm notification appliance in the vicinity of the required manual fire alarm box is necessary to provide feedback to the person who actuated this manual fire alarm box. I purposely did not include visible alarm notification to prevent any potential conflict with ADAAG requirements. I have submitted a separate proposal to add the requirement for this manual fire alarm box to the IFC. The Protected Premises Technical Committee of NFPA 72 feels it is better suited in the IBC and IFC than in NFPA 72 and intends to remove this requirement once it is included in the IBC and IFC.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F101–06/07

904.2.2 (New) [IBC [F] 904.2.2 (New)]

Proponent: Greg Rogers, South Kitsap Fire & Rescue, representing ICC Joint Fire Service Review Committee

Add new text as follows:

(IFC) 904.2.2 Cooking appliances. Cooking appliances required by Section 609 to have a Type I hood shall be provided with an approved automatic fire extinguishing system in accordance with this code.

(IBC) [F]904.2.2 Cooking appliances. Cooking appliances required by the *International Mechanical Code* or the *International Fire Code* to have a Type I hood shall be provided with an approved automatic fire extinguishing system in accordance with this code.

Reason: Ensures coordination and clarity for the code's intent to have any required cooking appliance and/or Type I hood to be protected by an approved automatic fire extinguishing systems.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F102–06/07

904.11.6.3, 904.11.6.3.1 through 904.11.6.3.3 (New)

Proponent: Daniel E. Nichols, New York State Department of State

1. Revise as follows:

~~904.11.6.3 Cleaning. Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned at intervals necessary to prevent the accumulation of grease as required by this section. Cleanings shall be recorded, and records shall state the extent, time and date of cleaning. Such records shall be maintained on the premises.~~

2. Add new text as follows:

904.11.6.3.1 Inspection. Hoods, grease-removal devices, fans, ducts, and other appurtenances shall be inspected at intervals specified in Table 904.11.6.3.1. Inspections shall be by completed by qualified individuals or by the fire code official.

**TABLE 904.11.6.3.1
COMMERCIAL COOKING SYSTEM INSPECTION FREQUENCY**

TYPE OF COOKING OPERATIONS	FREQUENCY OF INSPECTION
High-volume cooking operations such as 24-hour cooking, charbroiling, or wok cooking	3 months
Low-volume cooking operations such as places of religious worship, seasonal businesses, and senior centers	12 months
Cooking operations utilizing solid-fuel burning cooking appliances	1 month
All other cooking operations	6 months

904.11.6.3.2 Cleaning. If during the inspection it is found that hoods, grease-removal devices, fans, ducts, or other appurtenances have an accumulation of grease, such components shall be cleaned.

904.11.6.3.3 Records. Each inspection or cleaning shall be recorded and a copy of such shall be maintained on premises. Records for inspections shall state the individual performing the inspection, a description of the inspection, and when the inspection took place. Records for cleanings shall state the individual performing the cleaning and when the cleaning took place. Such records shall be maintained on the premises for a minimum of three years and be copied to the fire code official upon request.

Reason: The purpose of this code change proposal is to assist the fire code official by placing specific requirements for hoods and duct inspections within the IFC.

The IFC currently does not provide specific information on when kitchen hood systems need to be inspected. The current language states that hoods need to be inspected when grease accumulates. How does the fire code official know when this happens? It is clear that the intent of the section is to require a periodic inspection of kitchen hood systems. This is further supported by NFPA data that shows one-half of fires in assembly occupancies are caused by cooking appliances and 7% of all injuries are caused from a fire that started in the hood and duct system.

In the previous cycle, a similar proposal submitted by the proponent was denied. The previous proposal was scoped to add a reference to NFPA 96 for the inspection and maintenance provisions. Fire code officials voiced their concern that the requirements that fire code officials will enforce in the field need to be in the IFC, not a reference standard. Taking an approach to meet the needs of fire code officials, this proposal places the specific requirements right into the IFC.

It is the intent of the new proposal to give guidance to fire code officials for requiring periodic inspections of kitchen hood systems (based on use), direct requirements on cleaning when found to be deficient, and definitive records development and retention.

Bibliography: NFPA-Fire Loss Data of Assembly Occupancies, NFPA 96

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

**F103-06/07
905.2 (IBC [F] 905.2)**

Proponent: Moriel Kaplan, P.E., Schirmer Engineering Corporation

Revise as follows:

905.2 Installation Standard. Standpipe systems shall be installed in accordance with this section and NFPA 14.

Exception: A manual standpipe system shall be allowed when all of the following are met:

1. The water supply provided by local fire department equipment at the fire department connection can provide the minimum system demand requirements of NFPA 14 at the most remote hose connection as shown in hydraulic calculations.
2. The highest hose valve connection is not more than 75 feet (45720 mm) above the lowest level of fire department vehicle access.
3. The building does not contain a stage greater than 1,000 square feet in area or Class II standpipes, and
4. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and 903.3.1.2.

Reason: The purpose of this revision is to provide relief from the installation of an automatic standpipe system when local fire department resources are adequate.

The current text is overly restrictive as it requires a standpipe system to be supplied by both an attached water supply and the fire department connection. Many attached water supplies are not capable of providing the minimum design requirements without the use of a fire pump. The proposed text eliminates the need for, or the over-sizing of, a fire pump solely for the use of the standpipe system when fire fighting will be done by fire department personnel only.

With the exception of buildings containing stages over 1,000 square feet or Class II standpipes, the Code does not require hose to be located at the hose connections. The omission of the hose is to deter building occupants who are not physically able or adequately trained from trying to fight the fire. As such, the only users of a building's standpipes are the fire department personnel, who arrive at a fire scene with their own pump with which to pressurize the system. Numbers 1 and 2 of the proposed exception ensure that the fire department pump will be capable of supplying the demand flow and pressure to the most remote outlet of the standpipe system. Number 3 of the exception is provided to eliminate the possibility that occupants may utilize any installed fire hoses without the required amount of water flow and pressure.

Number 4 of the proposed exception is provided to ensure that the time it takes for the fire department to pressurize the standpipes will not delay the fire suppression activities. This sentence acknowledges the success rate of automatic sprinklers to either extinguish or control a fire.

When all four of the proposed exception criteria are met, the standpipe system will be able to function as intended by the Code without placing overly restrictive requirements (i.e., the need to provide a fire pump) on buildings.

NFPA 1901, *The Standard for Fire Apparatus*, 2004 edition requires all new pumper fire apparatus to deliver one-hundred percent of the rated capacity at 150 psi net pump pressure. At an elevation of 75 feet, using a pressure loss per foot of elevation of 0.433 psi, the total pressure delivered is 118 psi.

$$150\text{psi} - (0.433 \frac{\text{psi}}{\text{ft}} * 75\text{ft}) = 150\text{psi} - 32\text{psi} = 118\text{psi}$$

NFPA 14 requires a design pressure of 100 psi at the most remote hose connection when the building is not sprinklered. Provisions to reduce the required pressure are included in NFPA 14 based on suppression tactics and the installation of an automatic sprinkler system, although permission to utilize the exceptions must come from the authority having jurisdiction. It is implied that if the jurisdiction has the necessary fire department equipment the omission of the pressure requirement is acceptable.

The proposed text, without utilizing any permitted reductions in required pressure, includes both a 18 psi safety factor over the requirements of NFPA 14 as well as the requirement for a sprinkler system in accordance with either Section 903.3.1.1 or 903.3.1.2 of the Code. In addition, hydraulic calculations are provided to ensure that the minimum flow will still be maintained and the friction loss in the horizontal lengths of piping will not diminish the factor of safety to below that which is required.

Text similar to that being proposed is included in the BOCA National Building Code (BOCA). BOCA recognizes the capabilities of pumper fire apparatus and the practicality that where hose is not installed, the standpipes will not be used until the fire department personnel arrive. As such, the pressure requirement for standpipes is permitted to be relieved entirely from the original requirement of 65 psi when the building is equipped with an automatic sprinkler system and where there is not more than 150 feet between the lowest level of fire department access and the highest floor level. The commentary to 1999 BOCA Section 915.4 indicates that the reason for the allowed reduction in design pressure is two fold. First, "a height of 150 feet is well within the limitations that most fire department vehicles can effectively pressurize and supply" and second, automatic sprinklers will continue to operate and suppress a fire.

The Uniform Building Code and the Standard Building Code do not contain requirements for standpipe design pressure. Instead, they reference NFPA 14 for the design criteria. As such, when the Code was formulated, all standpipe design requirements were left to the referenced material.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F104-06/07

905.3.3 (IBC [F] 905.3.3)

Proponent: Daniel E. Nichols, New York State Department of State

Revise as follows:

905.3.3 Covered mall buildings. A covered mall building shall be equipped throughout with a standpipe system where required by Section 905.3.1. Covered mall buildings not required to be equipped with a standpipe system by Section 905.3.1 shall be equipped with Class I hose connections connected to a the automatic sprinkler system sized to deliver water at 250 gallons per minute (946.4 L/min) at the most hydraulically remote outlet while concurrently supplying the automatic sprinkler system demand. Hose connections shall be provided at each of the following locations:

1. Within the mall at the entrance to each exit passageway or corridor.
2. At each floor-level landing within enclosed stairways opening directly on the mall.
3. At exterior public entrances to the mall.

Reason: The purpose of this code change proposal is to clearly define the 'system' the hose connections need to be connected to as well as a more definitive water supply requirement for covered mall buildings utilizing this section.

The intent of the section is to not require the spacing and additional water flow requirements found in NFPA 14 for a single (or two) story mall. The section permits hose connection valves to be placed on a 'system' but doesn't specifically state 'automatic sprinkler system.' This code change clarifies that the hose connections are required to be connected to the building's required automatic sprinkler system. If this section was ever interpreted to utilize another system, such as the domestic water system, the fire code official may not be able to apply the inspection requirements of NFPA 25 to it since it is not a standpipe nor sprinkler system.

The additional revision to add 'while concurrently supplying the automatic sprinkler system' ensures that the design does not create a condition where firefighting operations diminish the flow to the automatic sprinkler system. Without providing a specific pressure requirement, this proposal also provides the hose connections with a minimum pressure condition.

The State of New York has utilized this covered mall provision since its adoption in 2002. The provision has been working well in New York but the current language is problematic to fire code officials since the intent is to provide hose connections from the sprinkler system piping. These changes will provide a more useful system to firefighters and clear direction for fire code officials doing inspections.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F105–06/07

905.6.2 (IBC [F] 905.6.2)

Proponent: Kevin Kelly, National Fire Sprinkler Association

Revise as follows:

905.6.2 Interconnection. In buildings where more than one Class III standpipe is provided, the standpipes shall be interconnected ~~at the bottom~~ in accordance with NFPA 14.

Reason: NFPA 14 requires standpipes to be interconnected close to the water source. This may not necessarily be at the bottom. For example the water source could be at the ground floor or at the top if the water supply is a water tank on the roof. This proposed language will also coordinate with Section 905.4.2.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F106–06/07

906.1

Proponent: Ron Nickson, National Multi Housing Council/National Apartment Association

Revise as follows:

906.1 Where required. Portable fire extinguishers shall be installed in the following locations.

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies.

Exception: In new and existing Group A, B, ~~E and R~~ E and ~~E~~ occupancies equipped throughout with quick response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

2. Within 30 feet (9144 mm) of commercial cooking equipment.
3. In areas where flammable or combustible liquids are stored, used or dispensed.
4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 1415.1.
5. Where required by the sections indicated in Table 906.1.
6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.

Reason: To add R occupancies to the exception to not require portable fire extinguishers in buildings equipped with quick response sprinkler systems. Note that the proposed exception only applies to the building sprinkler system is working and does not apply to buildings under construction covered by paragraph 3. The sprinkler systems in R occupancies have the best operation efficiency of all sprinkler systems along with one of the best records in saving lives. The small number of fires that would not be controlled by the activation of the sprinkler system would be well beyond the capacity of a portable fire extinguisher and at that time it would be more important for the occupant to leave the building than stay and fight the fire.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F107–06/07

907.2 (IBC [F]907.2)

Proponent: Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc.

Revise as follows:

907.2 Where required—new buildings and structures. An approved manual, automatic or manual and automatic fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in

accordance with Section 907.10, unless other requirements are provided by another section of this code. Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of automatic smoke detection, other automatic fire detection shall be allowed. A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

Exception: The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.

Reason: There is a great deal of confusion about the requirements for occupant notification when a fire alarm system is only installed to provide supervising station monitoring for a sprinkler system. NFPA 72 added a new definition for this type of fire alarm system and will be called a "dedicated function fire alarm system". The intent of that change was to avoid confusion with all the requirements of a "building fire alarm system." This manual fire alarm box is needed to provide a means of manually activating a fire alarm system that only contains automatic devices like waterflow switches or smoke detectors. It serves two purposes. One is for the sprinkler technician to be able to manually activate the fire alarm system in the event of a fire during the time the sprinkler system is down for maintenance. The second purpose is to allow building occupants a means to manually activate the fire alarm system prior to sprinkler water discharge in the event a fire is discovered. The NFPA 72 Protected Premises Technical Committee feels this requirement belongs in building and fire codes rather than in NFPA 72. NFPA 72 provides the "how to" for fire alarm devices required by building and fire codes. Building and fire codes provide the "when required". This requirement will be removed from NFPA 72 once it is in the building and fire codes.

The purpose of the proposed change is to clarify the fire alarm provisions and add into the code a requirement that currently exists in NFPA 72 so that it can be addressed in the proper forum – "where" as opposed to "how." This should be included in both the IFC and the IBC.

The proposal is an effort made by a group of people from various segments of the industry and code application to improve usability of the code. Before addressing the specific technical issue involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),
Shane Clary (Bay Alarm)
John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hopple (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is one in a series of code changes. This one incorporates a specific technical issue identified by the group. It is identified here separately in case the composite proposal is deemed too extensive.

Cost Impact: The code change proposal will not increase the cost of construction. It is already required by NFPA 72.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F108–06/07

907.2 (IBC [F] 907.2), 907.3

Proponent: Robert J. Davidson, Davidson Code Concepts, LLC, representing himself

Revise as follows:

907.2 Where required—new buildings and structures. An approved manual, automatic or manual and automatic fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.10, unless other requirements are provided by another section of this code. Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

Required automatic fire alarm systems shall be installed as Total (Complete) Coverage systems as described in NFPA 72, unless otherwise specified in this chapter. The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of automatic smoke detection, other automatic fire detection shall be allowed.

907.3 Where required—retroactive in existing buildings and structures. An approved manual, automatic or manual and automatic fire alarm system shall be installed in existing buildings and structures in accordance with

Sections 907.3.1 through 907.3.1.8. Where automatic sprinkler protection is provided in accordance with Section 903.3.1.1 or 903.3.1.2 and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Required automatic fire alarm systems shall be installed as Total (Complete) Coverage systems as described in NFPA 72, unless otherwise specified in this chapter. Devices, combinations of devices, appliances and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.

Reason: This proposal is a clarification to section 907.2 of the IBC and IFC to provide correlation with NFPA 72.

NFPA 72, National Fire Alarm Code, classifies 'detector coverage' as 'Total (Complete) Coverage', 'Partial Coverage', 'Selective Coverage', and 'Nonrequired Coverage'. The National Fire Alarm Code Handbook explains that the 'partial' and 'selective' coverage provisions were added to NFPA 72 in the 1999 edition to provide for 'partial' or 'selective' coverage where less than complete coverage is specified by a code, standard, law or authority. This added language makes it clear that a required system is to provide complete coverage unless a code section specifies otherwise.

Although the National Fire Alarm Code Handbook clearly explains the concept behind these additional types of coverage, not all installers and regulators possess the handbook version. By adding this language the code enforcer and the user will be directed to the appropriate sections of the referenced standard for detector coverage.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F109-06/07

907.2.1.1, 202 (IBC [B] 907.2.1.1, [B] 202)

Proponent: Jay Hall, Virginia Department of Housing and Community Development

1. Revise as follows:

907.2.1.1 System initiation in Group A occupancies with an occupant load of 1,000 or more and in certain nightclubs. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more and in nightclubs with an occupant load of 300 or more shall initiate a signal using an emergency voice/alarm communications system in accordance with NFPA 72.

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed 3 minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.

2. Add new definition as follows:

NIGHTCLUB. A Group A-2 occupancy where exhibitions, performances or other forms of entertainment are provided, alcoholic beverages are served, and music and space for dancing are provided.

Reason: This proposal is to add a clear definition of a nightclub and to extend the voice/alarm communications system signal initiation requirements to nightclubs with an occupant load of 300 or more. Ambient noise levels and strobe lighting mask and delay recognition of emergencies in large nightclubs. A communications system announcement is necessary to alert occupants and prevent panic.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F110-06/07

907.2.3 (IBC [B]907.2.3)

Proponent: Gerald M. Couse, New York State Education Department/Office of Facilities Planning

Revise as follows:

907.2.3 Group E. A manual and automatic fire alarm system shall be installed ~~in~~ throughout Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions: Group E occupancies without assembly use space.

1. ~~Group E occupancies with an occupant load of less than 50.~~
2. ~~Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:~~
 - 2.1. ~~Interior corridors are protected by smoke detectors with alarm verification.~~
 - 2.2. ~~Auditoriums, cafeterias, gymnasiums and the like are protected by heat detectors or other approved detection devices.~~
 - 2.3. ~~Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.~~
 - 2.4. ~~Off-premises monitoring is provided.~~
 - 2.5. ~~The capability to activate the evacuation signal from a central point is provided.~~
 - 2.6. ~~In buildings where normally occupied spaces are provided with a two way communication system between such spaces and a constantly attended receiving station from where a general evacuation alarm can be sounded, except in locations specifically designated by the fire code official.~~
3. ~~Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system, the notification appliances will activate on sprinkler water flow and manual activation is provided from a normally occupied location.~~

Reason: The reasoning is due to the use of assembly spaces in today's schools. These spaces are used by many different organizations as fund raisers, public service, even as shelters. Without a code change there is no required automatic detection in an E occupancy along with the distinct possibility of no sprinklers being required either. Imagine hundreds or maybe even thousands of people in a public assembly space and no one in the un-occupied portions of the building. There would be no early warning for the people in the public assembly space to vacate the area in the event of a fire scenario. The fact is, schools go out of their way to keep individuals restricted to the assembly use spaces when school is not in session thereby virtually ensuring the majority of the school building being unoccupied.

Cost Impact: The code change proposal will increase the cost of construction. We have been able to determine that for one of the more sophisticated, "smart", systems the following INSTALLED cost would be a ballpark figure in New York State for new construction. Detectors are approx \$165/detector, horn and strobe assembly \$185/asm, manual stations \$165/per unit, and control panel \$2,300.

The detectors cover approx 900 sq. ft. The horn and strobes are dependent on area configuration to be assured of audio AND visual notification, and the manual stations are of course dependent on the number of MARKED and/or REQUIRED Exits.

The estimated additional cost to a typical school building of less than 20,000 square feet per floor would be approximately \$5000 per floor. This cost is for the detectors and associated wiring, labor and possible control panel upgrade. The notification devices, manual stations and a control panel are already required. If this is done during construction, the labor cost is further reduced as the additional wiring is installed at the same time as the wiring for the currently required devices

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F111-06/07

907.2.10.2 (IBC [F] 907.2.10.2); IRC R313.3

Proponent: John Andres, Kidde, Residential and Commercial Division

THIS PROPOSAL IS ON THE AGENDA OF THE IFC COMMITTEE AND THE IRC BUILDING/ENERGY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR BOTH COMMITTEES

PART I – IFC

Revise as follows:

907.2.10.2 Power source. In new construction, required smoke alarms shall either receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup or they shall receive their power from a nonrechargeable, nonreplaceable primary battery that is capable of operating the device for at least 10 years. Smoke alarms shall emit a signal when the batteries are low. Wiring, if used, shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

PART II – IRC

Revise as follows:

R313.3 Power source. In new construction, ~~the~~ required smoke alarms shall either receive their primary power from the building wiring when such wiring is served from a commercial source, ~~and when primary power is interrupted, shall receive power from a battery~~ and shall be equipped with a battery backup or they shall receive their power from a

nonrechargeable, nonreplaceable primary battery that is capable of operating the device for at least 10 years. Smoke alarms shall emit a signal when the batteries are low. Wiring, if used, shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs or additions regulated by Section R313.2.1.

Reason: The proposed changes revise the code requirements to allow for new smoke alarm technology alternatives with advantages over currently required devices. Section 11.6.1 of NFPA 72 recognizes smoke alarms that are powered by a nonrechargeable, nonreplaceable primary battery that is capable of operating the device for at least 10 years as equivalent to devices powered by the building wiring with a battery backup. The proposed code changes will provide requirements that are consistent with NFPA 72 requirements and that recognize smoke alarms with nonrechargeable, nonreplaceable primary batteries as providing advantages of improved reliability over alarms powered by AC with battery backup.

Battery-operated smoke alarms utilizing wireless technology to provide interconnection are now available that meet the requirements of NFPA 72 and UL 217.

The requirement for smoke alarms to be powered by AC with battery backup was established to provide a reliable power supply to the alarm under normal operation and during periods of time when the primary AC power is not available. The use of nonrechargeable, nonreplaceable primary batteries provides reliable power regardless of the availability of AC power. These alarms will work during normal conditions and during power outages for the 10 plus year life of the alarm, after which it would be replaced with a new alarm consistent with the 10 year replacement requirement of NFPA 72.

NFPA data from 1999-2001 showed that smoke alarms powered only by replaceable batteries operated in 68 percent of the home structure fires in which they were present and hardwired smoke alarms with battery backup operated in 89 percent of the home structure fires in which they were present [Ahrens, 2004]. Missing, disconnected, or dead batteries are responsible for the vast majority of cases in which smoke alarms do not operate [Ahrens, 2004]. Unlike typical smoke alarms powered by replaceable batteries, smoke alarms powered by nonreplaceable batteries have the batteries sealed inside the device, so it is highly unlikely that the batteries will be missing or disconnected. The long life of the nonreplaceable batteries will also dramatically reduce the likelihood of dead batteries, which typically result from a lack of regular (yearly) battery changes for AC with battery backup alarms. UL 217 requires that smoke alarms with nonreplaceable batteries include a silence feature to allow users to temporarily silence a nuisance alarm without removing the smoke alarm or its batteries. Missing or disconnected batteries often result from users attempting to silence nuisance alarms; smoke alarms with non-replaceable batteries capable of operating the device for at least 10 years have addressed these issues with new technology.

Alarms with nonreplaceable batteries are expected to provide greater reliability than smoke alarms powered by AC with battery backup because the nonreplaceable batteries avoid the problems associated with replaceable backup batteries. Many people are under the impression that smoke alarms powered by the building wiring with battery backup provide 100 percent reliability. As reported by the US Air Force, residential smoke alarms powered by AC with battery backup were functional in less than 90 percent of homes they surveyed, four to five years after installation [Brown and Vickers, 1995]. Similar to smoke alarms powered only by replaceable batteries, they found that some users disabled their smoke alarms powered by AC with battery backup to avoid the low battery warning. Smoke alarms with a nonrechargeable, nonreplaceable primary battery are expected to provide improved reliability to smoke alarms powered by AC with battery backup.

Similar proposals have been submitted to coordinate with the relevant sections of other I-Codes (IFC 907.2.10.2; IFC 907.3.2.3; IRC R313.2.1, and IRC R313.3).

Bibliography:

Ahrens, M., "U.S. Experience with Smoke Alarms and Other Fire Detection/Alarm Equipment," National Fire Protection Association, Quincy, MA, 2004.

Brown, R.H. and Vickers, R.N., "Smoke Detector Operability and Reliability in Military Family Housing," WL-TR-96-3068, Wright Laboratory Air Base Technology Branch, Tyndall Air Force Base, FL, November 1995.

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IRC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F112–06/07

907.2.10.2 (IBC [F] 907.2.10.2), 907.3.2.3

Proponent: Gene Boecker, Code Consultants, Inc.

Revise as follows:

907.2.10.2 Power source. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup in ~~Group R-4~~ where they are connected to an emergency electrical system.

907.3.2.3 Power source. In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

Reason: The purpose of this code change is to address a potential discrepancy between what is expected operation for smoke alarms which are audible units and smoke alarms which also have integral visual devices.

The proposal is an effort made by a group of people from various segments of the industry and code application to improve usability of the code. Before addressing the specific technical issue involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),
Shane Clary (Bay Alarm)
John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hopple (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is one in a series of code changes. This one incorporates a specific technical issue identified by the group. It is identified here separately in case the composite proposal is deemed too extensive.

At the present time, there are on the market smoke alarms that have an integral strobe that do not have a built in battery for the strobe. Thus, if the power for the building goes down, while the smoke detection and horn of the device may still operate, the strobe will not. It is critical for rooms that are equipment with these smoke alarms that may house the hearing impaired that depend on the strobe to alert them to the alarm. The proposed change to 907.2.10.2 would require that a smoke alarm with an integral strobe that does not have a battery backup would be required to be connected to an emergency electrical system for the required backup power.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F113-06/07

907.2.12.1 (IBC [F] 907.2.12.1); IMC 606.2 through 606.2.4

Proponent: Dave Frable, U.S. General Services Administration

THIS PROPOSAL IS ON THE AGENDA OF THE IFC AND THE IMC CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IFC

Revise as follows:

907.2.12.1 Automatic fire detection. Smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section shall operate the emergency voice/alarm communication system. Smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection, elevator machine rooms and in elevator lobbies.
2. In the main supply air duct of each air-handling system having a capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m³/s), downstream of any filters.
- ~~2-~~ 3. In the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than ~~2,000~~ 15,000 cubic feet per minute (cfm) (0.94 m³/s). Such detectors shall be located in a serviceable area downstream of the last duct inlet.

4. In the return air system where multiple air-handling systems share common or supply return air ducts or plenums with a combined design capacity greater than 15,000 cfm (7.1 m³/s).
5. At each story in return air systems having a design capacity greater than 15,000 cfm (7.1 m³/s), where return air risers serve two or more stories.
- 3-6. At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system with a design capacity of greater than 15,000 cfm (7.1 m³/s). In Group R-1 and R-2 occupancies a listed smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm (2.4 m³/s) and serving not more than 10 air inlet openings.

Exception: Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the *International Fire Code*.

PART II – IMC

Revise as follows:

606.2 Where required. Smoke detectors shall be installed where indicated in Sections 606.2.1 through ~~606.2.3~~ 606.2.4.

Exception: Smoke detectors shall not be required where air distribution systems are incapable of spreading smoke beyond the enclosing walls, floors and ceilings of the room or space in which the smoke is generated.

606.2.1 Supply air systems. Smoke detectors shall be installed in supply air systems with a design capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m³/s), in the supply air duct or plenum downstream of any filters.

~~606.2.1~~ **606.2.2 Return air systems.** Smoke detectors shall be installed in return air systems with a design capacity greater than ~~2,000~~ 15,000 cfm (0.9 7.1m³/s), in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances.

Exception: Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the *International Fire Code*. The area smoke detection system shall comply with Section 606.4.

606.2.2 606.2.3 Common supply and return air systems. Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than ~~2,000~~ 15,000 cfm (0.9 7.1 m³/s), the return air system shall be provided with smoke detectors in accordance with Section 606.2.24.

Exception: ~~Individual smoke detectors shall not be required for each fan powered terminal unit, provided that such units do not have an individual design capacity greater than 2,000 cfm (0.9 m³/s) and will be shut down by activation of one of the following:~~

- ~~1. Smoke detectors required by Sections 606.2.1 and 606.2.3.~~
- ~~2. An approved area smoke detector system located in the return air plenum serving such units.~~
- ~~3. An area smoke detector system as prescribed in the exception to Section 606.2.1.~~

In all cases, the smoke detectors shall comply with Sections 606.4 and 606.4.1.

606.2.3 606.2.4 Return air risers. Where return air risers serve two or more stories and serve any portion of a return air system having a design capacity greater than 15,000 cfm (7.1m³/s), smoke detectors shall be installed at each story. Such smoke detectors shall be located upstream of the connection between the return air riser and any air ducts or plenums.

Reason: (New) IFC 907.2.12.1, paragraph 2 and IMC 606.2.1: Over the past few years, the U.S. General Services Administration has had a number of fire incidences that did not activate the building fire alarm system because there were no smoke detectors installed in the main supply air duct of the air-handling system downstream of any filter. We believe the solution would be to require smoke detectors to be installed in supply air systems so that fires that occur in the supply air filters can be discovered before it spreads. Establishing a 2,000 cfm threshold for installing detectors in supply air fans appears to be an industry standard.

(Revision) 606.2.1 and 606.2.2 (changed to 606.2.2 and 606.2.3, respectively) and (new) 907.2.12.1, paragraphs 3 & 4 (Note: the intent is for 907.2.12.1 to be have similar language as 606.2.2 and 606.2.3 so the codes are coordinated):

We also believe that the current requirement for installing smoke detectors in return air systems exceeding 2,000 cfm is overly restrictive. Furthermore, it seems to be completely opposite of what had been required by all of the legacy codes prior to the development of the 2000 IBC (i.e., previously, all three model building codes didn't require smoke detectors in return air systems unless they exceeded 15,000 cfm, not 2,000 cfm as currently required; and previous model codes required smoke detectors in supply air systems exceeding 2,000 cfm.

(New) IFC 907.2.12.1, paragraph 5 is material extracted from IMC existing 606.2.3 (changed to 606.2.4).

This is an editorial change to coordinate the two codes.

(Revision) 907.2.12.1 Paragraph No. 6 (formally Paragraph No. 3) – The purpose of this code change is to correlate this paragraph with the changes above. The code language contained in the IBC does not have a capacity threshold for return air ducts/plenum with connections to more than two stories and, therefore, all return duct/plenum system that connects more than two floors would require duct mounted smoke detectors at the connection to the riser regardless of the size of the system. This would be onerous to smaller buildings that have multi-story returns. In addition, the previous editions of the model building codes (pre-IBC 2000) did not require smoke detectors in multi-story return air systems unless they exceeded 15,000 cfm. This change also would correlate the capacity requirements currently specified in NFPA 90A - 2002 edition (NFPA 90A – 6.4.2).

(New) Exception to IFC 907.2.12.1 is material extracted from the IMC existing exception to 606.2.1 (changed to 606.2.2). This is an editorial change to coordinate the two codes.

(Deletion) Exception to IMC 606.2.2 (changed to IMC 606.2.3):

Exception needs to be deleted given the proposed new return air threshold will be increased from 2,000 cfm to 15,000 cfm.

As far as the cost impact, although there will be a new requirement to install smoke detectors in the supply side of the air handling equipment, the number of additional detectors required to be installed on the supply side should be offset by the greater number of detectors that will no longer be required on the return side of the air handling equipment.

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IMC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F114–06/07

907.3.2.2; IRC R313.2.1

Proponent: John Andres, Kidde, Residential and Commercial Division\

THIS PROPOSAL IS ON THE AGENDA OF THE IFC COMMITTEE AND THE IRC BUILDING/ENERGY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR BOTH COMMITTEES

PART I – IFC

Revise as follows:

907.3.2.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

- Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
- ~~Smoke alarms in existing areas are not required to be interconnected where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes.~~

PART II – IRC

Revise as follows:

R313.2.1 Alterations, repairs and additions. When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard wired.

Exceptions:

- ~~Inter connection and~~ Hard-wiring of smoke alarms in existing areas shall not be required where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring ~~and interconnection~~ without the removal of interior finishes.

2. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.

Reason: (IFC) Technological advances allow interconnection of smoke alarms without removal of interior finishes. Battery-operated smoke alarms utilizing wireless technology to provide interconnection are now available that meet the requirements of NFPA 72 and UL 217. Removing the exception provides a higher level of protection for existing construction, without posing a significant additional burden.

Interconnection of smoke alarms increases the level of protection by ensuring audibility of smoke alarms and alerting occupants that are distant from the fire. The requirement of interconnected smoke alarms in 907.3.2.2 recognizes the additional level of protection provided by interconnected smoke alarms. The intent of 907.3.2.2 Exception 2 is to exempt existing building areas from the impracticality and additional cost associated with providing hardwired interconnected smoke alarms when the interior wall or ceiling finishes were not being removed. However, new wireless interconnection technology in smoke alarms allows a practical, cost-effective alternative for existing building areas. The Consumer Product Safety Commission (CPSC) evaluated the economics of battery-operated smoke alarms with wireless interconnection capabilities compared to retrofitting hardwired interconnected smoke alarms [Lee, 2005]. In their analysis, the CPSC received quotes \$800 to \$1,200 for installing hardwired smoke alarms in a three bedroom, two-level home in the Washington, DC area. They estimated a cost savings of over \$800 using battery-operated wireless smoke alarms, given an estimated cost of \$350 for five battery-operated wireless smoke alarms. In reality, an even larger cost savings is available because the CPSC cost estimate for five battery-operated wireless smoke alarms was high; the current cost for five UL-listed smoke alarms with wireless interconnection is as low as \$200 (\$40 per alarm)

NFPA 72 Technical Committees have recognized the benefit of wireless interconnection technology for battery operated smoke alarms and have approved code changes in the upcoming revision (2006) of NFPA 72 that require interconnection of alarms in all dwellings, regardless of new or existing construction.

(IRC) The proposed changes revise the code to require interconnection of smoke alarms in existing dwellings for all instances when alterations, repairs or additions meet the criteria in R313.2.1 with no exceptions.

Technological advances allow interconnection of smoke alarms without removal of interior finishes. Battery-operated smoke alarms utilizing wireless technology to provide interconnection are now available that meet the requirements of NFPA 72 and UL 217. Removing the exception for interconnection provides a higher level of protection for existing construction, without posing a significant additional burden.

Interconnection of smoke alarms increases the level of protection by ensuring audibility of smoke alarms and alerting occupants that are distant from the fire. The requirement of interconnected smoke alarms in R313.2.1 recognizes the additional level of protection provided by interconnected smoke alarms. The intent of R313.2.1 Exception 1 is to exempt existing building areas from the impracticality and additional cost associated with providing interconnected smoke alarms when the interior wall or ceiling finishes were not being removed. However, new wireless interconnection technology in smoke alarms allows a practical, cost-effective alternative for existing building areas.

NFPA 72 Technical Committees have recognized the benefit of wireless interconnection technology for battery operated smoke alarms and have approved code changes in the upcoming revision (2006) of NFPA 72 that require interconnection of alarms in all dwellings, regardless of new or existing construction.

Bibliography:

Lee, A., "Possible Technologies for Improving the Audibility of Residential Smoke Alarms for Older Adults," CPSC-ES-0505, U.S. Consumer Product Safety Commission, Washington, DC, 2005.

Available online: <<http://www.cpsc.gov/library/foia/foia06/os/audibility.pdf>>

Cost Impact: The code change proposal will increase the cost of construction but provide a greater level of protection. Battery-operated multiple-station smoke alarms with wireless interconnection capability cost more than battery-operated single-station smoke alarms, but they provide a greater level of protection. Battery-operated multiple-station smoke alarms with wireless interconnection capability provide significant cost savings compared to hardwired interconnected multiple-station smoke alarms (see Substantiation for details) for an equivalent level of protection.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IRC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F115–06/07
907.3.2.3; IRC R313.2.1

Proponent: John Andres, Kidde, Residential and Commercial Division

THIS PROPOSAL IS ON THE AGENDA OF THE IFC COMMITTEE AND THE IRC BUILDING/ENERGY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR BOTH COMMITTEES

PART I – IFC

Revise as follows:

907.3.2.3 Power source. In Group R occupancies, ~~single-station~~ smoke alarms shall either receive their primary power from the building wiring ~~provided that where~~ such wiring is served from a commercial source and shall be equipped with a battery backup or they shall receive their power from a nonrechargeable, nonreplaceable primary battery that is capable of operating the device for at least 10 years. Smoke alarms shall emit a signal when the

batteries are low. Wiring, if used, shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are permitted to be solely battery operated: by replaceable batteries in existing buildings where no construction is taking place; ~~in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.~~

PART II – IRC

R313.2.1 Alterations, repairs and additions. When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and ~~hard-wired~~ either powered by the building wiring with a battery backup or powered by a nonrechargeable, nonreplaceable battery that is capable of operating the device for at least 10 years.

Exceptions:

1. Inter connection and hard-wiring of smoke alarms in existing areas shall not be required where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.
2. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.

Reason: (IFC) The proposed changes revise the code requirements to allow for new smoke alarm technology alternatives with advantages over currently required devices.

- Section 11.6.1 of NFPA 72 recognizes smoke alarms that are powered by a nonrechargeable, nonreplaceable primary battery that is capable of operating the device for at least 10 years as equivalent to devices powered by the building wiring with a battery backup. The proposed code changes will provide requirements that are consistent with NFPA 72 requirements and that recognize smoke alarms with nonrechargeable, nonreplaceable primary batteries as providing advantages of improved reliability over alarms powered by AC with battery backup.
- Minor wording changes were made for consistency with other I-codes (for example IFC 907.2.10.2)
- The exception to 907.3.2.3 has been revised so as not to burden existing buildings with the revised provisions of 907.3.2.3
- A portion of the exception to 907.2.3 was deleted since the revised provisions in 907.3.2.3 now provide an alternative to powering smoke alarms from the building wiring with commercial power and therefore this portion of the exception is no longer relevant.
- Battery-operated smoke alarms utilizing wireless technology to provide interconnection are now available that meet the requirements of NFPA 72 and UL 217.

The requirement for smoke alarms to be powered by AC with battery backup was established to provide a reliable power supply to the alarm under normal operation and during periods of time when the primary AC power is not available. The use of nonrechargeable, nonreplaceable primary batteries provides reliable power regardless of the availability of AC power. These alarms will work during normal conditions and during power outages for the 10 plus year life of the alarm, after which it would be replaced with a new alarm consistent with the 10 year replacement requirement of NFPA 72.

NFPA data from 1999-2001 showed that smoke alarms powered only by replaceable batteries operated in 68 percent of the home structure fires in which they were present and hardwired smoke alarms with battery backup operated in 89 percent of the home structure fires in which they were present [Ahrens, 2004]. Missing, disconnected, or dead batteries are responsible for the vast majority of cases in which smoke alarms do not operate [Ahrens, 2004]. Unlike typical smoke alarms powered by replaceable batteries, smoke alarms powered by nonreplaceable batteries have the batteries sealed inside the device, so it is highly unlikely that the batteries will be missing or disconnected. The long life of the nonreplaceable batteries will also dramatically reduce the likelihood of dead batteries, which typically result from a lack of regular (yearly) battery changes for AC with battery backup alarms. UL 217 requires that smoke alarms with nonreplaceable batteries include a silence feature to allow users to temporarily silence a nuisance alarm without removing the smoke alarm or its batteries. Missing or disconnected batteries often result from users attempting to silence nuisance alarms; smoke alarms with non-replaceable batteries capable of operating the device for at least 10 years have addressed these issues with new technology.

Alarms with nonreplaceable batteries are expected to provide greater reliability than smoke alarms powered by AC with battery backup because the nonreplaceable batteries avoid the problems associated with replaceable backup batteries. Many people are under the impression that smoke alarms powered by the building wiring with battery backup provide 100 percent reliability. As reported by the US Air Force, residential smoke alarms powered by AC with battery backup were functional in less than 90 percent of homes they surveyed, four to five years after installation [Brown and Vickers, 1995]. Similar to smoke alarms powered only by replaceable batteries, they found that some users disabled their smoke alarms powered by AC with battery backup to avoid the low battery warning. Smoke alarms with a nonrechargeable, nonreplaceable primary battery are expected to provide improved reliability to smoke alarms powered by AC with battery backup.

Similar proposals have been submitted to coordinate with the relevant sections of other I-Codes (IFC 907.2.10.2; IBC [F] 907.2.10.2; IRC R313.2.1, and IRC R313.3).

(IRC) The proposed changes revise the code requirements to allow for new smoke alarm technology alternatives with advantages over currently required devices.

- Section 11.6.1 of NFPA 72 recognizes smoke alarms that are powered by a nonrechargeable, nonreplaceable primary battery that is capable of operating the device for at least 10 years as equivalent to devices powered by the building wiring with a battery backup. The proposed code changes will provide requirements that are consistent with NFPA 72 requirements and that recognize smoke alarms with nonrechargeable, nonreplaceable primary batteries as providing advantages of improved reliability over alarms powered by AC with battery backup.
- Battery-operated smoke alarms utilizing wireless technology to provide interconnection are now available that meet the requirements of NFPA 72 and UL 217.

The requirement for smoke alarms to be powered by AC with battery backup was established to provide a reliable power supply to the alarm under normal operation and during periods of time when the primary AC power is not available. The use of nonrechargeable, nonreplaceable primary batteries provides reliable power regardless of the availability of AC power. These alarms will work during normal conditions and during power outages for the 10 plus year life of the alarm, after which it would be replaced with a new alarm consistent with the 10 year replacement requirement of NFPA 72.

NFPA data from 1999-2001 showed that smoke alarms powered only by replaceable batteries operated in 68 percent of the home structure fires in which they were present and hardwired smoke alarms with battery backup operated in 89 percent of the home structure fires in which they were present [Ahrens, 2004]. Missing, disconnected, or dead batteries are responsible for the vast majority of cases in which smoke alarms do not operate [Ahrens, 2004]. Unlike typical smoke alarms powered by replaceable batteries, smoke alarms powered by nonreplaceable batteries have the batteries sealed inside the device, so it is highly unlikely that the batteries will be missing or disconnected. The long life of the nonreplaceable batteries will also dramatically reduce the likelihood of dead batteries, which typically result from a lack of regular (yearly) battery changes for AC with battery backup alarms. UL 217 requires that smoke alarms with nonreplaceable batteries include a silence feature to allow users to temporarily silence a nuisance alarm without removing the smoke alarm or its batteries. Missing or disconnected batteries often result from users attempting to silence nuisance alarms; smoke alarms with non-replaceable batteries capable of operating the device for at least 10 years have addressed these issues with new technology.

Alarms with nonreplaceable batteries are expected to provide greater reliability than smoke alarms powered by AC with battery backup because the nonreplaceable batteries avoid the problems associated with replaceable backup batteries. Many people are under the impression that smoke alarms powered by the building wiring with battery backup provide 100 percent reliability. As reported by the US Air Force, residential smoke alarms powered by AC with battery backup were functional in less than 90 percent of homes they surveyed, four to five years after installation [Brown and Vickers, 1995]. Similar to smoke alarms powered only by replaceable batteries, they found that some users disabled their smoke alarms powered by AC with battery backup to avoid the low battery warning. Smoke alarms with a nonrechargeable, nonreplaceable primary battery are expected to provide improved reliability to smoke alarms powered by AC with battery backup.

Similar proposals have been submitted to coordinate with the relevant sections of other I-Codes (IFC 907.2.10.2; IFC 907.3.2.3, IBC [F] 907.2.10.2; and IRC R313.3).

Bibliography:

Ahrens, M., "U.S. Experience with Smoke Alarms and Other Fire Detection/Alarm Equipment," National Fire Protection Association, Quincy, MA, 2004.

Brown, R.H. and Vickers, R.N., "Smoke Detector Operability and Reliability in Military Family Housing," WL-TR-96-3068, Wright Laboratory Air Base Technology Branch, Tyndall Air Force Base, FL, November 1995.

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IRC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F116–06/07

907.4 (New), 907.4.1 (New) [IBC [F] 907.3 (New), [F] 907.3.1 (New)]

Proponent: Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc.

Add new text as follows:

907.4 Initiating devices. Where manual or automatic alarm initiation is required as part of a fire alarm system, the initiating devices shall installed in accordance with Sections 907.4.1 through 907.4.2.5.

907.4.1 Protection of fire alarm control unit. In areas that are not continuously occupied, a single smoke detector shall be provided at the location of each fire alarm control unit.

Exception: Where ambient conditions prohibit installation of smoke detector, a heat detector shall be allowed.

907.4 907.4.2 Manual fire alarm boxes. (No change to current text)

907.4.1 907.4.2.1 Location. (No change to current text)

907.4.2 907.4.2.2 Height. (No change to current text)

907.4.3 907.4.2.3 Color. (No change to current text)

907.4.4 907.4.2.4 Signs. (No change to current text)

907.4.5 907.4.2.5 Protective covers. (No change to current text)

Reason: The NFPA 72 Fundamental Technical Committee feels this requirement is more appropriate in the building and fire codes rather than NFPA 72. NFPA 72 provides the “how to” for fire alarm devices required by building and fire codes. This smoke detector is required to ensure the fire alarm system is capable of performing its function in the event of a fire in the vicinity of the fire alarm control unit. This smoke detector will activate the fire alarm control and allow it to either notify occupants or transmit a signal to a remote monitoring location before the fire impairs the fire alarm control unit. This requirement will be removed from NFPA 72 once it is in the building and fire codes.

Paragraph 907.4 is needed because we now would have two types of initiating devices listed rather than just manual fire alarm boxes.

This proposal will clarify the fire alarm provisions and add into the code a requirement that currently exists in NFPA 72 so that it can be addressed in the proper forum – “where” as opposed to “how.” This should be included in both the IFC and the IBC.

The proposal is an effort made by a group of people from various segments of the industry and code application to improve usability of the code. Before addressing the specific technical issue involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),
Shane Clary (Bay Alarm)
John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hopple (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is one in a series of code changes. This one incorporates a specific technical issue identified by the group. It is identified here separately in case the composite proposal is deemed too extensive.

Cost Impact: The code change proposal will not increase the cost of construction. It is already required by NFPA 72.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

F117-06/07

907.7 (IBC [F] 907.6)

Proponent: Thomas P. Hammerberg, Automatic Fire Alarm Association, Inc.

Revise as follows:

907.7 ~~Activation Alarm notification systems.~~ A fire alarm system shall annunciate at the panel and shall initiate occupant notification. Where an a fire alarm notification system is required by another section of this code provided, it shall be activated by:

1. ~~Required Automatic fire alarm system detectors.~~
2. Sprinkler water-flow devices.
3. ~~Required Manual fire alarm boxes.~~
4. Automatic fire-extinguishing systems.

Exception: Where a dedicated function fire alarm system is installed exclusively to transmit waterflow signals to a remote monitoring location, one audible alarm notification appliance shall be installed in the vicinity of the manual fire alarm box and will activate upon actuation of the waterflow alarm device or the manual fire alarm box.

Reason: There are numerous differences in interpretation of what must occur if this manual fire alarm box is actuated. A similar exception has been submitted for Section 903.4.2. Many interpret 903.4.2 to require alarm notification appliances to be installed throughout a facility due to the wording in this section that states “Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.” NFPA has added a new definition in the 2007 version to describe this system as a “Dedicated Function Fire Alarm System” with the intent to show that it is not the building fire alarm system, and was only installed to provide monitoring of the required sprinkler system. Since Section 903 does not require occupant notification inside the building, full occupant notification should not be required. The addition of the one audible alarm notification appliance is intended to provide feedback to the individual operating the manual fire alarm box so they know that something is happening. It is not intended to provide full occupant notification. Visible alarm notification appliance were intentionally omitted to avoid any conflict with ADAAG requirements.

This proposal will clarify the fire alarm provisions and add into the code a requirement that currently exists in NFPA 72 so that it can be addressed in the proper forum – “where” as opposed to “how.” This should be included in both the IFC and the IBC.

The proposal is an effort made by a group of people from various segments of the industry and code application to improve usability of the code. Before addressing the specific technical issue involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),

Shane Clary (Bay Alarm)
John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hopple (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is one in a series of code changes. This one incorporates a specific technical issue identified by the group. It is identified here separately in case the composite proposal is deemed too extensive.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F118–06/07

907.10.1 (IBC [F] 907.9.1)

Proponent: Dave Frable, U.S. General Services Administration

Revise as follows:

907.10.1 Visible alarms. Visible alarm notification appliances shall be provided in accordance with Sections 907.10.1.1 through 907.10.1.4.

Exceptions:

1. Visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.
2. Visible alarm notification appliances shall not be required in exits as defined in Section 1002.1.
3. Visible alarm notification appliances shall not be required in elevator cars.

Reason: It has come to our attention that several jurisdictions across the country have been requiring visible alarm notification appliances to be installed in elevator cars since there is no exception in the IFC or the NFPA 72, *National Fire Alarm Code* for not installing this type of notification appliance in elevator cars. This code proposal will eliminate any confusion regarding the need to install visible notification appliances in elevator cars. The rationale for not installing visible notification appliances in elevator cars is the same as for exit enclosures; high light intensity from these notification appliances may cause confusion and disorientation. Last but not least, the NFPA 72 Technical Committee on Protected Premise Fire Alarm Systems is also trying to eliminate any confusion with regard to where visible notification appliances are required to be installed in buildings and has also proposed to add new text in the next edition of NFPA 72 that would state “visible signals shall not be required in elevator cars”.

Cost Impact: The code change proposal will not increase the cost of construction.

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

F119–06/07

907.11.1 (New) [IBC [F] 907.10.1 (New)]

Proponent: Gene Boecker, Code Consultants, Inc.

Add new text as follows:

907.11.1 Elevator emergency operation. Automatic fire detectors installed for elevator emergency operation shall be installed in accordance with the provisions of ASME A17.1 and NFPA 72.

Reason: The purpose of the proposed change is to clarify that the elevator code and NFPA must also be reviewed for the installation of alarm systems for elevators.

The proposal is an effort made by a group of people from various segments of the industry and code application to improve usability of the code. Before addressing the specific technical issue involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),
Shane Clary (Bay Alarm)

John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hopple (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is one in a series of code changes. This one incorporates a specific technical issue identified by the group. It is identified here separately in case the composite proposal is deemed too extensive.

The elevator recall function is required in the IBC. The IFC does not contain that provision. Including this in the IFC will point toward the Elevator Code. Including it in the IFC re-enforces the application and aids in understanding.

It is important that there be clear direction to both the designer and the enforcer that there are requirements in ASME/ANSI A17.1 and NFPA 72 that need to be considered for elevator recall.

BIBLIOGRAPHY:

NFPA 72 – National Fire Alarm Code; 2002 edition.
NFPA 72 – National Fire Alarm Code; 2007 edition – draft text
NFPA 72 – National Fire Alarm handbook; 2002 edition
ASME A17.1 – National Elevator Code - 2004

Cost Impact: The code change proposal will not increase the cost of construction. The manual pull station is already a requirement in NFPA 72.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F120–06/07

907.12 (IBC [F] 907.11); IMC 606.4.1

Proponent: Gregory G. Victor, Fire Department, Glendale, AZ, representing himself

THIS PROPOSAL IS ON THE AGENDA OF THE IFC AND THE IMC CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IFC

Revise as follows:

907.12 Duct smoke detectors. Duct smoke detectors shall be connected to the building's fire alarm control panel when a fire alarm system is ~~provided~~ required by section 907.2. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location. Duct smoke detectors shall not be used as a substitute for required open area detection.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

PART II – IMC

Revise as follows:

606.4.1 Supervision. The duct smoke detectors shall be connected to a fire alarm system when a fire alarm system is required by Section 907.2 of the *International Fire Code*. The actuation of a duct smoke detector shall activate a visible and audible supervisory signal at a constantly attended location.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where the duct smoke detector activates the building's alarm-indicating appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Duct smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

Reason: To coordinate IFC Section 907.12 with IFC Section 907.11 and IMC Section 606.4.1.

Section 907.11 reads:

“ 907.11 Fire safety functions. Automatic fire detectors utilized for the purpose of performing fire safety functions shall be connected to the building’s fire alarm control panel **where a fire alarm system is required by Section 907.2 (emphasis added)**. Detectors shall, upon actuation, perform the intended function and activate the alarm notification appliances or activate a visible and audible supervisory signal at a constantly attended location. In buildings not required to be equipped with a fire alarm system, the automatic fire detector shall be powered by normal electrical service and, upon actuation, perform the intended function. The detectors shall be located in accordance with NFPA 72.”

Section 907.11 makes it clear that it is the intent of the IFC that fire safety functions shall be connected to a fire alarm system only when Section 907.2 requires a system. The function of the duct smoke detector is to shut down the air handler and send a “hey Joe” supervisory signal so that someone knows something is up. The current language in the 907.12 and IMC 606.4.1 is confusing by simply calling out a fire alarm system, even though exception 2 hints at the fire alarm requirement when it reads in part “In occupancies not required to be equipped with a fire alarm system...” We have received numerous questions regarding when this connection must be made and what constitutes a fire alarm system.

This proposal clarifies the intent of the code and clarifies the requirement for the user by duplicating the appropriate portion of the language found in 907.11 in these two sections.

Cost Impact: The code change proposal may slightly increase the cost of construction where no fire alarm is required.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART I – IMC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F121–06/07

907 (IBC [F] 907)

Proponent: Gene Boecker, Code Consultants, Inc.

THIS PROPOSAL IS ON THE AGENDA OF THE IFC AND THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IFC

Revise and reorganize section as follows:

SECTION 907 FIRE ALARM AND DETECTION SYSTEMS

907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components in new and existing buildings and structures. The requirements of Section 907.2 are applicable to new buildings and structures. The requirements of Section 907.3 are applicable to existing buildings and structures as follows:

1. The requirements of Section 907.2 are applicable to new buildings and structures.
2. The requirements of Section 907.3 are applicable to existing buildings and structures.

907.1.1 ~~Construction documents~~ Shop drawings. ~~Construction documents~~ Shop drawings for fire alarm systems shall be submitted for review and approval prior to system installation. ~~Construction documents~~ shop drawings shall include, but not be limited to, all of the following:

1. A floor plan which indicates the use of all rooms.
2. Locations of alarm-initiating and notification appliances.
3. ~~Alarm control and trouble signaling equipment.~~ Location of fire alarm control unit, transponders, and notification power supplies.
4. ~~Annunciation.~~ Annunciators.
5. Power connection.
6. Battery calculations.
7. Conductor type and sizes.
8. Voltage drop calculations.
9. Manufacturers, data sheets indicating model numbers and listing information for equipment, devices and materials.

10. Details of ceiling height and construction.
11. The interface of fire safety control functions.

907.1.2 Equipment. Systems and their components shall be listed and approved for the purpose for which they are installed.

907.2 Where required—new buildings and structures. An approved manual, automatic or manual and automatic fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through ~~907.2.23~~ 907.2.21 and provide occupant notification in accordance with Section ~~907.40~~ 907.6, unless other requirements are provided by another section of this code. ~~Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.~~

~~The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of automatic smoke detection, other automatic fire detection shall be allowed.~~

907.2.1 Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group A occupancies having an occupant load of 300 or more. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the ~~alarm~~ occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.1.1 System initiation in Group A occupancies with an occupant load of 1,000 or more. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more shall initiate a signal using an emergency voice/alarm communications system in accordance with ~~NFPA 72~~ Section 907.6.2.2.

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed 3 minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.

~~907.2.1.23 Emergency power:~~ (Relocated to Section 907.6.2.2.3)

907.2.2 Group B. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group B occupancies where one of the following conditions exists:

- ~~1. The combined Group B occupant load of all floors is having an occupant load of 500 or more, persons or~~
- ~~2. The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge.~~

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the ~~alarm~~ occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.3 Group E. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an occupant load of less than 50.
2. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
 - 2.1. Interior corridors are protected by smoke detectors ~~with alarm verification.~~
 - 2.2. Auditoriums, cafeterias, gymnasiums and ~~the like~~ similar areas are protected by heat detectors or other approved detection devices.
 - 2.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.
 - ~~2.4. Off premises monitoring is provided.~~
 - ~~2.5. 2.4.~~ The capability to activate the evacuation signal from a central point is provided.
 - ~~2.6. 2.5.~~ In buildings where normally occupied spaces are provided with a two-way communication system between such spaces and a constantly attended receiving station from where a general evacuation alarm can be sounded, except in locations specifically designated by the fire code official.
3. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system, the notification appliances will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

907.2.4 Group F. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group F occupancies where both of the following conditions exist:

1. The Group F occupancy is that are two or more stories in height; and
2. The Group F occupancy has have an a combined occupant load of 500 or more above or below the lowest level of exit discharge.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the ~~alarm~~ occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.5 Group H. A manual fire alarm system shall be installed in Group H-5 occupancies and in occupancies used for the manufacture of organic coatings. An automatic smoke detection system shall be installed for highly toxic gases, organic peroxides and oxidizers in accordance with Chapters 37, 39 and 40, respectively.

907.2.6 Group I. A manual fire alarm system shall be installed in Group I occupancies. An ~~electrically supervised,~~ automatic smoke detection system shall be provided in accordance with Sections 907.2.6.1 and 907.2.6.2.

Exception: Manual fire alarm boxes in resident or patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section ~~907.4.4~~ 907.5.1 are not exceeded.

907.2.6.1 Group I-1. Corridors. An automatic smoke detection system shall be installed in corridors, waiting areas open to corridors and habitable spaces other than sleeping units and kitchens, and waiting areas that are open to corridors shall be equipped with an automatic smoke detection system. The system shall be activated in accordance with Section 907.6.

Exceptions:

1. Smoke detection in habitable spaces is not required where the facility is equipped throughout with an automatic sprinkler system.
2. Smoke detection is not required for exterior balconies.

907.2.6.1.1 Smoke alarms. Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.10.

907.2.6.2 Group I-2. An automatic smoke detection system shall be installed in corridors in nursing homes (both intermediate care and skilled nursing facilities), detoxification facilities and spaces permitted to be open to the corridors by Section 407.2 of the *International Building Code* shall be equipped with an automatic fire detection system. The system shall be activated in accordance with Section 907.6. Hospitals shall be equipped with smoke detection as required in Section 407.2 of the *International Building Code*.

Exceptions:

1. Corridor smoke detection is not required in smoke compartments that contain patient sleeping units where patient sleeping units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each patient sleeping unit and shall provide an audible and visual alarm at the nursing station attending each unit.
2. Corridor smoke detection is not required in smoke compartments that contain patient sleeping units where patient sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

907.2.6.3 Group I-3 occupancies. Group I-3 occupancies shall be equipped with a manual and automatic fire alarm system installed for alerting staff.

907.2.6.3.1 System initiation. Actuation of an automatic fire-extinguishing system, a manual fire alarm box or a fire detector shall initiate an approved fire alarm signal which automatically notifies staff. ~~Presignal systems shall not be used.~~

907.2.6.3.2 Manual fire alarm boxes. Manual fire alarm boxes are not required to be located in accordance with Section ~~907.4~~ 907.5.1 where the fire alarm boxes are provided at staff-attended locations having direct supervision over areas where manual fire alarm boxes have been omitted.

Manual fire alarm boxes are allowed to be locked in areas occupied by detainees, provided that staff members are present within the subject area and have keys readily available to operate the manual fire alarm boxes.

907.2.6.3.3 Smoke detectors. An ~~approved~~ automatic smoke detection system shall be installed throughout resident housing areas, including sleeping units and contiguous day rooms, group activity spaces and other common spaces normally accessible to residents.

Exceptions:

1. Other approved smoke-detection arrangements providing equivalent protection, including, but not limited to, placing detectors in exhaust ducts from cells or behind protective guards listed for the purpose, are allowed when necessary to prevent damage or tampering.
2. Sleeping units in Use Conditions 2 and 3.
3. Smoke detectors are not required in sleeping units with four or fewer occupants in smoke compartments that are equipped throughout with an ~~approved~~ automatic sprinkler system.

907.2.7 Group M. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group M occupancies where one of the following conditions exists:

1. ~~The combined Group M occupant load of all floors is having an occupant load of 500 or more persons, or~~
2. ~~The Group M occupant load is more than 100 persons above or below the lowest level of exit discharge. The initiation of a signal from a manual fire alarm box shall initiate alarm notification appliances as required by Section 907.10.~~

Exceptions:

1. A manual fire alarm system is required in covered mall buildings complying with Section 402 of the *International Building Code*.
2. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the ~~alarm occupant~~ notification appliances will automatically activate throughout the notification zones upon sprinkler water flow.

907.2.7.1 Occupant notification. During times that the building is occupied, the initiation of a signal from a manual fire alarm box or from a water flow switch shall not be required to activate the alarm notification appliances when an alarm signal is activated at a constantly attended location from which evacuation instructions shall be initiated over an emergency voice/alarm communication system installed in accordance with ~~Section 907.2.12.2~~ 907.6.2.2.

The emergency voice/alarm communication system shall be allowed to be used for other announcements, provided the manual fire alarm use takes precedence over any other use.

907.2.8 Group R-1. Fire alarm systems and smoke alarms shall be installed in Group R-1 occupancies as required in Sections 907.2.8.1 through 907.2.8.3.

907.2.8.1 Manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group R-1 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings not more than two stories in height where all individual dwelling units or sleeping units and contiguous attic and crawl spaces to those units are separated from each other and public or common areas by at least 1-hour fire partitions and each individual dwelling unit or sleeping unit has an exit directly to a public way, exit court or yard.
2. Manual fire alarm boxes are not required throughout the building when the following conditions are met:
 - 2.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 2.2. The notification appliances will activate upon sprinkler water flow; and
 - 2.3. At least one manual fire alarm box is installed at an approved location.

907.2.8.2 Automatic fire alarm system. An automatic fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed throughout all interior corridors serving dwelling units or sleeping units.

Exception: An automatic fire detection system is not required in buildings that do not have interior corridors serving dwelling units or sleeping units and where each dwelling unit or sleeping unit has a means of egress door opening directly to an exit or to an exterior exit access that leads directly to an exit.

907.2.8.3 Smoke alarms. ~~Single- and multiple-station smoke alarms shall be installed as required by in accordance with Section 907.2.10. In buildings that are not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the smoke alarms in sleeping units shall be connected to an emergency electrical system and shall be annunciated by sleeping unit at a constantly attended location from which the fire alarm system is capable of being manually activated.~~

907.2.9 Group R-2. Fire alarm systems and smoke alarms shall be installed in Group R-2 occupancies as required in Section 907.2.9.1 and 907.9.2.

907.2.9.1 Manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group R-2 occupancies where:

1. Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge;
2. Any dwelling unit or sleeping unit is located more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit; or
3. The building contains more than 16 dwelling units or sleeping units.

Exceptions:

- ~~1. A fire alarm system is not required in buildings not more than two stories in height where all dwelling units or sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each dwelling unit or sleeping unit has an exit directly to a public way, exit court or yard.~~
- ~~2. 1. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the building when the following conditions are met:
2.1. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2; and
2.2. The occupant notification appliances will automatically activate throughout the notification zones upon a sprinkler water flow.~~
- ~~3. 2. A manual fire alarm system is not required in buildings not more than two stories in height that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1023.6, Exception 4.~~

907.2.9.2 Smoke alarms. Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.10.

907.2.10 Single- and multiple-station smoke alarms. Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with the provisions of this code Sections 907.1.10.1 through 907.2.10.4 and the household fire warning equipment provisions of NFPA 72.

907.2.10.1 Where required. ~~Single- or multiple-station smoke alarms shall be installed in the locations described in Sections 907.2.10.1.1 through 907.2.10.1.3.~~

907.2.10.1.1 907.2.10.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the dwelling unit or sleeping unit.
3. In each story within the dwelling unit or sleeping unit, including basements. For dwelling units or sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.10.1.2 907.2.10.2 Groups R-2, R-3, R-4 and I-1. Single or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.

Exception: Single- or multiple-station smoke alarms in Group I-1 shall not be required where smoke detectors are provided in the sleeping rooms as part of an automatic smoke detection system.

3. In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

~~907.2.10.1.3 Group I-1. Single or multiple station smoke alarms shall be installed and maintained in sleeping areas in Group I-1 occupancies.~~

~~**Exception:** Single or multiple station smoke alarms shall not be required where the building is equipped throughout with an automatic fire detection system in accordance with Section 907.2.6.~~

907.2.10.3 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Groups R-1, R-2, R-3 or R-4, ~~or within an individual sleeping unit in Group R-1,~~ the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

~~907.2.10.4 Acceptance testing:~~ (Relocated to Section 907.8.1)

~~907.2.10.2~~ **907.2.10.4 Power source.** In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are not required to be equipped with battery backup ~~in Group R-4~~ where they are connected to an emergency electrical system.

907.2.11 Special amusement buildings. An approved automatic smoke detection system shall be provided in special amusement buildings in accordance with this section.

Exception: In areas where ambient conditions will cause a smoke detection system to alarm, an approved alternative type of automatic fire detector shall be installed.

907.2.11.1 Alarm. Activation of any single smoke detector, the automatic sprinkler system or any other automatic fire detection device shall immediately sound an alarm at the building at a constantly attended location from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 907.2.11.2.

907.2.11.2 System response. The activation of two or more smoke detectors, a single smoke detector with alarm verification, the automatic sprinkler system or other approved fire detection device shall automatically:

1. Cause illumination of the means of egress with light of not less than 1 foot-candle (11 lux) at the walking surface level;
2. Stop any conflicting or confusing sounds and visual distractions; ~~and~~
3. Activate an approved directional exit marking that will become apparent in an emergency; ~~and~~
4. ~~Such system response shall also include activation of~~ Activate a prerecorded message, clearly audible throughout the special amusement building, instructing patrons to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound which is distinctive from other sounds used during normal operation.

~~The wiring to the auxiliary devices and equipment used to accomplish the above fire safety functions shall be monitored for integrity in accordance with NFPA 72.~~

907.2.11.3 Emergency voice/alarm communication system. An emergency voice/alarm communication system, which is also allowed to serve as a public address system, shall be installed in accordance with NFPA 72 Section 907.6.2.2 and be audible throughout the entire special amusement building.

907.2.12 High-rise buildings. Buildings with a floor used for human occupancy located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with ~~Section 907.2.42.2~~ 907.6.2.2.

Exceptions:

1. Airport traffic control towers in accordance with Section 907.2.22 and Section 412 of the *International Building Code*.
2. Open parking garages in accordance with Section 406.3 of the *International Building Code*.

3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the *International Building Code*.
4. Low-hazard special occupancies in accordance with Section 503.1.1 of the *International Building Code*.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415 of the *International Building Code*.
6. In Group I-1 and I-2 occupancies, the alarm shall sound at a constantly attended location and general occupant notification shall be broadcast by the paging system.

907.2.12.1 Automatic fire detection. Smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section shall operate the emergency voice/alarm communication system. Smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection, elevator machine rooms, and in elevator lobbies.
2. In the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m³/s). Such detectors shall be located in a serviceable area downstream of the last duct inlet.
3. At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system. In Group R-1 and R-2 occupancies, a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4m³/s) and serving not more than 10 air-inlet openings.

~~907.2.12.2 Emergency voice/alarm communication system.~~ (Relocated to Section 907.6.2.2)

~~907.2.12.2.1 Manual override.~~ (Relocated to Section 907.6.2.2.1)

~~907.2.12.2.2 Live voice messages.~~ (Relocated to Section 907.6.2.2.2)

~~907.2.12.2.3 Standard.~~ (Relocated to Section 907.6.2.2)

907.2.12.3 907.2.12.2 Fire department communication system. An approved two-way, fire department communication system designed and installed in accordance with NFPA 72 shall be provided for fire department use. It shall operate between a fire command center complying with Section 509 and elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge and inside enclosed exit stairways. The fire department communication device shall be provided at each floor level within the enclosed exit stairway.

Exception: Fire department radio systems where approved by the fire department.

907.2.13 Atriums connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium that connects more than two stories. The system shall be activated in accordance with Section ~~907.7~~ 907.6. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication system complying with the requirements of Section ~~907.2.12.2~~ 907.6.2.2.

907.2.14 High-piled combustible storage areas. An automatic fire detection system shall be installed throughout high-piled combustible storage areas where required by Section 2306.5.

~~907.2.15 Delayed egress locks.~~ (Relocated to Section 907.4.2)

~~907.2.16 907.2.15 Aerosol storage uses.~~ Aerosol storage rooms and general-purpose warehouses containing aerosols shall be provided with an approved manual fire alarm system where required by this code.

~~907.2.17 907.2.16 Lumber, wood structural panel and veneer mills.~~ Lumber, wood structural panel and veneer mills shall be provided with a manual fire alarm system.

907.2.18 907.2.17 Underground buildings with smoke exhaust control systems. Where a smoke ~~exhaust control~~ system is installed in an underground building in accordance with the *International Building Code*, automatic fire detectors shall be provided in accordance with this section.

~~907.2.18.1 907.2.17.1 Smoke detectors.~~ A minimum of one smoke detector listed for the intended purpose shall be installed in the following areas:

1. Mechanical equipment, electrical, transformer, telephone equipment, elevator machine or similar rooms.
2. Elevator lobbies.
3. The main return and exhaust air plenum of each air-conditioning system serving more than one story and located in a serviceable area downstream of the last duct inlet.
4. Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m³/s) and serving not more than 10 air inlet openings.

907.2.17.2 Alarm required. Activation of the smoke ~~exhaust~~ control system shall activate an audible alarm at a constantly attended location.

907.2.17.3 Deep underground buildings. Where the lowest level of a structure is more than 60 feet (18 288 mm) below the lowest level of exit discharge, the structure shall be equipped throughout with a manual fire alarm system, including an emergency voice/alarm communication system installed in accordance with Section ~~907.2.12.2~~ 907.6.2.2.

907.2.17.3.1 Public address system. Where a fire alarm system is not required by Section 907.2, a public address system shall be provided which shall be capable of transmitting voice communications to the highest level of exit discharge serving the underground portions of the structure and all levels below.

907.2.18 Covered mall buildings. Covered mall buildings exceeding 50,000 square feet (4645 m²) in total floor area shall be provided with an emergency voice/alarm communication system. An emergency voice/alarm communication system serving a mall, required or otherwise, shall be accessible to the fire department. The system shall be provided in accordance with Section ~~907.2.12.2~~ 907.6.2.2.

907.2.19 Residential aircraft hangars. A minimum of one ~~listed~~ single-station smoke alarm shall be installed within a residential aircraft hangar as defined in the *International Building Code* and shall be interconnected into the residential smoke alarm or other sounding device to provide an alarm which will be audible in all sleeping areas of the dwelling.

907.2.20 Airport traffic control towers. An automatic fire detection system that activates the occupant notification system in accordance with Section 907.6 shall be provided in airport traffic control towers in all occupiable spaces.

907.2.21 Battery rooms. An ~~approved~~ automatic smoke detection system shall be installed in areas containing stationary storage battery systems ~~having with~~ a liquid capacity of more than 50 gallons (189 L). The detection system shall activate a local alarm signal at a constantly attended location ~~or shall be supervised by an approved central, proprietary, or remote station service or a local alarm which will sound an audible signal at a constantly attended location.~~

907.3 Where required—retroactive in existing buildings and structures. An approved manual, automatic or manual and automatic fire alarm system shall be installed in existing buildings and structures in accordance with Sections 907.3.1 through 907.3.1.8 and provide occupant notification in accordance with Section 907.6 unless other requirements are provided by other sections of this code. ~~Where automatic sprinkler protection is provided in accordance with Section 903.3.1.1 or 903.3.1.2 and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.~~

~~An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.~~

907.3.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 907.3.1.1 through 907.3.1.8.

Exception: Occupancies with an existing, previously approved fire alarm system.

907.3.1.4 907.3.1 Group E. A fire alarm system shall be installed in existing Group E occupancies in accordance with Section 907.2.3.

Exceptions:

1. A manual fire alarm system is not required in a building with a maximum area of 1,000 square feet (93 m²) that contains a single classroom and is located no closer than 50 feet (15 240 mm) from another building.
2. A manual fire alarm system is not required in Group E with an occupant load less than 50.

907.3.2 Group I. A fire alarm system shall be installed in existing Group I occupancies in accordance with Sections 907.3.2.1 through 907.3.2.3.

Exception: Manual fire alarm boxes in resident or patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.5.1 are not exceeded.

907.3.1.2 907.3.2.1 Group I-1. An automatic or manual fire alarm system shall be installed in existing Group I-1 residential care/assisted living facilities in accordance with Section 907.2.6.1.

Exception: Where each sleeping room has a means of egress door opening directly to an exterior egress balcony that leads directly to the exits in accordance with Section 1014.5, and the building is not more than three stories in height.

907.3.1.3 907.3.2.2 Group I-2. An automatic or manual fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2.

907.3.1.4 907.3.2.3 Group I-3. An automatic or manual fire alarm system shall be installed in existing Group I-3 occupancies in accordance with Section 907.2.6.3.

907.3.3 Group R. A fire alarm system and smoke alarms shall be installed in existing Group R occupancies in accordance with Sections 907.3.3.1 through 907.3.3.4.

907.3.1.5 907.3.3.1 Group R-1 hotels and motels. An automatic or manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in existing Group R-1 hotels and motels more than three stories or with more than 20 dwelling units or sleeping units.

Exception: Buildings less than two stories in height where all dwelling units or sleeping units, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each dwelling unit or sleeping unit has direct access to a public way, exit court or yard.

907.3.1.6 907.3.3.2 Group R-1 boarding and rooming houses. An automatic or manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in existing Group R-1 boarding and rooming houses.

Exception: Buildings that have single-station smoke alarms meeting or exceeding the requirements of Section 907.2.10.1 and where the fire alarm system includes at least one manual fire alarm box per floor arranged to initiate the alarm.

907.3.1.7 907.3.3.3 Group R-2. An automatic or manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in existing Group R-2 occupancies more than three stories in height or with more than 16 dwelling units or sleeping units.

Exceptions:

1. Where each living unit is separated from other contiguous living units by fire barriers having a fire-resistance rating of not less than 0.75 hour, and where each living unit has either its own independent exit or its own independent stairway or ramp discharging at grade.
2. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and having a local alarm to notify all occupants.
3. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1023.6, Exception 4.

907.3.1.8 907.3.3.4 Group R-4. An automatic or manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in existing Group R-4 residential care/assisted living facilities.

Exceptions:

1. Where there are interconnected smoke alarms meeting the requirements of Section 907.2.10 and there is at least one manual fire alarm box per floor arranged to sound continuously the smoke alarms.
2. Other manually activated, continuously sounding alarms approved by the fire code official.

907.3.2 907.3.4 Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be installed in existing Group R occupancies in accordance with Sections ~~907.3.2.1~~ 907.3.4.1 through ~~907.3.2.3~~ 907.3.4.3.

907.3.2.1 907.3.4.1 General Where required. Existing Group R occupancies not already provided with single-station smoke alarms shall be provided with ~~approved~~ single-station smoke alarms. Installation shall be in accordance with Section 907.2.10, except as provided in Sections ~~907.3.2.2~~ 907.3.4.2 and ~~907.3.2.3~~ 907.3.4.3.

907.3.2.2 907.3.4.2 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit in Group R-1, R-2, R-3 or R-4, ~~or within an individual sleeping unit in Group R-4,~~ the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes.

907.3.2.3 907.3.4.3 Power source. In Group R occupancies, single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Smoke alarms are permitted to be solely battery operated: in existing buildings where no construction is taking place; in buildings that are not served from a commercial power source; and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

~~**907.4 Manual fire alarm boxes.**~~ (Relocated to Section 907.5.1)

~~**907.4.1 Location.**~~ (Relocated to Section 907.5.1.1)

~~**907.4.2 Height.**~~ (Relocated to Section 907.5.1.2)

~~**907.4.3 Color.**~~ (Relocated to Section 907.5.1.3)

~~**907.4.4 Signs.**~~ (Relocated to Section 907.5.1.4)

~~**907.4.5 Protective covers.**~~ (Relocated to Section 907.5.1.5)

~~**907.5 Power supply.**~~ (Relocated to Section 907.7.2)

~~**907.6 Wiring.**~~ (Relocated to Section 907.7.1)

~~**907.7 Activation.**~~ (Relocated to Section 907.6)

~~**907.8 Presignal system.**~~ (Relocated to Section 907.6.1)

~~**907.9 Zones.**~~ (Relocated to Section 907.7.3)

~~**907.9.1 Zoning indicator panel.**~~ (Relocated to Section 907.7.3.1)

~~**907.9.2 High rise buildings.**~~ (Relocated to Section 907.7.3.2)

~~**907.10 Alarm notification appliances.**~~ (Relocated to Section 907.6.2)

~~**907.10.1 Visible alarms.**~~ (Relocated to Section 907.6.2.3)

~~**907.10.1.1 Public and common areas.**~~ (Relocated to Section 907.6.2.3.1)

~~**907.10.1.2 Employee work areas.**~~ (Relocated to Section 907.6.2.3.2)

~~**907.10.1.3 Groups I-1 and R-1.**~~ (Relocated to Section 907.6.2.3.3)

~~**Table 907.10.1.3 Visible and Audible Alarms**~~ (Relocated to Table 907.6.2.3.3)

~~**907.10.1.4 Group R-2.**~~ (Relocated to Section 907.6.2.3.4)

~~**907.10.2 Audible alarms.**~~ (Relocated to Section 907.6.2.1)

907.11 907.4 Fire safety functions. Automatic fire detectors utilized for the purpose of performing fire safety functions shall be connected to the building's fire alarm control ~~panel unit~~ where a fire alarm system is ~~required by Section 907.2~~ provided. Detectors shall, upon actuation, perform the intended function and activate the alarm notification appliances or activate a visible and audible supervisory signal at a constantly attended location. In buildings not ~~required to be~~ equipped with a fire alarm system, the automatic fire detector shall be powered by normal electrical service and, upon actuation, perform the intended function. The detectors shall be located in accordance with NFPA 72.

907.12 907.4.1 Duct smoke detectors. Duct smoke detectors shall be connected to the building's fire alarm control ~~panel unit~~ when a fire alarm system is provided. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location. Duct smoke detectors shall not be used as a substitute for required open area detection.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

~~907.13 Access.~~ (Relocated to Section 907.7.4)

~~907.14 Fire extinguishing systems.~~ (Relocated to Section 907.6(4))

~~907.15 Monitoring.~~ (Relocated to Section 907.7.5)

~~907.16 Automatic telephone – dialing devices.~~ (Relocated to Section 907.7.5.1)

~~907.17 Acceptance tests.~~ (Relocated to Section 907.8)

~~907.18 Record of completion.~~ (Relocated to Section 907.8.2)

~~907.19 Instructions.~~ (Relocated to Section 907.8.3)

~~907.20 Inspection, testing and maintenance.~~ (Relocated to Section 907.9)

~~907.20.1 Maintenance required.~~ (Relocated to Section 907.9.1)

~~907.20.2 Testing.~~ (Relocated to Section 907.9.2)

~~907.20.3 Detection sensitivity.~~ (Relocated to Section 907.9.3)

~~907.20.4 Method.~~ (Relocated to Section 907.9.4)

~~907.20.4.1 Testing device.~~ (Relocated to Section 907.9.4.1)

~~907.20.5 Maintenance, inspection and testing.~~ (Relocated to Section 907.9.5)

~~907.2.15~~ **907.4.2 Delayed egress locks.** Where delayed egress locks are installed on means of egress doors in accordance with Section 1008.1.8.6, an automatic smoke or heat detection system shall be installed as required by that section.

907.4.3 Wiring. The wiring to the auxiliary devices and equipment used to accomplish the above fire safety functions shall be monitored for integrity in accordance with NFPA 72.

907.5 Initiating devices. Where manual or automatic alarm initiation is required as part of a fire alarm system, the initiating devices shall be installed in accordance with Sections 907.5.1 through 907.5.4.

~~907.4~~ **907.5.1 Manual fire alarm boxes.** Where a manual fire alarm system is required by another section of this code, it shall be activated by fire alarm boxes shall be installed in accordance with Sections 907.4.4 907.5.2.1 through 907.4.5 907.5.2.5.

~~907.4.1~~ **907.5.1.1 Location.** Manual fire alarm boxes shall be located not more than 5 feet (1524 mm) from the entrance to each exit. Additional manual fire alarm boxes shall be located so that travel distance to the nearest box does not exceed 200 feet (60 960 mm).

~~907.4.2~~ **907.5.1.2 Height.** The height of the manual fire alarm boxes shall be a minimum of 42 inches (1067 mm) and a maximum of 48 inches (1372 mm) measured vertically, from the floor level to the activating handle or lever of the box.

~~907.4.3~~ **907.5.1.3 Color.** Manual fire alarm boxes shall be red in color.

~~907.4.4~~ **907.5.1.4 Signs.** Where fire alarm systems are not monitored by a supervising station, an approved permanent sign shall be installed adjacent to each manual fire alarm box that reads: WHEN ALARM SOUNDS—CALL FIRE DEPARTMENT.

Exception: Where the manufacturer has permanently provided this information on the manual fire alarm box.

~~907.4.5~~ **907.5.1.5 Protective covers.** The fire code official is authorized to require the installation of listed manual fire alarm box protective covers to prevent malicious false alarms or to provide the manual fire alarm box with protection from physical damage. The protective cover shall be transparent or red in color with a transparent face to permit visibility of the manual fire alarm box. Each cover shall include proper operating instructions. A protective cover that emits a local alarm signal shall not be installed unless approved. Protective covers shall not project more than that permitted by Section 1003.3.3 of the *International Building Code*.

907.2 (Part) 907.5.2 Automatic detection. The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of automatic smoke detection detectors, other approved automatic fire detection shall be allowed permitted. Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

907.7 Activation 907.6 Alarm notification systems. A fire alarm system shall annunciate at the panel and shall initiate occupant notification upon activation, in accordance with this section. Where an a fire alarm notification system is required by another section of this code provided, it shall be activated by:

1. ~~Required~~ Automatic fire alarm system detectors.
2. Sprinkler water-flow devices.
3. ~~Required~~ Manual fire alarm boxes.
4. Automatic fire-extinguishing systems.

Exceptions:

1. Occupant notification is not required for fire detectors used to control fire safety functions in accordance with Section 907.4.
2. Where notification systems are permitted elsewhere in this section to annunciate at a constantly attended location.

907.8 907.6.1 Presignal system feature. Presignal systems feature shall not be installed unless approved by the fire code official and the fire department. Where a presignal system feature is installed provided, ~~24-hour personnel supervision shall be provided at a signal shall be annunciated at a constantly attended location~~ approved by the fire department, in order that the alarm signal occupant notification can be ~~actuated~~ activated in the event of fire or other emergency.

907.10 907.6.2 Alarm notification appliances. Alarm notification appliances shall be provided and shall be listed for their purpose.

907.10.2 907.6.2.1 Audible alarms. Audible alarm notification appliances shall be provided and sound a distinctive sound that is not to be used for any purpose other than that of a fire alarm.

Exception: Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care areas of Group I-2 occupancies.

907.10.2 907.6.2.1.1 Average sound pressure. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater, in every occupied space within the building. The minimum sound pressure levels shall be: ~~70~~ 75 dBA in occupancies in Groups R and I-1; 90 dBA in mechanical equipment rooms; and 60 dBA in other occupancies.

907.10.2 907.6.2.1.2 Maximum sound pressure. The maximum sound pressure level for audible alarm notification appliances shall be ~~420~~ 110 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

907.2.12.2.3 Standard. 907.6.2.2 Emergency voice/alarm communication system. The emergency voice/alarm communication system shall be designed and installed in accordance with NFPA 72. ~~907.2.12.2 Emergency voice/alarm communication system.~~ The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation on a minimum of the alarming floor, the floor above and the floor below in accordance with the building's fire safety and evacuation plans required by Section 404. Speakers shall be provided throughout the building by paging zones. As a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Exit stairways.
3. Each floor.
4. Areas of refuge as defined in Section 1002.1.

907.2.12.2.1 907.6.2.2.1 Manual override. A manual override for emergency voice communication shall be provided on a selective and all-call basis for all paging zones.

907.2.12.2.2 907.6.2.2.2 Live voice messages. The emergency voice/alarm communication system shall also have the capability to broadcast live voice messages ~~through~~ by paging zones on a selective and all-call basis.

907.2.1.2 907.6.2.2.3 Emergency power. Emergency voice/alarm communications systems shall be provided with an approved emergency power source.

907.10.4 907.6.2.3 Visible alarms. Visible alarm notification appliances shall be provided in accordance with Sections 907.10.4.1 ~~907.6.2.3.1~~ through 907.10.4.4 ~~907.6.2.3.4~~.

Exceptions:

1. Visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed.
2. Visible alarm notification appliances shall not be required in exits as defined in Section 1002.1.

907.10.1.4 907.6.2.3.1 Public and common areas. Visible alarm notification appliances shall be provided in public areas and common areas.

907.10.1.2 907.6.2.3.2 Employee work areas. Where employee work areas have audible alarm coverage, the notification appliance circuits serving the employee work areas shall be initially designed with a minimum of 20 percent spare capacity to account for the potential of adding visible notification appliances in the future to accommodate hearing impaired employee(s).

907.10.1.3 907.6.2.3.3 Groups I-1 and R-1. Group I-1 and R-1 dwelling units or sleeping units in accordance with Table 907.10.1.3 907.6.2.3.3 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system.

**TABLE 907.10.1.3 907.6.2.3.3
VISIBLE AND AUDIBLE ALARMS**

NUMBER OF SLEEPING UNITS	SLEEPING ACCOMMODATIONS WITH VISIBLE AND AUDIBLE ALARMS
6 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

907.10.1.4 907.6.2.3.4 Group R-2. In Group R-2 occupancies required by Section 907 to have a fire alarm system, the notification appliance circuits serving all dwelling units and sleeping units shall be initially designed with a minimum of 20% spare provided with the capability to support visible alarm notification appliances in accordance with ICC A117.1.

907.7 Installation. A fire alarm system shall be installed in accordance with this section and NFPA 72.

907.6 907.7.1 Wiring. Wiring shall comply with the requirements of the ICC *Electrical Code* and NFPA 72. Wireless protection systems utilizing radio-frequency transmitting devices shall comply with the special requirements for supervision of low-power wireless systems in NFPA 72.

907.5 907.7.2 Power supply. The primary and secondary power supply for the fire alarm system shall be provided in accordance with NFPA 72.

Exception: Back-up power for single-station and multiple-station smoke alarms as required in Sections 907.2.10.4 and 907.3.4.3.

907.9 907.7.3 Zones. Each floor shall be zoned separately and a zone shall not exceed 22,500 square feet (2090 m²). The length of any zone shall not exceed 300 feet (91 440 mm) in any direction.

Exception: Automatic sprinkler system zones shall not exceed the area permitted by NFPA 13.

907.9.4 907.7.3.1 Zoning indicator panel. A zoning indicator panel and the associated controls shall be provided in an approved location. The visual zone indication shall lock in until the system is reset and shall not be canceled by the operation of an audible-alarm silencing switch.

907.9.2 907.7.3.2 High-rise buildings. In buildings with a floor used for human occupancy that is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors.
2. Sprinkler water-flow devices.
3. Manual fire alarm boxes.
4. Other approved types of automatic fire detection devices or suppression systems.

907.13 907.7.4 Access. Access shall be provided to each detector for periodic inspection, maintenance and testing.

907.15 907.7.5 Monitoring. Fire alarm systems required by this chapter or by the *International Building Code* shall be monitored by an approved supervising station in accordance with NFPA 72.

Exception: ~~Supervisory service~~ Monitoring by a supervising station is not required for:

1. Single- and multiple-station smoke alarms required by Section 907.2.10.
2. Smoke detectors in Group I-3 occupancies.
3. Automatic sprinkler systems in one- and two-family dwellings.

907.16 907.7.5.1 Automatic telephone-dialing devices. Automatic telephone-dialing devices used to transmit an emergency alarm shall not be connected to any fire department telephone number unless approved by the fire chief.

907.17 907.8 Acceptance tests and completion. Upon completion of the installation, ~~of the fire alarm system, alarm notification appliances and circuits, alarm-initiating devices and circuits, supervisory signal initiating devices and circuits, signaling line circuits, and primary and secondary power supplies and all fire alarm components~~ shall be tested in accordance with NFPA 72.

907.2.10.4 Acceptance testing 907.8.1 Single- and multiple-station alarm devices. When the installation of the alarm devices is complete, each ~~detector~~ device and interconnecting wiring for multiple-station alarm devices shall be tested in accordance with the ~~household fire warning equipment~~ smoke alarm provisions of NFPA 72.

907.18 907.8.2 Record of completion. A record of completion in accordance with NFPA 72 verifying that the system has been installed and and tested in accordance with the approved plans and specifications shall be provided.

907.19 907.8.3 Instructions. Operating, testing and maintenance instructions and record drawings (“as built”) and equipment specifications shall be provided at an approved location.

907.20 907.9 Inspection, testing and maintenance. The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with this section and ~~Chapter 10 of~~ NFPA 72.

907.20.4 907.9.1 Maintenance required. ~~Whenever or wherever any device, equipment, system, condition, arrangement, level of protection or any other feature is required for compliance with the provisions of this code, such devices, equipment, systems, conditions, arrangements, levels of protection or other feature shall thereafter be continuously maintained in accordance with applicable NFPA requirements or as directed by the fire code official.~~

907.20.2 907.9.2 Testing. Testing shall be performed in accordance with the schedules in ~~Chapter 10 of~~ NFPA 72 or more frequently where required by the fire code official. ~~Where automatic testing is performed at least weekly by a remotely monitored fire alarm control unit specifically listed for the application, the manual testing frequency shall be permitted to be extended to annual.~~

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where approved by the fire code official, but not less than every 18 months.

907.20.3 907.9.3 Smoke detector sensitivity. Smoke detector sensitivity shall be checked within one year after installation and every alternate year thereafter. After the second calibration test, where sensitivity tests indicate that the detector has remained within its listed and marked sensitivity range (or 4-percent obscuration light grey smoke, if not marked), the length of time between calibration tests shall be permitted to be extended to a maximum of five years. Where the frequency is extended, records of detector-caused nuisance alarms and subsequent trends of these alarms shall be maintained. In zones or areas where nuisance alarms show any increase over the previous year, calibration tests shall be performed.

907.20.4 907.9.4 Method. To ensure that each smoke detector is within its listed and marked sensitivity range, it shall be tested using either a calibrated test method, the manufacturer’s calibrated sensitivity test instrument, listed control equipment arranged for the purpose, a smoke detector/control unit arrangement whereby the detector causes a signal at the control unit where its sensitivity is outside its acceptable sensitivity range or other calibrated sensitivity test method acceptable to the fire code official. Detectors found to have a sensitivity outside the listed and marked sensitivity range shall be cleaned and recalibrated or replaced.

Exceptions:

1. Detectors listed as field adjustable shall be permitted to be either adjusted within the listed and marked sensitivity range and cleaned and recalibrated or they shall be replaced.
2. This requirement shall not apply to single-station and multiple-station smoke alarms.

907.20.4.1 907.9.4.1 Testing device. Smoke detector sensitivity shall not be tested or measured using a device that administers an unmeasured concentration of smoke or other aerosol into the detector.

907.20.5 907.9.5 Maintenance, inspection and testing. The building owner shall be responsible for ensuring that the fire and life safety systems are maintained to maintain the fire and life safety systems in an operable condition at all times. Service personnel shall meet the qualification requirements of NFPA 72 for maintaining, inspecting and testing such systems. A written record shall be maintained and shall be made available to the fire code official.

PART II – IBC

(IBC) 907.3 Existing buildings. Fire alarm systems to be installed in existing buildings shall be in accordance with this code and the *International Existing Building Code* and the *International Fire Code*.

(No other subsections are intended to be added under Section 907.3 in the IBC)

Reason: To clarify the fire alarm provisions and add limited technical revisions that will aid in providing clarity to the code. The general organization of the reformatted 907 section is as follows:

- 907.1 General
- 907.2 Requirements for new buildings
- 907.3 Requirements for existing buildings
- 907.4 Requirements for special functions
- 907.5 Initiating devices
- 907.6 Notification Devices
- 907.7 Installation requirements
- 907.8 Acceptance testing
- 907.9 Inspection, testing and maintenance

Section 907 evolved as an amalgamation of the three legacy codes. In the process, it absorbed formatting issues from each in a different manner. The charging statement for each Occupancy Group is inconsistent. The text that indicates what is required is inconsistent. And, the general arrangement of text, although in a logical format, is not consistent with the way many people approach the code. It is certainly not consistent with the way that Section 903 is organized. The proposal is an effort made by a group of people from various segments of the industry and code application to correlate, reformat and generally improve usability of the code. Before addressing the formatting changes involved in the proposal, it is worth noting appreciation to the people who helped work on this effort. In alphabetical order:

Bill Aaron (Code Consultants, Inc.),
Diane Arend (Office of the State Fire Marshal; California),
Gene Boecker (Code Consultants, Inc),
Shane Clary (Bay Alarm)
John Guhl (Office of the State Fire Marshal; California),
Tom Hammerberg (Automatic Fire Alarm Association, Inc),
Bill Hopple (SimplexGrinnel),
Dave Lowrey (Fire Rescue; City of Boulder),
Dan Nichols (Building Codes Division; State of New York),
Jon Nisja (State Fire Marshal Division; Minnesota),
Brit Rockafellow (Building Project Review, San Diego),
Jimbo Schiffiliti (Fire Safety Consultants, Inc),
Dave Stringfield (University of Minnesota)

This is the second in a series of code changes. This one incorporates all the formatting and clarification changes but none of the technical changes in the larger code change proposal. It is hoped that if the broader proposal is not accepted that this would be heard immediately thereafter; and, if acceptable recommended for approval by the committee. If so, it is likely because there is a desire to separate the technical issue from the reformatting attempt included in this proposal. Additional alternative code change proposals are being submitted that address the various technical proposals.

PART I – IFC

The following is a section by section description of what was changed in each, followed by a comparison matrix indicating what the old section numbers are and what the new, proposed sections numbers would be. Due to the reformatting, reference is made to the proposed, new section number. Because the text is mostly the same in both the IBC and the IFC, only a single statement is offered and the differences identified as necessary.

907.1 [IFC] The paragraph was divided and itemized for quicker visual reference to requirements for new and existing buildings.

907.1 [IBC] The text is unchanged. Unlike the IFC, the IBC is directed to be new construction in its nature. There is no reason for the IFC statements in the first paragraph.

907.1.1 The term "construction drawings" is too generic. The type of information noted in the list is what is submitted with "shop drawings." Whether the jurisdiction requires shop drawings to be submitted at the time of permit application is irrelevant. There is confusion over whether or not the information is required on the contract documents prepared by the architects and engineers or whether it is prepared by the designer of the fire alarm system. The term Shop drawing is the proper term. #3 The terminology was changed to be more consistent with that used in NFPA 72. #4 Annunciation is the action that occurs and is simply called "occupant notification." The intent is to identify where the Annunciator panels may be located so that coordination with the fire service needs can occur. #9 The name of the manufacturer is what the code literally requires as written. What is actually requested and provided are data sheets from the manufacturers about their products. The data sheets contain the manufacturer's information as well as detailed descriptions of the products.

907.1.2 It is possible to have fire alarm equipment that is not part of a "system" as defined by the code. Therefore the word "their" can be deleted.

907.2 Section renumbering is intended to relate to what is done elsewhere in this proposal. The first sentence is deleted because there is no place in 907 that requires heat detection. Therefore the sentence is extraneous. The second deleted sentence is moved to the new section 907.5.2 because it has more to do with the initiating devices than to "new construction."

907.2.1 The code now clearly indicates that occupant notification is required. It had been assumed and is noted in the commentaries as being the understood response but it never clearly stated that in the code. It is also intimated in the definition but is not clear since there are systems in

the code that do not require full occupant notification. The added text removes the ambiguity. This additional text is added in several locations throughout the code

In the exception, the term "alarm notification" technically only indicates that the alarm condition is recognized at the panel. It does not mean that horns and strobes will be activated. "Occupant notification" is the term used to describe that function. The added words "within the notification zones" are provided so that it is clear to what extent the notification should occur. While there is a general understanding about what devices should activate, the revised language clarifies the intent.

907.2.1.1 The reference to NFPA is removed from this section. It is included in the new Section 907.6.2.2. The existing section 907.2.1.2 is deleted because the requirement is included in the new Section 907.6.2.2.3. Because the voice alarm system is part of the fire alarm system, it is subject to 907.2 which requires emergency and standby power to be in accordance with NFPA 72.

907.2.2 The paragraph is divided into various conditions. This is similar to the manner in which Section 903 is organized and makes for easier identification of the various conditions; both in reading and citation. This approach is used throughout the reorganization as a general reformatting concept for clarity. In so doing, the language in item one needed to be changed to make sense and additional language in item two added for clarity.

The text change in the exception is the same as that noted for Section 907.2.1. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1.

907.2.3, Exception #1 To clarify a potential misunderstanding, the wording is added so that it is clear that the exception applies to the manual fire alarm system and not the connection referred to in the charging sentence. Exception #2.1 - Alarm Verification is a term that is no longer used. Exception #2.2 - The wording "the like" is vague. While "similar areas" does not give specific information, it is consistent with code language and better than the alternative – keeping "the like." Exception #2.4 - The phrase "off-premises" is not consistent with NFPA 72 terminology. The code requires that all fire alarm systems must be supervised. Therefore, the intent is provided without any need for this requirement. The text is consequently extraneous and can be deleted.

907.2.4 The section is divided and language changed for clarity. See rationale statement for Section 907.2.2. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1.

907.2.5 (No change)

907.2.6 There is no reason for the wording "electrically supervised" since all smoke detection systems must be supervised by a method using electricity.

907.2.6.1 The charging statement is reworded to be in the positive and ordered in a similar manner to the other sections in 907.2. The reorganization also eliminates a confusion over whether or not the term "habitable" was intended to be applied to the other spaces in the list.

907.2.6.1.1 A new section is added as a pointer to the smoke alarm requirement for Group I-1 occupancies. As it is currently written, the reader does not find out about smoke alarms for I occupancies until reading the section for residential occupancies. This will point out the requirement.

907.2.6.2 – Similar to Section 907.6.1, the text is reworded to be in the positive and consistent with language used elsewhere in Section 907.2.

907.2.6.3 (No change)

907.2.6.3.1 The sentence regarding presignal systems is removed because the sentence preceding it is describing a presignal feature. The existing second sentence contradicts the first sentence. Because the staff notification feature is both desirable and consistent with the Life Safety Code, the second sentence is not necessary.

907.2.6.3.2 The only change is intended to revise the section number reference to be the proper one since the latter section numbers are revised.

907.2.6.3.3 The word "approved" is extraneous in this sense because all fire alarm systems require an approval through the permit process. The word adds nothing of value to the code in this use. This deletion occurs twice – once in the charging paragraph and once again in exception #3.

907.2.7 – The charging paragraph is divided in similar fashion to that noted above (see 907.2.2). The phrase stating what the manual system should activate is relocated to be still in the charging portion of the text. Language changes in the exceptions are the same as those in Section 907.2.2 and for the same reasons. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1.

907.2.7.1 The referenced section is changed because the voice alarm section is proposed to be relocated. Otherwise, there is no change.

907.2.8 Smoke alarms are added to the charging language. While the requirement for smoke alarms is found in the following sections there is currently nothing in the charging text acknowledging it.

907.2.8.1 The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. Two additional changes are proposed to exception one – both for clarity. The phrase "to those units" is proposed so that it is clear that the crawl spaces of interest are those associated with the units where the exception would be applied and not elsewhere in the building. The second change is to include dwelling units in the description for R-1 occupancies. While the typical assumption for an R-1 occupancy is the hotel room, many transient housing units now include cooking facilities and would therefore be called dwelling units. These types of units include extended stay units and weekly time-share rental properties. Hence, it is necessary to include the term dwelling unit and apply it as necessary for R-1 units as well as R-2 units.

907.2.8.2 The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. There are two additional changes to this section as well. Similar to 907.2.8.1, wording is added for dwelling units. Additionally, it is necessary to indicate that the egress door could lead directly into an exit as well as to an exterior exit access. In compressed site designs, it is not uncommon for the alternative route to be an exit enclosure rather than an exterior balcony. And, if the path leads directly into an exit, that should be counted as at least equal to an exterior balcony.

907.2.8.3 In the first sentence "single- and multiple-station" is added in association with smoke alarms so that it is clear that the requirements in 907.2.10 apply to both conditions. The other change to this sentence is to make it read consistent with other sections of the code. The second sentence is no longer necessary since all new construction for residential occupancies is required to be sprinklered.

907.2.9 In order that the requirements the manual fire alarm system and for smoke alarms can be divided, a new charging sentence is proposed. This is consistent with the format for Section 903 and helps the reader distinguish between code provisions.

907.2.9.1 A new title is added for the split off section. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1.

Existing Exception #1 The essence of this exception has to do with buildings that do not have interior corridors. The criterion for 1-hour separation is a requirement regardless, so it can be deleted. What is left is the limitation that the exception applies to buildings not more than two-stories in height. That criterion is inserted in to exception #3. When the old exception #1 is deleted, the old exception #2 becomes the new exception #1.

New Exception #1 Since the building must be sprinklered reference to sprinklers can be deleted as extraneous. The word "water" is added so that the phrase "water flow" is consistent with that used elsewhere in the code.

New Exception #2 because sprinklers are required in all residential occupancies, the reference to sprinklers can be deleted. The rest of the exception is so similar to the old exception #1 that the two-story limitation was relocated to this exception. The two-story provision with an exterior exit access is the only thing that makes this exception different from the new Exception #1. For practical purposes it could also be deleted since the sprinkler exception in #1 covers the issue completely. The exception was retained in case there was a situation where sprinkler protection may be waived.

907.2.9.2 A new pointer section is added that directs the reader to the requirement for smoke alarms in Group R-2 occupancies.

907.2.10 Charging language from the old 907.10.1 was relocated into this section to make it the charging section. The reference to household fire warning devices is deleted since the term used in NFPA is "smoke alarm." If the same term is used, it is already clear what the intent is when applying NFPA 72.

907.2.10.1 The old 907.10.1.1 is now the first section relating to smoke alarms. The addition of the terms dwelling units is explained in the substantiation for Section 907.2.8.1 above.

907.2.10.2 The exception added to item #2 is taken from the existing 907.2.10.1.3. The existing 907.2.10.1.3 relates to only item #2 in this list. This way all the provisions are located in the same place instead of two sections. Therefore, the existing 907.2.10.1.3 can be deleted.

907.2.10.3 Consistent with the application in 907.2.8.1 and elsewhere, if dwelling units can also apply to Group R-1 occupancies then there is no reason to segregate the occupancy in the text.

907.2.10.4 The section is renumbered due to the change in the charging section. Reference to Group R-1 is proposed to be deleted since the concept is applicable to all cases where a smoke alarm is required.

907.2.11 The word "approved" can be deleted since all alarm systems must be reviewed and approved. In the exception the word "fire" is added to differentiate between what type of alternate detector is allowed should smoke detectors not be appropriate for the ambient conditions. It is not clear in the present text whether or not a pressure sensitive detonation detector could be used as an alternative. The intent is that a fire detector be used.

907.2.11.1 (No change)

907.2.11.2 The paragraph after the list is also a part of the required functions. It is proposed to insert the text as a fourth function in the list and rephrase the text to be consistent with the way that the list is worded. The sentence relative to wiring is generic to all types of fire alarm systems. It is not necessary to repeat it here. The same provision is already located in NFPA 72.

907.2.11.3 The reference to NFPA 72 is deleted since it is more appropriate to refer to the code sections that specifically address the system function. NFPA 72 gives information as to how the voice alarm system should be installed but leaves options since it is primarily an installation document. Without the reference to 907.6.2.2 it is unclear what functions should be provided for a voice alarm in a special amusement building.

907.2.12 –The referenced section is changed from 907.2.12.2 to 907.6.2.2 because the provisions are moved to that new location. This is discussed further in Section 907.6.2.2. Exception #6 is moved from Section 907.2.12.2. It was unclear in its current location whether the exception applies to the last item in the list or to the entire section. This clarifies the issue. Additionally, providing the exception in this section means that the question of voice alarm for high-rise I-1 and I-2 occupancies can be settled before the need to read through the voice alarm requirement sections. The exception should be associated with the charging section.

907.2.12.1 The word "listed" can be deleted since it is already a requirement by definition that smoke detectors must be listed.

907.2.12.2 The existing 907.2.12.2 (and subordinate) sections are proposed to be relocated to a new 907.6.2.2 section with subordinate sections. See Section 906.2.2 for additional rationale. Therefore, the existing 907.2.12.3 becomes the proposed 907.2.12.2 – without any changes.

907.2.12.3 The section is renumbered.

907.2.13 The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. Code section references are changed due to the relocation of text. It is the intent that the references point to the same text as in the existing code arrangement.

907.2.14 – (No change)

907.2.15 The delayed egress lock section relates to a specific safety function and is proposed to be located in a place with similar requirements. Therefore the existing 907.2.16 becomes the new 907.2.15.

907.2.16 Due to section renumbering, the existing 907.2.17 becomes the new 907.2.16.

907.2.17 – With section renumbering, existing 907.2.18 becomes proposed 907.2.17. The nomenclature is changed from smoke "exhaust" to smoke "control" to be consistent with Section 909 and language used elsewhere in the code. The section becomes the charging section for all underground buildings. (See 907.2.17.3)

907.2.17.1 Other than the section renumbering, nothing is changed.

907.2.17.2 The wording is changed to read smoke "control" system rather than smoke "exhaust" system to be consistent with terminology in Section 909.

907.2.17.3 The existing 907.2.19 addresses requirements for an underground building. The only difference between it and that in the previous section is the depth below grade. Therefore, this section is made to be a subsection of the one addressing underground buildings. The reference section change is due to the relocation of the voice alarm provision.

907.2.17.3.1 No change other than section renumbering.

907.2.18 The section is renumbered due to relocation of requirements and the reference for voice alarms also changes because that provision is relocated.

907.2.19 –The word "listed" is deleted because all smoke detectors and smoke alarms must be listed (see also proposed section 907.2.10). The wording "single-station" is added to provide clarity to the term smoke alarm.

907.2.20 The section is renumbered. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. A sentence is added to indicate where smoke detection is required. In airport control towers smoke detectors are provided as part of a package of provisions to supplement the lack of egress because only one exit is required. However, without some direction, smoke detectors could be construed to be required in every closet and underfloor space. The basic intent is to provide notification and early warning but with such a small area limited placement is all that is necessary. Therefore, the proposed text would direct the installation to be in those areas where people work; which are also the areas with the greatest potential fuel source for a fire. This application is consistent with what is being done in most parts of the country and with what the original intent was for the smoke detection requirement.

907.2.21 The section is renumbered due to text relocation. The word "approved" is deleted since all fire alarm systems must be approved. The word "having" is changed to "with" to be consistent with language used elsewhere in the code. The provision for activation of an alarm at a constantly attended location is moved forward in the sentence. Generally, the preferred solution is listed first. The constantly attended location is the option typically used because it will let people in the vicinity know immediately that there has been an incident so action can be taken immediately. Most of the facilities with this type of battery storage area also one that have on site fire brigades who can respond faster to the scene than the fire department of the local jurisdiction. The preference and generally accepted method should be listed first in the code.

907.3 Text is added that discusses occupant notification similar to the charging text for 907.2. Also similar to what is proposed for section 907.2, specific text is relocated or deleted because it is not necessary in a charging section. See also the discussion for Section 907.2.

907.3.1 The existing section is deleted since this information is already included in 907.3. It also makes the format consistent with that of 907.2. The exception to the existing 907.3.1 becomes the exception to 907.3 because it addresses the charging provisions of 907.3. The proposed 907.3.1 has no changes other than the renumbering.

907.3.2 A new scoping statement is added to be similar to that in 907.2.6 for new construction. The same exception for new construction is included in 907.3.2.

907.3.2.1 The existing text states fire alarm system which includes both manual and automatic. The proposed text inserts that language as a starting point from which more descriptive and precise code changes can be proposed in the future. Requirements for an existing Group I-1 occupancy is being reference back to 907.2.6.1 so that the exceptions of that section can also be applied as necessary. Otherwise the requirements for existing building would be more restrictive than those for new construction. The existing exception is retained.

907.3.2.2 The existing text states fire alarm system which includes both manual and automatic. The proposed text inserts that language as a starting point from which more descriptive and precise code changes can be proposed in the future. Requirements for an existing Group I-2 occupancy is being reference back to 907.2.6.2 so that the exceptions of that section can also be applied as necessary. Otherwise the requirements for existing building would be more restrictive than those for new construction.

907.3.2.3 The existing text states fire alarm system which includes both manual and automatic. The proposed text inserts that language as a starting point from which more descriptive and precise code changes can be proposed in the future. Requirements for an existing Group I-3 occupancy is being reference back to 907.2.6.3 so that the exceptions of that section can also be applied as necessary. Otherwise the requirements for existing building would be more restrictive than those for new construction.

907.3.3 A new scoping section is added because there are two sets of requirements for Group R occupancies. This places the section in the same hierarchy as other requirements for existing buildings.

907.3.3.1 The section is renumbered due to relocated text. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. The words “manual or automatic” are added because these are both types of fire alarm systems. The change to this framework will allow future revisions to be made to further clarify the intent as necessary. As was done for the provisions for new buildings, the words “dwelling unit” is added because R-1 units can be either sleeping units or dwelling units. (see substantiation for Section 907.2.8.1.)

907.3.3.2 The section is renumbered due to relocated text. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. The words “manual or automatic” are added because these are both types of fire alarm systems. The change to this framework will allow future revisions to be made to further clarify the intent as necessary.

907.3.3.3 The section is renumbered due to relocated text. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. The words “manual or automatic” are added because these are both types of fire alarm systems. The change to this framework will allow future revisions to be made to further clarify the intent as necessary.

907.3.3.4 The section is renumbered due to relocated text. The code now clearly indicates that occupant notification is required. See rationale statement for Section 907.2.1. The words “manual or automatic” are added because these are both types of fire alarm systems. The change to this framework will allow future revisions to be made to further clarify the intent as necessary.

907.3.4 In addition to the section being renumbered, the references are renumbered so that they point to the same requirements as before. Otherwise, there is no change to this section.

907.3.4.1 The section and referenced sections are renumbered as necessary to point to the same provision. The word “approved” is deleted because all fire alarm systems are required to be approved.

907.3.4.2 Consistent with the application in 907.2.8.1 and elsewhere, if dwelling units can also apply to Group R-1 occupancies then there is no reason to segregate the occupancy in the text.

907.3.4.3 No change other than section renumbering.

907.4 Formerly Section 907.11. The wording is changed twice to read fire control “unit” rather than panel to be consistent with terminology in NFPA 72. Additionally the wording is proposed to be changed in two places from where “required” to where “provided.” It should not matter whether the fire alarm safety function is required by the code. If it is provided, it should meet certain levels of performance so that it can be expected to function in a manner consistent with its intent. For example, if duct smoke detection is “provided” although the size of the unit is less than what is “required,” it should still perform in a manner expected for that function. Therefore the term used should be provided rather than required.

The following three sections are proposed to be lumped in the same area of Section 907. They all relate to special fire safety functions that are not a part of a general fire alarm system. These include duct detectors and delayed egress locks.

907.4.1 The word “panel” is changed to “unit” to be consistent with the term used in NFA 72.

907.4.2 No change to the section other than the renumbering from 907.2.15 to 907.4.2.

907.4.3 The proposed text was a part of the last sentence in current Section 907.2.11.2. However, the intent is applicable to all types of special fire safety functions and should not be limited to only special amusement buildings. If wiring is provided as a part of the installation, it should be monitored for integrity so that it has reasonable reliability.

907.5 This is a new scoping statement. In the current code it is unclear as to whether or not the manual fire alarm requirements are to be applied when a manual fire alarm is required or whether the placement in the code indicates that manual devices are required regardless. This is also part of an attempt to differentiate the code requirements between initiating devices and notification devices.

907.5.1 The section is reworded so that it is clear that the intent is to install fire alarm boxes where a manual fire alarm system is required. This clears up the question as to when manual devices are required.

907.5.1.1 Other than the section number, nothing is changed

907.5.1.2 Other than the section number, nothing is changed

907.5.1.3 Other than the section number, nothing is changed

907.5.1.4 Other than the section number, nothing is changed

907.5.1.5 –A reference is added to the allowed projections in the IBC. Without this reference, it would be possible for a review by the fire code official to allow a protective cover that would project in a manner not allowed by the IBC.

907.5.2 The basic language is located currently in Section 907.2. However, it is referring to detection devices and should be located in this part of Section 907. The first sentence is rephrased. Smoke detectors are the limiting installation device. A smoke detection system also includes wiring, power supply, etc. It is not these things but rather the smoke detectors that are of concern. Additionally “shall be permitted” is proper code language – not “shall be allowed.” The word “approved” is inserted here because it is appropriate that there be coordination between the code official and the designer in the selection of the device that will substitute for the smoke detector.

907.6 The existing section 907.7 is given a new title to more clearly indicate the function of the activation. The first sentence is added so that it is clear that activation begins by notifying the panel and then notifying the occupants of an alarm condition.

The existing sentence (now the second sentence) has terminology changed to “fire alarm system” which is defined and used elsewhere in the code. The existing term “alarm notification system” is undefined and therefore not well enforceable. It is assumed that the “alarm notification” was intended to indicate that an alarm condition would be sent to the fire alarm control unit but it is not clear that occupant notification would be included in the assumption. The revised text clarifies the issue.

In three locations “required” is deleted and in one place “provided” inserted. As stated previously, it is assumed that when there is a manual fire alarm box, that it performs the function of every other manual fire alarm box – whether the device is “required” or optionally “provided.” If there are special circumstances wherein the anticipated response to a provided system is other than expected by this section, it will be necessary to address that with coordination between the designer and the code official.

The fourth item in the list is a proposal based on moving the provisions in the existing section 907.14 to this location. It is not intended to increase or decrease any provisions of the code – only combine similar requirements into one location for better ease of use.

There are three new exceptions proposed. A few of these are not all “new” inasmuch as they are identified rather than simply “understood” to be the case.

Exception #1 According to the general understanding and the concepts addressed in NFPA 72, it is not necessary to initiate occupant notification if the device is to close a damper or affect the function of a door. The reference to Section 907.4 is to the proposed 907.4 dealing with specific fire safety functions.

Exception #2 This exception is a recognition that there are places in the code where one alternative to occupant notification is an alarm notification at a constantly attended location. The exception is intended to clarify the code so that there is no question as to whether this general provision for alarm activation is superseded by the other sections addressing the alarm notification at a constantly attended location. There is no new exception offered here, only recognition of and coordination with those already in the code.

Exception #3 This is a new exception that attempts to address a confusing section in Section 903.4.2. The addition of the one audible alarm notification appliance is intended to provide feedback to the individual operating the manual fire alarm box so they know that something is happening. It is not intended to provide full occupant notification. There are numerous differences in interpretation of what must occur if this manual fire alarm box is actuated. A similar exception has been submitted for Section 903.4.2. Many interpret 903.4.2 to require alarm notification appliances to be installed throughout a facility due to the wording in this section that states “Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.” NFPA has added a new definition in the 2007 edition to describe this system as a “Dedicated Function Fire Alarm System”, with the intent to show that it is not the building fire alarm system, and was only installed to provide monitoring of the required sprinkler system. Since Section 903 does not require occupant notification inside the building, full occupant notification should not be required. Visible alarm notification appliance were intentionally omitted to avoid any conflict with ADAAG requirements.

907.6.1 The ability to “presignal” is a feature of a fire alarm system and not a separate system as described within NFPA 72. Thus the title and language with the section are changed to recognize that fact. And use language common to the industry. The phrase “24-hour personnel supervision” is deleted since that is language that describes a proprietary supervisory service. Instead, the phrase “at a constantly attended

location” is used, consistent with its usage in other sections of the code where a presignal feature is allowed. The text noting that occupant notification can be activated in the event of a fire is consistent with description of a presignal feature in NFPA 72.

907.6.2 The text is relocated from 907.10. There are no changes to the text.

907.6.2.1 The requirements of Section 907.10.2 are moved up. There sections address the audible devices. Because the code addresses audible and visual devices in that order, the sections are changed to reflect the order. There are no changes to the first sentence. The remainder of the large existing paragraph is divided for ease of reference and to make it clear what the exception applies to.

907.6.2.1.1 The second sentence in the existing 907.10.2 is given its own title and section. These represent the general sound pressure requirements for audibility.

907.6.2.1.2 The third sentence in the existing paragraph addresses special conditions relative to the maximum recommended sound pressure levels.

907.6.2.2 The voice alarm system is a type of notification device. It is a audible one but one which can produce intelligible words and provide direction to occupants in case of an emergency. Although it is most often associated with high-rise buildings, it is also used in large assembly spaces. Therefore, it is more appropriate that it be located in a part of section 907 that is not specifically associated with one type of building. The existing location is considered “buried” in the text and not easily found. The proposed relocation to a section with other notification devices makes the requirement more user-friendly. It should be located close to the requirements for other devices using sound. There are no proposed changes to the text.

907.6.2.2.1 This is text moved from the subordinate section to 907.2.12. There is no proposed change to the text – only renumbering to be consistent with the relocation of 907.2.12.

907.6.2.2.2 This is text moved from the subordinate section to 907.2.12. There is no proposed change to the text – only renumbering to be consistent with the relocation of 907.2.12.

907.6.2.2.3 In the subsection for large assembly voice alarms, is the requirement for emergency power for the voice alarm system. This is assumed to be true also for high-rise but is noted in the high-rise section of the IBC (403.11.1, item 3). Thus it makes sense that the provision be inserted here so that it is clear that emergency power is required.

907.6.2.3 The provision in Section 907.10.1 are relocated without change to the text or to the exceptions other than to refer to new section numbers, revised as a result of text relocation.

907.6.2.3.1 Text is relocated. There is no change to the text except for renumbering.

907.6.2.3.2 The word “initially” is added to make it clear that the intent is to initially provide for the expansion in circuitry when the system is designed. This is so that at some time in the future additional devices may be added. It is not the intent that the 20% spare capacity be increased each time that the system is modified. The reason for the additional capacity is so that visual devices can be added should hearing disabled employees be hired and renovations be required to add strobes. The 20% spare capacity is intended to be used – not continued at that time.

907.6.2.3.3 The word “dwelling unit” is added. As discussed in prior sections, if there are provisions for cooking in the I-1 or R-1 unit, it then is defined as a dwelling unit. Consequently the term must be added in order to address those conditions. The reference to the table will change as a result of the change in location and renumbering of the base code section. There are no other changes to the code section.

Table 907.6.2.3.3 The table is changed both in the title and in the second column heading. Because the table only deals with visual devices, the reference to audible devices is extraneous. Therefore, it is deleted from the table. Quantities in the table and threshold numbers are unchanged.

907.6.2.3.4 The text is proposed to be modified to be consistent with that in new section 907.3.2.3.2. The existing text only makes reference to spare capacity but does not address what the spare capacity must be. Because the reason for the spare capacity in Group R-2 is the same as that for employee areas, the language was made to be the same.

907.7 A new scoping section is added that identifies the following provisions those associated with installation and not as being somehow another requirement for additional devices. The statement is made that installation shall comply with NFPA 72. This allows similar statements all other the section to be removed as redundant.

907.7.1 The text was moved from 907.6, unchanged. Wiring is placed in the section before power supply because wiring must be installed before the power supply. Thus it is a simple order shift to a logical format.

907.7.2 The text was relocated from 907.5. Although the basic section is unchanged, a new exception is proposed to recognize the fact that battery back-up is provided for smoke alarms as the secondary power supply.

907.7.3 A portion of the installation is to establish alarm notification zones. The text is taken from the existing section 907.9 without changes.

907.7.3.1 The provisions for the zoning indicator panel are relocated here without changes; again as a subsection to zoning.

907.7.3.2 Because special notification zoning is included in the code for high-rise buildings, the provisions are inserted here, after zoning. There are no changes to the text.

907.7.4 Access to devices is an installation consideration and so it is relocated here. Otherwise the text is unchanged.

907.7.5 –The requirement for monitoring the fire alarm is relocated here from 907.15. The terminology is changed from “supervisory service” to monitoring by a “supervising station” to reflect the current usage in NFPA 72 and within the industry.

907.7.5.1 Telephone dialing devices are located in a section subordinate to that for monitoring and so are moved her, without changes.

907.8 Section 907.17 is proposed to be renumbered and function as the scoping section for acceptance testing of fire alarm systems. The total is changed to reflect the fact that testing is a portion of what it means to complete the installation. The “grocery list” of components is deleted and the sentence revised to include the fire alarm system “and all fire alarm components.” Because the acceptance testing is to be in accordance with NFPA 72, those components that have testing procedures will be included as part of the fire alarm system

907.8.1 Specific acceptance testing is noted in the existing code for smoke alarms in new buildings. There is no similar provision in the code for existing buildings although it would make sense that the same testing be applied to those devices as well. By taking those provisions and relocating them here, it is clear that all smoke alarms are to be tested as applicable to smoke alarms.

907.8.2 The record of completion should mean that the system has not only been installed but that it is tested. It is important to note testing here rather than allow the reference to NFPA 72 alone. If the system requires a special testing procedure due to special circumstances, then those testing procedures will be a part of the approved plans and/or specifications. Until it is tested, the installation is not complete. Otherwise the text from existing section 907.18 is unchanged.

907.8.3 The section about instructions is unchanged except for the renumbering.

907.9 – This section is renumbered as part of the reformatting. The reference to Chapter 10 in NFPA 72 is deleted. The code makes it clear enough that the requirements for inspection, testing and maintenance must be in accordance with NFPA 72. The provisions for that are no longer in Chapter 10. By deleting the chapter reference, the code will always be consistent with the proper reference.

907.9.1 The grocery list is proposed for deletion. It adds nothing and could possibly be construed as all inclusive. The resultant text simply states that “whenever required. . .” That should address the concern.

907.9.2 As noted for section 907.9, there is no reason to make reference to a specific chapter in NFPA 72 since the document already identifies what needs to be done for testing. And, because testing intervals are also addressed in NFPA 72, there is no reason for the second sentence which could conflict with the reference standard if NFPA 72 changes. The exception is maintained because it specifically involves an action required by the fire code official.

907.9.3 The word “smoke” is added too clarify that the sensitivity testing is only applicable to smoke detectors and should not be applied to other types of detectors. It can be understood by reading the text but it is much clearer to simply state smoke detector rather than leave it ambiguous.

907.9.4 The section is renumbered. In Exception #2 the words “and multiple-station” are added so that it is clear that the exception applies whether there is a single smoke alarm or whether there are more that are interconnected.

907.9.4.1 Again, the word “smoke” is added to make it clear that the testing is for smoke detectors and not other devices.

907.9.5 The language is changed to be clearer that the building owner bears the responsibility for maintaining the fire and life safety systems. Use of the word “ensure” does nothing to assist in the enforcement of the code. It only provides a mechanism by which the owner can argue that someone else is responsible for a particular action. While various responsibilities may be a reality, the code should not make the distinction. It is the owner’s responsibility; plain and simple.

PART II – IBC

In the Part II – IBC portion of this code change, the insertion of the new IBC Section 907.3 will give a reference to the reader for new work that is in conjunction with an existing building. It also serves to align the numbering between the IFC and the IBC. None of the other subsections of 907.3 in the fire code will be included in the building code.

Primarily the effort in this code change is in reorganization. A little was in proper use of terminology. Still a little more was in addressing changes in the NFPA 72 standard. Basically, the effort is to produce a part of the code that is similar in organization to other sections and that provides a framework where future proposals can be made without adding section after section to the end of 907.

SECTION 907 ADDITIONAL INFORMATION:

Summary of differences: There are two rather large code change proposals that are submitted together along with several smaller ones. One of the large ones is based on a comprehensive change to Section 907 in formatting and clarifications as well as several technical changes. The other proposal is intended only to address the reformatting and several clarification items. Several additional code change proposals have been submitted separately to address those technical items. If the comprehensive proposal is preferred there is no need to separately address those other technical proposals. This is the comprehensive proposal that does not include those technical changes. The list below is a brief description of the differences between the two:

- 907.1.1 – Added item #12; classification of supervising station;
- 907.2 – Added requirement for manual alarm box at fire alarm control unit, consistent with NFPA 72 requirements;
- 907.2.10.4 – Added back-up power for strobes in smoke alarms (new construction)
- 907.3.4.3 – Added back-up power for strobes in smoke alarms (existing construction)
- 907.5.1 – Added smoke detector at fire alarm control unit consistent with NFPA 72
- 907.6.2.1.1 & 907.6.2.1.2 – Changed sound pressure levels based on recommendations for the upcoming NFPA 72

Section matrix and general listing of renumbered sections. This matrix is provided as an assist in reviewing the renumbering of individual sections and to understand where certain segments of text may have been moved.

New Section	Was
907.1	907.1
907.1.1	907.1.1
907.1.2	907.1.2
907.2.	907.2
907.2.1	907.2.1
907.2.1.1	907.2.1.1
907.2.2	907.2.2
907.2.3	907.2.3
907.2.4	907.2.4
907.2.5	907.2.5
907.2.6	907.2.6
907.2.6.1	907.2.6.1
907.2.6.1.1	New
907.2.6.2	907.2.6.2
907.2.6.3	907.2.6.3
907.2.6.3.1	907.2.6.3.1
907.2.6.3.2	907.2.6.3.2
907.2.6.3.3	907.2.6.3.3
907.2.7	907.2.7
907.2.7.1	907.2.7.1
907.2.8	907.2.8
907.2.8.1	907.2.8.1
907.2.8.2	907.2.8.2
907.2.8.3	907.2.8.3
907.2.9	907.2.9
907.2.9.1	New
907.9.2	New
907.2.10	907.2.10
907.2.10.1	907.2.10.1.1
907.2.10.2	907.2.10.1.2 907.2.10.1.3
907.2.10.3	907.2.10.3
907.2.10.4	907.2.10.2
907.2.11	907.2.11
907.2.11.1	907.2.11.1
907.2.11.2	907.2.11.2
907.2.11.3	907.2.11.3
907.2.12	907.2.12
907.2.12.1	907.2.12.1
907.2.12.2	907.2.12.3
907.2.13	907.2.13
907.2.14	907.2.14
907.2.15	907.2.16
907.2.16	907.2.17
907.2.17	907.2.18
907.2.17.1	907.2.18.1
907.2.17.2	907.2.18.2
907.2.17.3	907.2.19
907.2.17.3.1	907.2.19.1
907.2.18	907.2.20
907.2.19	907.2.21

New Section	Was
907.2.20	907.2.22
907.2.21	907.2.23
907.3	907.3
907.3.1	907.3.1.1
907.3.2	New
907.3.2.1	907.3.1.2
907.3.2.2	907.3.1.3
907.3.2.3	907.3.1.4
907.3.3	New
907.3.3.1	907.3.1.5
907.3.3.2	907.3.1.6
907.3.3.3	907.3.1.7
907.3.3.4	907.3.1.8
907.3.4	907.3.2
907.3.4.1	907.3.2.1
907.3.4.2	907.3.2.2
907.3.4.3	907.3.2.3
907.4	907.11
907.4.1	907.12
907.4.2	907.2.15
907.4.3	907.2.11.2 (part)
907.5	New
907.5.1	907.4
907.5.1.1	907.4.1
907.5.1.2	907.4.2
907.5.1.3	907.4.3
907.5.1.4	907.4.4
907.5.1.5	907.4.5
907.5.2	907.2 (part)
907.6 , #4	907.7, 907.14
907.6.1	907.8
907.6.2	907.10
907.6.2.1	907.10.2
907.6.2.1.1	907.10.2
907.6.2.1.2	907.10.2
907.6.2.2	907.2.12.2 907.2.12.2.3
907.6.2.2.1	907.2.12.2.1
907.6.2.2.2	907.2.12.2.2
907.6.2.2.3	907.2.1.2
907.6.2.3	907.10.1
907.6.2.3.1	907.10.1.1
907.6.2.3.2	907.10.1.2
907.6.2.3.3	907.10.1.3
907.6.2.3.4	907.10.1.4
907.7	New
907.7.1	907.6
907.7.2	907.5
907.7.3	907.9
907.7.3.1	907.9.1
907.7.3.2	907.9.2
907.7.4	907.13
907.7.5	907.15
907.7.5.1	907.16
907.8	907.17
907.8.1	907.2.10.4
907.8.2	907.18
907.8.3	907.19
907.9	907.20
907.9.1	907.20.1
907.9.2	907.20.2
907.9.3	907.20.3
907.9.4	907.20.4
907.9.4.1	907.20.4.1
907.9.5	907.20.5

Bibliography:

NFPA 72 – National Fire Alarm Code; 2002 edition.
NFPA 72 – National Fire Alarm Code; 2007 edition – draft text
NFPA 72 – National Fire Alarm handbook; 2002 edition
NFPA 101 – Life Safety Code; 2006 edition
SFPE Handbook; 2nd edition, 1995

Cost Impact: There is little to no cost impact to this proposal, depending on the Occupancy Group classification and size of building. A few of the items may increase the cost of construction (i.e. battery backup for smoke alarms) but the added clarification should reduce the cost of construction.

Analysis: The maintenance of any technical content in proposed IBC Section 903 would rest with the IFC Code Development Committee. The need for and suitability of having the new section within the IBC is a matter to be determined by the IBC Fire Safety Code Development Committee.

PART I – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IBC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

F122–06/07

907 (IBC [F] 907)

Proponent: Gene Boecker, Code Consultants, Inc.

THIS PROPOSAL IS ON THE AGENDA OF THE IFC AND THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IFC

Revise and reorganize section as follows:

SECTION 907 FIRE ALARM AND DETECTION SYSTEMS

907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components in new and existing buildings and structures. The requirements of Section 907.2 are applicable to new buildings and structures. The requirements of Section 907.3 are applicable to existing buildings and structures as follows:

1. The requirements of Section 907.2 are applicable to new buildings and structures.
2. The requirements of Section 907.3 are applicable to existing buildings and structures.

907.1.1 ~~Construction documents~~ Shop drawings. ~~Construction documents~~ Shop drawings for fire alarm systems shall be submitted for review and approval prior to system installation. ~~Construction documents~~ shop drawings shall include, but not be limited to, all of the following:

1. A floor plan which indicates the use of all rooms.
2. Locations of alarm-initiating and notification appliances.
3. ~~Alarm control and trouble signaling equipment.~~ Location of fire alarm control unit, transponders, and notification power supplies.
4. ~~Annunciation.~~ Annunciators.
5. Power connection.
6. Battery calculations.
7. Conductor type and sizes.
8. Voltage drop calculations.
9. ~~Manufacturers,~~ data sheets indicating model numbers and listing information for equipment, devices and materials.
10. Details of ceiling height and construction.
11. The interface of fire safety control functions.
12. Classification of the supervising station.

907.1.2 Equipment. Systems and their components shall be listed and approved for the purpose for which they are installed.

907.2 Where required—new buildings and structures. An approved manual, automatic or manual and automatic fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through ~~907.2.23~~ 907.2.21 and provide occupant notification in accordance with Section ~~907.40~~ 907.6, unless other requirements are provided by another section of this code. ~~Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.~~

The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of automatic smoke detection, other automatic fire detection shall be allowed. A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

Exception: The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.

907.2.1 Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group A occupancies having an occupant load of 300 or more. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the ~~alarm~~ occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.1.1 System initiation in Group A occupancies with an occupant load of 1,000 or more. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more shall initiate a signal using an emergency voice/alarm communications system in accordance with ~~NFPA 72~~ Section 907.6.2.2.

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed 3 minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.

~~**907.2.1.2 Emergency power.**~~ (Relocated to Section 907.6.2.2.3)

907.2.2 Group B. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group B occupancies where one of the following conditions exists:

- ~~3. The combined Group B occupant load of all floors is having an occupant load of 500 or more, persons or~~
- ~~4. The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge.~~

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the ~~alarm~~ occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.3 Group E. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an occupant load of less than 50.
2. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
 - 2.1. Interior corridors are protected by smoke detectors ~~with alarm verification.~~
 - 2.2. Auditoriums, cafeterias, gymnasiums and ~~the like~~ similar areas are protected by heat detectors or other approved detection devices.
 - 2.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.
 - ~~2.4. Off-premises monitoring is provided.~~
 - ~~2-5.~~ 2.4. The capability to activate the evacuation signal from a central point is provided.
 - ~~2-6.~~ 2.5. In buildings where normally occupied spaces are provided with a two-way communication system between such spaces and a constantly attended receiving station from where a general evacuation alarm can be sounded, except in locations specifically designated by the fire code official.
3. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system, the notification appliances will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

907.2.4 Group F. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group F occupancies where both of the following conditions exist:

1. The Group F occupancy is that are two or more stories in height; and