2006/2007
DOCUMENTATION

Code Change No: F1-06/07

Original Proposal

Section: 102

Proponent: Rebecca Baker, Jefferson County, CO, Chair, ICC Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin)

Revise as follows:

SECTION 102
APPLICABILITY

102.1 Construction and design provisions. (No change to current text)

102.2 Administrative, operational and maintenance provisions. (No change to current text)

102.3 Change of use or occupancy. (No change to current text)

102.4 Application of building code. (No change to current text)

102.5 Historic buildings. (No change to current text)

102.6 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 45 and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall apply.

Exception: Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and manufacturer's instructions shall apply.

102.7 Subjects not regulated by this code. (No change to current text)

102.8 Matters not provided for. (No change to current text)

102.9 Conflicting provisions. Where, in a specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

102.10 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

102.11 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

Reason: Consistency and coordination among the I-Codes is one of the cornerstones of the ICC Code Development Process. This holds true for not only the technical code provisions but also for the administrative code provisions as contained in Chapter 1 of all the I-Codes.

In response to concerns raised by the ICC membership since publication of the first editions of the I-Codes, the ICC Board established the Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin) to review Chapter 1 administrative provisions in each code in the International Codes family and improve the correlation among the I-Codes through the code development process. In order to ensure that this correlation process will continue in an orderly fashion, it is also anticipated that future code development and maintenance of the administrative provisions of the I-Codes family will be overseen by a single, multi-discipline code development committee.

The AHC-Admin is submitting a series of code change proposals designed to provide consistent and correlated administrative provisions among the I-Codes using existing I-Code texts, as noted. The intent of this correlation effort is not to have absolutely identical text in each of the I-Codes but, rather, text that has the same intent in accomplishing the administrative tasks among the I-Codes. While some proposed text may be "new" because it was judged by the AHC to be necessary to this particular code, it is not new to the I-Code family, since it already exists in one or more of the International Codes. Unless otherwise noted, there are no technical changes being proposed to these sections. A comparative matrix of current I-Codes Chapter 1 text may be found on the ICC website at www.iccsafe.org/cs/cc/admin/index.html.

This proposal focuses on the applicability of the IFC. A section-by-section discussion follows:

102.6: This section is being editorially revised to provide an important exception, the source text for which is Section 102.8 of the International Fuel Gas Code and Section 102.4 of the *International Residential Code.*

The proposed exception recognizes the extremely unlikely but possible occurrence of the code requiring or allowing something less restrictive or stringent than the product's listing or manufacturer's instructions. This correlation will provide an added level of safety by recognizing and deferring to the expertise of the manufacturer and the independent testing laboratory process and fill a gap that currently exists in the IFC. The intent is for the highest level of safety to prevail.

A similar correlating proposal has been submitted to the *International Building Code*, *International Existing Building Code*, *International Mechanical Code*, *International Plumbing Code, International Private Sewage Disposal Code, International Energy Conservation Code, International Property Maintenance Code*, and *International Wildland-Urban Interface Code*.

102.9: This section is being proposed for revision to provide correlation with the provision in Section 102.1 of the *International Building Code*, *International Residential Code*, and *International Existing Building Code.*

The proposal adds an important provision that deals with instances when there are multiple provisions in the code on the same topic that could be different in technical content from one another. In such an instance, the added text states that the most restrictive of those provisions applies.

102.10: The purpose of this proposed change is to add a needed administrative provision not currently in the IFC, the source text for which is Section 102.2 of the *International Building Code*, *International Residential Code* and *International Existing Building Code* and Section 102.3 of the *International Code Council Electrical Code Administrative Provisions.*

This proposed provision would assist the code official in dealing with situations where other laws enacted by the jurisdiction or the state or federal government may be applicable to a condition that is also governed by a requirement in the code. In such circumstances, the requirements of the code would be in addition to that other law that is still in effect, although the code official may not be responsible for its enforcement.

A similar correlating proposal has also been submitted to the *International Mechanical Code*, *International Plumbing Code, International Private Sewage Disposal Code*, *International Fuel Gas Code, International Energy Conservation Code, International Property Maintenance Code* and *International Wildland-Urban Interface Code.*

102.11: The purpose of this proposed change is to provide a needed administrative provision not currently in the IFC, the source text for which is Section 102.3 of the *International Building Code, International Residential Code* and *International Existing Building Code* and Section 102.5 of the *International Code Council Electrical Code Administrative Provisions.*

This new provision would provide a code application tool for the code official by making it clear that, in a situation where the code makes reference to a chapter or section number or to another code provision without specifically identifying its location in the code, then that referenced section, chapter or provision is in this code and not in a referenced code or standard.

A similar correlating proposal has also been submitted to the *International Private Sewage Disposal Code*, *International Mechanical Code*, *International Plumbing Code, International Fuel Gas Code, International Property Maintenance Code* and *International Wildland-Urban Interface Code.*

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

Public Hearing Results

Committee Action: Approved as Modified

Modify proposal as follows:

102.6 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 45 and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall apply.

~~**Exception**: Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and manufacturer's instructions shall apply.~~

(Portions of proposal not shown remain unchanged)

Committee Reason: The exception would allow the listing or manufacturer's instructions to supercede the code even if they were less restrictive than the code.

Assembly Action: None

Final Hearing Results

F1-06/07 AM

Code Change No: F3-06/07

Original Proposal

Section: 103

Proponent: Rebecca Baker, Jefferson County, CO, Chair, ICC Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin)

Revise as follows:

SECTION 103
DEPARTMENT OF FIRE PREVENTION

103.1 General. (No change to current text)

103.2 Appointment. The fire code official shall be appointed by the chief appointing authority of the jurisdiction; ~~and the fire code official shall not be removed from office except for cause and after full opportunity to be heard on specific and relevant charges by and before the appointing authority.~~

103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the fire code official shall have the authority to appoint a deputy(s) ~~fire code official, other related technical officers, inspectors and other employees~~. Such employees shall have powers as delegated by the fire code official.

103.4 Liability. The fire code official, member of the board of appeals ~~officer~~ or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance shall not thereby be rendered liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission ~~required or permitted~~ in the discharge of official duties.

103.4.1 Legal defense. (No change to current text)

Reason: Consistency and coordination among the I-Codes is one of the cornerstones of the ICC Code Development Process. This holds true for not only the technical code provisions but also for the administrative code provisions as contained in Chapter 1 of all the I-Codes.

In response to concerns raised by the ICC membership since publication of the first editions of the I-Codes, the ICC Board established the Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin) to review Chapter 1 administrative provisions in each code in the International Codes family and improve the correlation among the I-Codes through the code development process. In order to ensure that this correlation process will continue in an orderly fashion, it is also anticipated that future code development and maintenance of the administrative provisions of the I-Codes family will be overseen by a single, multi-discipline code development committee.

The AHC-Admin is submitting a series of code change proposals designed to provide consistent and correlated administrative provisions among the I-Codes using existing I-Code texts, as noted. The intent of this correlation effort is not to have absolutely identical text in each of the I-Codes but, rather, text that has the same intent in accomplishing the administrative tasks among the I-Codes. While some proposed text may be "new" because it was judged by the AHC to be necessary to this particular code, it is not new to the I-Code family, since it already exists in one or more of the International Codes. Unless otherwise noted, there are no technical changes being proposed to these sections.

This proposal focuses on the Department of Fire Prevention. A section-by-section discussion follows:

103.2: The purpose of this change is to provide correlation with current Section 103.2 of the *International Building Code*, *International Residential Code* and *International Existing Building Code*, and Section 301.2 of the *International Code Council Electrical Code Administrative Provisions*.

The AHC felt that text relating to the removal of the code official should be deleted because it is a local personnel procedural matter that is outside the scope of the code. Removal from office is not usually associated with an administrative code chapter, but is more frequently found in state statute, a union contract or civil service law.

A similar correlating proposal has also been submitted to the *International Mechanical Code*, *International Plumbing Code, International Property Maintenance Code*, *International Zoning Code, International Wildland-Urban Interface Code*, *International Fuel Gas Code.*

103.3: The purpose of this proposed change is to provide correlation with Section 103.3 of the *International Building Code*, *International Residential Code* and *International Existing Building Code*, and Section 301.3 of the *International Code Council Electrical Code Administrative Provisions*.

The new text provides the code official with an important administrative tool in assigning personnel to assist with the administration and enforcement of the code within the department.

A similar correlating proposal has also been submitted to the *International Mechanical Code*, *International Plumbing Code, International Wildland-Urban Interface Code* and *International Private Sewage Disposal Code.*

103.4: The purpose of this proposed change is to provide correlation with Section 104.8 of the *International Building Code*, *International Residential Code*, *International Existing Building Code*, the texts of which the AHC felt provide a more complete and logical presentation of the provision. It will also afford important protection to members of the appeals board who typically serve voluntarily and might not personally have the liability protection afforded by the revised text.

A similar correlating proposal has been submitted to the *International Mechanical Code*, *International Plumbing Code, International Wildland-Urban Interface Code* and *International Private Sewage Disposal Code.*

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

SECTION 103
DEPARTMENT OF FIRE PREVENTION

103.1 General. (No change to current text)

103.2 Appointment. The fire code official shall be appointed by the chief appointing authority of the jurisdiction; and the fire code official shall not be removed from office except for cause and after full opportunity to be heard on specific and relevant charges by and before the appointing authority.

103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the fire code official shall have the authority to appoint a deputy~~(s)~~ fire code official, other related technical officers, inspectors and other employees. ~~Such employees shall have powers as delegated by the fire code official.~~

103.4 Liability. The fire code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance shall not thereby be rendered liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.

103.4.1 Legal defense. (No change to current text)

Committee Reason: The proposal will provide enhanced liability protection, especially to volunteer board of appeals members. The modification reflects the committee's position that current Sections 103.2 and 103.3 are adequate and preferred.

Assembly Action: **None**

Final Hearing Results

F3-06/07 **AM**

Code Change No: F10-06/07

Original Proposal

Sections: 105.6.23, 105.6.31, 308.5, 308.5.1, 202

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

1. Revise as follows:

105.6.23 Hot work operations. An operational permit is required for hot work including, but not limited to:

1. Public exhibitions and demonstrations where hot work is conducted.
2. Use of portable hot work equipment inside a structure.

   Exception: Work that is conducted under a construction permit.

3. Fixed-site hot work equipment such as welding booths.
4. Hot work conducted within a ~~hazardous fire~~ wildfire risk area.
5. Application of roof coverings with the use of an open-flame device.
6. When approved, the fire code official shall issue a permit to carry out a Hot Work Program. This program allows approved personnel to regulate their facility's hot work operations. The approved personnel shall be trained in the fire safety aspects denoted in this chapter and shall be responsible for issuing permits requiring compliance with the requirements found in Chapter 26. These permits shall be issued only to their employees or hot work operations under their supervision.

105.6.31 Open flames and torches. An operational permit is required to remove paint with a torch; or to use a torch or open-flame device in a ~~hazardous fire~~ wildfire risk area.

308.5 Open-flame devices. Torches and other devices, machines or processes liable to start or cause fire shall not be operated or used in or upon ~~hazardous fire~~ wildfire risk areas, except by a permit in accordance with Section 105.6 secured from the fire code official.

Exception: Use within inhabited premises or designated campsites which are a minimum of 30 feet (9144 mm) from grass-, grain-, brush- or forest-covered areas.

308.5.1 Signals and markers. Flame-employing devices, such as lanterns or kerosene road flares, shall not be operated or used as a signal or marker in or upon ~~hazardous fire~~ wildfire risk areas.

Exception: The proper use of fusees at the scenes of emergencies or as required by standard railroad operating procedures.

2. Add new definition as follows:

SECTION 202
GENERAL DEFINITIONS

WILDFIRE RISK AREA. Land which is covered with grass, grain, brush or forest, whether privately or publicly owned, which is so situated or is of such inaccessible location that a fire originating upon it would present an abnormally difficult job of suppression or would result in great or unusual damage through fire or such areas designated by the fire code official.

Reason: Clarifies the application of the code by reflecting the intent of the legacy code that served as the source of these requirements (UFC 97 edition Section 209). Also eliminates confusion with the term hazardous fire area and fire area.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides a more appropriate term with a definition and clarifies the intent of the code.

Assembly Action: **None**

Final Hearing Results

F10-06/07 **AS**

Code Change No: F14-06/07

Original Proposal

Sections: 106.2.1 (New), 106.2.2 (New)

Proponent: Rebecca Baker, Jefferson County, CO, Chair, ICC Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin)

Add new text as follows:

106.2.1 Inspection requests. It shall be the duty of the holder of the permit or their duly authorized agent to notify the fire code official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

106.2.2 Approval required. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the fire code official. The fire code official, upon notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or

notify the permit holder or his or her agent wherein the same fails to comply with this code. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the fire code official.

Reason: Consistency and coordination among the I-Codes is one of the cornerstones of the ICC Code Development Process. This holds true for not only the technical code provisions but also for the administrative code provisions as contained in Chapter 1 of all the I-Codes. In response to concerns raised by the ICC membership since publication of the first editions of the I-Codes, the ICC Board established the Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin) to review Chapter 1 administrative provisions in each code in the International Codes family and improve the correlation among the I-Codes through the code development process. In order to ensure that this correlation process will continue in an orderly fashion, it is also anticipated that future code development and maintenance of the administrative provisions of the I-Codes family will be overseen by a single, multi-discipline code development committee.

The AHC-Admin is submitting a series of code change proposals designed to provide consistent and correlated administrative provisions among the I-Codes using existing I-Code texts, as noted. The intent of this correlation effort is not to have absolutely identical text in each of the I-Codes but, rather, text that has the same intent in accomplishing the administrative tasks among the I-Codes. While some proposed text may be "new" because it was judged by the AHC to be necessary to this particular code, it is not new to the I-Code family, since it already exists in one or more of the International Codes. Unless otherwise noted, there are no technical changes being proposed to these sections. A comparative matrix of current I-Codes Chapter 1 text may be found on the ICC website at www.iccsafe.org/cs/cc/admin/index.html.

This proposal focuses on improved inspection requirements. A section-by-section discussion follows:

106.2.1: The purpose of this proposed change is to provide a needed administrative provision not currently in the IWUIC, the source text for which is Section 109.5 of the *International Building Code* and *International Existing Building Code,* Section 109.3 of the *International Residential Code* and Section 706.2 of the *International Code Council Electrical Code Administrative Provisions.*

This section would provide the code official with a useful administrative tool that would make it clear that it is the responsibility of the permit holder to arrange for the required inspections when completed work is ready, thus providing sufficient time for the code official to schedule an inspection visit. It also establishes the responsibility for keeping work open for inspection and providing all means needed to accomplish the inspection.

A similar correlating proposal has also been submitted to the *International Fire Code*, *International Fuel Gas Code, International Plumbing Code*, *International Private Sewage Disposal Code*, and *International Mechanical Code.*

106.2.2: The purpose of this proposed change is to provide a needed administrative provision not currently in the IWUIC, the source text for which is Section 109.6 of the *International Building Code* and *International Existing Building Code,* Section 109.4 of the *International Residential Code* and Section 702.1.8 of the *International Code Council Electrical Code Administrative Provisions.*

This section would provide the code official with a useful administrative tool that would enhance the code official's control over projects by establishing that work cannot progress beyond the point of a required inspection without the code official's approval and that any item not approved cannot be concealed until it has been corrected and approved by the code official.

A similar correlating proposal has also been submitted to the *International Fire Code*, *International Fuel Gas Code, International Plumbing Code*, *International Private Sewage Disposal Code*, and *International Mechanical Code.*

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

Analysis: If this code change is approved, the final number of this new section will be correlated with all other approved code changes affecting Section 106 of this code.

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement and for consistency with the action on WUIC9-06/07 that includes the text proposed here. The added text will reflect current practice.

Assembly Action: **None**

Final Hearing Results

F14-06/07 **AS**

Code Change No: F15-06/07

Original Proposal

Section: 106.3

Proponent: Lawrence Brown, CBO. National Association of Home Builders

Revise as follows:

106.3 Concealed work. It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Whenever any installation subject to inspection prior to use is covered or concealed without having first been inspected, the fire code official shall have the authority to require that such work be exposed for inspection. Neither the fire code official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

Reason: The added text is from Sections 109.1 and 109.6 of the IBC. The added text provides a more complete provision related to work that may be concealed.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will improve the regulations on premature concealment of work requiring inspection.

Assembly Action: **None**

Final Hearing Results

F15-06/07 **AS**

Code Change No: F20-06/07

Original Proposal

Section: 112 (New)

Proponent: Rebecca Baker, Jefferson County, CO, Chair, ICC Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin)

Add new text as follows:

SECTION 112
FEES

112.1 Fees. A permit shall not be issued until the fees have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

112.2 Schedule of permit fees. A fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

112.3 Work commencing before permit issuance. Any person who commences any work, activity or operation regulated by this code before obtaining the necessary permits shall be subject to an additional fee established by the fire code official, which shall be in addition to the required permit fees.

112.4 Related fees. The payment of the fee for the construction, alteration, removal, or demolition of work done in connection to or concurrently with the work or activity authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law

112.5 Refunds. The fire code official is authorized to establish a refund policy.

Reason: Consistency and coordination among the I-Codes is one of the cornerstones of the ICC Code Development Process. This holds true for not only the technical code provisions but also for the administrative code provisions as contained in Chapter 1 of all the I-Codes.

In response to concerns raised by the ICC membership since publication of the first editions of the I-Codes, the ICC Board established the Ad Hoc Committee on the Administrative Provisions in the I-Codes (AHC-Admin) to review Chapter 1 administrative provisions in each code in the International Codes family and improve the correlation among the I-Codes through the code development process. In order to ensure that this correlation process will continue in an orderly fashion, it is also anticipated that future code development and maintenance of the administrative provisions of the I-Codes family will be overseen by a single, multi-discipline code development committee.

The AHC-Admin is submitting a series of code change proposals designed to provide consistent and correlated administrative provisions among the I-Codes using existing I-Code texts, as noted. The intent of this correlation effort is not to have absolutely identical text in each of the I-Codes but, rather, text that has the same intent in accomplishing the administrative tasks among the I-Codes. While some proposed text may be "new" because it was judged by the AHC to be necessary to this particular code, it is not new to the I-Code family, since it already exists in one or more of the International Codes. Unless otherwise noted, there are no technical changes being proposed to these sections. A comparative matrix of current I-Codes Chapter 1 text may be found on the ICC website at www.iccsafe.org/cs/cc/admin/index.html.

This proposal focuses on proposed permit fee provisions in the IFC. The purpose of this proposed change is to provide needed administrative provisions not currently in the IFC, the source text for which is Section 108 of the *International Building Code*, *International Existing Building Code* and *International Residential Code.* A section-by-section discussion follows:

112.1: This section requires that all fees be paid prior to permit issuance or release of an amendment to a permit. Since some or all of the enforcement department operations are usually intended to be supported by fees paid by the user of department services, it is important that these fees are received prior to the department incurring any expense.

112.2: This section authorizes the establishment of a schedule of fees by the jurisdiction. The fees are usually established by law, such as in an ordinance adopting the code, a separate ordinance or legally promulgated regulation, as required by state or local law and are often based on a valuation of the work to be performed.

112.3: The department will incur certain costs (i.e., inspection time and administrative) when investigating and citing a person who has commenced work without having obtained a permit. This section authorizes the fire code official to recover those costs by establishing a fee, in addition to that collected when the required permit is issued, to be imposed on the responsible party. In a slight modification from the source text, note that activities and operations regulated by the code have been included

112.4: This provision would provide the fire code official and the jurisdiction with a useful administrative tool that makes it clear that all applicable fees of the jurisdiction for regulated work that is done collateral to the work being done under this code's permit, such as sewer connections, water taps, driveways, signs, etc.) must be paid.

112.5: This section authorizes the fire code official to establish a policy to regulate the refund of fees, which may be full or partial, typically resulting from the revocation, abandonment or discontinuance of a building project for which a permit has been issued and fees have been collected.

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

Analysis: If this code change is approved, the final number of this new section will be correlated with all other approved code changes affecting Chapter 1 of this code.

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

SECTION 112
FEES

112.1 Fees. A permit shall not be issued until the fees have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

112.2 Schedule of permit fees. A fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

112.3 Work commencing before permit issuance. Any person who commences any work, activity or operation regulated by this code before obtaining the necessary permits shall be subject to an additional fee established by the applicable governing authority ~~fire code official~~, which shall be in addition to the required permit fees.

112.4 Related fees. The payment of the fee for the construction, alteration, removal, or demolition of work done in connection to or concurrently with the work or activity authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law

112.5 Refunds. The applicable governing authority ~~fire code official~~ is authorized to establish a refund policy.

Committee Reason: For consistency with the action on WUIC15-06/07. The proposal provides a means for the fire code official to recoup the costs of departmental operations. The modification will correlate the terminology of Sections 112.3 and 112.5 with Section 112.2.

Assembly Action: **None**

Final Hearing Results

F20-06/07 **AM**

Code Change No: F23-06/07

Original Proposal

Section: 201.4

Proponent: Steven L. Stimmel, Captain, Iowa City Fire Department, representing himself

Revise as follows:

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies. ~~*Webster's Third New International Dictionary of the English Language, Unadbridged*~~ *Merriam Webster's Collegiate Dictionary, 11th Edition*, shall be considered as providing ordinarily accepted meanings.

Reason: *Webster's Third New International Dictionary of the English Language, Unabridged* is difficult to find and cost prohibitive to purchase. Even in a community that houses a major university, this dictionary is unavailable at any local bookstore. If special ordered, it costs over $160.00. *Merriam Webster's Collegiate Dictionary, 11th Edition* is available at most bookstores for under $30.00 hardcover and under $10.00 on CD-ROM.

The National Fire Protection Association recognizes *Merriam Webster's Collegiate Dictionary, 11th Edition* as the official dictionary of NFPA 1, Uniform Fire Code, 2006 Edition. I believe it is in everyone's best interest to have the IFC and NFPA utilize the same dictionary.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. Any dictionary referenced in the code should be readily available.

Assembly Action: **None**

Final Hearing Results

F23-06/07 **AS**

Code Change No: F28-06/07

Original Proposal

Sections: 308.3.1, 308.3.1.1

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

Revise as follows:

308.3.1 Open-flame cooking devices. Charcoal burners and other open-flame cooking devices shall not be operated on combustible balconies or within 10 feet (3048 mm) of combustible construction**.**

Exceptions:

1. One- and two-family dwellings.
2. Where buildings, balconies and decks are protected by an automatic sprinkler system.
3. ~~**308.3.1.1 Liquefied-petroleum-gas-fueled cooking devices.**~~ LP-gas ~~burners~~ cooking devices having LP gas container with a water capacity not greater than 2.5 pounds [nominal 1 pound (0.454 kg) LP-gas capacity]~~ shall not be located on combustible balconies or within 10 feet (3048 mm) of combustible construction~~.

   ~~**Exception:** One- and two-family dwellings.~~

Reason: LP-gas-fueled cooking devices are included in the "open-flame cooking devices" regulated by Section 308.3.1. It has been pointed out that Section 308.3.1.1 is essentially an exception to the prohibition contained in Section 308.3.1 and that the code should be revised to clarify that fact. Also, the term "burners" should be revised for consistent terminology with the charging paragraph.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: The proposal clarifies the intent and application of the section and eliminates redundancy.

Assembly Action: **None**

Final Hearing Results

F28-06/07 **AS**

Code Change No: F29-06/07

Original Proposal

Section: 311.2.1

Proponent: Michael G. Kraft, Division of State Fire Marshal, State of Ohio

Revise as follows:

311.2.1 Security. Exterior openings and interior openings accessible to other tenants or unauthorized persons shall be boarded, locked, blocked or otherwise protected to prevent entry by unauthorized individuals. The fire code official is authorized to placard, post signs, erect barrier tape, or take similar measures as necessary to secure public safety.

Reason: The purpose of this code change is to specifically authorize the fire code official to post "keep out" type signs when necessary in these situations. This proposed new text simply memorializes the action that many fire service personnel would believe an appropriate tool in this circumstance.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the fire code official's authority in posting buildings.

Assembly Action: **None**

Final Hearing Results

F29-06/07 AS

Code Change No: F30-06/07

Original Proposal

Section: 311.5

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

Revise as follows:

311.5 Placards. Any vacant or abandoned buildings or structures determined to be unsafe pursuant to Section 110 of this code relating to structural or interior hazards shall be marked as required by Sections 311.5.1 through 311.5.5.

Reason: To establish guidance for the reader to determine when the placards should be required on buildings.

It was the intent of the original proponent to limit this section to vacant buildings. The original reason for this proposal read: "This addition to the IFC will put the codes in compliance with the FEMA Initiative on vacant structures and will make fire department operations much safer as this will allow them to do inspections of such properties and use a nationally recognized marking system to identify the structural stability of vacant buildings thus preventing another Worcester tragedy".

However the section references Section 110, which goes way beyond vacant and abandoned buildings. Section 110 covers everything from equipment problems to fire hazards to egress issues and beyond. As written this section will require the listed markings on occupied buildings. One only has to read Section 110 to see where this proposal would be very difficult to administer as written.

This proposal adds language in Section 311.5 that limits the use of these markings to abandoned or vacant buildings only. This proposal improves the code by setting appropriate guidelines for when placarding should be required and that this improves this section and in fact, brings it in line with the original FEMA proposal, which was the goal of the original proponents.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the intent of the code by focusing on structural and interior hazards that may not otherwise be readily apparent to arriving fire companies.

Assembly Action: **None**

Final Hearing Results

F30-06/07 AS

Code Change No: F31-06/07

Original Proposal

Section: 311.5.2

Proponent: Lawrence Brown, CBO, National Association of Home Builders

Revise as follows:

311.5.2 Placard size and color. Placards shall be 24 inches by 24 inches (610 mm by 610 mm) minimum in size with a red background, white reflective stripes and a white reflective border. The stripes and border shall have a 2-inch (51 mm) minimum stroke.

Reason: The size of these placards, and its stripes and border should not be exact. A minimum size is more appropriate and enforceable.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides needed clarification of the code's minimum size requirements for sign and lettering.

Assembly Action: **None**

Final Hearing Results

F31-06/07 **AS**

Code Change No: F34-06/07

Original Proposal

Section: 401.3

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

Revise as follows:

401.3 Emergency ~~forces~~ responder notification. Notification of emergency responders shall be in accordance with Sections 401.3.1 through 401.3.3

401.3.1 Fire events. In the event an unwanted fire occurs on a property, the owner or occupant shall immediately report such condition to the fire department. ~~Building employees and tenants shall implement the appropriate emergency plans and procedures.~~

401.3.2 Alarm activations. Upon activation of a fire alarm signal, employees or staff shall immediately notify the fire department.

401.3.3 Delayed notification. ~~No~~ A person shall not, by verbal or written directive, require any delay in the reporting of a fire to the fire department.

401.4 Required plan implementation. In the event an unwanted fire is detected in a building or a fire alarm activates, the emergency plan shall be implemented.

~~401.3.1~~ 401.5 Making false report. ~~It shall be unlawful for~~ A person ~~to~~ shall not give, signal, or transmit a false alarm.

~~401.3.3~~ 401.6 Emergency evacuation drills. ~~Nothing in this section shall prohibit~~ The sounding of a fire alarm signal ~~or~~ and the carrying out of an emergency evacuation drill in accordance with the provisions of Section 405 shall be allowed.

(Renumber subsequent sections)

Reason: The current code does not direct occupants to leave in the event of an unwanted fire. Fire code language is needed to prohibit delayed evacuation. This code change also clarifies the existing IFC language and the intent of the code.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the intent of the section and relocates an emergency plan action item to a more appropriate text location.

Assembly Action: **None**

Final Hearing Results

F34-06/07 **AS**

Code Change No: F35-06/07

Original Proposal

Section: 401.3.4 (New)

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

Add new text as follows:

401.3.4 Unplanned evacuation. Evacuations made necessary by the unplanned activation of a fire alarm system or by any other emergency shall not be substituted for a required evacuation drill.

Reason: Evacuation drills are intended to provide for an assessment of the adequacy of an emergency action plan and the response of the building occupants. Occupants may or may not be forewarned of a pending drill depending on the circumstances, but, the staff having the responsibility for conducting the drill do prepare for drills and a key aspect is having monitors in place to assess individual performance. An unplanned evacuation does not allow for effective monitoring or performance and should not be counted towards as a required drill.

The proposed text makes it clear the unplanned evacuations will not be applied to the number of drills required.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal reaffirms that the required number of evacuation drills must be conducted, regardless of actual evacuations that may occur, to reinforce the evaluation of procedures and performance.

Assembly Action: **None**

Final Hearing Results

F35-06/07 **AS**

Code Change No: F36-06/07

Original Proposal

Section: 404.5.1 (New)

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

Add new text as follows:

404.5.1 Distribution. The fire safety and evacuation plans shall be distributed to the tenants and building service employees by the owner or owner's agent. Tenants shall distribute to their employees applicable parts of the fire safety plan affecting the employees' actions in the event of a fire or other emergency.

Reason: Fire safety and evacuation plans are only effective when all building occupants have been informed of the contents of the plan. In the case of a multi-tenant building the plan must address the individual tenant spaces and distribution to all effected occupants is important for a coordinated response to an emergency.

The proposed text provides for the buildings owner or the owner's agent to distribute the plan to all tenants and building service employees. Since the owner and or agent of the owner usually do not have direct access to the tenants' employees, the individual tenants would then have the responsibility to distribute the applicable portion of the plan to their employees.

This provides for a wider distribution of the responsibility to plan for emergencies and to follow the requirements of the plan.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will increase the likelihood of a successful evacuation plan by requiring distribution to all occupants.

Assembly Action: **None**

Final Hearing Results

F36-06/07 **AS**

Code Change No: F38-06/07

Original Proposal

Section: 408.11.1

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

Revise as follows:

408.11.1 Lease plan. A lease plan shall be prepared for each covered mall building. The plan shall include the following information in addition to that required by Section 404.3.2:

1. Each occupancy, including identification of tenant.
2. Exits from each tenant space.

3. Fire protection features, including the following:
   3.1. Fire department connections.
   3.2. Fire command center.
   3.3. Smoke management system controls.
   3.4. Elevators ~~and~~, elevator machine rooms and controls.
   3.5. Hose valves outlets.
   3.6. Sprinkler and standpipe control valves.
   3.7. Automatic fire-extinguishing system areas.
   3.8. Automatic fire detector zones.
   3.9. Fire barriers.

Reason: This change recognizes situations where the elevator machine room may be remote from the elevator itself. In some cases the elevator machine room is remote from the elevator itself therefore its location should be highlighted in such plans.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the intent of the code regarding the protected areas to be included in the lease plan.

Assembly Action: **None**

Final Hearing Results

F38-06/07 **AS**

Code Change No: F40-06/07

Original Proposal

Sections: 505.1 (IBC [F] 501.2); IRC R321.1

Proponent: Paul Hayward, City of Farmington, UT, representing Bonneville Chapter ICC

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

PART I – IFC (IBC)

Delete and substitute as follows:

~~**505.1 Address numbers.** New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet letters. Numbers shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 0.5 inch (12.7 mm).~~

505.1 Address identification. New and existing buildings shall be provided with approved address numbers or letters. Each character shall be a minimum 4 inches (102 mm) high and a minimum of 0.5 inch (12.7 mm) wide. They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure.

PART II– IRC

~~**R321.1 Premises identification.** Approved numbers or addresses shall be provided for all new buildings in such a position as to be plainly visible and legible from the street or road fronting the property.~~

R321.1 Address identification. New buildings shall be provided with approved address numbers or letters. Each character shall be a minimum 4 inches (102 mm) high and a minimum of 0.5 inch (12.7 mm) wide. They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure.

Reason: The purpose of this change is to provide consistency among the International Building, Fire and Residential Codes. All three codes have different requirements regarding this regulation. Identifying buildings during an emergency is greatly aided by the proper placement of address identification. In emergencies, seconds may mean the different between life and death. In other than emergencies, convenience for persons attempting to locate a business, residence, public agency or other would seem to be a minimum requirement for a building. Sometimes one just can't locate a place without it being identified.

Many jurisdictions have ordinances requiring identification. The requirement is not consistent, nor is it uniform. Some federal agencies require identification on the mail box, but when that is located at the end of a private lane, with several structures located along the lane, it is impossible to determine the correct building from the group of mail boxes. When using mutual aid, emergency responders are at a distinct disadvantage. Their response becomes a true matter of life-safety. Some of the elements of this proposal have been submitted in prior cycles. It has gone before different committees and been rejected for a variety of reasons. A consequence of that action has resulted in an effort to have the proposed wording identical in all three codes. Additionally, provisions not previously considered, such as the height requirement, will now be uniform. Past committee objections have sometimes centered on wording that was not proposed for change, but was to remain as existing text, making the proponent wonder why it was not approved. In order to avoid a similar outcome, this is now a comprehensive approach to repair and maintain a very important requirement, but make it the same in all three codes. This will make it easier for users of the code and provide safety and consistency.

Bibliography: Please see G81-04/05

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

Public Hearing Results

PART I – IFC
Committee Action: **Disapproved**

Committee Reason: The proposal would delete the current "approved building identification" text that provides enforcement flexibility. The intent of the last sentence of the proposed text is unclear. The proposal should also deal with multiple buildings and common driveways for multiple buildings.

Assembly Action: **None**

PART II – IRC
Committee Action: **Disapproved**

Committee Reason: There was no evidence brought forward to justify the code change proposal. It is important to preserve the consistency that currently exists between the IFC and the IRC as it relates to address identification and the size of the lettering.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted for Part I.

Public Comment:

Paul Hayward, Farmington City, Utah, representing Bonneville Chapter ICC, requests Approval as Modified by this public comment for Part I.

Replace proposal with the following:

[F] 505.1 Address numbers. New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 0.5 inch (12.7mm). Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.

Commenter's Reason: The Committee had several objections to the original proposal. Those concerns have been addressed by retreating back to the original language in the existing IFC and IBC and simply adding the last sentence. There is a problem with buildings that have address numbers that cannot be seen from the public way. Section 505.2 in the Fire Code requires street signs to assist emergency personnel when responding to an address. This simply says that if the building cannot be seen from the public way then another identification means should be employed so that the building may be found.

Some of the discussion at the hearing centered around such things as a PUD or a grouping of university buildings. It is possible to post a site map at the entrance of a PUD, similar to the map the US Forrest Service uses at campground, and most universities have some form of building identification for visitors or new faculty, staff and students. There doesn't seem to be a problem with such an approach.

Previous proposals had a requirement that the signs could not be adversely affected by weather. A fire service person objected, stating that there was NO PROBLEM with any of the rest of the proposal (about 3 cycles back). That provision was removed from the subsequent proposals. *If you read carefully the reason given in Part II you will see that there were inconsistent provisions between the three codes---IFC, IBC and IRC.* Since the code sections to the IFC and IBC are now considered by only one committee, some of the reason for the change has disappeared (size consistency), but the reasons for the last sentence still remain.

The problem comes when a building is remote and hidden from view ad there is NO means to identify its location. That's all; very simple, straight forward and a common sense approach to safety.

PLEASE APPROVE this common sense proposal. It will assist the fire service as well as many others.

This item is on the agenda for individual consideration because public comments were submitted for Part II.

Public Comment 2:

Paul Hayward, Farmington City, Utah, representing Bonneville Chapter ICC, requests Approval as Modified by this public comment.

Replace proposal with the following:

R321.1 Address numbers. Buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 0.5 inch (12.7mm). Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.

Commenter's Reason: See F40-06/07 Part I for the reason to add the last sentence. Also, this is a very big problem in rural areas where a row of mail boxes identifies all the house-holds on a rural postal route, but gives no clue as to where any one dwelling is located. It's difficult to provide emergency services at the end of the lane next to the mail boxes. Additionally, some folks just want to tack up a piece of cardboard on a tree. The address identification should be a minimum size, stroke, and contrasting color so that it provides the safety contemplated by the code and that is best accomplished by this change.

The fact it must be approved should not provide heartburn to anyone, since that language is already contained in the current and proposed text of the code. This tool will definitely help those seeking to find a remote dwelling, especially in emergencies, when all they have is an address.

If the proposal to Part I is approved, then this change needs to be approved also to promote true consistency.

Final Hearing Results

F40-06/07, Part I	**AMPC1**
F40-06/07, Part II	**AMPC2**

Code Change No: F43-06/07

Original Proposal

Sections: 509.1 (IBC [F] 911.1)

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

Revise as follows:

509.1 Features. Where required by other sections of this code and in all buildings classified as high-rise buildings by the *International Building Code*, a fire command center for fire department operations shall be provided. The location and accessibility of the fire command center shall be approved by the fire department. The fire command center shall be separated from the remainder of the building by not less than a 1-hour fire barrier constructed in accordance with Section 706 of the *International Building Code* or horizontal assembly constructed in accordance with Section 711 of the *International Building Code*, or both. The room shall be a minimum of 96 square feet (9 m2) with a

minimum dimension of 8 feet (2438 mm). A layout of the fire command center and all features required by this section to be contained therein shall be submitted for approval prior to installation. The fire command center shall comply with NFPA72 and shall contain the following features:

1. The emergency voice/alarm communication system unit.
2. The fire department communications system.
3. Fire-detection and alarm system annunciator system.
4. Annunciator visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air-handling systems.
6. The fire-fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking stairway doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access.
13. Work table.
14. Generator supervision devices, manual start and transfer features.
15. Public address system, where specifically required by other sections of this code.
16. Elevator fire recall switch in accordance with ASME A17.1.
17. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.

Reason: Locate switches vital to needs of the fire department in the fire command center. These switches need to be located within the fire command center as required by ASME A17.1.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will provide additional needed information for fire/emergency scene commanders.

Assembly Action: **None**

Final Hearing Results

F43-06/07 **AS**

Code Change No: F44-06/07

Original Proposal

Section: 510.2 (New)

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

Add new text as follows:

510.2 Equipment access. Approved access shall be provided and maintained for all fire protection system equipment to permit immediate safe operation and maintenance of such equipment. Storage, trash and other materials or objects shall not be placed or kept in such a manner that would prevent such equipment from being readily accessible.

Reason: Section 510 *Fire Department Access to Equipment* currently contains language in Sec. 510.1 that requires identification of fire protection, detection, control for HVAC systems, sprinkler risers and valves to be identified. That existing language does not address fire department access to equipment, only identification.

The addition of new Sec. 510.2 provides language for the code official to require access to and working space around such fire suppression, protection, and detection system devices and control elements necessary for fire department use. This section further prohibits obstructions of materials or objects that may prevent such equipment from being readily accessible.

Addition of the proposed language in Sec. 510.2 will provide a requirement to maintain accessible those fire appurtenances that was the intent of the Section but not stated.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

510.2 Equipment Access. Approved access shall be provided and maintained for all fire protection ~~system~~ equipment to permit immediate safe operation and maintenance of such equipment. Storage, trash and other materials or objects shall not be placed or kept in such a manner that would prevent such equipment from being readily accessible.

Committee Reason: The proposal will provide a useful enforcement tool in keeping fire protection equipment of all kinds unobstructed and readily available. The modification deletes an unnecessary word.

Assembly Action: **None**

Final Hearing Results

F44-06/07 **AM**

Code Change No: F45-06/07

Original Proposal

Section: 602.1 (New)

Proponent: Ronald Marts, Telcordia Technologies, representing AT&T, SBC, Ameritech, PacBell, Cincinnati Bell, Qwest, Southern New England Telephone

Add new definition as follows:

602.1 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.

LITHIUM-ION BATTERY. A storage battery that consists of lithium ions imbedded in a carbon graphite or nickel metal-oxide substrate. The electrolyte is carbonate mixture or a gelled polymer. The lithium ions are the charge carriers of the battery.

Reason: This new definition was inadvertently omitted from the proposed change accepted in Cincinnati in February 2005 that added lithium-ion batteries to section 608.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal corrects an omission from a previously approved storage battery code change by providing a needed definition covering lithium-ion battery technology.

Assembly Action: **None**

Final Hearing Results

F45-06/07 **AS**

Code Change No: F46-06/07

Original Proposal

Sections: 603.3.2, Table 2703.1.1(1) [IBC Table [F] 307.1(1)]

Proponent: Lynne M. Kilpatrick, Fire Department, City of Seattle, WA

Revise as follows:

603.3.2 ~~Maximum~~ Inside fuel oil storage. Where connected to a fuel-oil piping system, ~~the maximum amount of fuel oil storage~~ a combustible liquid storage system having a maximum capacity of 660 gallons (2498 L) is allowed inside any building in a single control area ~~shall be 660 gallons (2498 L)~~. Where the amount of fuel oil stored inside a ~~building~~ single control area exceeds 660 gallons (2498 L), the storage area shall be in compliance with the *International Building Code* for a Group H-3 Occupancy.

TABLE 2703.1.1(1) [IBC Table [F] 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA
OF HAZARDOUS MATERIALS POSIG A PHYSICAL HAZARD

a. through h. (No change to current text)

i. Inside any building, ~~the maximum capacity of~~ a combustible liquid storage system that is connected to a fuel-oil piping system ~~shall be~~ and having a maximum capacity of 660 gallons shall be allowed on any floor in a single control area provided such system complies with this code. See Section 603.3.2.

(Portions of table and footnotes not shown do not change)

Reason: This proposal clarifies the intent of Section 603.3.2 which is to allow for a generator tank up to 660 gallons inside a building without requiring the tank system to be located in a Group H Occupancy. If the tank system exceeds 660 gallons then the tank system must be confined to a room or area meeting Group H occupancy requirements. The current code text states that the maximum quantity of fuel-oil storage allowed inside any building cannot exceed 660 gallons.

The change to the table clarifies the intent of the code and allows a single generator fuel tank system up to 660 gallons to be installed anywhere in a building without confining the system to a Group H room or area. It should be noted that the proposed footnote allows the tank system to be installed on any floor of the building and thus the maximum allowable quantity reductions noted in Table 2703.8.3.2 do not apply. As written, the current code text states that the maximum quantity of fuel-oil storage allowed inside any building cannot exceed 660 gallons which is quite unrealistic given the need for fuel for backup generators in virtually every newly constructed building. This code change gives relief to small generator fuel systems which currently are required to be confined to Group H Occupancy rooms or areas if the tank system exceeds 120 gallons in unsprinklered buildings or 240 gallons in sprinklered buildings.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposal's reason statement mentions generator tanks but the proposal does not. There needs to be better correlation with Table 2703.1.1(1).

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Lynne Kilpatrick, Seattle, Washington Fire Department, requests Approval as Modified by this public comment.

Replace proposal with the following modifications to current text:

1. Revise as follows:

603.3.1 Fuel oil storage in outside, aboveground tanks ~~Maximum outside fuel oil storage above ground~~. Where connected to a fuel-oil piping system, the maximum amount of fuel oil storage allowed outside above ground without additional protection shall be 660 gallons (2498 L). The storage of fuel oil above ground in quantities exceeding 660 gallons (2498 L) shall comply with NFPA 31.

2. Delete and substitute as follows:

~~**603.3.2 Maximum inside fuel oil storage.** Where connected to a fuel-oil piping system, the maximum amount of fuel oil storage allowed inside any building shall be 660 gallons (2498 L). Where the amount of fuel oil stored inside a building exceeds 660 gallons (2498 L), the storage area shall be in compliance with the *International Building Code*.~~

603.3.2 Fuel oil storage inside buildings. Fuel oil storage inside buildings shall comply with Sections 603.3.2.1 through 603.3.2.5 or Chapter 34.

603.3.2.1 Quantity limits. One or more fuel-oil storage tanks containing Class II or Class III combustible liquid shall be permitted in a building. The aggregate capacity of all such tanks shall not exceed 660 gallons (2498 L).

> **Exception:** The aggregate capacity limit shall be permitted to be increased to 3,000 gallons (11,356 L) of Class II or Class III liquid for storage in protected aboveground tanks complying with Section 3404.2.9.6, when all of the following conditions are met:
>
> 1. The entire 3,000 gallon (11,356 L) quantity shall be stored in protected aboveground tanks,
> 2. The 3,000 gallon (11,356 L) capacity shall be permitted to be stored in a single tank or multiple smaller tanks, and
> 3. The tanks shall be located in a room or rooms protected by an automatic sprinkler system complying with Section 903.3.1.1.

603.3.2.2 Restricted use and connection. Tanks installed in accordance with Section 603.3.2 shall be used only to supply fuel oil to fuel-burning or generator equipment installed in accordance with Section 603.3.2.4. Connections between tanks and equipment supplied by such tanks shall be made using closed-piping systems.

603.3.2.3 Applicability of maximum allowable quantity and control area requirements. The quantity of combustible liquid stored in tanks complying with Section 603.3.2 shall not be counted towards the maximum allowable quantity set forth in Table 2703.1.1 (1), and such tanks shall not be required to be located in a control area.

603.3.2.4 Installation. Tanks and piping systems shall be installed and separated from other uses in accordance with IMC Section 915 and IMC Chapter 13, as applicable.

> **Exception:** Protected aboveground tanks complying with Section 3404.2.9.6 shall not be required to be separated from surrounding areas.

603.3.2.5 Tanks in basements. Tanks in basements shall be located not more than two stories below grade plane.

3. Revise table as follows:

TABLE 2703.1.1(1) [IBC Table [F]307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA
OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD

a. through h. (No change to current text)

i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2. ~~Inside a building, the maximum capacity of a combustible liquid storage system that is connected to fuel-oil piping system shall be 660 gallons provided such system complies with this code.~~

(Portions of table and footnotes not shown remain unchanged)

Commenter's Reason:

1. Title corrected for editorial correlation with the revised section that follows.
2. This public comment responds to issues raised at the Orlando hearing during testimony on the original proposal as modified by a proposed amendment that was distributed and discussed. The proposed revisions resolve a longstanding problem in the IFC involving the apparent conflict between Table 2703.1.1(1), Footnote "i" and Section 603.3.2. The table implies that fuel oil tanks are subject to the MAQ/control area approach, but Section 603.3.2 instead establishes "per building" quantity limits. This revision clarifies that fuel oil tanks covered by 603.3.2 are not subject to the MAQ/control area regulatory scheme.

The recommended revision also tackles a longstanding problem involving the need for more reasonable size limits for tanks in buildings that serve fuel burning equipment and generators. The intent of this section, through its use of the term "fuel oil," was determined to be related to tanks supplying both fuel oil and generators, and this has been clarified. To address the need for more reasonable quantities, this public comment expands on an idea introduced in the floor modification in Orlando, which recommended increasing permissible quantities when "protected tanks" are used and are located in areas protected by fire sprinklers. Protected tanks represent the highest level of tank construction in widespread use. These tanks have extensive regulations in Chapter 34, and the special UL listing requirements further assure their safety. Included in the special regulations for these tanks are 1) the required ability to survive a 2-hour fire test conducted in accordance with the UL1709 fire exposure protocol, 2) a limitation that all penetrations must be made through the top of the tank (to avoid the risk of a gravity-fed leak that might be associated with a connection below liquid level) and that piping connected to the tank must be provided with anti-siphon controls where needed to prevent a siphon risk, 3) bullet resistance, 4) vehicle impact resistance, and many others. The added safety features more than compensate for the proposed quantity allowance of 3,000 gallons, and by having most of these safety features integral to the tank construction, the level of reliability is very high.

The proposal also correlates the fuel oil equipment requirements in the IFC with applicable requirements in the IMC that are probably often overlooked, and it places a reasonable limit on where tanks can be located in basements.

3. Correlates with Part 2 to clarify that fuel oil tanks installed in accordance with 603.3.2 are not regulated using the MAQ/control area approach.

Final Hearing Results

F46-06/07 AMPC1

Code Change No: F47-06/07

Original Proposal

Sections: 603.4, 603.4.2 (New)

Proponent: Lynne M. Kilpatrick, Fire Department, City of Seattle, WA

1. Revise as follows:

603.4 Portable unvented heaters. Portable unvented fuel fired heating equipment shall be prohibited in occupancies in Groups A, E, I, R-1, R-2, R-3 and R-4.

Exceptions:

1. Listed and approved unvented fuel-fired heaters, including portable outdoor gas-fired heating appliances, in one- and two-family dwellings.
2. Portable outdoor gas-fired heating appliances are allowed in accordance with Section 603.4.2.

2. Add new text as follows:

603.4.2 Portable outdoor gas-fired heating appliances. Portable gas-fired heating appliances located outdoors shall be in accordance with Sections 603.4.2.1 through 603.4.2.3.3.

603.4.2.1 Location. Portable outdoor gas-fired heating appliances shall be located in accordance with Sections 603.4.2.1.1 through 603.4.2.1.4.

603.4.2.1.1 Prohibited locations. The storage or use of portable outdoor gas-fired heating appliances is prohibited where any of the following exist:

1. Inside any occupancy when connected to the fuel gas container.
2. Inside tents, canopies and membrane structures.
3. On exterior balconies in accordance with NFPA 58.

603.4.2.1.2 Clearance to buildings. Portable outdoor gas-fired heating appliances shall be located at least 5 feet from buildings.

603.4.2.1.3 Clearance to combustible materials. Portable outdoor gas-fired heating appliances shall not be located beneath, or closer than 5 feet to combustible overhangs, awnings, sunshades or similar combustible attachments to buildings and combustible decorations.

603.4.2.1.4 Proximity to exits. Portable outdoor gas-fired heating appliances shall not be located within 5 feet of exits or exit discharges.

603.4.2.2 Portable outdoor gas-fired heating appliance installation and operation. Portable outdoor gas-fired heating appliances shall be installed and operated in accordance with Sections 603.4.2.2.1 through 603.4.2.2.4.

603.4.2.2.1 Listing and approval. Only listed and approved heating appliances utilizing a fuel gas container that is integral to the appliance shall be used.

603.4.2.2.2 Installation and maintenance. Heating appliances shall be installed and maintained in accordance with the manufacturer's instructions.

603.4.2.2.3 Tip-over switch. Portable gas-fired heating appliances shall be equipped with a tilt or tip-over switch that automatically shuts off the flow of gas if the appliance is tilted more than 15 degrees from vertical.

603.4.2.2.4 Guard against contact. The heating element or combustion chamber shall be permanently guarded so as to prevent accidental contact by persons or material.

603.4.2.3 Gas containers. Fuel gas containers for portable outdoor gas-fired heating appliances shall comply with Sections 603.4.2.3.1 through 603.4.2.3.4.

603.4.2.3.1 Approved containers. Only approved U.S. DOTn or ASME gas containers shall be used.

603.4.2.3.2 Container replacement. Replacement of gas containers in the heating appliance shall not be conducted while the public is present.

603.4.2.3.3 Container capacity. The maximum individual capacity of gas containers used in connection with portable gas-fired heating appliances shall not exceed 20 pounds.

603.4.2.3.4 Indoor storage prohibited. Gas containers shall not be stored inside as required by the *International Fuel Gas Code*.

Reason: The code currently prohibits the use of portable gas-fired heating appliances in public occupancies. In many jurisdictions LP-gas-fired portable heaters, or patio heaters, are being utilized in outdoor areas of restaurants, sidewalk cafes and hotel dining areas in increasing numbers. We are also now finding these heaters in new locations such as outdoor smoking areas and retail sites. These heaters are readily available to consumers at local home and building supply locations and it seems unreasonable to strictly prohibit the use of these heaters in outdoor areas when there is little data to support such a prohibition. This proposal adds an exception to allow for the conditional use of outdoor patio heaters and establishes general safety requirements for the storage and use of such heaters in a new Section 603.4.2.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides needed regulation of a very popular and widely utilized outdoor heating appliance.

Assembly Action: **None**

Final Hearing Results

F47-06/07 **AS**

Code Change No: F51-06/07

Original Proposal

Section: 606.8

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

Revise as follows:

606.8 Refrigerant detector. Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in the International Mechanical Code for the refrigerant classification. Detectors and alarms shall be placed in approved locations. The detector shall transmit a signal to an approved location.

Reason: This change will help ensure that a refrigerant release in a machinery room is detected as soon as possible. Machinery rooms are unattended much of the time. It is similar in intent to Section 3704.2.2.10.1 Alarms, for toxic gases. The cost impact is expected to be minimal, because equipment to send security or fire alarms is already present at most refrigeration facilities.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides an enhanced level of safety and notification.

Assembly Action: **None**

Final Hearing Results

F51-06/07 **AS**

Code Change No: F52-06/07

Original Proposal

Section: 606.9.1

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

Revise as follows:

606.9.1 Refrigeration system emergency shutoff. A clearly identified switch of the break-glass type or with an approved tamper resistant cover shall provide off-only control of ~~electrically energized equipment and appliances in the machinery room, other than refrigerant leak detectors and machinery room ventilation.~~ refrigerant compressors, refrigerant pumps, and normally closed, automatic refrigerant valves located in the machinery room. In addition, this equipment shall be automatically shut off whenever the refrigerant vapor concentration in the machinery room exceeds the vapor detector's upper detection limit or 25 percent of the LEL, whichever is lower.

Exception: In machinery rooms where only nonflammable refrigerants are used, ~~electrical equipment and appliances, other than compressors, are not required to be provided with a~~ only compressors are required to be stopped by vapor detection or the cut-off switch.

Reason: This change will help prevent the release of a large amount of refrigerant if there is a significant leak in the machinery room. It is similar in intent to Section 3704.2.2.10.2 Shut off of gas supply, for toxic gases. Energized equipment is changed to the primary equipment of concern in stopping a release, including compressors, pumps, and normally closed, automatic valves. The cost impact is expected to be minimal, because the needed equipment is already being used, including system controllers for automatic valves, pumps, and compressors, which can be connected to the gas detector.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the intent of the emergency shutoff provisions.

Assembly Action: **None**

Final Hearing Results

F52-06/07 **AS**

Code Change No: F53-06/07

Original Proposal

Sections: 608.1, Table 608.1, 608.5, 608.5.2, 608.6.1, 602 (New)

Proponent: Ronald Marts, Telcordia Technologies, representing AT&T, SBC, Ameritech, PacBell, Cincinnati Bell, Qwest, Southern New England Telephone

1. Revise as follows:

608.1 Scope. Stationary storage battery systems having an electrolyte capacity of more than 50 gallons (189L) for flooded lead acid, Nickel Cadmium, and VRLA, or 1000 pounds for Lithium-Ion and Lithium Metal Polymer, used for facility standby power, emergency power, or uninterrupted power supplies shall comply with this section and with Table 608.1.

TABLE 608.1
BATTERY REQUIREMENTS

Requirement	Nonrecombinant Batteries		Recombinant Batteries		Other
	Flooded Lead Acid Batteries	Flooded Nickel Cadmium (Ni-Cd) Batteries	Valve Regulated Lead Acid (VRLA) Batteries	Lithium-Ion	Lithium Metal Polymer
Safety Caps	Venting caps (608.2.1)	Venting caps (608.2.1)	Self-resealing flame-arresting caps (608.2.2)	No caps	No caps
Thermal runaway Management	Not required	Not required	Required (608.3)	Not required	Not Required
Spill Control	Required (608.5)	Required (608.5)	Not required	Not required	Not Required
Neutralization	Required (608.5.1)	Required (608.5.1)	Required (608.5.2)	Not required	Not Required
Ventilation	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Not Required	Not Required
Signage	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)
Seismic Protection	Required (608.8)	Required (608.8)	Required (608.8)	Required 608.8	Required 608.8
Smoke Detection	Required (608.9)	Required (608.9)	Required (608.9)	Required 608.9	Required 608.9

608.5 Spill control and neutralization. An approved method and materials for the control and neutralization of a spill of electrolyte shall be provided in areas containing lead-acid, nickel-cadmium, or other types of batteries with free-flowing liquid electrolyte. For purposes of this paragraph, a "spill" is defined as any unintentional release of electrolyte.

Exception: VRLA, Lithium-Ion, Lithium Metal Polymer, or other types of sealed batteries with immobilized electrolyte shall not require spill control.

608.5.2 Recombinant battery neutralization. For VRLA or other types of sealed batteries with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3.0 percent of the capacity of the largest VRLA cell or block in the room to a pH between 7.0 and 9.0.

Exception: Lithium-Ion and Lithium Metal Polymer batteries shall not require neutralization.

608.6.1 Room ventilation. Ventilation shall be provided in accordance with the *International Mechanical Code* and the following:

1. For flooded lead acid, flooded Ni-Cad, and VRLA batteries, the ventilation system shall be designed to limit the maximum concentration of hydrogen to 1.0 percent of the total volume of the room; or
2. Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot (1 $ft^3/min/ft^2$) [$0.0051 m^3/s\ m^2$] of floor area of the room.

Exception: Lithium-Ion and Lithium Metal Polymer batteries shall not require ventilation.

2. Add new definition as follows:

602.1 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.

LITHIUM METAL POLYMER BATTERY. A storage battery that uses an aluminum foil current collector, a vanadium oxide cathode, a solid polymer electrolyte, and a metallic lithium anode. The lithium ions are the charge carriers of the battery.

Reason: This proposed change adds Lithium Metal Polymer (LMP) batteries to Section 608. LMP batteries are currently undergoing tests by several end users for use as stationary battery back-up systems where lead acid and VRLA batteries are currently used.

The LMP battery is similar to the Lithium-ion type in its characteristics (light, energy-dense, no liquid electrolyte, etc.). This technology is becoming more popular for deployment in outdoor cabinets and in buildings as well.

Like Lithium-ion, LMP uses Lithium ions as the charge carrier. However, LMP batteries have a little more Lithium because their anode is a solid thin foil of pure Lithium (encased in a plastic-like polymer that serves as the electrolyte).

Even though LMP batteries should be recycled, they don't pose as much of an environmental hazard as lead-acid or Ni-Cad technologies. There is no gassing (the battery is truly completely sealed), no liquid electrolyte, and no really heavy metals. LMP batteries are one of the best technologies on the market for high temperature environments since they operate internally above 40 degrees C (the touch temperature of the case does not exceed 41 degrees C unless the ambient temperature exceeds that value). This battery technology has no caps and it is literally maintenance free. It is not prone to thermal runaway, and has internal disconnects and external alarms. Spill control is not required since the batteries have no liquid electrolyte. Similarly, neutralization is not required. Ventilation is not required, since there are no caps and no off-gassing. Temperature compensation is not required as the operating float voltage window is large, and heating and cooling are not necessary (internal heaters take care of the battery). Some signage and seismic control is required. Due to the sealed nature of the battery, it is a very low fire hazard. LMPs are Listed for safety to UL 1989, 2054, 60950, and 1642. NFPA 704 fire hazard diamond levels are:

Red (Flammability): 2 (case materials are UL 94 V-0)
Blue (Health): 3
Yellow (Instability): 1
White (water reactivity): 0

The new definition is required in Section 602 for clarity.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposal would exclude other Lithium Metal Polymer technologies, such as magnesium dioxide cathodes, and the hazards of thermal runaway have not been addressed. Also, the proposed definition includes text that is essentially commentary.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Ronald Marts, Telcordia Technologies, representing AT&T, BellSouth, SBC, PacBell, Ameritech, SNET, Qwest, Cincinnati Bell, requests Approval as Modified by this public comment.

Modify Table 608.1 as follows:

TABLE 608.1
BATTERY REQUIREMENTS

	Non-recombinant Batteries		Recombinant Batteries		Other
Requirement	**Flooded Lead Acid Batteries**	**Flooded Nickel Cadmium (Ni-Cd) Batteries**	**Valve Regulated Lead Acid (VRLA) Batteries**	**Lithium-Ion**	**Lithium Metal Polymer**
Safety Caps (608.2)	Venting caps (608.2.1)	Venting caps (608.2.1)	Self-resealing flame-arresting caps (608.2.2)	No caps	No caps
Thermal Runaway Management	Not required	Not required	Required (608.3)	Not required	~~Not~~ Required (608.3)
Spill Control	Required (608.5)	Required (608.5)	Not required	Not required	Not Required
Neutralization	Required (608.5.1)	Required (608.5.1)	Required (608.5.2)	Not required	Not Required
Ventilation	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Not Required	Not Required
Signage	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)
Seismic Control	Required (608.8)	Required (608.8)	Required (608.8)	Required 608.8	Required 608.8
Fire Detection	Required (608.9)	Required (608.9)	Required (608.9)	Required 608.9	Required 608.9

2. Modify current text as follows:

608.3 Thermal runaway. VRLA and lithium metal polymer battery systems shall be provided with a listed device or other approved method to preclude, detect, and control thermal runaway.

3. Modify proposed definition as follows:

BATTERY TYPES

LITHIUM METAL POLYMER BATTERY. A storage battery that is comprised of non-aqueous liquid or polymerized electrolytes, which provide ionic conductivity between lithiated positive active material electrically separated from metallic lithium or lithiated negative active material ~~uses an aluminum foil current collector, a vanadium oxide cathode, a solid polymer electrolyte, and a metallic lithium anode. The lithium ions are the charge carriers of the battery~~.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: The original proposal was submitted to include Lithium Metal Polymer (LMP) batteries to Section 608. The committee disapproved the proposed change for three reasons: 1) thermal runaway was not addressed; 2) the proposal could preclude other LMP technologies; 3) definition included text that was commentary.

This revised change addresses thermal runaway in both the table and the text. The change has also been modified to include all LMP technologies, and the definition has been modified to conform to battery industry standards.

Final Hearing Results

F53-06/07 AMPC1

Code Change No: F54-06/07

Original Proposal

Section: 608.6.3 (New)

Proponent: Lynne M. Kilpatrick, Fire Department, City of Seattle, WA

Add new text as follows:

608.6.3 Supervision. Ventilation systems required by Section 608.6.1 and 608.6.2 shall be supervised by an approved central, proprietary, or remote station service or shall initiate an audible and visual signal at a constantly attended on-site location.

Reason: The ventilation systems in 608.6.1 and 608.6.2 are required to insure that the concentration of hydrogen does not exceed 1% or present an explosion hazard. Without a supervised system or a signal at a constantly attended location, the required ventilation systems can fail without warning allowing hydrogen concentrations to build to hazardous levels. The proposed code change adds a new requirement to supervise both the required room and cabinet ventilation systems to ensure that there will be adequate notification of a system failure.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposal provides no justification as to why supervision should be required now after many years of battery operated equipment (e.g., golf carts, etc.) charging for prolonged periods. It also does not specify what aspects of the ventilation system are to be supervised.

Assembly Action: **Approved as Submitted**

Public Comment

Individual Consideration Agenda

This item is on the agenda for individual consideration because an assembly action was successful and a public comment was submitted.

Public Comment:

Stephen McCluer, American Power Conversion, requests Disapproval.

Commenter's Reason: The requirements of this proposal are too broad and vague to be enforceable. This requirement would be absolutely useless for installations using batteries that do not generate hydrogen gas, such as lithium batteries. It is especially onerous on battery cabinets.

Final Hearing Results

F54-06/07 AS

Code Change No: F55-06/07

Original Proposal

Sections: 609.3 (New), 609.3.1 through 609.3.4, 904.11.6 through 904.11.6.5

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

Revise as follows:

609.3 Operations and maintenance. Commercial cooking systems shall be operated and maintained in accordance with Sections 609.3.1 through 609.3.4.

609.3.1 ~~**904.11.6.1**~~ **Ventilation system.** The ventilation system in connection with hoods shall be operated at the required rate of air movement, and classified grease filters shall be in place when equipment under a kitchen grease hood is used.

609.3.2 ~~**904.11.6.2**~~ **Grease extractors.** Where grease extractors are installed, they shall be operated when the commercial-type cooking equipment is used.

609.3.3 ~~**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. Cleanings shall be recorded, and records shall state the extent, time and date of cleaning. Such records shall be maintained on the premises.

609.3.4 Extinguishing system service. Automatic fire-extinguishing systems protecting commercial cooking system shall be serviced as required in Section 904.11.6.

904.11.6 Operations and maintenance. Automatic fire-extinguishing systems protecting commercial cooking systems shall be ~~operated and~~ maintained in accordance with this section.

~~**904.11.6.4**~~ **904.11.6.1 Extinguishing system service.** Automatic fire-extinguishing systems shall be serviced at least every 6 months and after activation of the system. Inspection shall be by qualified individuals, and a certificate of inspection shall be forwarded to the fire code official upon completion.

~~**904.11.6.5**~~ **904.11.6.2 Fusible link and sprinkler head replacement.** Fusible links and automatic sprinkler heads shall be replaced at least annually, and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

Exception: Frangible bulbs are not required to be replaced annually.

Reason: The purpose of this code change proposal is to place the requirements for commercial kitchen hoods in Chapter 6 so they are applicable to all commercial kitchen hoods.

Currently, the operational and maintenance requirements of commercial kitchen hoods are located within IFC Section 904. There are many cases when a commercial hood system is required by the IMC but doesn't require a fire-extinguishing system, such as Type II hoods providing ventilation for steam or odors. Since the requirement that commercial hood systems shall be operated is within the fire-extinguishing system section, the current IFC has no requirement that these ventilation systems need to be activated.

The intent of this code change is not to alter the technical requirements of the IFC but to provide a better path of enforcement for the code user. It is not the purpose of this code change proposal to alter other code change proposals on this topic besides the location they are found in the IFC.

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

Analysis: While the maintenance of the technical content of Section 609 rests with the IMC Code Development Committee, the appropriateness of relocating existing text to Section 609 from Section 904, without technical change, rests with the IFC Code Development Committee.

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will enhance the code and places requirements in a more appropriate location.

Assembly Action: **None**

Final Hearing Results

F55-06/07 **AS**

Code Change No: F59-06/07

Original Proposal

Sections: 703.1.2, 703.1.3 (New), Chapter 45

Proponent: Vickie Lovell, representing Air Movement and Control Association

1. Revise as follows:

703.1.2 Smoke barriers and smoke partitions. Required smoke barriers and smoke partitions shall be maintained to prevent the passage of smoke. ~~and~~ All openings shall be protected with approved smoke barrier doors or smoke dampers in accordance with NFPA 105.

703.1.3 Fire walls, fire barriers and fire partitions. Required fire walls, fire barriers and fire partitions shall be maintained to prevent the passage of fire. All openings protected with approved doors or fire dampers shall be maintained in accordance with NFPA 80.

2. Add referenced standard to Chapter 45 as follows:

NFPA

105-03 – Standard for Installation of Smoke Door Assemblies

Reason: The maintenance for smoke doors and smoke dampers is covered by NFPA 105. Additionally the scope of NFPA 80 has been changed and expanded to include the maintenance requirements of fire dampers. This most recent editions of these standards will be voted on in June at the NFPA meeting. A copy of the final document will be provided to ICC staff and the committee is the document passes successfully and is authorized for publication by the NFPA standards Council.

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

Errata: The following (published in the "Errata to the 2006/2007 Proposed Changes to the International Codes and Analysis of Proposed Referenced Standards" provided at the code development hearings) replaced the original proposal:

Proponent: Vickie Lovell, representing Air Movement and Control Association

1. Revise as follows:

703.1.2 Smoke barriers and smoke partitions. Required smoke barriers and smoke partitions shall be maintained to prevent the passage of smoke. ~~and~~ All openings protected with approved smoke barrier doors or smoke dampers shall be maintained in accordance with NFPA 105.

2. Add new text as follows:

703.1.3 Fire walls, fire barriers and fire partitions. Required fire walls, fire barriers and fire partitions shall be maintained to prevent the passage of fire. All openings protected with approved doors or fire dampers shall be maintained in accordance with NFPA 80.

3. Add referenced standard to Chapter 45 as follows:

NFPA
105-03 – Standard for Installation of Smoke Door Assemblies

Reason: The maintenance for smoke doors and smoke dampers is covered by NFPA 105. Additionally the scope of NFPA 80 has been changed and expanded to include the maintenance requirements of fire dampers. This most recent editions of these standards will be voted on in June at the NFPA meeting. A copy of the final document will be provided to ICC staff and the committee if the document passes successfully and is authorized for publication by the NFPA standards Council.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

703.1.2 Smoke barriers and smoke partitions. Required smoke barriers and smoke partitions shall be maintained to prevent the passage of smoke. All openings protected with approved smoke barrier doors or smoke dampers shall be maintained ~~in accordance with NFPA 105~~.

703.1.3 Fire walls, fire barriers and fire partitions. Required fire walls, fire barriers and fire partitions shall be maintained to prevent the passage of fire. All openings protected with approved doors or fire dampers shall be maintained ~~in accordance with NFPA 80~~.

~~**Add referenced standard to Chapter 45 as follows:**~~

~~**NFPA** 105-03 Standard for Installation of Smoke Door Assemblies~~

Committee Reason: The proposal will provide an important enforcement tool in maintaining the original integrity of smoke resistant and fire resistance rated assemblies. The modifications are due to the proposed updated referenced standards not having been submitted to the committee for review.

Assembly Action: **Disapproved**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because an assembly action was successful.

Final Hearing Results

F59-06/07 **AM**

Code Change No: F61-06/07

Original Proposal

Section: 803.1.2

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

Revise as follows:

803.1.2 Classification in accordance with NFPA 286. Interior wall or ceiling finishes~~, other than textiles,~~ shall be allowed to be tested in accordance with NFPA 286. Finishes tested in accordance with NFPA 286 shall comply with Section 803.1.2.1. Interior wall and ceiling finish materials~~, other than textiles,~~ tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.2.1, shall be allowed to be used where a Class A classification in accordance with ASTM E 84 is required.

Reason: The phrase 'other than textiles' is contradictory, since section 803.5.1 already permits textile wall coverings to be tested in accordance with NFPA 286.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The stricken text is not needed here since textile tests are already addressed in IFC Sections 803.5.1.1 and 803.5.1.2.

Assembly Action: **None**

Final Hearing Results

F61-06/07 **AS**

Code Change No: F62-06/07

Original Proposal

Section: 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/m^3) 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal eliminates the potential for conflict between Section 803.7.3 and Section 804.2.

Assembly Action: **None**

Final Hearing Results

F62-06/07 **AS**

Code Change No: F63-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Modified**

Modify the proposal 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 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 or ~~and~~ ceiling areas of a room or space.

Committee Reason: The committee believes that the correct intent of the code is that the area of trim shall not exceed 10% of the wall or ceiling area individually. The modification clarifies that position.

Assembly Action: **None**

Final Hearing Results

F63-06/07 **AM**

Code Change No: F64-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

804.1.1 Alternate testing When the interior trim material has been tested as an interior finish 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.

804.2.4 Flame spread. The flame spread index shall not exceed 75 where tested in accordance with ASTM E 84. The smoke-developed index shall not be limited.

Exception: ~~**804.2.5 Heat release.**~~ When the interior trim material has been tested as an interior finish 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.

Committee Reason: Based on the proponent's reason statement. The proposal will provide clarification and an alternative testing means for interior trim materials. The modification clarifies how the material is to be tested and more properly makes proposed Section 804.2.5 into an exception to Section 804.2.4.

Assembly Action: **None**

Final Hearing Results

F64-06/07 **AM**

Code Change No: F65-06/07

Original Proposal

Sections: 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/cm^2 or greater; Class II, 0.22 watts/cm^2 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides reasonable regulation of a commonplace installation practice as well as an appropriate testing standard for materials used in the floor-wall base application.

Assembly Action: **None**

Final Hearing Results

F65-06/07 **AS**

Code Change No: F66-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will clarify the ignition resistance testing options for Group I-1 occupancies.

Assembly Action: **None**

Final Hearing Results

F66-06/07 **AS**

Code Change No: F67-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. Deletion of the exception recognizes that sprinklers have no effect on a smoldering ignition scenario due to the lack of a temperature increase in the room. See also the action on F66-06/07.

Assembly Action: **None**

Final Hearing Results

F67-06/07 **AS**

Code Change No: F68-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement and for consistency with the action on F67-06/07.

Assembly Action: **None**

Final Hearing Results

F68-06/07 **AS**

Code Change No: F69-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement and for consistency with the action on F67- and F68-06/07.

Assembly Action: **None**

Final Hearing Results

F69-06/07 **AS**

Code Change No: F70-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement and for consistency with the action on F67-, F68- and F69-06/07.

Assembly Action: **None**

Final Hearing Results

F70-06/07 **AS**

Code Change No: F71-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The sprinklered building exception should not be allowed because fires in correctional institutions are often intentionally set by cell occupants in locations that may be shielded from sprinkler discharge, reducing sprinkler response time and increasing the danger to occupants.

Assembly Action: **None**

Final Hearing Results

F71-06/07 **AS**

Code Change No: F72-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement and for consistency with the action on F67-, F68-, F69- and F70-06/07.

Assembly Action: **None**

Final Hearing Results

F72-06/07 **AS**

Code Change No: F75-06/07

Original Proposal

Section: 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 dormitrories 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 Results

Committee Action: **Disapproved**

Committee Reason: For consistency with the action on F74-06/07. The number of apparent problems with these proposals should be resolved by consensus among the various proponents during the public comment period.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Marcelo M. Hirschler, GBH International, representing American Fire Safety Council requests Approval as Modified by this public comment.

Modify proposal as follows:

805.4 Group R-2 college and university dormitories ~~and non-transient hotels and motels~~. The requirements in Sections 805.4.1 through 805.4.2.3 shall apply to college and university 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 NFPA 260 and shall meet the requirements for Class I. ~~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 1537or 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 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 mattress ~~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.

Commenter's Reason: The committee also recommended that consensus be obtained among the various proposals. In view of that, this comment on proposal F75 builds on the acceptance of proposal F76. This comment restricts the scope of the changes from the original sets of occupancies and addresses only "college and university dormitories classified in Group R-2", just like F76. This is equivalent to a change to proposal F76 that makes the requirements for college and university dormitories consistent with those addressed by the IFC code for other occupancies, namely health care and detention. The committee discussed that college and university dormitories are the higher-risk occupancy types within Group R-2, where the fire record has been poor. Therefore this comment restricts the scope of the initial F76 proposal to those occupancy types. The acceptance of this comment will provide an important enforcement tool for both the fire code official and college and university campus housing authorities in limiting the combustibility of student -owned furnishings that they bring to school with them. Those furnishings include both upholstered furniture and mattresses, which are the high fuel items in dormitories. Proposal F76 addresses upholstered furniture only.

As discussed in other proposals accepted by the committee, sprinklers have no effect on smoldering fires and that is the other change from Proposal F76 addressed in this comment. Moreover, all mattresses sold in the US since 1972 must be smolder resistant and all major manufacturers of upholstered furniture comply with the industry requirements that their products are smolder resistant. This also brings consistency with the committee action on the other IFC occupancies.

If this comment is accepted, the changes approved in F76 are enhanced and are not lost.

Final Hearing Results

F75-06/07 AMPC1

Code Change No: F78-06/07

Original Proposal

Section: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the code by deleting unnecessary text which could cause conflict with IFC Section 804.2 if it remained.

Assembly Action: **None**

Final Hearing Results

F78-06/07 **AS**

Code Change No: F83-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the code by adding a needed definition from the legacy codes.

Assembly Action: **None**

Final Hearing Results

F83-06/07 **AS**

Code Change No: F84-06/07

Original Proposal

Sections: 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 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.

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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides definition revisions to correlate with referenced standard NFPA 72.

Assembly Action: **None**

Final Hearing Results

F84-06/07 **AS**

Code Change No: F85-06/07

Original Proposal

Sections: 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 m^2) 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 Results

Committee Action: **Disapproved**

Committee Reason: The committee agreed that the noted sections are in need of clarification for buildings built on hilly terrain but pointed to the inconsistencies brought out in floor testimony that need to be fixed as the reason for disapproval. In Section 903.2.1, using the term "highest" could be problematic if a Group A occupancy is located below grade in that it could require more sprinklered levels than are actually necessary. The proponent's intent was to sprinkler levels to the first exit encountered, depending on whether the direction of travel is up or down and the proposal should clearly reflect that intent. It was also suggested that, since the intent is to identify exit discharge levels serving the occupancy, using the word "serving" might be useful. The proponent was encouraged to return with a public comment dealing with those issues.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Maureen Traxler, City of Seattle, Washington, Department of Planning and Development requests Approval as Modified by this public comment.

Modify proposal 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~~ nearest level of exit discharge serving the Group A occupancy. 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 that serves that portion of the building.

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.

Commenter's Reason: Buildings on sloping sites often have more than one level of exit discharge. Unless a particular level of exit discharge is specified, sections 903.2.1 and 903.2.2 are ambiguous. This public comment specifies that sprinklers are required for all floors between Group A occupancies and the level of exit discharge closest to the assembly, that also serves the assembly. This provides protection for occupants of Group A until they reach a floor that provides them access to a public way.

Similarly, section 903.2.2 is modified to provide sprinkler protection for occupants of educational buildings until they reach the nearest level of exit discharge.

Final Hearing Results

F85-06/07 **AMPC1**

Code Change No: F89-06/07

Original Proposal

Sections: 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 m^2); 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal adds a needed and reasonable sprinkler threshold that was omitted during drafting of the code to correlate with Group S-1 and other 12,000 sq.ft thresholds.

Assembly Action: **None**

Final Hearing Results

F89-06/07 **AS**

Code Change No: F90-06/07

Original Proposal

Sections: 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 m^2) 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 lineal 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: W here 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides needed clarification to the code based on published ICC interpretations on these sections.

Assembly Action: **None**

Final Hearing Results

F90-06/07 **AS**

Code Change No: F96-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will clarify the intent of the code on the need for a deck above the sprinkler to facilitate its operation.

Assembly Action: **None**

Final Hearing Results

F96-06/07 **AS**

Code Change No: F99-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will clarify the intent of the code as to how sprinkler systems are to be supervised.

Assembly Action: **None**

Final Hearing Results

F99-06/07 **AS**

Code Change No: F102-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Disapproved**

Committee Reason: The committee generally agreed with the concept of the proposal but felt that it contains vague and subjective language that could result in inconsistent enforcement. In Section 904.11.6.3.1, it is unclear who would be considered “qualified individuals” and whether that would include the fire code official. In Section 904.11.6.3.2, cleaning would be required if hoods, etc. “have an accumulation of grease” but it is unclear what that means since there will always be a certain amount of grease in the system. In Section 904.11.6.3.3, the name of the cleaning firm should also be included. A concern was also expressed that having a fixed cleaning schedule could be problematic since some cooking operations could seasonally vary in the amount of grease produced and thus the inspection frequency needed.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Daniel E. Nichols, PE, New York State Department of State, requests Approval as Modified by this public comment.

Modify proposal 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 or as approved by the fire code official. Inspections shall be by completed by qualified individuals ~~or by the fire code official~~.

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 and company performing the inspection, a description of the inspection, and when the inspection took place. Records for cleanings shall state the individual and company performing the cleaning and when the cleaning took place. Such records shall be completed after each inspection or cleaning, maintained on the premises for a minimum of three years, and be copied to the fire code official upon request.

(Portions of proposal not shown remain unchanged)

Commenter’s Reason: At the hearings in Orlando, the IFC code development committee generally agreed that a code section that gave further direction on hood cleaning was needed. This public comment addresses the concerns of the committee as well as the comments from the floor:

1. Section 904.11.6.3.1 was modified to include the phrase “or as approved by the fire code official” to allow AHJ’s to alter the inspection schedule based on specific conditions. The specific conditions that were mentioned were mainly based on irregular cooking frequencies, such as seasonal uses and religious groups. However, the seasonal use frequency in the table was left as a guidance tool for code users that do not set a different frequency in their jurisdiction.
2. Section 904.11.6.3.1 was modified to remove ‘fire code official’ from the qualified individuals sentence; returning the qualification requirements back to those found within the current IFC.
3. One comment was stated regarding ‘What does the accumulation of grease mean?” This language is currently in the IFC and the intention of the original code change proposal was not to change the conditions of when hood gets cleaned.
4. One comment regarded that the company, in addition to the individual, shall be added as part of the record requirement. Section 904.11.6.3.3 has been modified to address this concern.

I trust that the membership will consider this public comment and recognize the necessity for this code change proposal. This is 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.

It is still the intent that the hood inspection and cleaning requirements, including any changes made here, be moved to Chapter 6. This move was already approved in F55-06/07.

Final Hearing Results

F102-06/07 AMPC1

Code Change No: F104-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal improves correlation with NFPA 14, provides clarification of what type of system the hose connection must be connected to and improves the water supply to supply both hose station and sprinkler demand.

Assembly Action: **None**

Final Hearing Results

F104-06/07 AS

Code Change No: F105-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will provide correlation with the referenced standard, NFPA 14, and provides flexibility regarding the location of standpipe riser interconnection.

Assembly Action: **None**

Final Hearing Results

F105-06/07 **AS**

Code Change No: F118-06/07

Original Proposal

Sections: 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 Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will provide clarification regarding where visible alarm notification appliances are not required and will also provide better correlation with NFPA 72.

Assembly Action: **None**

Final Hearing Results

F118-06/07 **AS**

Code Change No: F120-06/07

Original Proposal

Sections: 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.

Final Hearing Results

PART I — IFC
Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the intent of the code and correlates IFC Sections 907.12 and 907.11.

Assembly Action: **None**

PART II — IMC
Committee Action: **Approved as Submitted**

Committee Reason: The proposed change provides a reference to the appropriate section of the *International Fire Code* for guidance on when a fire alarm is required.

Assembly Action: **None**

Final Hearing Results

F120-06/07, Part I	**AS**
F120-06/07, Part II	**AS**

Code Change No: F122-06/07

Original Proposal

Sections: 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. Manufacturer~~s,~~ 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 ~~907.10~~ 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:

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 ~~907.4.1~~ 907.5.2 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~~ 907.5.2 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 with integral strobes that are not equipped with battery back-up 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-1~~ 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 withNFPA72.~~

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 ~~907.2.12.2~~ 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/alarmcommunication 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 m^3/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 Delay 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 m^3/s) and serving not more than 10 air inlet openings.

~~**907.2.18.2**~~ **907.2.17.2 Alarm required.** Activation of the smoke ~~exhaust~~ control system shall activate an audible alarm at a constantly attended location.

~~**907.2.19**~~ **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.

~~**907.2.19.1**~~ **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.

~~**907.2.20**~~ **907.2.18 Covered mall buildings.** Covered mall buildings exceeding 50,000 square feet (4645 m^2) 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.

~~**907.2.21**~~ **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.

~~**907.2.22**~~ **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.

~~**907.2.23**~~ **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.~~

~~907.3.1.1~~ 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 m^2) 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 907.5.2 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~~ 9097.3.4 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-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:

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 with integral strobes that are not equipped with battery back-up 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.

~~907.4 Manual fire alarm boxes.~~ (Relocated to Section 907.5.2)
~~907.4.1 Location.~~ (Relocated to Section 907.5.2.1)
~~907.4.2 Height.~~ (Relocated to Section 907.5.2.2)
~~907.4.3 Color.~~ (Relocated to Section 907.5.2.3)
~~907.4.4 Signs.~~ (Relocated to Section 907.5.2.4)
~~907.4.5 Protective covers.~~ (Relocated to Section 907.5.2.5)
~~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 r~~equired 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 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.

907.4.4 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 installed in accordance with Sections 907.5.1 through 907.5.4.

907.5.1 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 permitted.

~~**907.4**~~ **907.5.2 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 ~~907.4.1~~ 907.5.2.1 through ~~907.4.5~~ 907.5.2.5.

~~**907.4.1**~~ **907.5.2.1 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**~~ **907.5.2.2 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**~~ **907.5.2.3 Color.** Manual fire alarm boxes shall be red in color.

~~**907.4.4**~~ **907.5.2.4 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**~~ **907.5.2.5 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*.

907.5.3 Automatic detection. The automatic fire detectors shall be smoke detectors. Where ambient conditions prohibit installation of smoke detectors, other approved automatic fire detection shall be 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.
3. Where a dedicated function fire alarm system is installed exclusively to transmit waterflow signals to a remote monitoring location, a single audible alarm notification device, in accordance with Section 903.4.2, shall be installed in the vicinity of the manual fire alarm box to activate upon detection of waterflow or upon activation of the manual fire alarm box.

~~**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 ~~120~~ 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.

~~**907.10.1**~~ **907.6.2.3 Visible alarms.** Visible alarm notification appliances shall be provided in accordance with Sections ~~907.10.1.1~~ 907.6.2.3.1 through ~~907.10.1.4~~ 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.

~~**907.10.1.1**~~ **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 *International Code Council Electrical Code Administrative Provisions* 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 m^2). 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.

~~907.9.1~~ **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 withNFPA72.

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 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 builts”) 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.

~~**907.20.1**~~ **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

Add new text as follows:

(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 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 technical and 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 one in a series of code changes. This one incorporates all the formatting changes and all the technical changes. It is hoped that this would be heard first; and, if acceptable recommended for approval by the committee. Otherwise, there are alternative code change proposals being submitted that divide the overall proposal into reformatting and 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 – The paragraph was divided and itemized for quicker visual reference to requirements for new and existing buildings.

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. #12 This is a new item to the list. One question that seems to be asked regularly but is not previously identified as being required is the supervising station information. Now it will be required to submit what firm will be performing the supervising and what type of supervision will be done.

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 907.5.3 because it has more to do with the initiating devices than to “new construction.”

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 active 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.

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 al 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 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 also two changes to this section. 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. A sentence is added in recognition of a concern raised by NFPA 72. Reference to Group R-1 is proposed to be deleted since the concept is applicable to all cases where a smoke alarm is required.

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 907.2.10.4 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. The section has been changed to 907.2.10.4 to be in alignment with the proposed changes to Section 907 that are part of this submittal.

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 and 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 of 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 changing 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 that 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 that 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 that 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 that 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 Text is added to address battery back-up as it relates top visual devices, integral to the smoke alarm. See substantiation for 907.2.10.4.

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 four 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, delayed egress locks and elevator recall.

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 This is a new section written to provide clearer reference to both the Elevator Code and the Fire Alarm Code as the standards for installation. Both of these are standards are currently referenced in the codes so there is no reason to address the question of referenced standards in the substantiation.

907.4.4 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 This is a new section that is added to address the smoke detector that is required in NFPA 72. 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. Building and fire codes provide the "when required". 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.

907.5.2 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.

907.5.2.1 Other than the section number, nothing is changed

907.5.2.2 Other than the section number, nothing is changed

907.5.2.3 Other than the section number, nothing is changed

907.5.2.4 Other than the section number, nothing is changed

907.5.2.5 – 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.

907.5.3 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" insomuch 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. A technical change is made to the minimum sound pressure level for sleeping rooms. Based on the current text in NFPA 72, the pressure level is proposed to be increased from 70 dBA to 75 dBA. Otherwise the sentence is unchanged. The higher level is deemed necessary in order to wake people from a deep sleep.

907.6.2.1.2 The third sentence in the existing paragraph addresses special conditions relative to the maximum recommended sound pressure levels. Also based on recommendations from NFPA 72, the maximum sound pressure level is proposed to be lowed from 120 dBA to 110 dBA. The reduction is based on the fact that 120 dBA is just under the threshold of pain. If a person where close to such a device when it activated the result could be permanent hearing loss. The lower threshold is considered to still be loud enough for people to hear consistent with device spacing requirements in NFPA 72 for such spaces.

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 –The 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 includes 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**

New Section	Was
907.2.18	907.2.20
907.2.19	907.2.21
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	New
907.4.4	907.2.11.2 (part)
907.5	New
907.5.1	New
907.5.2	907.4
907.5.2.1	907.4.1
907.5.2.2	907.4.2
907.5.2.3	907.4.3
907.5.2.4	907.4.4
907.5.2.5	907.4.5
907.5.3	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.

Public Hearing Results

PART I — IFC
Committee Action: Approved as Modified

Modify the proposal as follows:

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. Location of fire alarm control unit, transponders, and notification power supplies.
4. Annunciators.
5. Power connection.
6. Battery calculations.
7. Conductor type and sizes.
8. Voltage drop calculations.
9. Manufacturer 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.

907.2.8.1 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.

907.2.10.1 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.

~~**907.2.17.3**~~ **907.2.18 Deep underground buildings.** (Proposed text is unchanged)
~~**907.2.17.3.1**~~ **907.2.18.1 Public address system.** (Proposed text is unchanged)
~~**907.2.18**~~ **907.2.19 Covered mall buildings.** (Proposed text is unchanged)
~~**907.2.19**~~ **907.2.20 Residential aircraft hangars.** (Proposed text is unchanged)
~~**907.2.20**~~ **907.2.21 Airport traffic control towers.** (Proposed text is unchanged)
~~**907.2.21**~~ **907.2.22 Battery rooms.** (Proposed text is unchanged)

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.

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

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.

907.4 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 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 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.

907.4.1 Duct smoke detectors. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is required by Section 907.2 ~~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.

907.6 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 a fire alarm system is required by another section of this code ~~provided~~, it shall be activated by:

1. Automatic fire detectors.
2. Sprinkler water-flow devices.
3. 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.
3. ~~Where a dedicated function fire alarm system is installed exclusively to transmit waterflow signals to a remote monitoring location, a single audible alarm notification device, in accordance with Section 903.4.2, shall be installed in the vicinity of the manual fire alarm box to activate upon detection of waterflow or upon activation of the manual fire alarm box.~~

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.

(Portions of proposal not shown remain unchanged)

Committee Reason: Based on the proponent's reason statement. The proposal achieves the proponent's stated goals and is a substantial improvement over the current Section 907. The committee felt that the proposal as modified is a good starting point for future improvements. The modifications, which deal with concerns brought up in testimony and committee discussion, delete redundant text (907.1), retain use of a defined term (907.1.1), correct an error in including the term "dwelling units" in Group R-1 requirements (907.2.8.1, 907.2.8.2, 907.2.10.1, 907.3.3.1), clarify applicability to all deep underground buildings (907.2.18), retain a reasonable exception (907.3), retain applicability only to required systems (907.4, 907.4.1), clarify applicability only with a required alarm system (907.6), correlate with the action on F100-06/07 (907.6, Ex. 3), and recognize that the requirement can be met by simple installation of a relay in the unit (907.6.2.3).

Assembly Action: **None**

PART II — IBC FIRE SAFETY

Committee Action: **Approved as Submitted**

Committee Reason: This proposal brings the reference into both the IBC and also the IEBC. This will provide a helpful reference where new work is being done within an existing building. An additional benefit will be that it will help coordinate the numbering between Chapter 9 of the IBC and IFC and help eliminate confusion that sometimes occurs because of the difference in the numbering.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted for Part I.

Public Comment 2:

Gene Boecker, Code Consultants, Inc., requests Approval as Modified by this public comment for Part I.

Modify only Section 907.5.1 of the proposal as follows:

907.5.1 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, notification appliance circuit power extenders, and supervising station transmitting equipment.

Editorially, revise the exception to be identified as Exception Number 1 and add the following second exception:

2 The smoke detector shall not required where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Commenter's Reason: During the preparation of the code change, efforts were made to include items that were anticipated as a part of the revised NFPA 72 standard. The deadline for proposal submittal was prior to the final action of the NFPA 72 committee. During public testimony at the ICC hearings in Orlando, it was noted that one of the differences was that the NFPA 72 committee adopted language that allowed for the omission of the smoke detector if the building was sprinklered.

This modification would modify the code language and insert into the code the exception, making the IBC and IFC consistent with the fire alarm requirements in NFPA 72. This concept was discussed by the task group working on the original code change proposal. We have subsequently discussed this with the individual who raised the issue at the ICC committee hearings and resolved the issue with the original task group. This proposed modification is the result.

We believe, consistent with the NFPA 72 committee, that the need for the smoke detector is diminished if not totally eliminated by the presence of the sprinkler system throughout the building. The intent of the smoke detector was to provide an early warning device should a fire originate in the area of the fire alarm control unit. The sprinkler system, with its integral connection to the fire alarm control unit, accomplishes that purpose. This issue has been discussed at numerous code hearings in the past. A vote in favor of this modification would be consistent with the prior actions.

Public Comment 3:

Gene Boecker, Code Consultants, Inc., requests Approval as Modified by this public comment for Part I.

Modify proposal as follows:

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 installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

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. (No change to current text)
2. (No change to current text)

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the 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. (No change to current text)
2. (No change to current text)
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 installed in accordance with Section 903.3.1.1, 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. (No change to current text)
2. (No change to current text)

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

907.2.6.1 Group I-1. An automatic smoke detection system shall be installed in corridors, waiting areas open to corridors and habitable spaces other than sleeping rooms and kitchens. 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 installed in accordance with Section 903.3.1.1.
2. (No change to current text)

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

Exceptions:

1. (No change to current text)
2. (No change to current text)
3. Smoke detectors are not required in sleeping units with four or fewer occupants in smoke compartments that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

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 500 or more persons.
2. The Group M occupant load is more than 100 persons above or below the lowest level of exit discharge.

Exceptions:

1. (No change to current text)
2. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will automatically activate throughout the notification zones upon sprinkler water flow.

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. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and the occupant notification appliances will automatically activate throughout the notification zones upon a sprinkler water flow.
2. (No change to current text)

(Portions of proposal not shown remain unchanged)

Commenter's Reason: One of the efforts of the task group was to revise language for consistency with that used elsewhere in the code. During the rewrite it was determined that the *"equipped throughout with an automatic sprinkler system"* phrase should be used where applicable since it is used in other places in Chapter 9 and 10.

Inadvertently, the task group overlooked the reference language that is used non-consistently. In order to use language that is consistent and more specific, the reference language should be added to avoid confusion regarding whether one or both types of dominant sprinkler designs are acceptable. Elsewhere in the code reference is made to the applicable section for installation, This amendment would continue that application.

Final Hearing Results

F122-06/07, Part I AMPC2, 3
F122-06/07, Part II D

Code Change No: F123-06/07

Original Proposal

Sections: 909.8.1 (IBC [F] 909.8.1)

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

Revise as follows:

909.8.1 Smoke layer. The height of the lowest horizontal surface of the ~~accumulating~~ smoke layer interface shall be maintained at least 6 feet (1829 mm) above any walking surface that forms a portion of a required egress system within the smoke zone.

Reason: The purpose of this code change proposal is to remove a potential conflict between the IFC (IBC, IMC) and the design standard, NFPA 92B

NFPA 92B has a definition for the term 'smoke layer interface'. Due to the dynamics of a fire event, smoke does not accumulate at a constant rate from the ceiling of a space. NFPA 92B addresses this by discussing the smoke layer as the hazard it produces rather than the current IFC language that is often interpreted as a clear space. Retaining the term 'accumulating smoke layer' could become confusing when using NFPA 92B since it could be interpreted that the code is referencing the NFPA 92B definition of 'transition zone' or 'first indication of smoke' rather than the 'smoke layer interface.'

Bibliography: NFPA 92B, 2005 edition- Smoke Management Systems

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides correlation with the terminology used in the referenced standard, NFPA 92B.

Assembly Action: **None**

Final Hearing Results

F123-06/07 **AS**

Code Change No: F132-06/07

Original Proposal

Sections: 912.2 (IBC [F] 912.2)

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

Revise as follows:

912.2 Location. With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be approved by the fire code official.

Reason: The proposal will correlate this section with the approval language in Sections 912.2.1 and 912.2.2.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

912.2 Location. With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be approved by the fire chief ~~code official~~.

Committee Reason: The proposal will provide the desired correlation with Sections 912.2.1 and 912.2.2. The modification reflects the fact that FDC location is a matter of operational concern for the fire department.

Assembly Action: **None**

Final Hearing Results

F132-06/07 **AM**

Code Change No: F133-06/07

Original Proposal

Sections: 912.3, 912.3.2 (New), 912.3.3 (New) [IBC [F] 912.3, [F] 912.3.2 (New), [F] 912.3.3 (New)], IFC 508.5.4

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

1. Revise as follows:

912.3 Access. Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other fixed or moveable object ~~for a minimum of 3 feet (914 mm)~~. Access to fire department connections shall be approved by the fire code official.

Exception: Fences, where provided with an access gate equipped with a sign complying with the legend requirements of Section 912.4 and a means of emergency operation. The gate and the means of emergency operation shall be approved by the fire code official and maintained operational at all times.

2. Add new text as follows:

912.3.2 Clear space around connections. A working space of not less than 36 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or approved by the fire code official.

912.3.3 Physical protection. Where fire department connections are subject to impact by a motor vehicle, vehicle impact protection shall be provided in accordance with Section 312.

3. Revise as follows:

508.5.4 Obstruction. Unobstructed access to fire hydrants shall be maintained at all times. ~~Posts, fences, vehicles, growth, trash, storage and other materials or objects shall not be placed or kept near fire hydrants, fire department inlet connections or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible.~~ The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.

Reason: The phrase "...for a minimum of 3 feet..." was added by code changes F830-98 and F831-98 as a means of correlating with IFC Section 508.5.5 - Clear space around hydrants. The added phrase, however, can be and has been literally interpreted as allowing obstructions to fire department connection (FDC) access to exist as long as they are kept 3 feet away from the FDC.

The suggested solution clarifies the intent of the section by deleting the conflicting text from Section 912.3 and adding recognition that the obstructing objects regulated here can be either fixed or moveable (such as outdoor furnishings, shopping cart queue areas, etc.). A new sentence is also suggested that reinforces the approval process by the fire code official.

The suggested solution also includes an exception that recognizes the practical fact that sometimes, security or other considerations make installation of a fence around a building necessary as long as the fence meets the stated criteria. The sign requirement intends to provide a visual location cue to approaching fire apparatus where the height of the fence may obscure the visibility of the FDC. The text of the exception is based on IFC Section 503.6.

The suggested solution, in new Sections 912.3.2 and 912.3.3, includes text that is more reflective of the intent of the deleted phrase from Section 912.3 (and the intent of Section 508.5.5) and provides added protection consistent with Sections 508.5.6 and 312.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

912.3 Access. Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other fixed or moveable object. Access to fire department connections shall be approved by the fire chief ~~code official~~.

Exception: Fences, where provided with an access gate equipped with a sign complying with the legend requirements of Section 912.4 and a means of emergency operation. The gate and the means of emergency operation shall be approved by the fire chief ~~code official~~ and maintained operational at all times.

912.3.2 Clear space around connections. A working space of not less than 36 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or approved by the fire chief ~~code official~~.

(Portions of proposal not shown remain unchanged.)

Committee Reason: The proposal clarifies the intent of the code with respect to maintaining FDC's accessible and unobstructed at all times. The modifications reflect the fact that access to FDC's is a matter of operational concern for the fire department.

Assembly Action: **None**

Final Hearing Results

F133-06/07 **AM**

Code Change No: F138-06/07

Original Proposal

Section: 1028.5 (New)

Proponent: A. Hal Key, P.E., Mesa, AZ, representing himself

Add new text as follows:

1028.5 Non-exit identification. When in the opinion of the fire code official, a door is arranged, constructed similar to, or can be confused with an exit door, that door shall be identified with an approved sign reading "No Exit."

(Renumber subsequent sections)

Reason: Many times doors look like exit doors and those doors do not lead to an egress path. In may cases, these doors only open into rooms with no other way out. This added section will permit the fire code official to require the non-exit door signage. This added section is not intended to be included in the new construction requirements for a building due to the difficulty in determining the confusion between exit doors and non-exit door during the plan review process. This added section is intended for the Fire Code Official during maintenance inspections when the confusion becomes apparent.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

1028.5 Non-exit identification. ~~When in the opinion of the fire code official,~~ Where a door is adjacent to ~~arranged~~, constructed similar to, and ~~or~~ can be confused with a means of egress ~~an exit~~ door, that door shall be identified with an approved sign that identifies the room name or use of the room. ~~reading "No Exit."~~

Committee Reason: The proposal will provide an important enforcement tool for the enhancement of egress safety. The modification removes potential confusion that could be caused by signage that uses the word "exit"

Assembly Action: **None**

Final Hearing Results

F138-06/07 **AM**

Code Change No: F140-06/07

Original Proposal

Section: 1106.5.1

Proponent: Anthony W. Richter, The Boeing Company

Revise as follows:

1106.5.1 Positioning of aircraft fuel servicing vehicles. Aircraft fuel~~ing~~ servicing vehicles shall not be located, parked or permitted to stand in a position where such unit would obstruct egress from an aircraft should a fire occur during fuel-transfer operations. ~~Tank vehicles shall not be located, parked or permitted to stand under any portion of an aircraft.~~

Reason: The general requirement for tank vehicles to not be located, parked or permitted to stand under any portion of an aircraft is overly restrictive and unenforceable. Depending on any one of a number of factors to include, the size of the aircraft, the location of fuel inlets and the length of hose on the tank truck, will dictate where aircraft fuel servicing vehicles are necessarily located. Approval of this proposed code change would reflect standard industry practices and eliminate a burdensome, unenforceable provision.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: There was no technical substantiation provided for the proposal. Changing the technical term from aircraft fueling vehicles to aircraft fuel servicing vehicles would be inconsistent with the term used in the referenced standard, NFPA 407.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Michael J. Shimer, The Boeing Company, requests Approval as Modified by this public comment.

Modify proposal as follows:

1106.5.1 Positioning of aircraft fueling ~~servicing~~ vehicles. Aircraft fueling ~~servicing~~ vehicles shall not be located, parked or permitted to stand in a position where such unit would obstruct egress from an aircraft should a fire occur during fuel-transfer operations. Aircraft fueling vehicles shall not be located, parked or permitted to stand under any portion of an aircraft.

Exception: Aircraft fueling vehicles shall be allowed to be located under aircraft wings during underwing fueling of turbine-engine powered aircraft.

Commenter's Reason: The general requirement for tank vehicles to not be located, parked or permitted to stand under any portion of an aircraft is overly restrictive and unenforceable. Depending on any one of a number of factors to include, the size of the aircraft, the location of fuel inlets and the length of hose on the tank truck, will dictate where aircraft fuel servicing vehicles are necessarily located. During discussion of this item in Orlando, the committee felt that the provision was too broad in its scope and could apply to private or piston powered aircraft. Additionally, there was concern that proposed terminology was not consistent with NFPA 407. This public comment speaks to both concerns. First, a specific exception has been created that applies only to turbine-engine (jet) powered aircraft. Secondly, proposed terminology is now consistent with that used in NFPA 407. It should be noted that there was testimony in Orlando from the Houston, Texas Airport Authority speaking in favor of the proposal. Approval of this modified code change would reflect standard industry practices and eliminate a burdensome, unenforceable provision.

Final Hearing Results

F140-06/07 AMPC1

Code Change No: F141-06/07

Original Proposal

Section: 1413.1 (IBC [F] 3311.1)

Proponent: John Berry, Cole + Russell Architects, Inc.

Revise as follows:

1413.1 (IBC [F] 3311.1) Where required. In buildings ~~four or more stories in height shall be provided with~~ required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed when the progress of construction is not more than 40 feet (12 192 mm) in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

Reason: The proposed text ties Sections 1413.1 and 905.3.1 together to clarify that the building first must need a standpipe based on Section 905.3.1. If the building is required to have standpipes, then one of those standpipes must be provided during construction per Section 1413.1. The proposed text does not alter the intent of the code, but rather clarifies it. The addition of the word "vehicle" merely coordinates the language used elsewhere in the code.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides needed clarification of the text and improved correlation between Sections 905 and 1413 of the code by deletion of an arbitrary threshold of 4 stories.

Assembly Action: **None**

Final Hearing Results

F141-06/07 AS

Code Change No: F142-06/07

Original Proposal

Section: 1417.1

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

Revise as follows:

1417.1 General. Roofing operations utilizing heat-producing systems or other ignition sources shall be conducted in accordance with Chapter 26. ~~performed by a contractor licensed and bonded for the type of roofing process to be performed~~.

Reason: Fire Code is not and should not be responsible for ensuring the proper licensing of contractors. IFC Chapter 26 is also an appropriate reference for roofing operations.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

1417.1 General. Roofing operations utilizing heat-producing systems or other ignition sources shall be conducted in accordance with this section and Chapter 26.

Committee Reason: Based on the proponent's reason statement. The proposal relieves the fire code official of responsibility for verifying roofing contractor's licenses. The modification retains the applicability of the fire extinguisher and tar kettle requirements.

Assembly Action: **None**

Final Hearing Results

F142-06/07 **AM**

Code Change No: F144-06/07

Original Proposal

Sections: 1506.2, 1506.3

Proponents: Gregory G. Victor, Fire Department, Glendale, AZ; Elley Klausbruckner, Klausbruckner & Associates

Revise as follows:

1506.2 Location. Powder coating operations shall be conducted in enclosed powder coating rooms, enclosed powder coating facilities which are ventilated, or ventilated spray booths ~~constructed and protected in accordance with Section 1506~~.

1506.3 Construction of powder coating rooms and booths. Powder coating rooms ~~and booths~~ shall be constructed of noncombustible materials~~.~~. ~~enclosed powder coating facilities which are ventilated, or ventilated~~ ~~s~~ Spray booths shall be constructed in accordance ~~complying~~ with Section 1504.3.2.

Exception: Listed spray-booth assemblies that are constructed of other materials shall be allowed.

Reason: The new format of Chapter 15 as approved by the membership is as follows:

1. General
2. Location
3. Construction & Equipment
4. Fire Protection
5. Housekeeping, maintenance and storage of hazardous materials
6. Sources of Ignition
7. Ventilation
8. Interlocks
9. Additional Specific

It came to our attention that the current text as published in the 2006 first edition appears to be incorrect since it does not seem to make sense. A review to the text as well as the original submittals and other communications that the current text appears to be the result of a word processing snafu. This proposal will revise the text of 1506.2 and 1506.3 to reflect the original intent, which was to incorporate the requirements found in old Section 1507.2 and split the location & construction requirements to meet the new format of Chapter 15 without changing the content of the original section.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides a needed clarification of the text and clarifies the separation between the operational provisions and construction provisions of Chapter 15.

Assembly Action: **None**

Final Hearing Results

F144-06/07 **AS**

Code Change No: F145-06/07

Original Proposal

Sections: 1507.2, 1507.3, 1507.3.1, 1507.5.1

Proponent: Anthony W. Richter, The Boeing Company

Revise as follows:

1507.2 Location and clear space. A space of at least twice the sparking distance shall be maintained between goods being painted or deteared and electrodes, electrostatic atomizing heads or conductors. A sign stating the sparking distance shall be conspicuously posted near the assembly.

Exception: Portable electrostatic paint-spraying apparatus approved for use in Class I, Division 1 locations.

1507.3 Construction of equipment. Electrodes and electro-static atomizing heads shall be of approved construction, rigidly supported in permanent locations and effectively insulated from ground. Insulators shall be nonporous and non-combustible.

Exception: Portable electrostatic paint-spraying apparatus approved for use in Class I, Division 1 locations.

1507.3.1 Barriers. Booths, fencing, railings or guards shall be placed about the equipment such that either by their location or character, or both, isolation of the process is maintained from plant storage and personnel. Railings, fencing and guards shall be of conductive material, adequately grounded, and shall be at least 5 feet (1524 mm) from processing equipment.

Exception: Portable electrostatic paint-spraying apparatus approved for use in Class I, Division 1 locations.

1507.5.1 Maintenance. Insulators shall be kept clean and dry. Drip plates and screens subject to paint deposits shall be removable and taken to a safe place for cleaning. Grounds and bonding means for the paint-spraying apparatus and all associated equipment shall be periodically cleaned and maintained free of overspray.

Reason: Portable electrostatic spray guns have been listed and approved by recognized testing laboratories for many years and are in use in commercial/industrial applications throughout the United States. These units are approved for use in Class I, Division I, Group D environments and they do not create an ignition source from potential sparking. Such units are designed to preclude sparking when the spray gun is moved directly against the object being sprayed. The requirements to install barriers, provide signs, and require general isolation of equipment does not improve the safety of this category of equipment and hampers its use by industry.

On the other hand, it is felt that a general safety requirement for all paint spraying operations is currently lacking in the IFC. And that deals with the fact that all electrostatic spray equipment requires that grounding and bonding means be properly maintained free of overspray so as to preclude the potential injury to employees or the creation of potential fire hazards caused by the electric charge of objects through the Leyden jar effect.

The purpose of this proposal is to update IFC provisions by recognizing standard industry practice and increase safety of spray painting operations through increased maintenance requirements.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

1507.2 Location and clear space. A space of at least twice the sparking distance shall be maintained between goods being painted or deteared and electrodes, electrostatic atomizing heads or conductors. A sign stating the sparking distance shall be conspicuously posted near the assembly.

Exception: Portable electrostatic paint-spraying apparatus listed ~~approved~~ for use in Class I, Division 1 locations.

1507.3 Construction of equipment. Electrodes and electro-static atomizing heads shall be of approved construction, rigidly supported in permanent locations and effectively insulated from ground. Insulators shall be nonporous and non-combustible.

Exception: Portable electrostatic paint-spraying apparatus listed ~~approved~~ for use in Class I, Division 1 locations.

1507.3.1 Barriers. Booths, fencing, railings or guards shall be placed about the equipment such that either by their location or character, or both, isolation of the process is maintained from plant storage and personnel. Railings, fencing and guards shall be of conductive material, adequately grounded, and shall be at least 5 feet (1524 mm) from processing equipment.

Exception: Portable electrostatic paint-spraying apparatus listed ~~approved~~ for use in Class I, Division 1 locations.

1507.5.1 Maintenance. Insulators shall be kept clean and dry. Drip plates and screens subject to paint deposits shall be removable and taken to a safe place for cleaning. Grounds and bonding means for the paint-spraying apparatus and all associated equipment shall be periodically cleaned and maintained free of overspray.

Committee Reason: Based on the proponent's reason statement. The proposal addresses the use of tested portable electrostatic paint spraying devices which should be acceptable within the context of the IFC. The modification reflects the typical phraseology of how devices are recognized as being suitable for use in electrically classified locations.

Assembly Action: **None**

Final Hearing Results

F145-06/07 **AM**

Code Change No: F147-06/07

Original Proposal

Sections: 1803.13.2 (IBC [F] 415.8.7.2), 3704.2.2.10

Proponent: Pat McLaughlin, McLaughlin & Associates, representing Semiconductor Industry Association

Revise as follows:

1803.13.2 Gas detection system operation. The continuous gas detection system shall be capable of monitoring the room, area or equipment in which the gas is located at or below the ~~permissible exposure limit (PEL) or ceiling limit of the gas for which detection is provided~~ following gas concentrations:

1. Immediately dangerous to life and health (IDLH) values when the monitoring point is with an exhausted enclosure, ventilated enclosure or gas cabinet.
2. Permissible exposure limit (PEL) levels when the monitoring point is an area outside an exhausted enclosure, ventilated enclosure or gas cabinet.
3. For flammable gases, the monitoring detection threshold level shall be vapor concentrations in excess of ~~20~~ 25 percent of the lower flammable limit (LFL) when the monitoring is within or outside an exhausted enclosure, ventilated enclosure or gas cabinet.
4. Monitoring for highly toxic and toxic gases shall also comply with Chapter 37.

3704.2.2.10 Gas detection system. A gas detection system shall be provided to detect the presence of gas in the room, area or equipment in which the gas is located at or below the ~~permissible exposure limit (PEL) or ceiling limit of the gas for which detection is provided~~. following gas concentrations:

1. Immediately dangerous to life and health (IDLH) values when the monitoring point is with an exhausted enclosure, ventilated enclosure or gas cabinet.
2. Permissible exposure limit (PEL) levels when the monitoring point is an area outside an exhausted enclosure, ventilated enclosure or gas cabinet.
3. The system shall be capable of monitoring the discharge from the treatment system at or below one-half the IDLH limit.

   Exception: A gas detection system is not required for toxic gases when the physiological warning threshold level for the gas is at a level below the accepted PEL for the gas.

Reason: The ACGIH has announced that it is considering lowering the arsine TLV from its current value of 50 ppb to 5 ppb. IFC section 3704.2.2.9 requires gas detection to detect a leak at or below the Permissible Exposure Limit (PEL). This exposure limit regulated by OSHA to prevent adverse health effects and is the breathing zone exposure limit for employees over an 8-hr time weighted average. A great percentage of existing gas detection technology would not be capable of detecting at arsine TLV of 5 ppb. SIA is concerned that if these TLV's are promulgated by OSHA as revised PEL's (TLV's have been the past origin of PEL's), that new detection equipment would have to be retrofitted in existing fabs at significant cost and with little real improvement to personnel safety since all HPM gases are located inside exhausted enclosures, ventilated enclosures or gas cabinets which are designed to contain a worst case release. In most cases, gas detection in the semiconductor industry is conducted in an exhausted enclosure, ventilated enclosure or gas cabinet and not in the breathing zone of the employee, and is designed to detect and alert employees of leaks inside exhausted enclosures, ventilated enclosures or gas cabinets and is not intended to estimate potential employee breathing zone exposures. The semiconductor industry addressed this by codifying NFPA 318, Section 10.9 to differentiate gas detection set points in exhausted enclosures (set at the IDLH) with gas detection when the monitoring point is in an area outside an exhausted enclosure, ventilated enclosure or gas cabinet. The purpose of the change will be to harmonize the IFC with NFPA 318, Section 10.9 (see below) guidelines that are much more relevant to the type of monitoring performed in the semiconductor manufacturing (inside exhausted enclosures, ventilated enclosures or gas cabinets). Monitoring in the semiconductor industry is designed to detect and alert employees of leaks inside exhausted enclosures, ventilated enclosures and gas cabinets and is not intended to estimate potential employee breathing zone exposures. Therefore, set points are not required or recommended to be set at occupational exposure limits (e.g. TLVs or PELs). Additionally, the change from 20% LFL to 25% LFL will create consistency with both IMC, Section 510.2 and NFPA 318, Section 10.9.

NFPA 318 Extracts for Gas-Detection

10.9 Gas-Detection Systems.

10.9.1 General. A gas-detection system shall be provided for hazardous chemical gases when the physiological warning properties of the gas are at a higher level than the accepted permissible exposure limit (PEL) for the gas, for flammable gases, and for pyrophoric gases.

10.9.2 Where Required.
10.9.2.1 Fabrication Areas. A gas-detection system shall be provided in fabrication areas at locations in the fabrication area where gas is used or stored.
10.9.2.2 Hazardous Chemical Rooms. A gas-detection system shall be provided in hazardous chemical storage and dispensing rooms when hazardous gas is in use in the room.
10.9.2.3 Gas Cabinets, Exhausted Enclosures, and Gas Rooms.
10.9.2.3.1 A gas-detection system shall be provided in gas cabinets and exhausted enclosures.
10.9.2.3.2 A gas-detection system shall be provided in gas rooms when gases are not located in gas cabinets or exhausted enclosures.

10.9.3 Gas-Detection System Operation.
10.9.3.1 Monitoring. Gas-monitoring equipment, when required by this standard to warn of the presence of leaked gas, shall be capable of detection and alarm initiation at or below the following gas concentrations:
(1) Immediately dangerous to life or health (IDLH) values when the monitoring point is within an exhausted enclosure
(2) PEL levels when the monitoring point is in an area outside an exhausted enclosure
(3) Twenty-five percent of LFL when the monitoring point is within or outside an exhausted enclosure
10.9.3.2 Shutoff of Gas Supply. Gas-monitoring systems shall automatically close the nearest isolation valve upon high level (IDLH, PEL, and LEL) detection alarms:
(1) At local gas boxes near the tool or in the tool gas jungle
(2) At valve manifold boxes, shut down individual sticks
(3) At the gas source
(4) At the bulk source

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

Public Hearing Results

Committee Action: Approved as Modified

Modify the proposal as follows:

1803.13.2 Gas detection system operation. The continuous gas detection system shall be capable of monitoring the room, area or equipment in which the gas is located at or below all the following gas concentrations:

1. Immediately dangerous to life and health (IDLH) values when the monitoring point is within an exhausted enclosure, ventilated enclosure or gas cabinet.
2. Permissible exposure limit (PEL) levels when the monitoring point is in an area outside an exhausted enclosure, ventilated enclosure or gas cabinet.
3. For flammable gases, the monitoring detection threshold level shall be vapor concentrations in excess of 25 percent of the lower flammable limit (LFL) when the monitoring is within or outside an exhausted enclosure, ventilated enclosure or gas cabinet.
4. Except as noted in this section, ~~M~~monitoring for highly toxic and toxic gases shall also comply with Chapter 37.

3704.2.2.10 Gas detection system. A gas detection system shall be provided to detect the presence of gas ~~in the room, area or equipment in which the gas is located~~ at or below the PEL or ceiling limit of the gas for which detection is provided. ~~following gas concentrations~~:

~~1. Immediately dangerous to life and health (IDLH) values when the monitoring point is with an exhausted enclosure, ventilated enclosure or gas cabinet.~~
~~2. Permissible exposure limit (PEL) levels when the monitoring point is an area outside an exhausted enclosure, ventilated enclosure or gas cabinet.~~
~~3.~~ The system shall be capable of monitoring the discharge from the treatment system at or below one-half the IDLH limit.

Exception: A gas detection system is not required for toxic gases when the physiological warning threshold level for the gas is at a level below the accepted PEL for the gas.

Committee Reason: The proposal will provide better correlation with the IMC and industry standards. The modification makes the change applicable only to semiconductor facilities by retaining the current text of Section 3704.2.2.10, clarifying that the other provisions of Chapter 37 still apply and clarifying that the intent of the proposal was not to change the monitoring requirements in occupied spaces, which could include exhausted enclosures.

Assembly Action: None

Final Hearing Results

F147-06/07 AM

Code Change No: F151-06/07

Original Proposal

Table 1805.2.2

Proponent: Pat McLaughlin, McLaughlin & Associates, representing Semiconductor Industry Association

Revise table by deleting footnote a as follows:

TABLE 1805.2.2
MAXIMUM QUANTITIES OF HPM AT A WORKSTATION[e]

HPM CLASSIFICATION	STATE	MAXIMUM QUANTITY
Flammable, highly toxic, pyrophoric and toxic combined	Gas	3 cylinders
Flammable	Liquid Solid	15 gallons [~~a~~, b, c] 5 pounds [b, c]
Corrosive	Gas Liquid Solid	3 cylinders Use-open system 25 gallons [~~a~~, c] Use-closed system: 150 gallons [~~a~~, c, f] 20 pounds [b, c]
Highly Toxic	Liquid Solid	15 gallons [~~a~~, b] 5 pounds
Oxidizer	Gas Liquid Solid	3 cylinders Use-open system 12 gallons [c] Use-closed system 60 gallons [~~a~~, c] 20 pounds [b,c]
Pyrophoric	Liquid Solid	0.5 gallons [d, g] See Table 1804.2.2.1
Toxic	Liquid Solid	Use-open system 15 gallons [c] Use-closed system 60 gallons [~~a~~, c] 5 pounds [b,c]
Unstable reactive Class 3	Liquid Solid	0.5 gallon [b, c] 5 pounds [b, c]
Water-reactive Class 3	Liquid Solid	0.5 gallons [d, g] See Table 1804.2.2.1

For SI: 1 pound = 0.454 kg. 1 gallon = 3.785 L.

~~a. DOT shipping containers with capacities of greater than 5.3 gallons shall not be located within a workstation.~~

(Renumber footnotes b through g to become a through f.)

Reason: IFC Section 1805.2.3 requires that workstations have the following safety features for spill control and containment:

Each workstation utilizing HPM liquids shall have all of the following:
1. Drainage piping systems connected to a compatible system for disposition of such liquids.
2. The work surface provided with a slope or other means for directing spilled materials to the containment or drainage system.
3. An approved means of containing or directing spilled or leaked liquids to the drainage system.

Allowing use of >5.3 gallon DOT containers an H-5 Occupancy will be consistent with what is allowed in the other H Occupancy groups, including sometimes without drainage, spill control or containment as is required in H-5 Occupancies.

This change will not increase degree of hazard at workstations because of the safety conditions required in IFC 1805.2.3.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will reduce the hazard associated with frequent cylinder exchanges.

Assembly Action: **None**

Final Hearing Results

F151-06/07 **AS**

Code Change No: F152-06/07

Original Proposal

Table 1805.2.2

Proponent: Pat McLaughlin, McLaughlin & Associates, representing Semiconductor Industry Association

Revise table as follows:

TABLE 1805.2.2
MAXIMUM QUANTITIES OF HPM AT A WORKSTATION[e]

HPM CLASSIFICATION	STATE	MAXIMUM QUANTITY
Flammable, highly toxic, pyrophoric and toxic combined	Gas	~~3 cylinders~~ Combined aggregate volume of all cylinders at a workstation shall not exceed an internal cylinder volume of 39.6 gallons [150 liters] or 5.29 cf.
Corrosive	Gas	~~3 cylinders~~ Combined aggregate volume of all cylinders at a workstation shall not exceed an internal cylinder volume of 39.6 gallons [150 liters] or 5.29 cf.
	Liquid	Use-open system 25 gallons [~~a,~~ c] Use-closed system: 150 gallons [~~a,~~ c, f]
	Solid	20 pounds [b, c]
Oxidizer	Gas	~~3 cylinders~~ Combined aggregate volume of all cylinders at a workstation shall not exceed an internal cylinder volume of 39.6 gallons [150 liters] or 5.29 cf.
	Liquid	Use-open system 12 gallons [c] Use-closed system 60 gallons [~~a,~~ c]
	Solid	20 pounds [b,c]

(Portions of table and footnotes not shown do not change)

Reason: The intent of the code in limiting the number of hazardous gas cylinders at a workstation is to limit the potential for harm to personnel within the facility. If the number of cylinders is limited to 3, as required by the code, the operators will have to frequently change out one type of gas with another in order to complete the manufacturing process. The only time an employee comes in contact with a hazardous gas cylinder is during change outs. Therefore by limiting the number of cylinders to 3, without regard to volume, in this particular instance the end result will be to increase the potential interaction between the operators and hazardous gases and thereby increase the potential for an accident.
Under normal conditions in a many semiconductor workstations, a cylinder is changed on average once every 4 months but if only 3 gas cylinders are allowed, without considering the cylinder volume, then average 5 cylinder change outs per week may be necessary.
The following safety features result in an increase rather than a decrease in the safety level, and with more efficiency.

VOLUME OF HPM GAS CONTAINERS

The maximum volume requested is the same as that contained in 3 standard cylinders while the actual quantity will be significantly less.

Some workstation gases are supplied in Air Products cylinder size D/4X (or equivalent) and in Praxair cylinder size of G (or equivalent) such that maximum 2 G type cylinders and maximum 6 D type cylinders will be located in any one workstation. This equates to 6 x 3L = 18L plus 2 x 7L = 14L for a total of 32L which is less than 1/4th of that possible with 3 standard size cylinders.

The state of the art workstations today is a very precise machine and requires very small quantity of gas during operation. This improved precision allows less quantity of gas to be used during the process and therefore makes it safer than that anticipated by the code requirement which does not limit the quantity of gas in each cylinder.

Cylinder on the left is an “A” cylinder, next to d & 4X size cylinders.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent’s reason statement. The proposal will reduce the exposure of personnel to frequent cylinder changes and will facilitate operations.

Assembly Action: **None**

Final Hearing Results

F152-06/07 **AS**

Code Change No: F154-06/07

Original Proposal

Section: 2209.4.1 (New)

Proponent: Thomas Joseph, Chair, Hydrogen Industry Panel on Codes

Add new text as follows:

2209.4.1 Dispensing systems. Dispensing systems shall be equipped with an overpressure protection device set at 140 percent of the service pressure of the fueling nozzle it supplies.

Reason: To prevent overpressure of the vehicle fuel system. Overpressure protection of the vehicles is provided by the fueling station system. This addition will ensure that overpressure protection of the vehicles is provided by the fueling system. CSA is currently in the process of developing hydrogen dispenser standards HGV 4.1. However CSA's dispenser standard efforts will not be completed within ICC's 2006/2007 code cycle. To ensure safe fueling in the interim, overpressure protection should be added to this code cycle.

Nearly all of the hydrogen fuel cell vehicles that are currently deployed or will be deployed in the near future rely on the dispenser for overpressure protection. Similar language has been adopted in NFPA 52 2006 Edition and in Michigan's Department of Environmental Quality Waste and Hazardous Materials Division proposed hydrogen storage and dispensing rules. Additionally, similar language has been incorporated in the upcoming Society of Automotive Engineers SAE J2579 *Recommended Practice for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles*. SAE J2579 is being developed by the SAE Fuel Cell Vehicle (FCV) Safety Working Group (SWG) to provide recommended practices for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides a provision that is already in NFPA 52 to provide protection for vehicle tanks when they are connected for refilling.

Assembly Action: **None**

Final Hearing Results

F154-06/07 **AS**

Code Change No: F156-06/07

Original Proposal

Sections: 2209.5.1.1(New), Chapter 45; IBC 406.5.2 (New), Chapter 35

Proponent: Thomas Joseph, Chair, Hydrogen Industry Panel on Codes

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

PART I – IFC

1. Add new text as follows:

2209.5.1.1 Vehicle fueling pad. The vehicle fueling pad shall be constructed of a non-coated concrete pavement or shall have a resistivity not exceeding criteria of 1 megohm as measured using the methodology specified in *EN 1081.*

2. Add new standard to Chapter 45 as follows:

European Committee for Standardization (EN)
Central Secretariat
Rue de Stassart 36
B-10 50 Brussels

European Standard EN 1081: 1998 Resilient Floor Coverings – Determination of the Electrical Resistance

PART II – IBC General

406.5.2 Vehicle fueling pad. The vehicle fueling pad shall be constructed of a non-coated concrete pavement or shall have a resistivity not exceeding criteria of 1 megohm as measured using the methodology specified in *EN 1081.*

2. Add new standard to Chapter 35 as follows:

European Committee for Standardization (EN)
Central Secretariat
Rue de Stassart 36
B-10 50 Brussels

European Standard EN 1081: 1998 Resilient Floor Coverings – Determination of the Electrical Resistance

Reason: The current language does not address safety issues associated with electrostatic discharges (ESD).

Fueling surfaces for hydrogen powered vehicles should be at least as protective regarding ESD issues as those fueling surfaces used for petroleum powered vehicles. The 1 megohm criteria is cited from the *American Petroleum Institute (API) 2003 Recommended Practices (RP)*.

Substantiation: Paving material meeting the criteria specified in the language offered as Section 2209.5.1.1 will ensure the dissipation of static charge build up on the vehicle before the driver opens the door to fuel. Material Similar language has been used in Michigan's proposed Hydrogen Storage and Dispensing Rules.

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

Analysis: Results of review of the proposed standard(s) will be posted on the ICC Website by August 20, 2006.

Public Hearing Results

Note: The following analysis was not in the Code Change Proposal book but was published in the "Errata to the 2006/2007 Proposed Changes to the International Codes and Analysis of Proposed Referenced Standards" provided at the code development hearings:

Analysis: Review of the proposed new standard indicated that, in the opinion of ICC staff, the standard did not comply with ICC standards criteria, Sections 3.6.2.11 and 3.6.3.2.

PART I — IFC
Committee Action: **Disapproved**

Committee Reason: In was unclear how the proposed standard for resilient floor coverings would apply to non-coated concrete.

Assembly Action: **None**

PART II — IBC GENERAL
Committee Action: **Disapproved**

Committee Reason: The standard proposed for inclusion had not been provided for review by the committee.

Assembly Action: **None**

Public Hearing Results

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted for Parts I and II.

Public Comment:

Thomas Joseph, Chair, Hydrogen Industry Panel on Codes, requests Approval as Modified by this public comment for Part I and Part II.

Replace proposal with the following:

2209.5.1.1 Vehicle fueling pad. The vehicle fueling pad shall be of concrete or a material having a resistivity not exceeding 1 megohm as determined by an approved method.

406.5.2 Vehicle fueling pad. The vehicle fueling pad shall be of concrete or a material having a resistivity not exceeding 1 megohm as determined by an approved method.

Commenter's Reason: The current language does not address safety issues associated with electrostatic discharges (ESD). The Public Comment addresses IFC and IBC Committee concerns in that the proposal specifies plain concrete as the transfer surface material of choice, while clearly stating the antistatic performance of alternative materials.

Motor vehicles can acquire an electrostatic charge while traveling. The resistance offered by the tires through an un-coated concrete surface is low enough that this charge dissipates to ground very quickly (seconds or less). However, under dry conditions, an asphalt surface may offer sufficient resistance that the charge will not dissipate in a timely manner. A small number of incidents have occurred in Europe where a non-absorbent polymer, having unusually high resistance, was used at service stations to prevent soil contamination from gasoline spills. Therefore, paved surfaces that result in a resistance greater than one megohm should not be used.

Transfer surface materials meeting the criteria specified will provide for the dissipation of static charge built up on the vehicle before the driver opens the door initiate refueling.

The 1 megohm criteria is cited from the *American Petroleum Institute (API) 2003 Recommended Practices (RP)*. This language has also been proposed by the State of Michigan, Department of Environmental Quality – Waste and Hazardous Materials Division for Michigan's *Hydrogen Storage and Dispensing Rules*, and is consistent with changes proposed under the current cycle to NFPA 55-2005, *Standard for the Storage, Use, and Handling of Compressed Gasses and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks*. Addition of this language will provide the IFC with electrostatic discharge requirements for hydrogen refueling stations that are as protective as those for petroleum refueling stations with language aligned with modifications proposed to NFPA 55. Measurement of the resistivity of the vehicle fueling pad can be conducted using the *European Standard EN 1081 : 1998 Determination of Electrical Resistance – Resilient Floor Coverings.*

Cost Impact: The code change proposal will increase the cost of construction at service stations where materials other than plain concrete are proposed.

Final Hearing Results

F156-06/07, Part I **AMPC1**
F156-06/07, Part II **AMPC1**

Code Change No: F157-06/07

Original Proposal

Sections: 2211.7.2, 2211.7.2.1

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

Revise as follows:

2211.7.2 Gas detection system. Repair garages used for repair of vehicles fueled by nonodorized gases, such as hydrogen and nonodorized LNG, shall be provided with a~~n approved~~ flammable gas detection system.

2211.7.2.1 System design. The flammable gas detection system shall be l<u>isted and shall be</u> calibrated to the types of fuels or gases used by vehicles to be repaired. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammable limit (LFL). Gas detection shall also be provided in lubrication or chassis repair pits of repair garages used for repairing nonodorized LNG-fueled vehicles.

Reason: Consistency with other gas detection requirements in Chapter 22. (See 2208.2.2 and 2209.2.2)

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

2211.7.2 Gas detection system. Repair garages used for repair of vehicles fueled by nonodorized gases, such as hydrogen and nonodorized LNG, shall be provided with a flammable gas detection system.

2211.7.2.1 System design. The flammable gas detection system shall be listed <u>or approved</u> and shall be calibrated to the types of fuels or gases used by vehicles to be repaired. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammable limit (LFL). Gas detection shall also be provided in lubrication or chassis repair pits of repair garages used for repairing nonodorized LNG-fueled vehicles.

Committee Reason: The proposal adds consistency to the gas detection system requirements. The modification will provide an alternative approval to listing.

Assembly Action: **None**

Final Hearing Results

F157-06/07 **AM**

Code Change No: F160-06/07

Original Proposal

Section: 2403.12.6.1

Proponent: Rick Thornberry, P.E., The Code Consortium, Inc., representing American Pyrotechnics Association

Revise as follows:

2403.12.6.1 Exit sign illumination. Exit signs shall be ~~of an approved~~ listed and labeled as a self-luminous type having a minimum duration of 90 minutes luminosity or shall be internally or externally illuminated by luminaires supplied in the following manner:

1. Two separate circuits, one of which shall be separate from all other circuits, for occupant loads of 300 or less; or
2. Two separate sources of power, one of which shall be an approved emergency system, shall be provided when the occupant load exceeds 300. Emergency systems shall be supplied from storage batteries or from the on-site generator set, and the system shall be installed in accordance with the *International Code Council Electrical Code Administrative Provisions.* The emergency system provided shall have a minimum duration of 90 minutes when operated at full design demand.

Reason: This code change proposal accomplishes basically two things. First, it specifies that self-luminous type exit signs shall be labeled rather than approved as they are now available based on testing in accordance with nationally recognized standards. Second, it specifies the minimum duration that the self-luminous sign must maintain its luminosity or the emergency power must maintain its operation at full design demand at 90 minutes. This is consistent with the requirements for the illumination of exit signs in Section 1011.5.3 of the 2006 *International Building Code*.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal adds a needed duration factor for sign illumination consistent with Section 1011.5.3.

Assembly Action: **None**

Final Hearing Results

F160-06/07 **AS**

Code Change No: F161-06/07

Original Proposal

Section: 2404.1

Proponent: Rick Thornberry, P.E., The Code Consortium, Inc., representing American Pyrotechnics Association

Revise as follows:

2401.1 Scope. Tents, canopies and membrane structures shall comply with this chapter. The provisions of Section 2403 are applicable only to temporary tents, canopies and membrane structures. The provisions of Section 2404 are applicable to temporary and permanent tents, canopies and membrane structures.

Reason: This code change proposal simply clarifies the scoping statement for Chapter 24. Membrane structures are defined differently than tents and canopies so they need to be included when referring to the requirements of Sections 2403 and 2404.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal adds needed clarity as to the applicability of Chapter 24.

Assembly Action: **None**

Final Hearing Results

F161-06/07 **AS**

Code Change No: F162-06/07

Original Proposal

Sections: 2404.5, 2404.21, 2404.22

Proponent: Rick Thornberry, P.E., The Code Consortium, Inc., representing American Pyrotechnics Association

Revise as follows:

2404.5 Combustible materials. Hay, straw, shavings or similar combustible materials shall not be located within any tent, canopy or membrane structure containing an assembly occupancy, except the materials necessary for the daily feeding and caring of animals. Sawdust and shavings utilized for a public performance or exhibit shall not be prohibited provided the sawdust and shavings are kept damp. Combustible materials shall not be permitted under stands or seats at any time. ~~The areas within and adjacent to the tent or air-supported structure shall be maintained clear of all combustible materials or vegetation that could create a fire hazard within 20 feet (6096 mm) of the structure. Combustible trash shall be removed at least once a day from the structure during the period the structure is occupied by the public.~~

2404.21 Combustible Vegetation ~~removal~~. Combustible vegetation that could create a fire hazard shall be removed from the area occupied by a tent, canopy or membrane structure, and from areas within 30 feet (9144 mm) of such structures.

2404.22 Combustible waste material. The floor surface inside tents, canopies or membrane structures and the grounds outside and within a 30 foot (9144 mm) perimeter shall be kept clear of combustible waste and other combustible materials that could create a fire hazard. Such waste shall be stored in approved containers and shall be ~~until~~ removed from the premises at least once a day during the period the structure is occupied by the public.

Reason: This code change proposal is similar to a companion a code change proposal which intends to accomplish the same thing: to correlate and clarify the requirements for combustible materials and vegetation within and in close proximity to tents, canopies, and membrane structures. These three sections deal with those issues but are not consistent. In this code change proposal we do not modify the separation distance of 30 feet for combustibles in Sections 2404.21 and 2404.22. We simply maintain the current requirements but deleted the separation distance requirement of 20 feet contained in Section 2404.5 which is in conflict. This gives the Committee the choice of which separation distances are appropriate so that they can approve one of these code changes in order to correlate the code regarding these combustible materials and their proximity to tents, canopies, and membrane structures.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides needed correlation of terminology among the several sections on the same subject.

Assembly Action: **None**

Final Hearing Results

F162-06/07 **AS**

Code Change No: F164-06/07

Original Proposal

Section: 2404.11

Proponent: Rick Thornberry, P.E., The Code Consortium, Inc., representing American Pyrotechnics Association

Revise as follows:

2404.11 Clearance. There shall be a minimum clearance of at least 3 feet (914 mm) between the fabric envelope and all contents located inside ~~the tent or~~ membrane structures.

Reason: This code change proposal corrects an error that was made when this chapter was completely revised to reorganize and clarify the requirements for tents, canopies, and membrane structures. We talked with the proponent of that code change proposal who indicated that it was not his intent to require that the fabric envelope and the contents of tents be separated by 3 feet. This is specifically a requirement for membrane structures which is the same as contained from the original source documents from which the rewrite was developed. It is important to maintain the minimum clearance of 3 feet between the fabric envelope and the contents of membrane structures since the fabric envelope may be a structural element, so to speak, of the membrane structure and should be available for inspection, as well as to prevent accidental contact that may tear or otherwise damage the fabric envelope. This is not the case for tents where the fabric envelope is simply provided as a weather and sun shield and is not structural. To our knowledge there was no similar requirement in any of the previous legacy model fire codes that were used to develop the *International Fire Code*. We are also not aware of any technical justification to support the 3 foot clearance between the fabric envelope and the contents within a tent.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal corrects an apparent error in the 2003/2004 cycle rewrite of Chapter 24.

Assembly Action: **None**

Final Hearing Results

F164-06/07 **AS**

Code Change No: F165-06/07

Original Proposal

Section: 2605.2.1 (New)

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

Revise as follows:

2605.2 Cylinder and container storage, handling and use. Storage, handling and use of compressed gas cylinders, containers and tanks shall be in accordance with this section and Chapter 30.

2605.2.1 Cylinders connected for use. The storage or use of a single cylinder of oxygen and a single cylinder of fuel-gas located on a cart shall be allowed without requiring the cylinders to be separated in accordance with Sections 2703.9.8 or 2703.10.3.6 when the cylinders are connected to regulators, ready for service, equipped with apparatus designed for cutting or welding and the following:

1. Carts shall be kept away from the cutting or welding operation in accordance with Section 2605.5 or fire-resistant shields shall be provided.
2. Cylinders shall be secured to the cart to resist movement.
3. Carts shall be in accordance with Section 2703.10.3.
4. Cylinder valves not having fixed hand wheels shall have keys, handles, or nonadjustable wrenches on valve stems while the cylinders are in service.
5. Cylinder valve outlet connections shall conform to the requirements of CGA V-1.
6. Cylinder valves shall be closed when work is finished.
7. Cylinder valves shall be closed before moving the cart.

Reason: The use of "welding carts" has been common practice as a means to secure cylinders of oxygen and fuel-gas used in cutting and welding operations. The carts serve as a means to secure cylinders as well as a means to hold flexible hose, torches and in some cases safety equipment such as goggles or eye shields and welding rod. The requirements for separation of incompatible materials under the requirements of Sections 2703.9.8 and 2703.10.3.6 presents a practical difficulty when the quantity of materials is limited. Excepting a single cylinder of oxygen and fuel-gas with additional controls to address the use condition provides a more comprehensive approach to safe use compared to that of prohibition that is out of convention. Specifying the minimum control for valves and their operation to include mandating the use of standard connections as prescribed by standards referenced in Chapter 45 (CGA V-1) enhances the overall safety of the system.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides reasonable storage requirements for cylinders connected for use, as on welding carts.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Larry Fluer, Fluer, Inc., representing Compressed Gas Association, requests Approval as Modified by this public comment.

Modify proposal as follows:

2605.2.1.1 Individual cart separation. Individual carts in accordance with 2605.2.1 shall be separated from each other in accordance with Section 2703.9.8.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: During the public testimony one of the committee members raised a question regarding the separation of multiple carts. The code change was focused on single cylinders on individual carts, and multiple carts were not considered. If the number of carts were to grow, the quantity controls imposed by the Maximum Allowable Quantities (MAQ) would trigger the use of an H Occupancy when the MAQ of 1,000 cubic feet of flammable gas was exceeded (three or four carts depending on the fuel gas). However, using MAQ as a control was not the intent of the code change.

The addition of a new subsection to require that individual carts be separated in accordance with Section 2703.9.8 solves the problem raised in committee discussion by recognizing the allowance created to allow a single cylinder of oxidizing gas and single cylinder of fuel gas to be located on an individual cart while addressing the concern expressed with multiple carts while maintaining the intent of the code change.

Final Hearing Results

F165-06/07 **AMPC1**

Code Change No: F168-06/07

Original Proposal

Table 2703.1.1(1) [IBC Table [F] 307.1(1)], Table 2703.1.1(2) [IBC Table [F] 307.1(2)], 2703.9.10 (New), Chapter 45

Proponent: Lynne M. Kilpatrick, Fire Department, City of Seattle, WA

1. Revise tables as follows:

TABLE 2703.1.1(1) [IBC [F] TABLE 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA
OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD [a,j] [m, n, p]

e. Maximum allowable quantities shall be increased 100 percent when stored in approved ~~storage cabinets~~, gas cabinets, exhausted enclosures, listed storage cabinets or listed safety cans. Where Note d also applies, the increase for both notes shall be applied accumulatively.

(Portions of table and footnotes not shown do not change)

TABLE 2703.1.1(2) [IBC [F] TABLE 307.1(2)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA
OF HAZARDOUS MATERIALS POSING A HEALTH HAZARD [a, b, c, j]

f. Maximum allowable quantities shall be increased 100 percent when stored in approved ~~storage cabinets,~~ gas cabinets, ~~or~~ exhausted enclosures or listed storage cabinets. Where Note e also applies, the increase for both notes shall be applied accumulatively.

2. Add new text as follows:

2703.9.10 Safety cans. Safety cans shall be listed in accordance with UL 30 when used to increase the maximum allowable quantities of flammable or combustible liquids in accordance with Table 2703.1.1(1) or Table 2703.1.1(3). Safety cans listed in accordance with UL 1313 are allowed for flammable and combustible liquids when not used to increase the maximum allowable quantities and for other hazardous material liquids in accordance with the listing.

3. Add standard to Chapter 45 as follows:

Underwriters Laboratories
1313-98 Standard for Nonmetallic Safety Cans for Petroleum Products

Reason: Part 1: The addition of "listed" in the footnote Table 2703.1.1 (1) and Table 2703.1.1 (2) for the safety cans and storage cabinets is to ensure that if a 100% increase in the maximum allowable quantity is to be applied for the material, the safety cans or the storage cabinets have met rigorous testing requirements.

UL 30 should be used for requirements covering metal safety cans that have nominal capacities of five gallons (18.9 L) or less and that are primarily intended to store and handle flammable and combustible liquids, such as gasoline, naphtha, kerosene, acetone, MEK, and similar liquids. The standard has over 75 years of experience testing safety cans and conducts 10 differtent testing phases that include a stability test, drop test, leakage test, handle and nozzle strength test, and fire exposure test.

UL 1313 should be used for requirements that cover nonmetallic safety cans having nominal capacities of 5 Imperial gallons or less and are primarly for the storage of combustible and some flammable liquids. This standard has 15 performance tests including, drop test, leak test, direct flame test, two different fire exposures test to name a few. Footnote (e) is located in many of the material categorize beyond flammable and combustible liquids. The use of this standard allows different materials that can be compatible to the can's construction material and product stored. This change will provide the code official an opportunity to ensure that products that are not compatible with the listed safety can are not stored improperly.

The standard UL 1275 for liquid storage cabinets is a critical safety feature in the storage of flammable and combustible liquids. The use of these cabinets continues to be an option that provides the code official and owner's flexibility for where the liquids can be stored and the ability for smaller (120 gallons) amounts to be located within manufacturing areas to reduce handling throughout the site. UL 1275 provides specific construction requirements for the cabinet, including sheet metal thickness, type joints, air space for the double walls, and venting to name a few. The standard includes a rigorous fire endurance test and leakage test. These add up to a cabinet that provides the needed protection feature to justify the doubling of the maximum allowable quantity for a control area. Currently, UL 1275 has tested many metal and wood cabinets.

Part 2: The addition of this new section will provide guidance to the code user regarding listed safety cans when they are utilized for general safety reasons and when utilized to take advantage of increasing the maximum allowable quantities of hazardous material liquids in a control area. This new Section requires the use of metal safety cans for flammable and combustible liquids if those cans are being used to increase quantities in a control area. It would allow for nonmetallic safety cans listed to UL1313 to be utilized to increase the maximum allowable quantities of other hazardous material liquids in accordance with Table 2703.1.1(1) and for the general safety of flammable and combustible liquids. Including this requirement for a UL listed safety cans in this code cycle provides some advance notice of the potential cost increase prior to publication in the 2009 IFC and allows for business to prepare for such a change.

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

Public Hearing Results

Errata: The following was published in the "Errata to the 2006/2007 Proposed Changes to the International Codes and Analysis of Proposed Referenced Standards" provided at the code development hearings:

F168-06/07, Item 5: The correct edition of the proposed referenced standard is "UL 1313-93 – with revisions through May 2003"

Note: The following analysis was not in the Code Change Proposal book but was published in the "Errata to the 2006/2007 Proposed Changes to the International Codes and Analysis of Proposed Referenced Standards" provided at the code development hearings:

Analysis: Review of the proposed new standard indicated that, in the opinion of ICC staff, the standard did comply with ICC standards criteria.

Committee Action: **Approved as Modified**

Modify the proposal as follows:

TABLE 2703.1.1(1) [IBC [F] TABLE 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA
OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD [a,j m, n, p]

e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets, exhausted enclosures, ~~listed storage cabinets~~ or listed safety cans. Where Note d also applies, the increase for both notes shall be applied accumulatively.

(Portions of table and footnotes not shown remain unchanged)

TABLE 2703.1.1(2) [IBC [F] TABLE 307.1(2)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA
OF HAZARDOUS MATERIALS POSING A HEALTH HAZARD [a, b, c, j]

f. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets, or exhausted enclosures ~~or listed storage cabinets~~. Where Note e also applies, the increase for both notes shall be applied accumulatively.

(Portions of proposal not shown remain unchanged)

Committee Reason: Based on the proponent's reason statement. The proposal adds an important requirement that safety cans be listed to specific standards, depending on their use. The modifications recognize that listed storage cabinets are only listed for flammable and combustible liquid storage and that the current use of the phrase "approved storage cabinets" is more appropriate.

Assembly Action: **None**

Final Hearing Results

F168-06/07 **AM**

Code Change No: F169-06/07

Original Proposal

Tables 2703.1.1(1) [IBC Table [F]307.1(1)], 2703.1.1.(2) [IBC Table [F]307.1(2)], 2703.1.1(3), 2703.1.1(4)]

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

1. Revise tables as follows:

TABLE 2703.1.1(1) [IBC [F] 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A PHYSICAL HAZARD[a,j,m,n]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]		
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP
Flammable gas	Gaseous	H-2	Not Applicable	Not Applicable	1,000[d, e]	Not Applicable	Not Applicable	1,000[d, e]
	Liquefied			(150) ~~30~~[d, e]	Not Applicable		(150) ~~30~~[d, e]	Not Applicable
Oxidizing gas	Gaseous	H-3	Not Applicable	Not Applicable	1,500[d, e]	Not Applicable	Not Applicable	1,500[d, e]
	Liquefied			(150) ~~15~~[d, e]	Not Applicable		(150) ~~15~~[d, e]	Not Applicable

(Portions of table and footnotes not shown do not change)

TABLE 2703.1.1(2) [IBC [F[307.1(2)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD[a,b,c,j]

Material	STORAGE[d]			USE - CLOSED SYSTEMS[d]			USE - OPEN SYSTEMS[d]	
	Solid pounds[e,f]	Liquid gallons (pounds)[e,f]	Gas Cubic feet (pounds)[e]	Solid pounds[e]	Liquid gallons[e]	Gas Cubic feet (pounds)[e]	Solid pounds[e]	Liquid gallons[e]
Corrosives	5000	500	Gaseous 810[f, g] Liquefied (150)[f]	5000	500	Gaseous 810[f, g] Liquefied (150)[f]	1000	100
Highly Toxics	10	(10)[f]	Gaseous 20[h] Liquefied (4)[h, i]	10	(10)[f]	Gaseous 20[h] Liquefied (4)[h,i]	3	(3)[f]
Toxics	500	(500)[f]	Gaseous 810[f] Liquefied (150)[f,i]	500	(500)[f]	Gaseous 810[f] Liquefied (150)[f,i]	125	(125)[f]

a. through f. (No change to current text)

g. ~~A single cylinder containing 150 pounds or less of anhydrous ammonia in a single control area in a nonsprinklered building shall be considered a maximum allowable quantity. Two cylinders, each containing 150 pounds or less in a single control area shall be considered a maximum allowable quantity provided the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

h. through j. Renumber to become g. through l (No change to current text)

TABLE 2703.1.1(3)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A PHYSICAL HAZARD IN AN OUTDOOR CONTROL AREA[a,b,c]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]		
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP
Flammable gas	Gaseous	H-2	Not Applicable	Not Applicable	3000	Not Applicable	Not Applicable	1500
	Liquefied			(300) ~~30~~	Not Applicable		(150) ~~15~~	Not Applicable
Oxidizing gas	Gaseous	H-3	Not Applicable	Not Applicable	6000	Not Applicable	Not Applicable	3000
	Liquefied			(600) ~~60~~	Not Applicable		(300) ~~30~~	Not Applicable

(Portions of table and footnotes not shown do not change)

TABLE 2703.1.1(4)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD IN AN OUTDOOR CONTROL AREA[a,b,c]

Material	STORAGE			USE - CLOSED SYSTEMS			USE - OPEN SYSTEMS	
	Solid pounds	Liquid gallons (pounds)	Gas Cubic feet (pounds)	Solid pounds	Liquid gallons	Gas Cubic feet (pounds)	Solid pounds	Liquid gallons
Corrosives	20,000	2,000	Gaseous 1,620[g] Liquefied (300)[f]	10,000	1,000	Gaseous 810[g] Liquefied (150)[f]	1,000	100
Highly Toxics	20	(20)[f]	Gaseous 40[d] Liquefied (8)[d,f]	10	(10)[f]	Gaseous 20[d] Liquefied (4)[d,f]	3	(3)[f]
Toxics	1,000	(1,000)[e,f]	Gaseous 1,620 Liquefied (300)[f]	500	50[c]	Gaseous 810 Liquefied (150)[f]	25	(25)[e,f]

a. through f. (No change to current text)

g. ~~Two cylinders, each cylinder containing 150 pounds or less of anhydrous ammonia, shall be considered a maximum allowable quantity in an outdoor control area.~~

Reason: (General) applicable to all tables: The unit of measure for liquefied gases has historically been incorporated into the MAQ tables in terms of gallons as it has been conventional to think of ordinary liquids in terms of gallons. From a practical standpoint the use of gallons as a unit of measure for liquefied gases introduces an inconsistency into the concept due to the fact that unlike most liquids the density of liquefied gases varies widely. In commerce, liquefied gases are packaged and distributed based on weight being used as the unit of measure. Revising the MAQ tables to reflect threshold quantities in terms with units of measure that are readily available from the commercial market will greatly simplify the use of the code thereby making it more user friendly. To do so requires that a model be used as the basis for comparison. This approach was taken when thresholds were revised to base certain health hazard thresholds levels using a "chlorine index" as the model. A similar approach is proposed as a means to simplify the use of these tables.

Table 2703.1.1(1): Flammable gases (liquefied): In the case of liquefied flammable gases probably the most commonly encountered liquefied gas is LPG. LPG as defined can consist of propane, butane, propylene or others either in a mixed or pure form. NFPA 58 Table B.1.2(a) lists the approximate densities of commercial propane and butane at 60 degrees F as 4.20 and 4.81 pounds per gallon respectively. Converting the 30 gallon quantity to pounds and rounding up to the closest five pounds yields a quantity of 150 pounds on a weight basis. The density of butane is greater than that of propane therefore representing the worst case where mixtures of propane and butane are involved. The result of converting the 30 gallon threshold to a 150 pound threshold is in keeping with the philosophical approach used with gases such as ammonia and chlorine as they appear in Table 2703.1.1(2).

Oxidizing gases (liquefied): The threshold level of 15 gallons for oxidizing gases can be expressed in terms of weight based on using any of a number of oxidizing gases as the baseline. However, given the fact that a single cylinder of chlorine (an oxidizing, corrosive and toxic gas) has been used as the baseline in Table 2703.1.1(2) it is reasonable to use a single cylinder of chlorine as the baseline for the establishment of quantity in Table 2703.1.1(1) as well. To test the assumption a comparison was made to the 1500 cubic foot baseline maximum quantity for a non-liquefied gas using oxygen as the model. Using a specific volume for oxygen of 12.1 cubic feet per pound translates the 1500 cubic feet allowed for the baseline MAQ to 125 pounds if this gas was considered on a weight basis. The use of 150 pounds as a baseline quantity for liquefied oxidizing gases resolves the problem where a single cylinder of chlorine would NOT trip the H-4 threshold, but WOULD trip the H-3 threshold where arguably the inherent health hazards of the gas may represent a greater concern for public safety than do the physical hazards of the same gas.

It is recognized that this approach may appear to represent a major increase in the threshold for liquefied oxidizing gases; however, it brings the threshold levels into parity with those of liquefied flammable gases which may represent the greater hazard given the potential for fire and/or explosion. The example using oxygen as the baseline shows that an increase is justified. By supporting the change there is established a clear rationale that is based on practical examples of materials commonly found in commerce which have generally been accepted for use as the threshold for an increased level of control. In addition, the use of weight as a unit of measure brings the code into sync with units typically used by the suppliers of these products thereby mitigating the need for elaborate conversions into units of measure not found in common use.

Table 2703.1.1(2): The MAQ for corrosive and toxic gases established in Table 2703.1.1(2) of 810 cubic feet was based on a single cylinder of chlorine. Footnote g in the table was added to recognize that a single cylinder of ammonia should be allowed, however, the use of 810 did not allow for this given the fact that by comparison a 150 pound cylinder of ammonia contains over 3,300 cubic feet of gas. The preferred solution in lieu of trying to justify or create a series of footnotes to address individual gases is to use an index system that establishes a standardized approach. The concept of using a widely distributed gas such as chlorine as an index to establish the unit of measure has been established. However, the unit of measure in terms of weight was not carried into the table when it was formulated thereby creating the need for the use of footnotes to address ammonia. Compressed gases may be in liquid form or they may be gaseous. By maintaining the use of chlorine as the index to the table for toxic and corrosive properties and listing the threshold for liquefied gases as well as those that are nonliquefied eliminates the need for elaborate conversions in units of measure using data that in many cases is not readily available. The index used to establish the weight threshold is based on the use of arsine, a highly toxic gas with a specific volume of 5.0 cubic feet per pound.

It may be argued that by recognizing the common forms of gases, e.g., liquefied and nonliquefied allows a defacto increase in the threshold levels applied. It is possible that one could have a toxic gas that is liquefied and also one that is nonliquefied in the same area therefore doubling the aggregate quantity of gas if all was considered. While this is theoretically possible, it is not considered to be the norm. In addition, there is precedent in using the approach as established in Table 2703.1.1(1) for flammable and oxidizing gases.

Table 2703.1.1(3): The concept of "outdoor control areas" was introduced into the code as a means to establish a threshold where the general provisions of Chapter 27 would apply. When Table 2703.1.1(3) was created the logic for assignment of threshold values was primarily based on the use of multipliers representing a multiple increase of the basic tabular values shown in Table 2703.1.1(1). In the First Draft of the code Table 2703.1.1(3) was Table 2803.1-C and the quantities of gaseous and liquefied flammable gases were limited to 1500 cubic feet and 15 gallons respectively. The result was that the threshold level for liquefied flammable gases in interior areas was greater than that allowed for the same commodity when stored in outdoor areas. Assuming that the threshold level of 30 gallons for indoor areas was correct, the value of 15 gallons shown for outdoor areas is believed to have been in error. Code change F1324-98 submitted by proponent Mr. George G. Verbryck increased the threshold quantities for flammable and oxidizing gases (as well as a number of other commodities including combustible liquids, cryogenics, flammable liquids, flammable solids, organic peroxides, oxidizers, pyrophorics, unstable reactives and water reactives) <u>in storage in outdoor areas</u> by a factor of 2 resulting in the increase to for liquefied flammable gases from 15 to 30 gallons, and the inconsistency was perpetuated.

There may be those that argue that the 30 gallon threshold imposed by Table 2703.1.1(1) should have been 15 gallons when the First Draft was printed; however, it appears that the 30 gallon limit was established and the inconsistencies that followed have been perpetuated. The proposed code change is made to 1) correct the inconsistency in the table for liquefied flammable gases, and 2) to change the unit of measure to units of weight rather than those of volume to eliminate confusing and elaborate calculations thereby bringing the code closer into harmony with the commercial environment. The index system used to obtain a unit of measure for weight is based on multiples for a single 150 pound cylinder of butane for flammable gases and a single 150 pound cylinder for chlorine. The change made for oxidizing gases has been made for consistency and to correlate in concept with conversion to a weight basis.

Table 2703.1.1(4): A weight unit of measure has been established for liquefied gases, and the table has been revised to recognize that these materials may exist in liquid as well as gaseous form. The index system used to establish the quantity for toxics and corrosives is based on multiples of a single 150 pound cylinder of chlorine. The index system used to establish the threshold quantity for highly toxic liquefied gases is based on arsine, a highly toxic gas with a specific volume of 5.0 cubic feet per pound.

In preparing this code change it appears that the quantities listed for toxic solids and liquids in open use are in error, and that the 25 pounds indicated should be 125 pounds in each case. The original code change was introduced as F1309-98 by Mr. George V. Verbryck. By using weight rather than cubic footage as a unit of measure, there is not need to perpetuate footnote g as the variability of density has been accommodated. Both ammonia and chlorine are packaged as liquefied compressed gases.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal revises the tables to reflect a more accurate, standardized measurement of liquefied gases.

Assembly Action: **None**

Final Hearing Results

F169-06/07 **AS**

Code Change No: F171-06/07

Original Proposal

Sections: 2704.7 (IBC [F] 414.5.4)

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

Revise as follows:

2704.7 Standby or emergency power. Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required, such systems shall be provided with an emergency or standby power system in accordance with the *International Code Council Electrical Code Administrative Provisions* and Section 604.

Exceptions:

1. Storage areas for Class 1 and 2 oxidizers.
2. Storage areas for Class II, III, IV and V organic peroxides.
3. Storage areas for asphyxiant, irritant and radioactive gases.

~~3.~~ 4. For storage areas for highly toxic or toxic materials, see Sections 3704.2.2.8 and 3704.3.2.6.

~~4.~~ 5. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an approved fail-safe engineered system is installed.

Reason: Unlike the requirements for other hazard categories which use the Maximum Allowable Quantity Per Control Area (MAQ) as a trigger threshold, the requirement for ventilation in storage areas containing asphyxiant, irritant and radioactive gases is not quantity based. Ventilation under the requirements of Section 3007.2 is only required in storage areas when the building is occupied.

Providing ventilation in areas where compressed gases are stored or used is fundamental, whether standby power as a redundant control is fundamental for any quantity of this particular group of gases is warranted is questionable given the fact that standby or emergency power is not required for flammables, corrosives, oxidizing, toxic, highly toxic, unstable reactive or other hazard classes until the MAQ is exceeded. An MAQ was not established for this group of materials when the provision was introduced to the code based on the lack of defined physical or health hazards that represent the Group H occupancies in general.

The construction of compressed gas containers is robust compared to the containers used for other materials that may be of glass, plastic or paper. The integrity of the containers alone represents a major safeguard against likely failure. While leakage from containers is a consideration the concern the reestablishment of power to the ventilation system within a 60 second period is not warranted given the fact that the requirement could be imposed for insignificant quantities of the gas, and given the fact that occupancy of a storage area during power out conditions is not the norm.

The change to Exception 2 to add Class II organic peroxides to the list of exceptions is to correlate the requirements with Section 3904.1.11 which requires standby power only for Class I and unclassified detonable organic peroxides.

IBC: Correlation with IFC Section 2704.7. Exception No. 1, the characters for oxidizers should be Arabic not Roman. Exception. 2 is to correlate with IFC Section 3904.1.11.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will provide correlation between Sections 2704.7 and 3007.2.

Assembly Action: **None**

Final Hearing Results

F171-06/07 **AS**

Code Change No: F173-06/07

Original Proposal

Section: 3006.2

Proponent: Lynne M. Kilpatrick, Fire Department, City of Seattle, WA

Revise as follows:

3006.2 Interior supply location. Medical gases shall be stored in areas dedicated to the storage of such gases without other storage or uses. Where containers of medical gases in quantities greater than the permit amount are located inside buildings, they shall be in a 1-hour exterior room, a 1-hour interior room or a gas cabinet in accordance with Section 3006.2.1, 3006.2.2 or 3006.2.3. Storage of hazardous medical gases exceeding the maximum allowable quantity per control area as set forth in Section 2703.1 shall also be in accordance with Chapter 27 and the appropriate material specific chapters.

Reason: The proposed code change clarifies that even though a medical gas room in accordance with Section 3006.2 is provided for medical gas quantities over the permit threshold, once the maximum allowable quantity has been exceeded any additional requirements set forth in Chapter 27 and the hazard specific chapters for storage of hazardous gases must also be met.

Cost Impact: The code change proposal will increase the cost of construction when the maximum allowable quantity is exceeded.

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

3006.2 Interior supply location. Medical gases shall be stored in areas dedicated to the storage of such gases without other storage or uses. Where containers of medical gases in quantities greater than the permit amount are located inside buildings, they shall be in a 1-hour exterior room, a 1-hour interior room or a gas cabinet in accordance with Section 3006.2.1, 3006.2.2 or 3006.2.3. Rooms or areas where ~~Storage of~~ hazardous medical gases are stored or used in quantities exceeding the maximum allowable quantity per control area as set forth in Section 2703.1 shall ~~also~~ be in accordance with ~~Chapter 27 and the appropriate material specific chapters~~ the *International Building Code* for high hazard Group H occupancies.

Committee Reason: Based on the proponent's reason statement. The proposal clarifies that when the maximum allowable quantity of hazardous medical gases is reached, all provisions of the code for Group H apply. The modification further clarifies the code by indicating that it is the application of the IBC that determines Group H construction requirements.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

John Williams, Washington State Department of Health – Construction Review Service, requests Approval as Modified by this public comment.

Further modify proposal as follows:

3006.2 Interior supply location. Medical gases shall be stored in areas dedicated to the storage of such gases without other storage or uses. Where containers of medical gases in quantities greater than the permit amount are located inside buildings, they shall be in a 1-hour exterior room, a 1-hour interior room or a gas cabinet in accordance with Section 3006.2.1, 3006.2.2 or 3006.2.3. Rooms or areas where ~~hazardous~~ medical gases are stored or used in quantities exceeding the maximum allowable quantity per control area as set forth in Section 2703.1 shall be in accordance with the *International Building Code* for high hazard Group H occupancies.

Commenter's Reason: Having the word "hazardous" in front of "medical gases" creates an undefined term that will cause confusion. This introduces a concept of classification that does not exist. Throughout this section medical gases are referred to as simply "medical gases." This term should remain consistent.

Final Hearing Results

F173-06/07 AMPC1

Code Change No: F174-06/07

Original Proposal

Section: 3202.1

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

Add new definition as follows:

3202.1 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.

OXIDIZING CRYOGENIC FLUID. An oxidizing gas in the cryogenic state.

Reason: The term "oxidizing cryogenic fluid" is used in Section 3201.1 in this form, and in Table 2703.1.1(1) and Appendix F Table F101.2 as cryogenic, oxidizing. The term needs to be defined so that it is clear. Section 3202.1 is used to define flammable cryogenic fluid and although the term may be used elsewhere, it seems most appropriate to include the definition in Chapter 32 given the fact that Chapter 32 is titled "Cryogenic Fluids."

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides a needed definition for a term currently used in the code.

Assembly Action: **None**

Final Hearing Results

F174-06/07 AS

Code Change No: F176-06/07

Original Proposal

Section: 3301.1.3

Proponent: Rick Thornberry, P.E., The Code Consortium, Inc., representing American Pyrotechnics Association

Revise as follows:

3301.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 3304.
2. Manufacture, assembly and testing of fireworks as allowed in Section 3305.
3. The use of fireworks for fireworks displays as allowed in Section 3308.
4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowedby applicable laws, ordinances and regulations, provided such fireworks comply with CPSC 16 CFR, Parts 1, 500 and 1507, and DOTn 49 CFR, Parts 100-178, for consumer fireworks.

Reason: This code change proposal simply clarifies Exception 3 to Section 3301.1.3. It utilizes the defined term “fireworks display” which is defined in Section 3302.1. This would also make it consistent with the title to Section 3308 which is referenced in this exception.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent’s reason statement. The proposal clarifies the intent of the code in using the term “displays”.

Assembly Action: **None**

Final Hearing Results

F176-06/07 **AS**

Code Change No: F179-06/07

Original Proposal

Section: 3307.4

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

Revise as follows:

3307.4 Restricted hours. Surface-blasting operations shall only be conducted during daylight hours between sunrise and sunset. Other blasting shall be performed during daylight hours unless otherwise approved by the fire code official.

Reason: This change is to provide some specificity on the acceptable daylight hours that a blasting operation may take place. The time of sunrise and sunset is commonly advertised through various media sources.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal adds specific guidance for the fire code official in determining sufficient natural light for blasting.

Assembly Action: **None**

Final Hearing Results

F179-06/07 **AS**

Code Change No: F180-06/07

Original Proposal

Sections: 3308.1 through 3308.4, 3308.5.3 through 3308.5.5, 3308.8, 3308.9, 3302.1

Proponent: Rick Thornberry, P.E., The Code Consortium, Inc., representing American Pyrotechnics Association

1. Revise as follows:

SECTION 3308
FIREWORKS DISPLAY<u>S</u>

3308.1 General. ~~The display of~~ <u>Outdoor</u> fireworks <u>displays</u>, ~~including~~ <u>use of pyrotechnics before a</u> proximate audience ~~displays,~~ and pyrotechnic special effects in motion picture, television, theatrical, and group entertainment productions, shall comply with this ~~chapter~~ <u>section</u> and NFPA 1123 or NFPA 1126.

3308.2 Permit application. Prior to issuing permits for a fireworks display, plans for the <u>fireworks</u> display, inspections of the display site and demonstrations of the display operations shall be approved. A plan establishing procedures to follow and actions to be taken in the event that a shell fails to ignite in, or discharge from, a mortar or fails to function over the fallout area or other malfunctions shall be provided to the fire code official.

3308.2.1 Outdoor <u>fireworks</u> displays. In addition to the requirements of Section 403, permit applications for outdoor fireworks displays using Division 1.3G fireworks shall include a diagram of the location at which the <u>fireworks</u> display will be conducted, including the site from which fireworks will discharged; the location of buildings, highways, overhead obstructions and utilities; and the lines behind which the audience will be restrained.

3308.2.2 <u>Use of pyrotechnics before a</u> proximate audience ~~displays~~. Where the separation distances required in Section 3308.4 and NFPA 1123 are unavailable or cannot be secured, ~~only proximate audience~~ <u>fireworks</u> displays <u>shall be</u> conducted in accordance with NFPA 1126 <u>for proximate audiences</u> ~~shall be allowed~~. Applications for <u>use of pyrotechnics before a</u> proximate audience ~~displays~~ shall include plans indicating the required clearances for spectators and combustibles, crowd control measures, smoke control measures, and requirements for standby personnel and equipment when provision of such personnel or equipment is required by the fire code official.

3308.3 Approved <u>fireworks</u> displays. Approved <u>fireworks</u> displays shall include only the approved ~~Division~~ <u>fireworks</u> 1.3G, ~~Division~~ <u>fireworks</u> 1.4G, ~~and~~ ~~Division~~ <u>fireworks</u> 1.4S<u>, and pyrotechnic articles, 1.4G</u> ~~fireworks,~~ <u>which</u> shall be handled by an approved competent operator<u>.</u> ~~and~~ The <u>approved</u> fireworks shall be arranged, located, discharged and fire in a manner that will not pose a hazard to property or endanger any person.

3308.4 Clearance. Spectators, spectator parking areas, and dwellings, buildings or structures shall not be located within the display site.

Exceptions:

1. This provision shall not apply to pyrotechnic special effects and fireworks displays using Division 1.4G materials before a proximate audience in accordance with NFPA 1126.
2. This provision shall not apply to unoccupied dwellings, buildings and structures with the approval of the building owner and the fire code official.

3308.5.3 Inspection. Shells shall be inspected by the operator or assistants after delivery to the display site. Shells having tears, leaks, broken fuses or signs of having been wet shall be set aside and shall not be fired. Aerial shells shall be checked for proper fit in mortars prior to discharge. Aerial shells that do not fit properly shall not be fired. After the fireworks display, damaged, deteriorated or dud shells shall either be returned to the supplier or destroyed in accordance with the supplier's instructions and Section 3304.10.

Exception: Minor repairs to fuses shall be allowed. For electrically ignited displays, attachment of electric matches and similar tasks shall be allowed.

3308.5.4 Sorting and separation. After delivery to the display site and prior to the fireworks display, all shells shall be separated according to size and their designation as salutes.

Exception: For electrically fired displays, or displays where all shells are loaded into mortars prior to the show, there is no requirement for separation of shells according to size or their designation as salutes.

3308.5.5 Ready boxes. Display fireworks, ~~(Division~~ 1.3G~~)~~, that will be temporarily stored at the site during the fireworks display shall be stored in ready boxes located upwind and at least 25 feet (7620 mm) from the mortar placement and separated according to size and their designation as salutes.

Exception: For electrically fired fireworks displays, or fireworks displays where all shells are loaded into mortars prior to the show, there is no requirement for separation of shells according to size, their designation as salutes, or for the use of ready boxes.

3308.8 Fireworks display supervision. Whenever in the opinion of the fire code official or the operator a hazardous condition exists, the fireworks display shall be discontinued immediately until such time as the dangerous situation is corrected.

3308.9 Post-fireworks display inspection. After the fireworks display, the firing crew shall conduct an inspection of the fallout area for the purpose of locating unexploded aerial shells or live components. This inspection shall be conducted before public access to the site shall be allowed. Where fireworks are displayed at night and it is not possible to inspect the site thoroughly, the operator or designated assistant shall inspect the entire site at first light. A report identifying any shells that fail to ignite in, or discharge from, a mortar or fail to function over the fallout area or otherwise malfunction shall be filed with the fire code official.

2. Add new definitions to Section 3302.1 to read as follows:

PYROTECHNICS. Controlled exothermic chemical reactions timed to create the effects of heat, hot gas, sound, dispersion of aerosols, emission of visible light, or a combination of such effects to achieve the maximum effect from the least volume of pyrotechnic composition.

PYROTECHNIC ARTICLE. A pyrotechnic device for use in the entertainment industry, which is not classified as fireworks.

Reason: This is a clean up code change that basically makes editorial corrections throughout this section so the section internally correlates and uses appropriate terms including defined terms such as "fireworks display". This will also make this section more consistent with NFPA 1123, 1124, and 1126. In fact, the proposed two new definitions for "Pyrotechnics" and "Pyrotechnic Article" are consistent with those in NFPA 1124 without, hopefully, invoking any copyright infringement issues. It should be noted that only those sections and subsections where revisions are proposed have been shown in this code change proposal. Therefore, any sections or subsections which have not been incorporated into this code change proposal are not intended to be revised.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides improved clarity and correlation of the code provisions applicable to fireworks displays, including the referenced NFPA standards.

Assembly Action: **None**

Final Hearing Results

F180-06/07 **AS**

Code Change No: F181-06/07

Original Proposal

Section: 3308.11

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

Delete without substitution:

~~3308.11 Retail display and sale.~~ ~~Fireworks displayed for retail sale shall not be made readily accessible to the public. A minimum of one pressurized-water portable fire extinguisher complying with Section 906 shall be located not more than 15 feet (4572 mm) and not less than10 feet (3048 mm) from the hazard. "No Smoking" signs complying with Section 310 shall be conspicuously posted in areas where fireworks are stored or displayed for retail sale.~~

Reason: Section 3301.1.3 prohibits consumer fireworks unless specifically authorized by state or jurisdictional statute or ordinance as allowed in Exception 4 to Section 3301.1.3. Therefore, the statute or ordinance should include the provisions for the retail display of fireworks and the provisions for the structure that contains the retail operation.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal represents a consensus of industry and the fire service that the section is not needed.

Assembly Action: **None**

Final Hearing Results

F181-06/07 **AS**

Code Change No: F187-06/07

Original Proposal

Sections: 3404.2.8.12, 3404.2.8.17

Proponent: Richard S. Kraus, PSC Petroleum Safety Consultants, representing Petroleum Safety Consultants/American Petroleum Institute

Revise as follows:

3404.2.8.12 Liquid removal. Means shall be provided to recover liquid from the vault. Where a pump is used to meet this requirement, the pump shall not be permanently installed in the vault. Electric-powered portable pumps shall be suitable for use in Class I, Division 1 or Zone 0 locations, as defined in the *International Code Council Electrical Code Administrative Provisions*.

3404.2.8.17 Classified area. The interior of a vault containing a tank that stores a Class I liquid shall be designated a Class I, Division 1 or Zone 0 location, as defined in the *International Code Council Electrical Code Administrative Provisions*.

Reason: API 500 and NFPA 30 now incorporate the Zone classifications into their requirements. Much new equipment is now "Zone" classifies. This proposal does not change any technical requirement now contained in the code but reflects new terminology.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal brings code terminology into correlation with industry standards.

Assembly Action: **None**

Final Hearing Results

F187-06/07 **AS**

Code Change No: F188-06/07

Original Proposal

Section: 3402.9.1 (New)

Proponent: Michael G. Kraft, Division of State Fire Marshal, State of Ohio

Add new text as follows:

3404.2.9.1 Existing installations. Existing aboveground tank installations, even if previously approved, that are determined to constitute a hazard by the fire code official, shall not be continued in service. Unsafe tanks shall be removed where required by the fire code official and in accordance with Sections 3404.2.14 through 3404.2.14.2.

Reason: For AST's that constitute a hazard, such as an underground tank being used above ground, a clear-cut authorization to remove is needed. These situations are different from an abandoned out of service tank, yet require similar mitigation, such that the removal of such an unsafe tank needs to be in accordance with the safeguards otherwise required.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proponent requested disapproval to revise the proposal.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Michael G. Kraft, Ohio Division of State Fire Marshal, request Approval as Modified by this public comment.

Modify proposal as follows:

3404.2.9.1 Existing noncompliant installations. Existing aboveground tanks shall be maintained in accordance with the code requirements that were applicable at the time of installation. Aboveground tanks that were installed in violation of code requirements applicable at the time of installation shall be made code compliant or shall be removed in accordance with Section 3402.14, regardless of whether such tank has been previously inspected. See Section 106.4. ~~installations, even if previously approved, that are determined to constitute a hazard by the fire code official, shall not be continued in service. Unsafe tanks shall be removed where required by the fire code official and in accordance with Sections 3404.2.14 through 3404.2.14.2.~~

Commenter's Reason: This public comment fixes flaws in the original proposal that caused the proponent to request disapproval at the Orlando hearing. The revisions provided in this comment give straightforward guidance on how fire officials should handle existing non-compliant aboveground tanks. The reference to Section 106.4 addresses the issue of previous approvals that were mistakenly given by an inspector when a violation may have gone unnoticed.

Final Hearing Results

F188-06/07 **AMPC1**

Code Change No: F190-06/07

Original Proposal

Section: 3405.5.1

Proponent: Patrick A. McLaughlin, McLaughlin & Associates, representing Consumer Specialty Products Association

Revise as follows:

3405.5.1 Corridor installations. Where wall-mounted dispensers containing alcohol-based hand rubs are installed in corridors, they shall be in accordance with all of the following:

1. Level 2 and Level 3 aerosols containers shall not be allowed in corridors.
2. The maximum capacity of each Class I or II liquids dispenser shall be 41 ounces and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (.51 kg).

3. The maximum quantity allowed in a corridor within a control area shall be 10 gallons (37.85 L).
4. The minimum corridor width shall be 72 inches (1829 mm).
5. Projections into a corridor shall be in accordance with Section 1003.3.3.

Reason: The original proposal to allow limited quantities of Class I and II liquid alcohol rubs in corridors did not include aerosols because they were not addressed in the supporting documentation. This exclusion is appropriate for Level 2 and Level 3 aerosols but not Level 1. Level 1 aerosols are treated as ordinary combustibles by the Fire Code. The alcohol component is no different than that considered in the original approval. The concern of bursting is not relevant because the temperatures in the corridor that would result in a can burst would be so high that the corridor would already be untenable.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The committee did not feel that aerosols of any level should be installed in corridors without more history in the successful application of current Section 3405.5. Since the corridor is an egress element, a quantity limit for aerosols should be included since there is none in Chapter 28

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Patrick A. McLaughlin, McLaughlin & Associates, representing Consumer Specialty Products Association, requests Approval as Modified by this public comment.

Modify proposal as follows:

3405.5.1 Corridor installations. Where wall-mounted dispensers containing alcohol-based hand rubs are installed in corridors, they shall be in accordance with all of the following:

1. Level 2 and Level 3 aerosols containers shall not be allowed in corridors.
2. The maximum capacity of each Class I or II liquids dispenser shall be 41 ounces and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (.51 kg).
3. The maximum quantity allowed in a corridor within a control area shall be 10 gallons (37.85 L) of Class I or II liquids or 1135 ounces (32.2 kg) of Level 1 aerosols, or a combination of Class I or II liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gallons (37.85 L) or 1135 oz (32.2 kg).
4. The minimum corridor width shall be 72 inches (1829 mm).
5. Projections into a corridor shall be in accordance with Section 1003.3.3.

Commenter's Reason: The International Fire Code, 2006 Edition, was amended, as a result of the ICC Ad Hoc Committee on the Use of Alcohol Hand Disinfectants in Health Care Occupancies project, to allow limited quantities of Class I and II liquid alcohol hand sanitizers in corridors but did not include aerosol alcohol hand sanitizers because aerosols were not addressed in the supporting documentation (aerosol products make up approximately 33% of the use of alcohol based hand sanitizers). The aerosol industry was asked to conduct their own study and testing to show that aerosols could also be allowed in the same application. This was done and only Level 1 aerosols were proposed for inclusion in the code. The study is attached. Level 1 aerosols are treated as ordinary combustibles by the Fire Code. The alcohol content is equal to that currently permitted in Class I and II liquid or gel hand sanitizers. Testing of the aerosol configuration was done and the results showed that the hazard of level 1 aerosols was less than that of the allowed hand sanitizers and that the aerosol can would not release its contents before the temperatures in the corridor would be untenable.

The benefit of alcohol hand sanitizers as a means to minimize healthcare acquired infections was well documented in the Ad Hoc Committee work. "In response to this health care crisis, the CDC issued the Guidelines for Hand Hygiene in Health-Care Settings in October 2002. These guideline urge health care organizations to utilize alcohol hand rub solutions (found to be more effective than antimicrobial soap) to prevent the spread of dangerous germs via healthcare worker hands, leading to significant reduction in Healthcare Associated Infections and saving lives. Clinical studies have shown that the frequency of handwashing is affected by the accessibility of hand-hygiene facilities and that the placement of alcohol-based hand-rub solution dispensers in convenient locations is a key to success. By permitting the installation of hand-rub dispensers immediately outside the patient/residence bedroom or within suites of rooms the overall efficacy of staff use have been shown in case studies to increase by over 20%. This means that this code change has the potential to reduce the life loss related to these infections by some 18,000 per year."

At the Code Development Hearing in September 2006, comments regarding the fire history of all alcohol hand sanitizers were introduced as evidence that aerosols should not be allowed. Also, as stated in the reason for disapproval, the Committee felt that there needed to be more experience before aerosols were included. Aerosol alcohol hand sanitizers were first introduced into the hospital market in the early 1970s and

have been marketed widely in that market for over 30 years. We have reviewed the fire history of all alcohol hand sanitizers (gel and aerosol) and found that there have been only **3** incidents reported in the public domain in the last 7 years. These were all associated with alcohol based hand rubs in a gel formulation. In addition, the quality tracking system of one of the major manufacturers of alcohol based hand antiseptic products (estimated to provide 30 % of the product used in the US) recorded an additional 5 incidents. None of which involved aerosols and all were minor (confined to the product user, resulting in minor burns to the hands) with the cause of the fires being attributed either to electrostatic discharge, or improper use of the product (user lighting cigarette before hands were dry (3 cases), contact with electrical equipment or gas stove before hands were dry (2 cases)) Based on the limited number of incidents compared to the level of use, the safety profile of these aerosol products has been excellent. It is estimated that 95% or 4,465 out of 4,700 hospitals greater than 100 beds are now using alcohol based hand sanitizers. Aerosol alcohol hand rubs make up approximately 33% of the overall healthcare market, with over 3 million units of this product type used annually. The aerosol alcohol form of these products has shown no greater safety risk than gel based formulations. Furthermore, quoting from the Ad-Hoc Committee's reason statement; "Alcohol Hand Rub Solutions have been used, without incident of fire, for over 20 years in hospitals throughout Great Britain, Germany, Switzerland, Austria and Australia. In March 2003, the Infectious Disease Society of America (SHEA) conducted a study of 840 U.S. hospitals with over 95% indicating the ongoing use of alcohol hand rubs with dispensers in rooms and/or corridors …None of the respondents reported having a fire attributed to (or involving) an alcohol-based rub dispenser had occurred in his or her facility." (from Infection Control and Hospital Epidemiology, August 2003, pp. 618-619.) Testing and experience has shown that all alcohol based hand sanitizers, including aerosol alcohol hand sanitizers can safely be used in hospital corridors.

Lastly, the Code Development Committee requested that there be a maximum quantity limit and that has been provided in this pubic comment. It is proposed that the limit be the same as is presently allowed for Class I and II liquids.

Final Hearing Results

F190-06/07 AMPC1

Code Change No: F191-06/07

Original Proposal

Sections: 3501.1, 3502.1, 3506 (New), 3201.1, 3204.3.1.1, 2209.3.2.5

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

1. Revise as follows:

CHAPTER 35
FLAMMABLE GASES AND FLAMMABLE CRYOGENIC FLUIDS

SECTION 3501
GENERAL

3501.1 Scope. The storage and use of flammable gases shall be in accordance with this chapter. Compressed gases shall also comply with Chapter 30 and cryogenic fluids shall also comply with Chapter 32. Bulk hydrogen compressed gas systems ~~Gaseous~~ and bulk liquefied hydrogen gas systems shall also comply with NFPA 55.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied petroleum gases and natural gases regulated by Chapter 38.
3. Fuel-gas systems and appliances regulated under the *International Fuel Gas Code*.
4. Hydrogen motor fuel-dispensing stations and repair garages and above ground hydrogen storage systems designed and constructed in accordance with Chapter 22.
5. Pyrophoric gases in accordance with Chapter 41.

3502.1 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.

Bulk Hydrogen Compressed Gas System. An assembly of equipment, consisting of but not limited to, storage containers, pressure regulators, pressure relief devices, vaporizers, manifolds, and piping, with a storage capacity of more than 400 ft3 (scf) (11 m3) of compressed hydrogen gas including unconnected reserves integral to the system. The bulk system terminates at the point where the gas supply, at service pressure, first enters the supply line. The containers are either stationary or portable, and the gas is stored as a compressed gas.

Bulk Liquefied Hydrogen Gas System. An assembly of equipment, consisting of but not limited to, storage containers, pressure regulators, pressure relief devices, vaporizers, manifolds, and piping, with a storage capacity of more than 39.7 gal (150 L) of liquefied hydrogen including unconnected reserves integral to the system. The bulk system terminates at the point where the gas supply, at service pressure, first enters the supply line. The containers are either stationary or portable, and the gas is stored as a cryogenic fluid.

2. Add a new Section 3506 by relocating Section 3204.4 to Section 3506.4 without changes and adding new Sections 3506.1, 3506.2 and 3506.3:

SECTION 3506
FLAMMABLE CRYOGENIC FLUIDS

3506.1 General. The storage and use of flammable cryogenic fluids shall be in accordance with Section 3506.2 through 3506.4.8.3 and Chapter 32.

3506.2 Limitations. Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).

3506.3 Aboveground tanks for liquid hydrogen. Aboveground tanks for the storage of liquid hydrogen shall be in accordance with Section 3506.3.

3506.3.1 Construction of the inner vessel. The inner vessel of storage tanks in liquid hydrogen service shall be designed and constructed in accordance with Section VIII, Division 1 of the ASME *Boiler and Pressure Vessel Code* and shall be vacuum jacketed in accordance with Section 3506.3.2.

3506.3.2 Construction of the vacuum jacket (outer vessel). The vacuum jacket used as an outer vessel for storage tanks in liquid hydrogen service shall be of welded steel construction designed to withstand the maximum internal and external pressure to which it will be subjected under operating conditions to include conditions of emergency pressure relief of the annular space between the inner and outer vessel. The jacket shall be designed to withstand a minimum collapsing pressure differential of 30 psi (207 kPa).

3506.3.2.1 Vacuum level monitoring. A connection shall be provided on the exterior of the vacuum jacket to allow measurement of the pressure within the annular space between the inner and outer vessel. The connection shall be fitted with a bellows-sealed or diaphragm type valve equipped with a vacuum gauge tube that is shielded to protect against damage from impact.

~~**3204.4**~~ **3506.4 Underground tanks for liquid hydrogen.** Underground tanks for the storage of liquid hydrogen shall be in accordance with Sections ~~3204.4.1~~ 3506.4.1 through ~~3204.5.3~~ 3506.4.8.3.

~~**3204.4.1**~~ **3506.4.1Construction.** Storage tanks for liquid hydrogen shall be designed and constructed in accordance with ASME *Boiler and Pressure Vessel Code* (Section VIII, Division 1) and shall be vacuum jacketed in accordance with Section ~~3204.5~~ 3506.4.8.

~~**3204.4.2**~~ **3506.4.2 Location.** Storage tanks shall be located outside in accordance with the following:

1. Tanks and associated equipment shall be located with respect to foundations and supports of other structures such that the loads carried by the latter cannot be transmitted to the tank.
2. The distance from any part of the tank to the nearest wall of a basement, pit, cellar or lot line shall not be less than 3 feet (914 mm).
3. A minimum distance of 1 foot (1525 mm), shell to shell, shall be maintained between underground tanks.

~~**3204.4.3**~~ **3506.4.3 Depth, cover and fill.** The tank shall be buried such that the top of the vacuum jacket is covered with a minimum of 1 foot (305 mm) of earth and with concrete a minimum of 4 inches (102 mm) thick placed over the earthen cover. The concrete shall extend a minimum of 1 foot (305 mm) horizontally beyond the footprint of the tank in all directions. Underground tanks shall be set on firm foundations constructed in accordance with the *International Building Code* and surrounded with at least 6 inches (152 mm) of noncorrosive inert material, such as sand.

Exception: The vertical extension of the vacuum jacket as required for service connections.

~~3204.4.4~~ 3506.4.4 **Anchorage and security.** Tanks and systems shall be secured against accidental dislodgement in accordance with this chapter.

~~3204.4.5~~ 3506.4.5 **Venting of underground tanks.** Vent pipes for underground storage tanks shall be in accordance with Sections 2209.5.4 and 3203.3.

~~3204.4.6~~ 3506.4.6 **Underground liquid hydrogen piping.** Underground liquid hydrogen piping shall be vacuum jacketed or protected by approved means and designed in accordance with ~~this~~ Chapter 32.

~~3204.4.7~~ 3506.4.7 **Overfill protection and prevention systems.** An approved means or method shall be provided to prevent the overfill of all storage tanks.

~~3204.5~~ 3506.4.8 **Vacuum jacket construction.** The vacuum jacket shall be designed and constructed in accordance with Section VIII of ASME *Boiler and Pressure Vessel Code* and shall be designed to withstand the anticipated loading, including loading from vehicular traffic, where applicable. Portions of the vacuum jacket installed below grade shall be designed to withstand anticipated soil, seismic and hydrostatic loading.

~~3204.5.1~~ 3506.4.8.1 **Material.** The vacuum jacket shall be constructed of stainless steel or other approved corrosion-resistant material.

~~3204.5.2~~ 3506.4.8.2 **Corrosion protection.** The vacuum jacket shall be protected by approved or listed corrosion-resistant materials or an engineered cathodic protection system. Where cathodic protection is utilized, an approved maintenance schedule shall be established. Exposed components shall be inspected at least twice a year. Maintenance and inspection events shall be recorded and those records shall be maintained on the premises for a minimum of three years and made available to the fire code official upon request.

~~3204.5.3~~ 3506.4.8.3 **Vacuum level monitoring.** An approved method shall be provided to indicate loss of vacuum within the vacuum jacket(s).

3. Revise as follows:

3201.1 Scope. Storage, use and handling of cryogenic fluids shall comply with this chapter. Cryogenic fluids classified as hazardous materials shall also comply with Chapter 27 for general requirements. Partially full containers containing residual cryogenic fluids shall be considered as full for the purposes of the controls required.

Exceptions:

1. Fluids used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied natural gas (LNG), which shall comply with NFPA 59A.

Oxidizing cryogenic fluids, including oxygen, shall comply with NFPA 55.

Flammable cryogenic fluids, including hydrogen, methane and carbon monoxide, shall comply with NFPA 55 and Chapters 22 and 35 as applicable. Inert cryogenic fluids, including argon, helium and nitrogen, shall comply with CGA P-18.

3204.3.1.1 Location. Stationary containers shall be located in accordance with Section 3203.6. Containers of cryogenic fluids shall not be located within diked areas containing other hazardous materials.

~~Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).~~

(Note: Deleted text here becomes new Section 3506.2)

4. Revise as follows:

2209.3.2.5 Liquefied hydrogen storage. Storage of liquefied hydrogen shall be in accordance with Chapter 32 and 35.

Reason: Part 1. NFPA 55 contains material specific provisions for "bulk" hydrogen systems. The term "bulk" has been added to direct the user to the applicable sections of the Standard. Two new definitions have been added to define "bulk liquefied" and "bulk compressed" gas systems where specific details surrounding such installations can be found.

Part 2. Chapter 32 was intended to be a generic chapter for cryogenic fluids. Material specific hazards were to be placed into the appropriate chapter based on the nature of the material. A code change was introduced into the last code cycle (F216-04/05 Fluer, representing CGA) to relocate the requirements for liquid hydrogen tanks to Chapter 35, however, the necessary correlating changes and references were overlooked and the code change was rejected at the request of the proponent.

The provisions for liquid hydrogen have been proposed to be relocated without change from Chapter 32 to Chapter 35 and placed into a new Section 3506. Section 3506 is the only section in the chapter intended to apply to cryogenic fluids, and hydrogen is the sole cryogenic fluid provided for at this time. The general provisions of Chapter 32 address general design and safeguards. Section 3501.1 has been modified to require that Chapter 32 requirements be applied in addition to the requirements of Section 3506 while recognizing that there are also specific requirements in Chapter 22 that are applicable to service stations. The provisions for underground tanks for liquid hydrogen are applicable to industrial installations. They are not unique to service stations. Therefore, Chapter 35 is the logical choice for locating these provisions given the hazard specific approach to hazardous materials used by the IFC.

Section 3204.3.1.1, paragraph two contains material specific requirements applicable to flammable cryogens that have been relocated to new Section 3506.2 as Chapter 35 applies to flammable gases and cryogens.

Section 3506.3 has been added as a new section to address the requirements for tank construction in a more specific manner than that described by Section 2703.2.1. The requirements for construction for aboveground tanks parallel those found for underground tanks with the exception that the vacuum jacket (outer tank) is not required to be constructed to meet requirements of the ASME Boiler and Pressure Vessel Code. The vacuum jacket is designed to provide an insulated layer around the inner vessel through the use of vacuum and an insulating layer. It is also designed to contain and relieve a release of hydrogen should a leak occur in the annular space. The jacket is designed to a safety factor of two. For underground tanks, the safety factor is increased due to potential loading by the use of ASME requirements where the safety factor of three and a half is used.

The design criteria are found in newly published CGA Standard H-3-2006 Cryogenic Hydrogen Storage. The standard has not yet been submitted for approval into the ANSI process, however, it is available for use by those that seek to establish more detailed design requirements than would otherwise be available through the use of Section 2703.2.1. The minimum design requirements established by Section 3506.3 coupled with the general requirements of Chapter 32 applicable to all cryogens improve the code resulting in greater consistency and an increase in public safety.

Approval of this code change will maintain Chapter 32 as a generic chapter applicable to all cryogens while placing material specific requirements into the material specific chapters as desired.

Part 3. References are added to Chapter 22 and 35 as requirements for liquid hydrogen systems are also found in these chapters. Section 3204.3.1.1 has been moved to Section 3506.2 without change.

Part 4. Reference is made to Chapter 35 which contains requirements for underground tanks used for liquid hydrogen.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

3501.1 Scope. The storage and use of flammable gases shall be in accordance with this chapter. Compressed gases shall also comply with Chapter 30 and cryogenic fluids shall also comply with Chapter 32. Bulk hydrogen compressed gas systems and bulk liquefied hydrogen gas systems shall also comply with NFPA 55.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied petroleum gases and natural gases regulated by Chapter 38.
3. Fuel-gas systems and appliances regulated under the *International Fuel Gas Code*.
4. Hydrogen motor fuel-dispensing stations and repair garages and <u>their associated</u> above ground hydrogen storage systems designed and constructed in accordance with Chapter 22.
5. Pyrophoric gases in accordance with Chapter 41.

(Portions of proposal not shown remain unchanged)

Committee Reason: Based on the proponent's reason statement. The proposal will continue Chapter 32 as the general cryogens chapter while Chapter 35 will continue to develop as the material-specific chapter for flammable gases and cryogenic fluids. Additional correlation of in-code references is also provided along with clearer direction on the application of the referenced standard, NFPA 55, to bulk systems. The modification clarifies that the exception is only applicable to tanks associated with fuel dispensing.

Assembly Action: **None**

Final Hearing Results

F191-06/07 **AM**

Code Change No: F194-06/07

Original Proposal

Sections: 3506 (New), 3502.1 (New)

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

1. Add new section as follows:

SECTION 3506
METAL HYDRIDE STORAGE SYSTEMS

3506.1 General requirements. The storage and use of metal hydride storage systems shall be in accordance with Sections 3501, 3503, 3504, 3505 and 3506. Those portions of the system that are used as a means to store or supply hydrogen shall also comply with Chapters 27 and 30 as applicable.

3506.1.1 Classification. The hazard classification of the metal hydride storage system, as required by Section 2701.2.2, shall be based on the hydrogen stored without regard to the metal hydride content.

3506.1.2 Listed or approved systems. Metal hydride storage systems shall be listed or approved for the application and designed in a manner that prevents the addition or removal of the metal hydride by other than the original equipment manufacturer.

3506.1.3 Containers, design and construction. Compressed gas containers, cylinders and tanks shall be designed and constructed in accordance with Section 3003.2.

3506.1.4 Service life and inspection of containers. Metal hydride storage system cylinders, containers or tanks shall be inspected, tested and requalified for service at not less than five year intervals.

3506.1.5 Marking and labeling. Marking and labeling of cylinders, containers, tanks and systems shall be in accordance with Section 3003.4 and the following:

3506.1.5.1 System marking. Metal hydride storage systems shall be marked with the following.

1. Manufacturer's name.
2. Service life indicating the last date the system can be used.
3. A unique code or serial number specific to the unit.
4. System name or product code that identifies the system by the type of chemistry used in the system.
5. Emergency contact name, telephone number or other contact information, and
6. Limitations on refilling of containers to include rated charging pressure and capacity.

3506.1.5.2 Valve marking. Metal hydride storage system valves shall be marked with the following:

1. Manufacturer's name.
2. Service life indicating the last date the valve can be used, and
3. Metal hydride service in which the valve can be used, or a product code that is traceable to this information.

3506.1.5.3 Pressure relief device marking. Metal hydride storage system pressure relief devices shall be marked with the following:

1. Manufacturer's name.
2. Metal hydride service in which the device can be used, or a product code that is traceable to this information, and
3. Activation parameters to include temperature, pressure or both.

3506.1.5.3.1 Pressure relief devices integral to container valves. The required markings for pressure relief devices that are integral components of valves used on cylinders, containers and tanks shall be allowed to be placed on the valve.

3506.1.5.4 Pressure vessel markings. Cylinders, containers and tanks used in metal hydride storage systems shall be marked with the following:

1. Manufacturer's name.
2. Design specification to which the vessel was manufactured.
3. Authorized body approving the design and initial inspection and test of the vessel.
4. Manufacturer's original test date.
5. Unique serial number for the vessel.
6. Service life identifying the last date the vessel can be used, and
7. System name or product code that identifies the system by the type of chemistry used in the system.

3506.1.6 Temperature extremes. Metal hydride storage systems, whether full or partially full, shall not be exposed to artificially created high temperatures exceeding 125°F (52°C) or subambient (low) temperatures unless designed for use under the exposed conditions.

3506.1.7 Falling objects. Metal hydride storage systems shall not be placed in areas where they are capable of being damaged by falling objects.

3506.1.8 Piping systems. Piping, including tubing, valves, fittings and pressure regulators, serving metal hydride storage systems shall be maintained gas tight to prevent leakage.

3506.1.8.1 Leaking systems. Leaking systems shall be removed from service.

3506.1.9 Refilling of containers. The refilling of listed or approved metal hydride storage systems shall be in accordance with the listing requirements and manufacturers' instructions.

3506.1.9.1 Industrial trucks. The refilling of metal hydride storage systems serving powered industrial trucks shall be in accordance with Section 309.

3506.1.9.2 Hydrogen purity. The purity of hydrogen used for the purpose of refilling containers shall be in accordance with the listing and the manufacturer's instructions.

3506.1.10 Electrical. Electrical components for metal hydride storage systems shall be designed, constructed, and installed in accordance with the *International Code Council Electrical Code Administrative Provisions.*

3506.2 Portable containers or systems. Portable containers or systems shall comply with Section 3506.2.1 through 3506.2.2.

3506.2.1 Securing containers. Containers, cylinders and tanks shall be secured in accordance with Section 3003.5.3.

3506.2.1.1 Use on mobile equipment. Where a metal hydride storage system is used on mobile equipment the equipment shall be designed to restrain containers, cylinders or tanks from dislodgement, slipping or rotating when the equipment is in motion.

3506.2.1.2 Motorized equipment. Metal hydride storage systems used on motorized equipment shall be installed in a manner that protects valves, pressure regulators, fittings and controls against accidental impact.

3506.2.1.2.1 Protection from damage. Metal hydride storage systems including cylinders, containers, tanks and fittings shall not extend beyond the platform of the mobile equipment.

3506.2.2 Valves. Valves on containers, cylinders and tanks shall remain closed except when containers are connected to closed systems and ready for use.

2. Add new definitions as follows:

3502.1 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.

METAL HYDRIDE STORAGE SYSTEM. A closed system consisting of a group of components assembled as a package to contain metal-hydrogen compounds for which there exists an equilibrium condition where the hydrogen-absorbing metal alloy(s), hydrogen gas, and the metal-hydrogen compound(s) co-exist and where only hydrogen gas is released from the system in normal use.

METAL HYDRIDE. A generic name for compounds composed of metallic element(s) and hydrogen.

Reason: A definition and a statement for classification of metal hydride storage systems were added to the 2004 Supplement with the approval of F181-03/04 (ICC Ad Hoc Committee for Hydrogen Gas and Texaco/Ovonic Hydrogen). The definition and classification statement were removed by actions taken under code change F236-04/05 (G. Victor, City of Glendale, AZ). Public comments issued by proponents Boucard (Energy Conversion Devices, Inc.) and Shine, (Jadoo Power systems) to overturn the committee action under F236-04/05 were rejected by the membership during the final code action hearings.

The text as it appeared in the 2004 supplement that was later removed was as follows:

METAL HYDRIDE STORAGE SYSTEM. A system for the storage of hydrogen gas absorbed in solid material.

3503.1.6 Hydrogen gas absorbed in solids. The hazard classification of the metal hydride storage system, as required by Section 2701.2.2, shall be based on the hydrogen stored without regard to the metal hydride content.

3503.1.6.1 Listed system. Metal hydride storage systems shall be listed for the application and designed in a manner that prevents the removal of the metal hydride.

The committee approved the deletion of the above text based on the fact that it leads the code official to believe that there are listed systems available when, in fact there were none. In addition, standards for testing and listing of the systems were not yet final. In support of the action to strike the language from the code the committee suggested, in pertinent part, that until such time as there were listing standards…"it would be better if the code included, in codified form, the safeguards that are currently used by the industry for the systems that are currently in use in the field."

The code change now proposed by the Compressed Gas Association (CGA) is an effort to bring the parties to consensus in a manner that recognizes the presence of these unique systems, and to place fundamental requirements in the code to address their use.

The technical argument presented by the ICC Hydrogen Ad Hoc Committee and Texaco/Ovonic Hydrogen under F181-03/04 regarding the classification of containers used to absorb hydrogen was valid. Specifically, the primary hazard of the container is its hydrogen content, and not the metal hydride solid which is used as an absorbent. The weakness in the approach may have been the lack of clear direction regarding requirements for the construction of the vessels used to contain the metal hydride and the absorbed hydrogen gas as well as confusion as to the intent of the proponents with respect to how to apply the code to these containers.

In the last code cycle a new section was added to Chapter 30 that specifies the design and construction of cylinders, containers and tanks used to hold compressed gases (Section 3003.2). The code change proposal requires that containers be designed to meet requirements of DOTn 49 CFR or ASME Boiler and Pressure Vessel Code, Section VIII. The use of these design requirements will ensure that the containers used to contain the metal hydride are of robust construction. Containers meeting the reference standards are required to meet specified tests for impact, fire, drop and other physical hazards to ensure that they do not rupture due to events where they are exposed to common physical abuse.

Placement into Chapter 35 places these materials under the requirements of Chapter 30 (Compressed Gases). See 3501.1. In doing so, all of the requirements attendant to compressed gas containers, cylinders and tanks apply thereby alleviating some of the expressed concerns regarding the nature of the containers to be used as well as specialized controls such as pressure relief systems, valves and fittings. In addition, under the requirements of proposed Section 3506.1 the systems are required to comply with the requirements of Chapter 27. The oddity is that based on the classification as a flammable gas only and the provisions other physical or health hazard categories including that of pyrophoric, water reactive, or other hazards will not apply.

The closest analogy that can be made with respect to the code approach in treating the hazard is that of acetylene, a compressed gas that is dissolved in acetone or dimethylformamide. These solvents are Class IB flammable liquid and Class II combustible liquids respectively. However, in practice it is the flammable gas hazard that is regulated, and the solvent into which the gas is absorbed has not been independently assessed. The established reason for doing this is that the control strategy for the compressed gas hazard is suitable for that of the solvent hazard.

The control strategy for metal hydride systems, therefore, is heavily dependent on the control strategy for all compressed gases. However, a number of the control procedures have been drawn into Chapter 35 in order to focus on fundamental controls that might otherwise be missed by code users. In addition provisions have been added to address refilling of containers including containers that may be used on powered industrial trucks (now included in the code in Section 309).

The early use of these systems has been as a means to supply power attendant to portable equipment. Specific safeguards have been included to address the security of containers in mobile as well as motorized equipment. Fundamental controls for motorized equipment have been drawn in part from NFPA 505 Powered Industrial Trucks (Referenced in Chapter 45) as used for LPG.

There may be other controls that may be developed over time for systems of this nature, however, a starting point is needed to recognize this new technology and a fundamental set of controls can accommodate the need.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will add needed code provisions on metal hydride storage systems for the absorption and storage of hydrogen.

Assembly Action: **None**

Final Hearing Results

F194-06/07 **AS**

Code Change No: F198-06/07

Original Proposal

Section: 3704.2.2.7

Proponent: Jennifer Bower, Orange County, CA, Fire Authority, representing North/South Fire Prevention Officers

Revise as follows:

3704.2.2.7 Treatment systems. The exhaust ventilation from gas cabinets, exhausted enclosures and gas rooms, and local exhaust systems required in Sections 3704.2.2.4 and 3704.2.2.5 shall be directed to a treatment system. The treatment system shall be utilized to handle the accidental release of gas and to process exhaust ventilation. The treatment system shall be designed in accordance with Sections 3704.2.2.7.1 through 3704.2.2.7.5 and Section 510 of the *International Mechanical Code*.

Exceptions~~:~~ ~~1.~~ Highly toxic and toxic gases—storage. A treatment system is not required for cylinders, containers and tanks in storage when all of the following controls are provided:

~~1.~~1. Valve outlets are equipped with gas-tight outlet plugs or caps.
~~1.~~2. Handwheel-operated valves have handles secured to prevent movement.
~~1.~~3. Approved containment vessels or containment systems are provided in accordance with Section 3704.2.2.3 .

~~2. Toxic gases—use. Treatment systems are not required for toxic gases supplied by cylinders or portable tanks not exceeding 660 gallons (2 498 L) liquid capacity when the following are provided:~~
~~2.1. A gas detection system with a sensing interval not exceeding 5 minutes.~~
~~2.2. An approved automatic-closing fail-safe valve located immediately adjacent to cylinder valves. The fail-safe valve shall close when gas is detected at the permissible exposure limit (PEL) by a gas detection system monitoring the exhaust system at the point of discharge from the gas cabinet, exhausted enclosure, ventilated enclosure or gas room. The gas detection shall comply with Section 3704.2.2.10 .~~

Reason: We proposed that the California State Fire Marshal in the adoption of the 2006 California Fire Code, delete Exception 2 of IFC Section 3704.2.2.7 Treatment Systems. It is our feeling that although Exception 1 utilizes new and available technologies, Exception 2 substantially reduces Community and Emergency Responder Safety. Elimination of abatement or containment systems for Toxic Gases reduces the current standard of care and exposes the local community to extraordinary Health Hazards. Although the utilization of a modern shut off valve is a positive step, there are toxic leak paths that exist around the valve and through other appurtenances.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Replace proposal with the following:

3704.2.2.7 Treatment systems. The exhaust ventilation from gas cabinets, exhausted enclosures and gas rooms, and local exhaust systems required in Sections 3704.2.2.4 and 3704.2.2.5 shall be directed to a treatment system. The treatment system shall be utilized to handle the accidental release of gas and to process exhaust ventilation. The treatment system shall be designed in accordance with Sections 3704.2.2.7.1 through 3704.2.2.7.5 and Section 510 of the *International Mechanical Code*.

Exceptions:

1. Highly toxic and toxic gases–storage. A treatment system is not required for cylinders, containers and tanks in storage when all of the following controls are provided:
   1.1. Valve outlets are equipped with gas-tight outlet plugs or caps.
   1.2. Handwheel-operated valves have handles secured to prevent movement.
   1.3. Approved containment vessels or containment systems are provided in accordance with Section 3704.2.2.3 .
2. Toxic gases–use. Treatment systems are not required for toxic gases supplied by cylinders or portable tanks not exceeding 1, 700 pounds (772 kg) water ~~660 gallons (2498 L) liquid~~ capacity when the following are provided:

2.1. A listed or approved gas detection system with a sensing interval not exceeding 5 minutes.
2.2 A~~n~~ listed or approved automatic-closing fail-safe valve located immediately adjacent to cylinder valves. The fail-safe valve shall close when gas is detected at the permissible exposure limit (PEL) by a gas detection system monitoring the exhaust system at the point of discharge from the gas cabinet, exhausted enclosure, ventilated enclosure or gas room. The gas detection shall comply with Section 3704.2.2.10 .

Committee Reason: Based on the proponent's reason statement. The proposal as modified provides more enforcement flexibility by allowing either listed or approved devices. The modification also corrects a typographical error in the proposal, i.e. the difference in units of measure in Exception 2.

Assembly Action: **None**

Final Hearing Results

F198-06/07 **AM**

Code Change No: F200-06/07

Original Proposal

Section: 3705.1

Proponent: Kent Miller, representing City of Stockton, CA Fire Department; Paul Inouye, representing City of Milpitas, CA Fire Department; Ron Keefer, City of Menlo Park, CA Fire Department

Revise as follows:

3705.1 Scope. Ozone gas generators having a maximum ozone-generating capacity of 0.5 pound (0.23 kg) or more over a 24-hour period shall be in accordance with this section.

Exceptions~~:~~ ~~1.~~ Ozone-generating equipment used in Group R-3 occupancies.
~~2. Ozone-generating equipment used in Group H-5 occupancies.~~

Reason: This proposal will delete exception #2 that exempts H-5 Occupancies from the safeguards required by this Section for Ozone Gas generating equipment. Since the semiconductor industry uses Ozone Gas generators, which is a Fire Code defined Highly Toxic Gas, they should be included in the safeguards provided by this Section of the Code. It simply retains the Standard of Care that now exists. The specific requirements for ozone will require additional safeguards that would not otherwise be in H-5 occupancy.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposal would nullify previously added safeguards. The proponent requested disapproval in order to resolve that issue and others brought up to him by the semiconductor industry.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Ron Keefer, Menlo Park Fire Protection District, representing California Fire Chiefs Association, requests Approval as Modified by this public comment.

Modify proposal as follows:

3705.1 Scope. Ozone gas generators having a maximum ozone-generating capacity of 0.5 pound (0.23 kg) or more over a 24-hour period shall be in accordance with this section.

Exceptions:

1. Ozone-generating equipment used in Group R-3 occupancies.
2. Ozone generating equipment when used in Group H-5 occupancies when in compliance with Chapters 18 and 27 and the other provisions in Chapter 37 for Highly Toxic Gases.

Commenter's Reason: This proposal ensures that the necessary safety provisions for the highly toxic ozone gas produced in an ozone generator will be maintained when used in a semiconductor facility.

Final Hearing Results

F200-06/07 AMPC1

Code Change No: F201-06/07

Original Proposal

Section: 3802.1 (New)

Proponent: Jakki MacLean, Yakima County Washington Fire Protection Bureau, representing Washington State Association of Fire Marshals

1. Add new definition as follows:

3802.1 Definition. The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.

LP-GAS CONTAINER. Any vessel, including cylinders, tanks, portable tanks, and cargo tanks, used for transporting or storing LP-gases.

2. Wherever the term "Container" appears in Chapter 38, revise it to "LP-gas container"

Reason: The proposed definition will solve correlation problems between NFPA 58 and the IFC as they exist with the definition of "container," and the different forms that it can take. Placing the definition in Section 3802 will apply specifically to LP-gases and supersede the general definition used in Chapter 27.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal adds a needed definition that will draw the distinction between LP-gas containers and the more general term "container" used elsewhere in the code.

Assembly Action: **None**

Final Hearing Results

F201-06/07 AS

Code Change No: F203-06/07

Original Proposal

Sections: 4001.1, 4003.1, 4003.1.1, 4003.2, 4004.1, 4004.2 through 4004.2.4, 3201.1, 4006 (New)

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

Revise as follows:

4001.1 Scope. The storage and use of oxidizing materials ~~oxidizers~~ shall be in accordance with this chapter and Chapter 27. Compressed gases shall also comply with Chapter 30.

4003.1 Quantities not exceeding the maximum allowable quantity per control area. The storage and use of oxidizing materials ~~oxidizers~~ in amounts not exceeding the maximum allowable quantity per control area indicated in Section 2703.1 shall be in accordance with Sections 2701, 2703, 4001 and 4003. Oxidizing gases shall also comply with Chapter 30.

4003.1.1 Special limitations for indoor storage and use by occupancy. The indoor storage and use of oxidizing materials ~~oxidizers~~ shall be in accordance with Sections 4003.1.1.1 through 4003.1.1.3.

4003.2 Quantities exceeding the maximum allowable quantity per control area. The storage and use of oxidizing materials ~~oxidizers~~ in amounts exceeding the maximum allowable quantity per control area indicated in Section 2703.1 shall be in accordance with Chapter 27 and this chapter.

4004.1 Indoor storage. Indoor storage of oxidizing materials ~~oxidizers~~ in amounts exceeding the maximum allowable quantity per control area indicated in Table 2703.1.1(1) shall be in accordance with Sections 2701, 2703, 2704 and this chapter.

4004.2 Outdoor storage. Outdoor storage of oxidizing materials ~~oxidizers~~ in amounts exceeding the maximum allowable quantities per control area set forth in Table 2703.1.1(3) shall be in accordance with Sections 2701, 2703, 2704 and this chapter. Oxidizing gases shall also comply with Chapter 30.

4004.2.1 Distance from storage to exposures for liquid and solid oxidizers. Outdoor storage areas for liquid and solid oxidizers shall be located in accordance with Table 4004.1.2.

4004.2.2 Distance from storage to exposures for oxidizing ~~oxidizer~~ gases. Outdoor storage areas for oxidizing ~~oxidizer~~ gases shall be located in accordance with Table 4004.2.2.

4004.2.2.1 Oxidizing cryogenic fluids. Outdoor storage areas for oxidizing cryogenic fluids shall be located in accordance with Chapter 32.

4004.2.3 Storage configuration for liquid and solid oxidizers. Storage configuration for liquid and solid oxidizers shall be in accordance with Tables 4004.1.7(1) through 4004.1.7(4).

4004.2.4 Storage configuration for oxidizing ~~oxidizer~~ gases. Storage configuration for oxidizing ~~oxidizer~~ gases shall be in accordance with Table 4004.2.2.

TABLE 4004.2.2
OXIDIZING ~~OXIDIZER~~ GASES— DISTANCE FROM STORAGE TO EXPOSURES[a]

QUANTITY OF GAS STORED (cubic feet at NTP)	DISTANCE TO A BUILDING NOT ASSOCIATED WITH THE MANUFACTURE OR DISTRIBUTION OF OXIDIZING ~~OXIDIZER~~ GASES OR PUBLIC WAY OR LOT LINE THAT CAN BE BUILT UPON (feet)	DISTANCE BETWEEN STORAGE AREAS (feet)
0-50,000	5	5
50,001-100,000	10	10
100,001 or greater	15	10

For SI: 1 foot = 304.8 mm, 1 cubic foot = 0.02832 m^3.

a. The minimum required distances shall not apply when fire barriers without openings or penetrations having a minimum fire-resistance rating of 2 hours interrupt the line of sight between the storage and the exposure. The configuration of the fire barrier shall be designed to allow natural ventilation to prevent the accumulation of hazardous gas concentrations.

3201.1 Scope. Storage, use and handling of cryogenic fluids shall comply with this chapter. Cryogenic fluids classified as hazardous materials shall also comply with Chapter 27 for general requirements. Partially full containers containing residual cryogenic fluids shall be considered as full for the purposes of the controls required.

Exceptions:

1. Fluids used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied natural gas (LNG), which shall comply with NFPA 59A.

Oxidizing cryogenic fluids, including oxygen, shall comply with NFPA 55 and Chapter 40 as applicable. Flammable cryogenic fluids, including hydrogen, methane and carbon monoxide, shall comply with NFPA 55. Inert cryogenic fluids, including argon, helium and nitrogen, shall comply with CGA P-18.

CHAPTER 40
OXIDIZERS, OXIDIZING GASES AND OXIDIZING CRYOGENIC FLUIDS

2. Add new text as follows:

SECTION 4006
OXIDIZING CRYOGENIC FLUIDS

4006.1 General. The storage and use of oxidizing cryogenic fluids shall be in accordance with Section 4006 and Chapter 32.

Reason: The term “oxidizer” is used inconsistently throughout the code. “Oxidizing materials” is not a defined term, rather it includes solids, liquids and gases. An example can be seen in Table 105.6.21. Revisions have been made to resolve the use of the term in Sections 4001.1, 4003.1, 4003.1.1, 4003.2 and 4004.1 where appropriate as a means for consistency. The creation of a definition was considered, but felt not to be necessary as when specific requirements are to be applied to solids and liquids the term has conventionally been that of oxidizer, e.g., oxidizer solids and liquids or oxidizer Class 3, etc.

The term “oxidizing gas” as defined in Section 4002.1 is used to differentiate and establish requirements for gases separate from those used for solids and liquids. Clarification is needed to bring consistency in use of the term to Section 4004.2. The change in terminology is not intended to alter requirements and is offered as clarification to avoid misapplication of the code.

Chapter 32 is a generic chapter for all cryogenic fluids. The material specific chapters contain material specific provisions based on hazard class. The term oxidizer is generally used to describe solid and liquid materials; however, Chapter 40 contains provisions for oxidizing gases as well. Changing the title to reflect the Chapter content is user friendly. The requirements for oxidizing fluids found in the present code are limited to the generic requirements of Chapter 32, however, the establishment of a section for oxidizing cryogenic fluids is appropriate and parallel to a proposal that proposes similar organization for flammable cryogens to be placed into Chapter 35.

A code change to address the use of liquid oxygen (LOX), an oxidizing cryogenic fluid, for home health care has been introduced by other parties into the 06/07 code cycle. Establishing Section 4006 under the major heading of oxidizing cryogenic fluids provides a structure under which specific requirements may be developed.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

4001.1 Scope. The storage and use of oxidizing materials shall be in accordance with this chapter and Chapter 27. ~~Compressed~~ Oxidizing gases shall also comply with Chapter 30. Oxidizing cryogenic fluids shall also comply with Chapter 32.

~~**SECTION 4006**~~
~~**OXIDIZING CRYOGENIC FLUIDS**~~

~~**4006.1 General.** The storage and use of oxidizing cryogenic fluids shall be in accordance with Section 4006 and Chapter 32.~~

(Portions of proposal not shown remain unchanged)

Committee Reason: Based on the proponent's reason statement. The proposal adds clarity to the section by making a distinction between different terms applicable to oxidizing materials. The modification simplifies the proposal by moving the required reference back to Chapter 32 to the beginning of the chapter and deleting an unneeded new section.

Assembly Action: **None**

Final Hearing Results

F203-06/07 **AM**

Code Change No: F204-06/07

Original Proposal

Section: 4002.1

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

Revise definition as follows:

4002.1 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.

OXIDIZING GAS. A gas that can support and accelerate combustion of other materials more than air does.

Reason: As currently written air itself would be regulated as an oxidizing gas subject to the requirements of Chapter 40 including the Maximum Allowable Quantity per Control Area Tables. Air or compressed air should not trigger the need to establish a Group H3 Occupancy. The intent of the code is to regulate as oxidizing gases those materials that are more vigorous oxidizers than normal air. The normal oxygen content of air at sea level is 20.95% oxygen.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal definition provides a point of reference for the property of oxidizing gas to support combustion and will resolve the need to separate compressed air from oxidizing gases.

Assembly Action: **None**

Final Hearing Results

F204-06/07 **AS**

Code Change No: F205-06/07

Original Proposal

Sections: 4006 (New), 4002.1, 3001.1

Proponent: John Anicello, Airgas, Inc.; Greg Rogers, South Kitsap Fire & Rescue, representing ICC Joint Fire Service Review Committee

1. Add new text as follows:

SECTION 4006
LIQUID OXYGEN IN HOME HEALTH CARE

4006.1 General. The storage and use of liquid oxygen (LOX) in home health care shall comply with Sections 4006.2 through 4006.10.3.

4006.2 Information and instructions to be provided. The supplier of liquid oxygen shall provide the user with the following information in written form:

1. Manufacturer's instructions for operation of the containers used and labeling.
2. Locating containers away from ignition sources, exits, electrical hazards and high temperature devices.
3. Restraint of containers to prevent falling.
4. Requirements for transporting containers.
5. Safeguards to be followed when containers are refilled.

4006.3 Liquid oxygen home care containers. Liquid oxygen home care and ambulatory containers in Groups I-1, I-4, R-3 Residential Care/Assisted Living Facilities and R-4 occupancies shall be stored, used and filled in accordance with Sections 4006, 3203.1 and 3203.2.

4006.4 Manufacturer's instructions and labeling. Containers shall be stored, used and operated in accordance with the manufacturer's instructions and labeling.

4006.5 Locating containers. Containers shall not be located in areas:

1. Where they can be overturned due to operation of a door,
2. Where they are in the direct path of egress,
3. Subject to falling objects,
4. Where they may become part of an electrical circuit, or
5. Where open flames and high temperature devices can cause a hazard.

4006.6 No smoking. Smoking shall be prohibited in rooms or areas where liquid oxygen is in use.

4006.7 Signs. A sign stating "OXYGEN NO SMOKING" shall be posted in the room or area where the liquid oxygen home care container(s) is stored or used and liquid oxygen ambulatory containers are filled.

4006.8 Restraining containers. Containers shall be restrained while in storage or use to prevent falling caused by contact, vibration or seismic activity. Containers shall be restrained by one of the following methods:

1. Restraining containers to a fixed object with one or more restraints.
2. Restraining containers within a framework, stand or assembly designed to secure the container.
3. Restraining containers by locating a container against two points of contact like the walls of a corner of a room or a wall and a secure furnishing or object like a desk.

4006.9 Container movement. Containers shall be transported by use of a cart or hand truck designed for such use.

Exceptions:

1. Liquid oxygen home care containers equipped with a roller base.
2. Liquid oxygen ambulatory containers are allowed to be hand carried.

4006.10 Filling of containers. The filling of containers shall be in accordance with Sections 4006.10 through 4006.10.3.

4006.10.1 Filling of home care containers. Liquid oxygen home care containers shall be filled outdoors.

4006.10.1.1 Incompatible surfaces. A liquid oxygen compatible drip pan shall be provided under home care container fill connections during the filling process in order to protect against liquid oxygen spillage from coming into contact with combustible surfaces, including asphalt.

4006.10.2 Filling of ambulatory care containers. The filling of liquid oxygen ambulatory containers is allowed indoors where the supply container is designed to fill them and written instructions are provided by the container manufacturer.

4006.10.3 Open flames and high temperature devices. The use of open flames and high temperature devices shall be in accordance with Section 2703.7.2.

2. Add new definitions as follows:

4002.1 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.

LIQUID OXYGEN HOME CARE CONTAINER. A container used for liquid oxygen not exceeding 15.8 gallons (60 liters) specifically designed for use as a medical device as defined by 21 USC Chapter 9, the United States Food, Drug and Cosmetic Act that is intended to deliver gaseous oxygen for therapeutic use in a home environment.

LIQUID OXYGEN AMBULATORY CONTAINER. A container used for liquid oxygen not exceeding 0.396 gallons (1.5 liters) specifically designed for use as a medical device as defined by 21 USC Chapter 9, the United States Food, Drug and Cosmetic Act that is intended for portable therapeutic use and to be filled from its companion base unit (a liquid oxygen home care container).

OXIDIZING CRYOGENIC FLUID. An oxidizing gas in the cryogenic state.

3. Revise as follows:

3001.1 Scope. Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full compressed gas containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 22, NFPA 52 and the *International Fuel Gas Code*.

Cutting and welding gases shall also comply with Chapter 26.

Cryogenic fluids shall ~~also~~ comply with Chapter 32. Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 57 and NFPA 59A.

Compressed gases classified as hazardous materials shall also comply with Chapter 27 for general requirements and chapters addressing specific hazards, including Chapters 35 (Flammable Gases), 37 (Highly Toxic and Toxic Materials), 40 (Oxidizers) and 41 (Pyrophoric).

LP-gas shall also comply with Chapter 38 and the *International Fuel Gas Code*.

Reason:
1. Chapter 40: A typical liquid oxygen home care container holds up to 15.8 gallons of liquid oxygen (LOX). The ambulatory containers are typically limited to 1.5 gallons or less. These containers include in their design all appurtenances such as regulators, gauges, piping and controls and require no external piping other than the application of disposable breathing apparatus.

A code change (F215-04/05) was initially submitted by Mr. Hal Key, City of Mesa, AZ to address the subject. This code change was not approved. However, a substantial public comment was issued by Mr. John Anicello, Airgas, Inc. for consideration at the annual meeting. The public comment was disapproved at the request of the proponent to allow for further study and consideration. The code change has now been further revised based on input from the ICC/IAFC Western/Canadian Code Action Committee and discussion with other liquid oxygen suppliers.

This proposal is designed to establish controls for LOX into a section of Chapter 40 instead of Chapter 32, Cryogenic Fluids because Chapter 32 is a generic chapter that provides general provisions for all cryogens and has only limited application to liquid oxygen in homecare. Liquid oxygen is regulated by Chapters 32 and 40. As a cryogen LOX is not regulated by Chapter 30. Part 1 of the proposal is designed to resolve what might be a conflict by referring the user to Chapter 32 when cryogens are involved.

2. Chapter 40 definitions: Part 2 of the proposal provides the general provisions for storage and use of liquid oxygen home care and ambulatory containers as defined in two new definitions to be added to Chapter 40. A key aspect in the definitions are the containers are medical devices as classified by the Federal Food and Drug Administration and always intended for therapeutic use.

Use in all occupancies requires that the supplier furnish written information to the user under the requirements of Section 4006.1. Specific provisions applicable to I-1, I-4, R-3 Residential Care/Assisted Living facilities and R-4 occupancies are addressed in Section 4006.2 and the sections that follow. The requirements establish general safeguards including but not limited to locating containers, restraining containers, distance to exposures such as ignition sources, and high temperature devices, container movement and filling. The permit quantity of 10 gallons is unchanged.

The definitions and Part 4 of the proposal provide a reference to the US Code, Title 21 – Federal Food, Drug and Cosmetic Act that defines medical devices. LOX containers used as medical devices are unique in that they are intended for therapeutic use only, and not intended for use in industrial applications.

As the population ages the use of LOX is expected to increase. Approval of this code change will enhance public safety by establishing minimum requirements surrounding its use in the occupancies where the material is most frequently encountered. In addition it requires that the suppliers provide a reasonable level of information containing safeguards to be applied by the users. The code change fills a void in the code which has been characterized by a growing concern and "need to know" emanating from the code enforcement community.

3. 3001.1: Compressed gases in the cryogenic state are regulated under Chapter 32

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

SECTION 4006
LIQUID OXYGEN IN HOME HEALTH CARE

4006.1 General. The storage and use of liquid oxygen (LOX) in home health care shall comply with Sections 4006.2 through ~~4006.10.3~~ 4006.3.7, as applicable.

4006.2 Information and instructions to be provided. (Proposed text is unchanged)

4006.3 Liquid oxygen home care containers. (Proposed text is unchanged)

~~**4006.4**~~ **4006.3.1 Manufacturer's instructions and labeling.** (Proposed text is unchanged)

~~**4006.5**~~ **4006.3.2 Locating containers.** (Proposed text is unchanged)

~~**4006.6**~~ **4006.3.3 No smoking.** (Proposed text is unchanged)

~~**4006.7**~~ **4006.3.4 Signs.** (Proposed text is unchanged)

~~**4006.8**~~ **4006.3.5 Restraining containers.** Liquid oxygen home care containers shall be restrained while in storage or use to prevent falling caused by contact, vibration or seismic activity. Containers shall be restrained by one of the following methods:

1. Restraining containers to a fixed object with one or more restraints.
2. Restraining containers within a framework, stand or assembly designed to secure the container.
3. Restraining containers by locating a container against two points of contact like the walls of a corner of a room or a wall and a secure furnishing or object like a desk.

~~**4006.9**~~ **4006.3.6 Container movement.** (Proposed text is unchanged)

~~**4006.10**~~ **4006.3.7 Filling of containers.** The filling of containers shall be in accordance with Sections ~~4006.10~~ 4006.3.7.1 through ~~4006.10.3~~ 4006.3.7.3.

~~**4006.10.1**~~ **4006.3.7.1 Filling of home care containers.** (Proposed text is unchanged)

~~**4006.10.1.1**~~ **4006.3.7.1.1 Incompatible surfaces.** (Proposed text is unchanged)

~~4006.10.2~~ 4006.3.7.2 **Filling of ambulatory care containers.** (Proposed text is unchanged)

~~4006.10.3~~ 4006.3.7.3 **Open flames and high temperature devices.** (Proposed text is unchanged)

(Portions of proposal not shown remain unchanged)

Committee Reason: The proposal responds to guidance given by the committee in the 2004/2005 cycle in disapproving code change F215-04/05 and represents a consensus among gas purveyors and fire code officials. It provides needed and reasonable regulation of the hazards associated with the storage and use of liquid oxygen in home health care scenarios. The modification clarifies that Sections 4006.1 and 4006.2 apply to all occupancies and that Sections 4006.3.1 through 4006.3.7.3 apply to Groups I-1, I-4, R-3 Residential Care/Assisted Living and R-4 occupancies.

Assembly Action: **None**

Final Hearing Results

F205-06/07 **AM**

Code Change No: F206-06/07

Original Proposal

Sections: 4104.1, 4104.2, 4105.3, 4106, 604.2.12, Table 903.2.13, Chapter 45

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

1. Revise as follows:

4104.1 Indoor storage. Indoor storage of pyrophoric materials in amounts exceeding the maximum allowable quantity per control area indicated in Table 2703.1.1(1), shall be in accordance with Sections 2701, 2703, 2704 and this chapter.

The storage of silane gas and gas mixtures with a silane concentration of ~~2~~ 1.37 percent or more by volume, shall be in accordance with ~~Section 4106~~ CGA G-13.

4104.2 Outdoor storage. Outdoor storage of pyrophoric materials in amounts exceeding the maximum allowable quantity per control area indicated in Table 2703.1.1(3) shall be in accordance with Sections 2701, 2703, 2704 and this chapter.

The storage of silane gas, and gas mixtures with a silane concentration of ~~2~~ 1.37 percent or more by volume, shall be in accordance with ~~Section 4106~~ CGA G-13.

4105.3 Silane gas. The use of silane gas, and gas mixtures with a silane concentration of ~~2~~ 1.37 percent or more by volume, shall be in accordance with ~~Section 4106~~ CGA G-13.

2. Delete section without substitution:

~~**SECTION 4106**~~
~~**SILANE GAS**~~

~~**4106.1 General requirements.** The storage and use of silane gas and gas mixtures with a silane concentration of 2 percent or more by volume, in amounts exceeding the maximum allowable quantity per control area indicated in Table 2703.1.1(1) or 2703.1.1(3), shall be in accordance with this section.~~

~~**4106.1.1 Building construction.** Indoor storage and use of silane gas shall be within a room or building conforming to the *International Building Code*.~~

~~**4106.1.2 Flow control.** Compressed gas containers, cylinders and tanks containing silane gas, and gas mixtures with a silane concentration of 2 percent or more by volume, shall be equipped with reduced flow valves equipped with restrictive-flow orifices not exceeding 0.010 inch (0.254 mm) in diameter. The presence of the restrictive flow orifice shall be indicated on the valve and on the container, cylinder or tank by means of a label placed at a prominent location by the manufacturer.~~

Exceptions:

1. Manufacturing and filling facilities where silane is produced or mixed and stored prior to sale.
2. Outdoor installations consisting of permanently mounted cylinders connected to a manifold, provided that the outlet connection from the manifold is equipped with a restrictive flow orifice not exceeding 0.125 inch (3.175 mm) in diameter and the setback distance to exposures is not less than 40 feet (12 192 mm). Footnote a of Table 4104.2.1 shall not apply.

4106.1.3 Valves. Container, cylinder and tank valves shall be constructed of stainless steel or other approved materials. Valves shall be equipped with outlet fittings in accordance with CGA V-1.

4106.2 Indoor storage. Indoor storage of silane gas, and gas mixtures with a silane concentration of 2 percent or more by volume, shall be in accordance with Section 4104.1 and Sections 4106.2.1 through 4106.2.3.

4106.2.1 Fire protection. When automatic fire-extinguishing systems are required, automatic sprinkler systems shall be used.

4106.2.2 Exhausted enclosures or gas cabinets. When provided, exhausted enclosures and gas cabinets shall be constructed as follows:

1. Exhausted enclosures and gas cabinets shall be in accordance with Sections 2703.8.5 and 2703.8.6, respectively.
2. Exhausted enclosures and gas cabinets shall be internally sprinklered.
3. The velocity of ventilation across unwelded fittings and connections on the piping system shall not be less than 200 feet per minute (1.02 m/s).
4. The average velocity at the face of the access ports or windows in the gas cabinet shall not be less than 200 feet per minute (1.02 m/s) with a minimum velocity of 150 feet per minute (0.76 m/s) at any point of the access port or window.

TABLE 4104.2.1
PYROPHORIC GASES—DISTANCE FROM STORAGE TO EXPOSURES[a]

(Delete entire contents of table)

For SI: 1 foot = 304.8 mm, 1 cubic foot = 0.02832m3.

a. The minimum required distances shall be reduced to 5 feet when protective structures having a minimum fire resistance of 2 hours interrupt the line of sight between the container and the exposure. The protective structure shall be at least 5 feet from the exposure. The configuration of the protective structure shall allow natural ventilation to prevent the accumulation of hazardous gas concentrations.

4106.2.3 Emergency power. The ventilation system shall be provided with an automatic emergency power source in accordance with Section 604 and designed to operate at full capacity.

4106.3 Outdoor storage. Outdoor storage of silane gas, and gas mixtures with a silane concentration of 2 percent or more by volume, shall be in accordance with Section 4104.2 and Sections 4106.3.1 through 4106.3.4.

4106.3.1 Volume. The maximum volume for each nest shall not exceed 10,000 cubic feet (283.2 m^3) of gas.

4106.3.2 Aisles. Storage nests shall be separated by aisles a minimum of 6 feet (1829 mm) in width.

4106.3.3 Separation. Storage shall be located a minimum of 25 feet (7620 mm) from lot lines, public streets, public alleys, public ways, means of egress or buildings.

4106.3.4 Weather protection. The clear height of overhead construction provided for sheltering of outdoor storage shall not be less than 12 feet (3658 mm).

4106.4 Indoor use and dispensing. The indoor use and dispensing of silane gas and gas mixtures with a silane concentration of 2 percent or more by volume, in amounts exceeding the maximum allowable quantity per control area indicated in Table 2703.1.1(1) shall be in accordance with Sections 4105 and this section.

~~**4106.4.1 Exhausted enclosures or gas cabinets.** When provided, exhausted enclosures and gas cabinets shall be installed in accordance with Section 4106.2.2.~~

~~**4106.4.2 Remote manual shutdown.** A remotely located, manually activated shutdown control shall be provided outside each gas cabinet.~~

~~**4106.4.3 Emergency power.** The ventilation system shall be provided with an approved automatic emergency power source in accordance with Section 604 and designed to operate at full capacity.~~

~~**4106.4.4 Purge panels.** Automated purge panels shall be provided.~~

~~**4106.4.4.1 Purge gases.** Purging of piping and controls located in gas cabinets or exhausted enclosures shall only be performed using a dedicated inert gas supply that is designed to prevent silane from entering the inert gas supply. The use of nondedicated systems or portions of piping systems is allowed on portions of the venting system that are continuously vented to atmosphere. Devices that could interrupt the continuous flow of purge gas to the atmosphere shall be prohibited.~~

~~**Exception:** Manufacturing and filling facilities where silane is produced or mixed.~~

~~**4106.4.4.2 Venting.** Gas vent headers or individual purge panel vent lines shall have a continuous flow of inert gas. The inert gas shall be introduced upstream of the first vent or exhaust connection to the header.~~

~~**4106.4.4.3 Purging operations.** Purging operations shall be performed by means ensuring complete purging of the piping and control system before the system is opened to the atmosphere.~~

~~**4106.5 Outdoor use and dispensing.** The outdoor use and dispensing of silane gas, and gas mixtures with a silane concentration of 2 percent or more by volume, exceeding the maximum allowable quantity per control area indicated in Table 2703.1.1(3) shall be in accordance with Sections 4105, 4106.4 and 4106.5.1.~~

~~**4106.5.1 Outdoor use weather protection.** When overhead construction is provided for sheltering outdoor use areas containing silane gas, or gas mixtures with a silane concentration of 2 percent or more by volume, the use areas shall be provided with approved automatic fire-extinguishing system protection.~~

3. Delete without substitution:

~~**604.2.13 Pyrophoric materials.** Emergency power shall be provided for occupancies with silane gas in accordance with Sections 4106.2.3 and 4106.4.3.~~

4. Revise table as follows:

TABLE 903.2.13
ADDITIONAL REQUIRED FIRE-EXTINGUISHING SYSTEMS

SECTION	SUBJECT
~~4106.2.2~~	~~Exhaust enclosures or gas cabinets for silane gas~~

(Portions of table not shown do not change)

5. Add standard to Chapter 45 as follows:

Compressed Gas Association (CGA)

CGA G13-06 Storage and Handling of Silane and Silane Mixtures

Reason: (Items 1. and 2.) The Compressed Gas Association (CGA) proposed the introduction of a CGA standard (then P-32) to be adopted into the IFC with code change F174-00 (2000) for the regulation of the pyrophoric gas silane. When first introduced, the First Edition of the standard had not gone through the ANSI process, and therefore, it was not in a form that could be accepted into the I-Codes. Since that time CGA has responded and has developed the Section Edition of the document, now designated as G-13. The publication of the 2006 Edition of G-13 has undergone the ANSI review process. Comments received from users, producers, and regulatory officials were evaluated by CGA's technical committee and modifications were made to address technical issues and concerns raised in the evaluation process under the published procedures of ANSI.

The use of silane continues to be a major raw material in the production of silicon in various forms as consumed by the semiconductor and solar energy industries. The unique character of this material and the need for specialized controls became apparent to the regulatory community as a result of fires and explosions that occurred in the early use of this material. As the use of the material grew, the CGA engaged an independent testing laboratory to test large scale releases such as those that may be encountered should release occur from a large high

pressure bulk source. The flammable range of the material has been established by testing from a low of 1.37% to a high of 96%. The material has also been studied in some detail by SEMATECH, the semiconductor industry's research consortium and by Factory Mutual Insurance an insurer of highly protected risk entities. CGA's technical committee has considered the output of these other organizations throughout the development of the standard beginning with the first edition and continuing into this second edition of the standard. References to pertinent studies are provided in Chapters 18 and 19 of the document.

The standard has been prepared to present a control strategy to address the supply of this material up until the first point at which the user assumes control. CGA G-13 replaces IFC Section 4106. There is no intent for the G-13 standard to replace the requirements of IFC Chapter 18 for H-5 Occupancies. Areas where overlap may occur include requirements for gas cabinets when they are used and special care has been taken to avoid the creation of conflicts to include having the user community represented in the ANSI canvass process.

The requirements of the IFC for silane have been reviewed and compared to requirements of CGA G-13. The table below reflects the comparison based on the subjects addressed by the IFC. CGA G-13 is a fifty (50) page document that addresses the subject in a comprehensive manner. As a result there are a considerable number of elements addressed by the standard that are not reflected in the table below, however, the purpose of the table was to demonstrate to the reader that NOTHING IS BEING LOST by the deletion of Section 4106, rather there is much being gained as the control strategies have been developed to address systems and circumstances not envisioned when the provisions for the gas were crafted into the IFC.

IFC Section	Subject	G-13 Section Referenced	Comments
4106.1	General requirement when silane exceeds the MAQ	1	G-13 applies to cylinder systems in quantities exceeding 0.5 standard cubic feet up to and including bulk gas systems that might be found in ISO modules, tube trailers and other mobile supply units that may be located on site to act as a bulk source of supply.
4106.1.1	Requires buildings to be constructed in accordance with the building code.	various	The use of local and state building codes are referenced in various sections of the document. However, it is assumed that the local building code will apply. Specific references are made to construction elements to be in accord with state and local building codes including walls (section 6.3.2.1), penetrations and opening protection (6.3.2.2), explosion control (7.5), mixed occupancies and detached buildings (7.8.1)
4106.1.2	Requirement for flow control by means of a reduced flow orifice of 0.010" diameter	10.2.4.1	RFO required for non-bulk sources of 0.010" diameter. For bulk sources the diameter is 0.125" (Section 10.2.4.2). The concept of the use of an RFO has been developed in detail to address large distribution systems, the use of valve manifold boxes (VMB) and similar systems. In addition tables have been provided to balance various RFO sizes to required minimum flow rates to achieve control through dilution ventilation systems. The use of the term RFO appears not less than 20 times in the document.
4106.1.3	Requirements for valve construction and compliance for outlet fittings to conform to CGA V-1	5.1	Cylinders are required to conform to requirements of DOT which in turn references CGA standards. The CGA V-1 standard is listed as a reference publication.
4106.2	General requirement for storage to comply with 4106.2	2.1	The scope of the standard applies to storage as well as to use.
4106.2.1	Fire protection limited to sprinkler systems (water required)	12	Fire protection systems are discussed in detail to include the use of deluge systems for bulk supplies and warnings against the use of Halon ™ or inerting agents such as carbon dioxide.
4106.2.2	Requirements for gas cabinets. • Construction to be in accordance with Chapter 27 • Sprinklered • flow velocity across fittings in cabinet • control velocity at openings in cabinets	various	Sprinklers are required in gas cabinets (12.3.1); control velocity across unwelded fittings is addressed (13.2.2); minimum flow requirements are specified (13.2.3). The control velocity is not specified, rather dilution volumes and ratios required based on the use of reduced flow orifices is the method of control to avoid explosion, both attended and unattended operations are provided with requirements (Tables 5 and 6).
4106.2.3	Ventilation system to be on emergency power at full flow.	Table 7 and Table 8	Mechanical systems are to be provided with Emergency Power
4106.4.4	Automated purge panels required.	15.1	Purging may be either manual or automatic given the fact that the standard covers manufacturing as well as user sites in systems from large to small.
4106.4.4.1	Purge gas required to be: • dedicated and protected against backflow • non-dedicated systems allowed on vents that go to the atmosphere • continuous in the vent system to atmosphere	15	Dedicated source (15.2) Protection against backflow (15.2.2)
4106.4.4.2	Purge gas flow to be continuous in gas vent headers, and • purge gas to be introduced upstream of the first silane connection to a header	Figure 9	Required

IFC Section	Subject	G-13 Section Referenced	Comments
4106.4.4.3	Systems to be purged prior to opening to atmosphere.	8.1.3	Required
4106.5	Outdoor use to be in accordance with Section 4106.4 and 4106.5.1	Chapter 6	Detailed requirements provided. Also provided for throughout the document. In concept the document addresses bulk and nonbulk uses indoors and outdoors.
4106.5.1	Areas built as "weather protection" required to be sprinklered.	12.2.2	Requirements for sprinkler system

(Item 3) Emergency Power is required for all mechanical equipment in Tables 7 and 8 of CGA G-13.
(Item 4) Fire protection, by sprinkler systems, is required by Section 12 of CGA G-13.
(Item 5) CGA G-13 is a comprehensive document developed to establish storage and use requirements for bulk and non-bulk silane systems under conditions that parallel those established by the code, e.g., storage, use, indoor, outdoor, etc. The document was developed by a technical committee under the auspices of the Compressed Gas Association and accepted by ANSI through the use of the ANSI canvass process. Users, manufacturers, enforcers and special experts were included in the review process.

Cost Impact: The code change proposal will increase the cost of construction in some circumstances, depending on the location and configuration of the system intended (bulk, non-bulk, indoor, outdoor) as the engineering controls required by the standard are more comprehensive than those required by the existing code. This is due in part to the code being limited in its scope.

Analysis: Results of review of the proposed standard(s) will be posted on the ICC Website by August 20, 2006.

Public Hearing Results

Note: The following analysis was not in the Code Change Proposal book but was published in the "Errata to the 2006/2007 Proposed Changes to the International Codes and Analysis of Proposed Referenced Standards" provided at the code development hearings:

Analysis: Review of the proposed new standard indicated that, in the opinion of ICC staff, the standard did comply with ICC standards criteria.

Committee Action: Approved as Modified

Modify the proposal as follows:

TABLE 4104.2.1
PYROPHORIC GASES—DISTANCE FROM STORAGE TO EXPOSURES[a]

(Retain entire contents of table)

For SI: 1 foot = 304.8 mm, 1 cubic foot = 0.02832m3.

a. The minimum required distances shall be reduced to 5 feet when protective structures having a minimum fire resistance of 2 hours interrupt the line of sight between the container and the exposure. The protective structure shall be at least 5 feet from the exposure. The configuration of the protective structure shall allow natural ventilation to prevent the accumulation of hazardous gas concentrations.

(Portions of proposal not shown remain unchanged)

Committee Reason: The proposal represents the results of the Compressed Gas Association's response to direction given by the committee regarding CGA's silane gas standard. The standard has achieved designation as an ANSI standard and provides for comprehensive regulation of the hazards of silane gas, thereby eliminating the need to retain IFC Section 4106. The modification corrects an erratum in the monograph.

Assembly Action: None

Final Hearing Results

F206-06/07 AM

Code Change No: F207-06/07

Original Proposal

Chapter 45

Proponent: Standards writing organizations as listed below.

Revise as follows:

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard reference number	Title
D 56-05 ~~02a~~	Test Method for Flash Point by Tag Closed Tester
D 86-05 ~~04b~~	Test Method for Distillation of Petroleum Products at Atmospheric Pressure
D 93-05a~~02a~~	Test Method for Flash Point by Pensky-Martens Closed Cup Tester
D 3278-(2004)e01 ~~96~~	Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
E 84-05e01 ~~04~~	Test Method for Surface Burning Characteristics of Building Materials

BHMA

Builders Hardware Manufacturers' Association
355 Lexington Avenue, 17th Floor
New York, NY 10017-6603

Standard reference number	Title
A156.10-05 ~~99~~	American National Standard for Power Operated Pedestrian Doors

CGA

Compressed Gas Association
4221 Walney Road
Chantilly, VA 20151-2923

Standard reference number	Title
C-7 (2004) (~~2000~~)	Guide to the Preparation of Precautionary Labeling and Marking of Compressed Gas Containers
P-18 (2006) (~~1992~~)	Standard for Bulk Inert Gas Systems ~~at Consumer Sites~~
S-1.1(2005) (~~2002~~)	Pressure Relief Device Standards – Part 1- Cylinders for Compressed Gases
S-1.2(2005) ((~~1995~~)	Pressure Relief Device Standards – Part 2- Cargo and Portable Tanks for Compressed Gases
S-1.3(2005) (~~1995~~)	Pressure Relief Device Standards – Part 3- Stationary Storage Containers for Compressed Gases
V-1-(2005) (~~2002~~)	Compressed Gas Cylinder Valve Outlet and Inlet Connections

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02269-9101

Standard reference number	Title
11-05 ~~02~~	Low-, Medium-, and High-Expansion Foam
12-05 ~~00~~	Carbon Dioxide Extinguishing Systems
32-04 ~~00~~	Drycleaning Plants

35-05 ~~99~~	Manufacture of Organic Coatings
51A-~~01~~ 06	Acetylene Cylinder Charging Plants
52-06 ~~02~~	Vehicular Fuel System Code
59A-06 ~~01~~	Production, Storage and Handling of Liquefied National Gas (LNG)
101-06 ~~03~~	Life Safety Code
110-05 ~~02~~	Emergency and Standby Power Systems
111-05 ~~01~~	Stored Electrical Energy Emergency and Standby Power Systems
120-04 ~~99~~	Fire Prevention and Control in Coal ~~Preparation Plants~~ Mines
211-06 ~~03~~	Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances
241-04 ~~00~~	Safeguarding Construction, Alteration, and Demolition Operations
286-06 ~~00~~	Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth
303-06 ~~00~~	Fire Protection Standards for Marinas and Boatyards
409-04 ~~01~~	Aircraft Hangars
430-04 ~~00~~	Storage of Liquid and Solid Oxidizers
484-06 ~~02~~	Combustible Metals~~, Metal Powders and Metal Dusts~~
495-06 ~~01~~	Explosive Materials Code
498-06 ~~01~~	Safe Havens and Interchange Lots for Vehicles Transporting Explosives
505-06 ~~02~~	Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations
654-00 ~~96~~	Prevention of Fire & Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids
701-04 ~~99~~	Methods of Fire Tests for Flame Propagation of Textiles and Films
703-06 ~~00~~	Fire Retardant ~~Impregnated~~ Treated Wood and Fire Retardant Coatings for Building Materials
750-06 ~~03~~	Water Mist Fire Protection Systems
1123-06 ~~03~~	Fireworks Display
1124-06 ~~03~~	Manufacture, Transportation, Storage and Retail Sales of Fireworks and Pyrotechnic Articles
1126-06 ~~01~~	Use of Pyrotechnics Before a Proximate Audience
2001-04 ~~00~~	Clean Agent Fire Extinguishing Systems

UL

Underwriters Laboratories
333 Pfingsten Road
Northbrook, IL 60062

Standard reference number	Title
217-97	Single and Multiple Station Smoke Alarms-with Revisions through ~~January 2004~~ August 2005
268-1996	Smoke Detectors for Fire Protective Signaling Systems—with Revision through ~~January 1999~~ October 2003
300-05 ~~96~~	Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas~~— with Revisions through December 1998~~
793-03 ~~97~~	Standard~~s~~ for Automatically Operated Roof Vents For Smoke and Heat with Revisions through April 2004
864-03	Standard for Control Units and Accessories for Fire Alarm Systems — with Revisions through ~~October 1998~~ July 2005
900-04 ~~94~~	Air Filter Units~~—with Revisions Through October 1999~~
1275-2005 ~~94~~	Flammable Liquid Storage Cabinets~~—with Revisions through March 1997~~
1363-96	Standard for Relocatable Power Taps—with Revisions through ~~July 2004~~ February 2006
2208-2005 ~~96~~	Solvent Distillation Units~~-with Revisions through August 2001~~
2335-01	Fire Tests of Storage Pallets—with Revisions through ~~May 2002~~ September 2004

Reason: The *ICC Code Development Process for the International Codes* (Procedures) Section 4.5* requires the updating of referenced standards to be accomplished administratively, and be processed as a Code Proposal. In May 2005, a letter was sent to each developer of standards that are referenced in the I-Codes, asking them to provide ICC with a list of their standards in order to update to the current edition. Above is the list received of the referenced standards under the maintenance responsibility of the International Fire Code Committee.

***4.5 Updating Standards:** The updating of standards referenced by the Codes shall be accomplished administratively by the appropriate code development committee in accordance with these full procedures except that multiple standards to be updated may be included in a single proposal.

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's published reason statement. The proposal provides appropriate updates to the IFC referenced standards.

Assembly Action: **None**

Final Hearing Results

F207-06/07 **AS**

Code Change No: F208-06/07

Original Proposal

Chapter 45, Sections: 2605.4, 3003.2, 3203.4.3, 3203.8, 3301.1, 3301.1.3, 3301.3, 3302.1, 3406.5.1.15

Proponent: Larry Fluer, Fluer, Inc., representing Compressed Gas Association

1. Revise Chapter 45 as follows:

DOTn U.S. Department o f Transportation
Office of Hazardous Material Standards
400 7th Street, Southwest
Washington, DC 20590

Standard reference number	Title	Referenced in code section number
33 CFR Part 154 — 1998	Facilities Transferring Oil or Hazardous Material in Bulk	3406.8
33 CFR Part 155 — 1998	Oil or Hazardous Material Pollution Prevention Regulations for Vessels	406.8
33 CFR Part 156 — 1998	Oil and Hazardous Material Transfer Operations	3406.8
~~49 CFR – 1998~~	~~Transportation~~	~~2605.4, 3302.1~~
~~49 CFR Part 1 – 1999~~	~~Transportation~~	~~3203.4.3, 3203.8~~
49 CFR Part 172— ~~1999~~ 2005	Hazardous Materials Tables, Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training Requirements	3304.6.5.2
49 CFR Part 173— ~~1999~~ 2005	Shippers — General Requirements for Shipments and Packagings	3306.3
49 CFR Part 173.137— ~~1999~~ 2005	Shippers — General Requirements for Shipments and Packagings: Class 8 — Assignment of Packing Group	3102.1
~~49 CFR Parts 100-178 – 1994~~	~~Hazardous Materials Regulations~~	~~3301.1, 3301.1.3, 3301.3, 3406.5.1.15~~
49 CFR Parts 100 to 185 - 2005	Hazardous Materials Regulations	2605.4, 3003.2, 3203.4.3, 3203.8 , 3301.1, 3301.1.3, 3301.3, 3302.1, 3406.5.1.15

2. Revise as follows:

2605.4 Acetylene gas. Acetylene gas shall not be piped except in approved cylinder manifolds and cylinder manifold connections, or utilized at a pressure exceeding 15 pounds per square inch gauge (psig) (103 kPa) unless dissolved in a suitable solvent in cylinders manufactured in accordance with DOTn 49 CFR Part 178. Acetylene gas shall not be brought in contact with unalloyed copper, except in a blowpipe or torch.

3003.2 Design and construction. Compressed gas containers, cylinders and tanks shall be designed, fabricated, tested, marked with the specifications of manufacture and maintained in accordance with regulations of DOTn 49 CFR, Parts 100-~~178~~ 185 or the ASME *Boiler and Pressure Vessel Code*, Section VIII.

3203.4.3 Identification of containers. Stationary containers shall be identified with the manufacturing specification and maximum allowable working pressure with a permanent nameplate. The nameplate shall be installed on the container in an accessible location. The nameplate shall be marked in accordance with the ASME *Boiler and Pressure Vessel Code* or DOTn 49 CFR Parts 100-185.

3203.8 Service and repair. Service, repair, modification or removal of valves, pressure relief devices or other container appurtenances, shall comply with Sections 3203.8.1 and 3203.8.2 and the ASME *Boiler and Pressure Vessel Code*, Section VIII or DOTn 49 CFR Parts 100-185.

3301.1 Scope. The provisions of this chapter shall govern the possession, manufacture, storage, handling, sale and use of explosives, explosive materials, fireworks and small arms ammunition.

Exceptions:

1. The Armed Forces of the United States, Coast Guard or National Guard.
2. Explosives in forms prescribed by the official United States Pharmacopoeia.
3. The possession, storage and use of small arms ammunition when packaged in accordance with DOTn packaging requirements.
4. The possession, storage, and use of not more than 1 pound (0.454 kg) of commercially manufactured sporting black powder, 20 pounds (9 kg) of smokeless powder and 10,000 small arms primers for hand loading of small arms ammunition for personal consumption.
5. The use of explosive materials by federal, state and local regulatory, law enforcement and fire agencies acting in their official capacities.
6. Special industrial explosive devices which in the aggregate contain less than 50 pounds (23 kg) of explosive materials.
7. The possession, storage and use of blank industrial-power load cartridges when packaged in accordance with DOTn packaging regulations.
8. Transportation in accordance with DOTn 49 CFR Parts 100-~~178~~ 185.
9. Items preempted by federal regulations.

3301.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 3304.
2. Manufacture, assembly and testing of fireworks as allowed in Section 3305.
3. The use of fireworks for display as allowed in Section 3308.
4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided such fireworks comply with, CPSC 16 CFR, Parts 1500 and 1507, and DOTn 49 CFR, Parts 100-~~178~~ 185, for consumer fireworks.

3301.3 Prohibited explosives. Permits shall not be issued or renewed for possession, manufacture, storage, handling, sale or use of the following materials and such materials currently in storage or use shall be disposed of in an approved manner.

1. Liquid nitroglycerin.
2. Dynamite containing more than 60-percent liquid explosive ingredient.
3. Dynamite having an unsatisfactory absorbent or one that permits leakage of a liquid explosive ingredient under any conditions liable to exist during storage.

4. Nitrocellulose in a dry and uncompressed condition in a quantity greater than 10 pounds (4.54 kg) of net weight in one package.
5. Fulminate of mercury in a dry condition and fulminate of all other metals in any condition except as a component of manufactured articles not hereinafter forbidden.
6. Explosive compositions that ignite spontaneously or undergo marked decomposition, rendering the products of their use more hazardous, when subjected for 48 consecutive hours or less to a temperature of 167°F (75°C).
7. New explosive materials until approved by DOTn, except that permits are allowed to be issued to educational, governmental or industrial laboratories for instructional or research purposes.
8. Explosive materials condemned by DOTn.
9. Explosive materials containing an ammonium salt and a chlorate.
10. Explosives not packed or marked as required by DOTn 49 CFR, Parts 100-~~178~~ 185.

    Exception: Gelatin dynamite.

3302.1 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.

EXPLOSIVE. A chemical compound, mixture or device, the primary or common purpose of which is to function by explosion. The term includes, but is not limited to, dynamite, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, igniters and display fireworks, 1.3G (Class B, Special).

The term "explosive" includes any material determined to be within the scope of USC Title 18: Chapter 40 and also includes any material classified as an explosive other than consumer fireworks, 1.4G (Class C, Common) by the hazardous materials regulations of DOTn 49 CFR Parts 100-185.

3406.5.1.15 Tank vehicle and tank car certification. Certification shall be maintained for tank vehicles and tank cars in accordance with DOTn 49 CFR, Parts 100-~~178~~ 185.

Reason: The DOT revises the Hazardous Materials Regulations (HMR) annually. The annual cycle for revisions to Title 49 occurs in October. 49 CFR in its entirety is found under Title 49 Transportation, Volume 2, Chapter 1 – Research and Special Programs Administration, Department of Transportation, Parts 100 through 185 under Subtitle B – Other Regulations Relating to Transportation. A similar code change was submitted in the last code cycle, and a question was raised by a committee member regarding what was new in Parts 179 through 185. Part 179 is titled Specifications for tank cars; Part 180 is titled Continuing qualification and maintenance of packagings, Parts 181 through 185 are designated as Reserved (meaning there is no content at present); however, the use of the full title to include Parts 100 through 185 is how the document is described and listed by the US Government Printing Office, and as accessed by electronic means.

The use of DOT references in the IFC refer the user to Federal Regulations which use is mandatory. As such the general reference found in the code to the HMR is a pointer or an index to point the user in the right direction to obtain detailed regulatory requirements.

General references to "Transportation" (meaning the HMR) have been combined under the last row in the table to eliminate redundancy. The code change proposal is being submitted to update the reference to the most recent Federal publication. By the time this code change is processed the regulations will have again been revised.

As a result of issuing the 2005 update to 49 CFR, correlating changes are proposed to Sections 2605.4, 3003.2, 3102.1, 3203.4.3, 3203.8, 3301.1, 3301.1.3, 3301.3, 3302.1, 3304.6.5.2, 3406.5.1.15. Specific substantiating statements for each of the aforementioned changes to the sections referenced are as follows:

Section 2605.4: Part 178 is titled Specifications for Packagings. Specifications for cylinders are found in Subpart C to Part 178.

Section 3003.2: Part 179 contains specifications for cargo tank cars, tank car tanks including multi-unit tank car tanks. Part 180 contains requirements for the Continuing Qualification and Maintenance of Packagings.

Section 3102.1: The reference in Chapter 45 has been updated to the 2005 edition of the CFR. There are no changes proposed to Section 3102.1.

Section 3203.4.3: Stationary cryogenic containers are typically constructed to ASME Boiler and Pressure Vessel Code requirements. DOT regulations typically apply to containers that are used in the transportation phase. In some instances DOT containers have been viewed as stationary containers, for example, when connected to piping systems serving fixed facilities. 49CFR178 addresses Specifications for Packagings. General requirements in Section 178.35(f) specify the types of markings that are required along with their placement. Subsection 178.338 provides requirements for specification MC-338 cargo tanks. Marking requirements are found in 178.338-18.

Section 3203.8: From a practical standpoint service and repairs of valves, pressure relief devices and appurtenances on cryogenic vessels is done in accordance with nationally recognized standards including those published by the Compressed Gas Association. When repairs are done on containers manufactured to ASME or DOT specifications prescriptive provisions are applied based on the specifications of manufacture.

Section 3301.1, Item 8: The listed reference to Parts 100-178 of the 1994 Edition of the CFR is obsolete. A general reference to Parts 100-185 – 2005 updates the code with a current reference.

Section 3301.1.3: The listed reference to Parts 100-178 of the 1994 Edition of the CFR is obsolete. A general reference to Parts 100-185 – 2005 updates the code with a current reference.

Section 3301.3, Item 10: The listed reference to Parts 100-178 of the 1994 Edition of the CFR is obsolete. A general reference to Parts 100-185 – 2005 updates the code with a current reference.

Section 3302.1 (Explosive): 49CFR specifies the materials classified as explosives. The use of the terminology is found within several different sections of 49CFR including Parts 171, 172 and 173. The all encompassing reference to DOTn 49CFR Parts 100 – 185 correlates with the general reference listed in the existing code, e.g., DOTn 49 CFR without changing the intent of the reference.

Section 3304.6.5.2: 49CFR172.504 specifies the general placarding requirements for explosive materials. There are no changes proposed to Section 3304.6.5.2.

Section 3406.5.1.15: Tank vehicle and tank car certification. The reference to Parts 100 to 178 is obsolete. Specifications for cargo tank motor vehicles are found in Section 178 and specifications for tank cars are found in Section 179.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's published reason statement. The proposal provides a much-needed and appropriate update to the IFC referenced US DOTn standards.

Assembly Action: **None**

Final Hearing Results

F208-06/07 **AS**

Code Change No: F210-06/07

Original Proposal

Chapter XX (New)

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

Add new chapter as follows:

CHAPTER XX
MARINAS

SECTION XX01
SCOPE

XX01.1 Scope. Marina facilities shall be in accordance with this chapter.

XX01.1.1 Plans and approvals. Plans for marina fire-protection facilities shall be approved prior to installation. The work shall be subject to final inspection and approval after installation.

SECTION XX02
DEFINITIONS

XX02.1 Definitions. The following words and terms shall, for the purpose of this chapter and as used elsewhere in this code, have the meanings shown herein.

FLOAT. A floating structure normally used as a point of transfer for passengers and goods, or both, for mooring purposes.

MARINA. Any portion of the ocean or inland water, either naturally or artificially protected, for the mooring, servicing or safety of vessels and shall include artificially protected works, the public or private lands ashore, and structures or facilities provided within the enclosed body of water and ashore for the mooring or servicing of vessels or the servicing of their crews or passengers.

PIER. A structure built over the water, supported by pillars or piles, and used as a landing place, pleasure pavilion or similar purpose.

VESSEL. Watercraft of any type, other than seaplanes on the water, used or capable of being used as a means of transportation. Included in this definition are non transportation vessels such as houseboats and boathouses.

WHARF. A structure or bulkhead constructed of wood, stone, concrete or similar material built at the shore of a harbor, lake or river for vessels to lie alongside of, and piers or floats to be anchored to.

SECTION XX03
GENERAL PRECAUTIONS

XX03.1 Combustible debris. Combustible debris and rubbish shall not be deposited or accumulated on land beneath marina structures, piers or wharves.

XX03.2 Sources of ignition. Open-flame devices used for lighting or decoration on the exterior of a vessel, float, pier or wharf shall be approved.

XX03.3 Flammable or combustible liquid spills. Spills of flammable or combustible liquids at or upon the water shall be reported immediately to the fire department or jurisdictional authorities.

XX03.4 Rubbish containers. Containers with tight fitting or self closing lids shall be provided for the temporary storage of combustible trash or rubbish.

XX03.5 Electrical equipment. Electrical equipment shall be installed and used in accordance with its listing and Section 605 and NFPA 303, Chapter 3 as required for wet, damp and hazardous locations.

XX03.6 Berthing and storage. Berthing and storage shall be in accordance with NFPA 303, Chapter 5.

SECTION XX04
FIRE-PROTECTION EQUIPEMENT

XX04.1 General. Piers, wharves with facilities for mooring or servicing five or more vessels, and marine motor vehicle fuel-dispensing stations shall be equipped with fire-protection equipment in accordance with Section XX04.

XX04.2 Standpipes. Marinas and boatyards shall be equipped throughout with standpipe systems in accordance with NFPA 303.

XX04.3 Access and water supply. Piers and wharves shall be provided with fire apparatus access roads and water-supply systems with on-site fire hydrants when required by the fire code official. Such roads and water systems shall be provided and maintained in accordance with Sections 503.2 and 508.

XX04.4 Portable fire extinguishers. One fire extinguisher for ordinary (moderate) hazard type, shall be provided at each required hose station. Additional fire extinguishers, suitable for the hazards involved, shall be provided and maintained in accordance with Section 906.

XX04.5 Communications. A telephone not requiring a coin to operate or other approved, clearly identified means to notify the fire department shall be provided on the site in a location approved by the code official.

SECTION XX05
MARINE MOTOR VEHICLE FUEL-DISPENSING STATIONS

XX05.1 Fuel- Dispensing. Marine motor vehicle fuel-dispensing stations shall be in accordance with Chapter 22.

Reason: It has been identified the IFC currently has no requirements for the general fire safety precautions or protection equipment for marinas. Because of the different environment that a marina presents in fighting fires, than a normal business, these facilities need to be specifically addressed in the IFC.

In the last three years the largest marina fires in the US caused over 67 million dollars in damage with the complete loss of 272 boats and houseboats. A perfect example of the need to address marinas in the IFC is the following incident:

$10 MILLION MARINA FIRE
Bohemia Bay, Maryland

FIRE PROTECTION CODES AND EQUIPMENT
There was no fire detection or sprinkler systems at Bohemia Bay. The marina structure was completed in October 1986. It was built under a Maryland code that did not require fire detection, fire sprinkler, or standpipe systems. In addition, there was no requirement for providing readily accessible areas for fire department drafting operations.

Portable fire extinguishers located on finger piers were the main fire protection equipment provided in the entire marina. As a result of persuasion by the local fire department, a two inch dry standpipe line running the length of docks 'D' and 'E' had been installed. (The adequacy of such standpipe lines should be questioned because of their small size and the location of hose outlets.) There was no standpipe on the pier with the fire. A new Maryland code was adopted, which incorporated the B.O.C.A. code. The B.O.C.A. code adopts NFPA Standard #303, Protection to Marinas, and will require all future structures of this type and use to be equipped with fire protection, fire suppression, and standpipe systems. They must also provide reliable and accessible sources of water for fire fighting.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposal treats the subject matter in too broad a fashion and would have a negative impact upon small marinas that have not been shown to be a problem. For example, a wilderness outpost that rents out six kyaks or a youth camp that owns and docks 5 sailboats should not have to comply with all the requirements simply because they fit the definition. Also, the provisions would be applicable to any type of watercraft by definition in Section XX02. The threshold for fire protection equipment at 5 vessels is too low. There is no guidance regarding reportable quantities for fuel spills in Section XX03.3. The subject matter would be more appropriate as an appendix to the code, as it was in the legacy Uniform Fire Code/97, since not all jurisdictions would have use for it.

Assembly Action: **Approved as Submitted**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because an assembly action was successful and a public comment was submitted.

Public Comment:

Greg Rogers, representing Washington State Association of Fire Marshals, requests Approval as Modified by this public comment.

Modify proposal as follows:

Chapter XX
MARINAS

SECTION XX02
DEFINITIONS

XX02.1 Definitions. The following words and terms shall, for the purpose of this chapter and as used elsewhere in this code, have the meanings shown herein.

VESSEL is a motorized watercraft ~~of any type~~, other than seaplanes on the water, used or capable of being used as a means of transportation. Included in this definition are non transportation vessels such as houseboats and boathouses.

XX03.4 Rubbish containers. Metal containers with tight-fitting or self-closing metal lids shall be provided for the temporary storage of combustible trash or rubbish.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: To address the concern from the committee based on the published written comments in the 2006 Report of the Public Hearing. We have changed the definition of vessel to eliminate these requirements for small marinas with kayaks and small non-motorized sailboats.

One of the other areas mention was the negative impact on small marinas and the threshold of 5 vessels for fire protection equipment was too small. Current, the IFC requires standpipe systems for all marinas and boatyards with no limit under section 905.3.7. This would require a marina with one boat/vessel/kayak/sailboat/jet-ski to have standpipe system installed. This proposal actually increases the current IFC required threshold from zero to five.

To address the comments of making "this proposal an appendix, since not all jurisdictions would have to use it." If this is the direction the IFC is going, then ICC and members should look at making Chapter 16 Fruit and Crop Ripening, Chapter 17 Fumigation and Thermal Insecticidal Fogging, Chapter 18 Semiconductor Fabrication Facilities and other areas not used by every jurisdiction an appendix. Marina's are no different than any other item listed in the Fire Code. Because of the different environment that marinas present to firefighters while fighting fires, unlike a normal business, these facilities need to be specifically addressed in the IFC and not in an appendix.

Every year during the code hearings, the code development committee wants technical justification, below is justification to better understand the marina problem. In the last three years the largest marina fires in the US caused over 67 million dollars in damage with the complete loss of 272 boats and houseboats. A perfect example of the need to address marinas in the IFC is the following incident:

$10 MILLION MARINA FIRE
Bohemia Bay, Maryland

FIRE PROTECTION CODES AND EQUIPMENT
There was no fire detection or sprinkler systems at Bohemia Bay. The marina structure was completed in October 1986. It was built under a Maryland code that did not require fire detection, fire sprinkler, or standpipe systems. In addition, there was no requirement for providing readily accessible areas for fire department drafting operations.

Portable fire extinguishers located on finger piers were the main fire protection equipment provided in the entire marina. As a result of persuasion by the local fire department, a two inch dry standpipe line running the length of docks 'D' and 'E' had been installed. (The adequacy of such standpipe lines should be questioned because of their small size and the location of hose outlets.) There was no standpipe on the pier with the fire. A new Maryland code was adopted, which incorporated the B.O.C.A. code. The B.O.C.A. code adopts NFPA Standard #303, Protection to Marinas, and will require all future structures of this type and use to be equipped with fire protection, fire suppression, and standpipe systems. They must also provide reliable and accessible sources of water for fire fighting.

Final Hearing Results

F210-06/07 AMPC1

Code Change No: F211-06/07

Original Proposal

Appendix B, Section B105.1

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

Revise as follows:

B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m2) shall be 1,000 gallons per minute (3785.4 L/min) for 2 hours. Fire flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5m2) shall not be less than that specified in Table B105.1.

Reason: In Section B105.1 the required fire flow for one- and two-family dwellings not exceeding 3,600 square feet is 1,000 gallons per minute. There is not a flow duration associated with this required fire flow. Because these flow durations are used by water companies a fire flow duration should be required.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m2) shall be 1,000 gallons per minute (3785.4 L/min) for ~~2~~ 1 hour~~s~~. Fire flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5m^2) shall not be less than that specified in Table B105.1.

Committee Reason: Based on the proponent's reason statement. The proposal provides a needed fire flow duration for average dwellings. The 2-hour duration was chosen because it is the minimum duration in current Table B105.1. The modification recognizes that the fire flow for a dwelling 3,600 sq.ft. or less in area should not be the same as that for dwellings over 3,600 sq.ft. and reduces it to a more reasonable 1-hour.

Assembly Action: **None**

Final Hearing Results

F211-06/07 AM

Code Change No: F212-06/07

Original Proposal

Appendix B, Table B105.1

Proponent: Steven L. Schoon, Golder Ranch Fire District, representing Arizona Fire Marshals Association

Revise table as follows:

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS[a]

~~**a.** The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R.~~

Reason: The purpose is deleting an unnecessary additional reduction in minimum required fire flow: Going back to the approved proposal F126-01, Appendix B, B105.2 Exception, was modified allowing a reduction in required fire flow of up to 50 percent, as approved, when the building is provided with an approved automatic sprinkler system. The proponent's reasoning was an effort to make the appendix consistent with the ISO *Guide for Determination of Required Fire Flow.* The approved proposal F239-02 added a footnote to Table B105.1 which reads, "a. The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R." The proponent's reason was to include the additional 25 percent occupancy reduction factor for residential uses, as indicated in the ISO Guide.

Approved proposal F244-04/05 again modified Appendix B, B105.2 Exception, allowing a reduction in required fire flow of up to 75 percent, as approved, when the building is provided with an approved automatic sprinkler system. The proposal did not include the deletion of Footnote a. As printed in the 2006 IFC, the fire flow appears to allow a reduction of up to 75%, as approved, for an automatic sprinkler system and an additional 25% for Group R occupancies. Footnote a. needs to be removed from Table B105.1.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal deletes a table note that creates confusion and is no longer needed based on previous code changes to Appendix B. If applied with current Section B105.2, Exception, the current note could be interpreted to allow a total reduction in fire flow of 100%, which is not the appendix's intent.

Assembly Action: **None**

Final Hearing Results

F212-06/07 **AS**

Code Change No: F213-06/07

Original Proposal

Appendix C, Table C105.1

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

Revise as follows:

TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

(No change to current table contents)

a. (No change to current text)
b. Where streets are provided with median dividers which ~~can~~ cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.
c. through e. (No change to current text)

Reason: The current text makes no sense as it is written. It is clear that the intent of the note is to require hydrants on both sides of the street where high traffic volume or physical barriers would limit access to hydrants installed on one side only. Changing "can" to "cannot" will eliminate an obvious glitch that goes back to the 1994 UFC and beyond.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal corrects what appears to be a typographical error carried over from a legacy code during drafting of the IFC.

Assembly Action: **None**

Final Hearing Results

F213-06/07 **AS**

Code Change No: F215 -06/07

Original Proposal

Appendix F, Table F101.2

Proponent: Jeffrey M. Shapiro, P.E., International Code Consultants, representing himself

Revise as follows:

TABLE F101.2
FIRE FIGHTER WARNING PLACARD DESIGNATIONS
BASED ON HAZARD CLASSIFICATION CATEGORIES

HAZARD CATEGORY	DESIGNATION
Combustible liquid II	F2
Combustible liquid IIIA	F2
Combustible liquid IIIB	F1
Combustible dust	F4
Combustible fiber	F3
Cryogenic flammable	F4, H3
Cryogenic oxidizing	OX, H3
Explosive	R4
Flammable solid	F2
Flammable gas (gaseous)	F4
Flammable gas (liquefied)	F4
Flammable liquid IA	F4
Flammable liquid IB	F3
Flammable liquid IC	F3
Organic peroxide, UD	R4
Organic peroxide I	F4, R3
Organic peroxide II	F3, R3
Organic peroxide III	F2, R2
Organic peroxide IV	F1, R1
Organic peroxide V	~~Nonhazard~~ None
Oxidizing gas (gaseous)	OX
Oxidizing gas (liquefied)	OX
Oxidizer 4	OX
Oxidizer 3	OX
Oxidizer 2	OX
Oxidizer 1	None
Pyrophoric gases	F4
Pyrophoric solids, liquids	F3
Unstable reactive 4D	R4
Unstable reactive 3D	R4
Unstable reactive 3N	R3
Unstable reactive 2	R2
Unsable reactive 1	None
Water reactive 3	W, R3
Water reactive 2	W, R2
Water reactive 1	None
Corrosive	H3, COR
Toxic	H3
Highly toxic	H4

F—Flammable category.
R—Reactive category.
H—Health category.
W—Special hazard: water reactive.
OX—Special hazard: oxidizing properties.
COR—Corrosive.
UD—Unclassified detonable material.
4D—Class 4 detonable material.
3D—Class 3 detonable material.
3N—Class 3 nondetonable material.

Reason: Several years ago, code Change F81-01 deleted the entries in Table F101.2 for Oxidizer 1, Water reactive 1 and Unstable reactive 1 materials based on a determination that these materials did not warrant placarding. However Class V organic peroxides remained in the table with the designation “nonhazard.” This inconsistency leaves code users wondering why all of the materials regulated by the IFC are included in the table except the three missing Class 1 categories. It makes more sense to include these categories in the table so that the table is complete, but then designate them as not requiring an NFPA 704 designation. Use of the term “none” is more appropriate than “nonhazard.”

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

Hazard Category	Designation
Oxidizer 4	OX 4
Oxidizer 3	OX 3
Oxidizer 2	OX 2
Oxidizer 1	~~None~~ OX 1
Unstable reactive 1	None
Water reactive 3	W3~~, R3~~
Water reactive 2	W2~~, R2~~

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the intent of the table as to the placarding requirements for the noted materials. The modification also provides correlation with the designations used in NFPA 704-01.

Assembly Action: **None**

Final Hearing Results

F215-06/07 **AM**

Code Change No: F217-06/07

Original Proposal

Appendix H (New)

Proponent: Pat McLaughlin, McLaughlin & Associates, representing The Sherwin Williams Company

Add new appendix as follows: (Underline omitted for clarity)

APPENDIX H
HAZARDOUS MATERIALS MANAGEMENT PLANS AND
HAZARDOUS MATERIALS INVENTORY STATEMENTS

(See IFC Sections 2701.5,1 and 2701.5.2)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION 1 — SCOPE

Hazardous materials inventory statements (HMIS) and hazardous materials management plans (HMMP) which are required by the chief pursuant to Chapter 27 shall be provided for hazardous materials in accordance with Appendix H.

Exceptions:

1. Materials which have been satisfactorily demonstrated not to present a potential danger to public health, safety or welfare, based upon the quantity or condition of storage, when approved.
2. Chromium, copper, lead, nickel and silver need not be considered hazardous materials for the purposes of Appendix H unless they are stored in a friable, powered or finely divided state.

Proprietary and trade secret information shall be protected under the laws of the state or jurisdiction having authority.

SECTION 2 — HAZARDOUS MATERIALS INVENTORY STATEMENTS (HMIS)

2.1 When Required. A separate HMIS shall be provided for each building, including its appurtenant structures, and each exterior facility in which hazardous materials are stored.

The hazardous materials inventory statement shall list by hazard class all hazardous materials stored. The hazardous materials inventory statement shall include the following information for each hazardous material listed:

1. Hazard class.
2. Common or trade name.
3. Chemical name, major constituents and concentrations if a mixture. If a waste, the waste category.
4. Chemical Abstract Service number (CAS number) found in 29 Code of Federal Regulations (C.F.R.).
5. Whether the material is pure or a mixture, and whether the material is a solid, liquid or gas.
6. Maximum aggregate quantity stored at any one time.
7. Storage conditions related to the storage type, temperature and pressure.

2.2 Changes to HMIS. An amended HMIS shall be provided within 30 days of the storage of any hazardous materials which changes or adds a hazard class or which is sufficient in quantity to cause an increase in the quantity which exceeds 5 percent for any hazard class.

SECTION 3— HAZARDOUS MATERIALS MANAGEMENT PLAN (HMMP)

3.1 General. Applications for a permit to store hazardous materials shall include an HMMP standard form or short form in accordance with Section NO TAG and shall provide a narrative description of the operations and processes taking place at the facility. See Figure A-H-1.

3.2 Information Required. The HMMP standard form shall include the information detailed in Section 3.2.

3.2.1 General Information. General information, including business name and address, emergency contacts, business activity, business owner or operator, SIC code, number of employees and hours, Dunn and Bradstreet number, and signature of owner, operator or designated representative.

3.2.2 General site plan. A general site plan drawn at a legible scale which shall include, but not be limited to, the location of buildings, exterior storage facilities, permanent access ways, evacuation routes, parking lots, internal roads, chemical loading areas, equipment cleaning areas, storm and sanitary sewer accesses, emergency equipment and adjacent property uses. The exterior storage areas shall be identified with the hazard class and the maximum quantities per hazard class of hazardous materials stored. When required by the chief, information regarding the location of wells, flood plains, earthquake faults, surface water bodies and general land uses within 1 mile (1.609 km) of the facility boundaries shall be included.

3.2.3 Building floor plan. A building floor plan drawn to a legible scale which shall include, but not be limited to, hazardous materials storage areas within the building and shall indicate rooms, doorways, corridors, means of egress and evacuation routes. Each hazardous materials storage facility shall be identified by a map key which lists the individual hazardous materials, their hazard class and quantity present for each area.\

3.2.4 Hazardous materials handling. Information showing that activities involving the handling of hazardous materials between the storage areas and manufacturing processes on site are conducted in a manner to prevent the accidental release of such materials.

3.2.5 Chemical capability and separation. Information showing procedures, controls, signs or other methods used to ensure separation and protection of stored materials from factors which could cause accidental ignition or reaction of ignitable, reactive or incompatible materials in each area.

3.2.6 Monitoring program. Information including, but not limited to, the location, type, manufacturer's specifications, if applicable, and suitability of monitoring methods for each storage facility when required.

3.2.7 Inspection and recording keeping. Schedules and procedures for inspecting safety and monitoring and emergency equipment. The permittee shall develop and follow a written inspection procedure acceptable to the chief for inspecting the facility for events or practices which could lead to unauthorized discharges of hazardous materials. Inspections shall be conducted at a frequency appropriate to detect problems prior to a discharge. An inspection check sheet shall be developed to be used in conjunction with routine inspections. The check sheet shall provide for the date, time and location of inspection; note problems and dates and times of corrective actions taken; and include the name of the inspector and the countersignature of the designated safety manager for the facility.

3.2.8 Employee training. A training program appropriate to the types and quantities of materials stored or used shall be conducted to prepare employees to safely handle hazardous materials on a daily basis and during emergencies. The training program shall include:

1. Instruction in safe storage and handling of hazardous materials, including maintenance of monitoring records.
2. Instruction in emergency procedures for leaks, spills, fires or explosions, including shutdown of operations and evacuation procedures, and
3. Record-keeping procedures for documenting training given to employees.

3.2.9 Emergency response. A description of facility emergency procedures is to be provided.

3.3 HMMP Short Form—(Minimal Storage Site). A facility shall qualify as a minimal storage site if the quantity of each hazardous material stored in one or more facilities in an aggregate quantity for the facility is 500 pounds (227 kg) or less for solids, 55 gallons (208.2 L) or less for liquids, or 200 cubic feet (5.7 m^3) or less at NTP for compressed gases and does not exceed the threshold planning quantity as listed in 40 C.F.R., Part 355, Sections 302 and 304. The applicant for a permit for a facility which qualifies as a minimal storage site is allowed to file the short form HMMP. Such plan shall include the following components:

1. General facility information,
2. A simple line drawing of the facility showing the location of storage facilities and indicating the hazard class or classes and physical state of the hazardous materials being stored,
3. Information describing that the hazardous materials will be stored and handled in a safe manner and will be appropriately contained, separated and monitored, and
4. Assurance that security precautions have been taken, employees have been appropriately trained to handle the hazardous materials and react to emergency situations, adequate labeling and warning signs are posted, adequate emergency equipment is maintained, and the disposal of hazardous materials will be in an appropriate manner.

SECTION 4 — MAINTENANCE OF RECORDS

Hazardous materials inventory statements and hazardous materials management plans shall be maintained by the permittee for a period of not less than three years after submittal of updated or revised versions. Such records shall be made available to the chief upon request.

FIGURE A-H-1
SAMPLE FORMAT
HAZARDOUS MATERIALS MANAGEMENT PLAN (HMMP) INSTRUCTIONS

SECTION I—FACILITY DESCRIPTION

1.1.A Part A

1. Fill out Items 1 through 11 and sign the declaration.
2. Only Part A of this section is required to be updated and submitted annually, or within 30 days of a change.

1. 2 Part B — General Facility Description (Site Plan)

1. Provide a site plan on 8 ½-by 11-inch (215 mm by 279 mm) paper, using letters on the top and bottom margins and numbers on the right and left side margins, showing the location of all buildings, structures, chemical loading areas, parking lots, internal roads, storm and sanitary sewers, wells, and adjacent property uses. Indicate the approximate scale, northern direction and date the drawing was completed.
2. List all special land uses within 1 mile (1.609 km).

1.3 Part C — Facility Storage Map (Confidential Information)

1. Provide a floor plan of each building on 8 ½- by 11-inch (215 mm by 279 mm) paper, using letters on the top and bottom margins and numbers on the right and left side margins, with approximate scale and northern direction, showing the location of each storage area. Mark map clearly “Confidential—Do not disclose” for trade-secret information as specified by federal, state and local laws.
2. Identify each storage area with an identification number, letter, name or symbol.
3. Show the following:
   - 3.1. Accesses to each storage area.
   - 3.2. Location of emergency equipment.
   - 3.3. The general purpose of other areas within the facility.
   - 3.4. Location of all aboveground and underground tanks to include sumps, vaults, below-grade treatment systems, piping, etc.
4. Map key. Provide the following on the map or in a map key or legend for each storage area:
   - 4.1. A list of hazardous materials, including wastes.
   - 4.2. Hazard class of each hazardous waste.
   - 4.3. The maximum quantity for hazardous materials.
   - 4.4. Include the contents and capacity limit of all tanks at each area and indicate whether they are above or below ground.
   - 4.5. List separately any radioactives, cryogens and compressed gases for each facility.
   - 4.6. Trade-secret information shall be listed as specified by federal, state and local laws.

SECTION II — HAZARDOUS MATERIALS INVENTORY STATEMENT (HMIS)

2.1. Part A — Declaration

Fill out all appropriate information.

2.2.1 Part B—Inventory Statement

1. You must complete a separate inventory statement for all waste and nonwaste hazardous materials. List all hazardous materials in alphabetical order by hazard class.
2. Inventory Statement Instructions

Column	Information Required
1.	Provide hazard class for each material.
2.	Nonwaste. Provide the common or trade name of the regulated material.
3.	Waste. In lieu of trade names, you may provide the waste category.
4.	Provide the chemical name and major constituents and concentrations, if a mixture.
5.	Enter the chemical abstract service number (CAS number) found in 29 C.F.R. For mixtures, enter the CAS number of the mixture as a whole if it has been assigned a number distinct from its constituents. For a mixture that has no CAS number, leave this item blank or report the CAS numbers of as many constituent chemicals as possible.
6.	Enter the following descriptive codes as they apply to each material. You may list more than one code, if applicable. P = Pure M = Mixture S = Solid L = Liquid G = Gas
7.	7.1. Provide the maximum aggregate quantity of each material handled at any one time by the business. For underground tanks, list the maximum volume [in gallons (liters)] of the tank.. 7.2. Enter the estimated average daily amount on site during the past year.

8. Enter the units used in Column 6 as:
   LB = Pounds
   GA = Gallons
   CF = Cubic Feet
9. Enter the number of days that the material was present on site (during the last year).
10. Enter the storage codes below for type, temperature and pressure.

Type
A = Aboveground Tank
B = Belowground Tank
C – Tank inside Building
D = Steel Drum
E = Plastic or Nonmetallic Drum
F = Can
G = Carboy
H = Silo
I = Fiber Drum
J = Bag
K = Box
L = Cylinder
M = Glass Bottle or Jug
N = Plastic Bottles or Jugs
O = Tote Bin
P = Tank Wagon
Q = Rail Car
R = Other

Temperature
4 = Ambient
5 = Greater than Ambient
6 = Less than Ambient, but not Cryogenic [less than -150°F (-101.1°C)]
7 = Cryogenic conditions [less than -150°F (-101.1°C)]

Pressure
1 = Ambient (Atmospheric)
2 = Greater than Ambient (Atmospheric)
3 = Less than Ambient (Atmospheric)

11. For each material listed, provide the SARA hazard class as listed below. You may list more than one class. These categories are defined in 40 C.F.R. 370.3.

Physical Hazards
F = Fire
P = Sudden Release of Pressure
R = Reactivity
Health Hazards
I = Immediate (Acute)
D = Delayed (Chronic)

12. Waste Only. For each waste, provide the total estimated amount of hazardous waste handled throughout the course of the year.

SECTION III—SEPARATION AND MONITORING

3.1 Part A—Aboveground

Fill out Items 1 through 6, or provide similar information for each storage area shown on the facility map. Use additional sheets as necessary.

3.2 Part B—Underground

1. Complete a separate page for each underground tank, sump, vault, below-grade treatment system, etc.
2. Check the type of tank and method(s) that applies to your tank(s) and piping, and answer the appropriate questions. Provide any additional information in the space provided or on a separate sheet.

SECTION IV — WASTE DISPOSAL

Check all that apply and list the associated wastes for each method checked.

SECTION V — RECORDING KEEPING

Include a brief description of your inspection procedures. You are also required to keep an inspection log and recordable discharge log, which are designed to be used in conjunction with routine inspections for all storage facilities or areas. Place a check in each box that describes your forms. If you do not use the sample forms, provide copies of your forms for review and approval.

SECTION VI — EMERGENCY-RESPONSE PLAN

1. This plan should describe the personnel, procedures and equipment available for responding to a release or threatened release of hazardous materials that are stored, handled or used on site.
2. A check or a response under each item indicates that a specific procedure is followed at the facility, or that the equipment specified is maintained on site.
3. If the facility maintains a more detailed emergency-response plan on site, indicate this in Item 5. This plan shall be made available for review by the inspecting jurisdiction.

SECTION VII — EMERGENCY RESPONSE TRAINING PLAN

1. This plan should describe the basic training plan used at the facility.
2. A check in the appropriate box indicates the training is provided or the records are maintained.
3. If the facility maintains a more detailed emergency-response training plan, indicate this in Item 4. This plan shall be made available for review by the inspecting jurisdiction.

PART A—GENERAL INFORMATION

1. Business Name:_____Phone:_____

   Address:_____

2. Person Responsible for the Business:

Name	Title	Phone
_____	_____	_____

3. Emergency Contacts:

Name	Title	Home Number	Work Number
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

4. Person Responsible for the Application/Principal Contact:

Name	Title	Phone
_____	_____	_____

5. Property Owner:

Name	Address	Phone
_____	_____	_____

6. Principal Business Activity: _____

7. Number of Employees: _____

8. Number of Shifts: _____

9. Hours of Operation: _____

10. SIC Code: _____

11. Dunn and Bradstreet Number: _____

12. Declaration

I certify that the information above and on the following parts is true and correct to the best of my knowledge.

Signature:_____ Date _____

Print Name:_____ Title:_____

(Must be signed by owner/operator or designated representative)

PART B—GENERAL FACILITY DESCRIPTION/SITE PLAN

(Use grid format below.)

Special land uses within 1 mile (1. 609 km):_____

_____

_____

_____

PART C—FACILITY MAP

(Use grid format below.)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1															1
2															2
3															3
4															4
5															5
6															6
7															7
8															8
9															9
10															10
11															11
12															12
13															13
14															14
15															15
16															16
17															17
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	

BUSINESS NAME		DATE
ADDRESS	CITY	PAGE____ OF ____

FIGURE A-H-1 — (Continued)
SECTION II: HAZARDOUS MATERIALS INVENTORY STATEMENT
PART A — DECLARATION

1. Business Name: _____

2. Address: _____

3. Declaration:

Under penalty of perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct.

Signature: _____ Date: _____
Print Name: _____ Title: _____
(Must be signed by owner/operator or designated representative)

PART B — HAZARDOUS MATERIALS INVENTORY STATEMENT

(1) HAZARD CLASS	(2) COMMON/TRADE NAME	(3) CHEMICAL NAME, COMPONENTS AND CONCENTRATION	(4) CHEMICAL ABSTRACT SERVICE NO.	(5) PHYSICAL STATE	(6) MAXIMUM QUANTITY ON HAND AT ANY TIME	(7) UNITS	(8) DAYS ON SITE	(9) STORAGE CODE (TYPE, PRES., TEMP.)	(10) SARA CLASS	(11) ANNUAL WASTE THROUGHPUT

SECTION III: SEPARATION, SECONDARY CONTAINMENT AND MONITORING
PART A — ABOVEGROUND STORAGE AREAS

Storage Area Identification (as shown on facility map):_____

1. Storage Type:

_____ Original Containers
_____ Inside Machinery
_____ 55-gallon (208.2 L) Drums or Storage Shed
_____ Pressurized Vessel
_____ Other: _____
_____ Safety Cans
_____ Bulk Tank
_____ Outside Barrels

2. Storage Location:

_____ Inside Building
_____ Outside Building
_____ Secured

3. Separation:

_____ All Materials
_____ Compatible
_____ Separated by 20 Feet (6096 mm)
_____ Other: _____
_____ One-hour Separation Wall/Partition
_____ Approved Cabinets

4. Secondary Containment:

_____ Approved Cabinet
_____ Tray
_____ Vaulted Tank
_____ Other: _____
_____ Secondary Drums
_____ Bermed, Coated Floor
_____ Double-wall Tank

FIGURE A-H-1 — (Continued)

5. Monitoring:

_____ Visual _____ Continuous

_____ Other:

_____

Attach specifications if necessary

6. Monitoring Frequency:

_____ Daily _____ Weekly

_____ Other:

_____

Attach specifications if necessary

SECTION III: SEPARATION, CONTAINMENT AND MONITORING
PART B — UNDERGROUND

SINGLE-WALL TANKS AND PIPING

Tank Area Identification (as shown on facility map): _____

1. _____ Backfill Vapor Wells
   Model and Manufacturer: _____
   _____
   Continuous or Monthly Testing: _____
2. _____ Groundwater Monitoring Wells
3. _____ Monthly Precision Tank Test
4. _____ Piping
   Monitoring Method: _____
   Frequency: _____
5. _____ Other: _____
   _____

DOUBLE-WALL TANKS AND PIPING

Tank Area Identification (as shown on facility map):

1. Method of monitoring the annular space: _____
   _____
2. Frequency:
   _____ Continuous _____ Daily _____Weekly
   _____ Other: _____
3. List the type of secondary containment for piping: _____
4. List the method of monitoring the secondary containment for piping: _____
5. Are there incompatible materials within the same vault:
   _____ Yes _____ No
   If yes, how is separate secondary containment provided?
   _____

Note: If you have continuous monitoring equipment, you shall maintain copies of all service and maintenance work. Such reports shall be made available for review on site, and shall be submitted to the fire prevention bureau upon request.

Attach additional sheets as necessary.

SECTION IV: WASTE DISPOSAL

_____ Discharge to the Sanitary Sewer — Wastes: _____
_____
_____

_____ Pretreatment Wastes: _____
_____
_____

_____ Licensed Waste Hauler
Wastes: _____
_____
_____

_____ Recycle Wastes: _____
_____
_____

_____ Other
Describe Method: _____
Wastes: _____
_____
_____

_____ No Waste

FIGURE A-H-1 — (Continued)
SECTION V: RECORD KEEPING

Description of our inspection program: _____
_____
_____
_____ We will use the attached sample forms in our inspection program.
_____ We will not use the sample forms. We have attached a copy of our own forms.

SECTION VI: EMERGENCY RESPONSE PLAN

1. In the event of an emergency, the following shall be notified:

A. On-site Responders:

Name	Title	Phone
_____	_____	_____
_____	_____	_____

B. Method of Notification to Responder:

_____ Automatic Alarm _____ Phone
_____ Manual Alarm _____ Verbal
_____ Other: _____
_____

C. Agency Phone Number
Fire Department:
State Office of Emergency:
Services:
Other:
_____ _____
_____ _____

2. Designated Local Emergency Medical Facility:

Name	Address	Phone (24 hours)
_____	_____	_____

3. Mitigation Equipment:

A. Monitoring Devices:
_____ Toxic or flammable gas detection
_____ Fluid detection
_____ Other: _____
_____

B. Spill Containment:
_____ Absorbants _____ Other: _____
_____

C. Spill Control and Treatment:
_____ Vapor Scrubber _____ Mechanical Ventilation
_____ Pumps/vacuums _____ Secondary Containment
_____ Neutralizer _____ Other: _____
_____

4. Evacuation:
_____ Immediate area evacuation routes posted
_____ Entire building evacuation procedures developed
_____ Assembly areas preplanned
_____ Evacuation maps posted
_____ Other: _____
_____

5. Supplemental hazardous materials emergency response plan on site.
Location:_____
Responsible Person: _____
Phone:_____

SECTION VII: EMERGENCY-RESPONSE TRAINING PLAN

1. Person responsible for the emergency-response training plan:
   Name _____ Title _____ Phone _____

2. Training Requirements:

   A. All employees trained in the following as indicated:
   _____ Procedures for internal alarm/notification
   _____ Procedures for notification of external emergency-response organization
   _____ Location and content of the emergency-response plan

   B. Chemical handlers are trained in the following as indicated:
   _____ Safe methods for handling and storage of hazardous materials
   _____ Proper use of personal protective equipment
   _____ Locations and proper use of fire- and spill-control equipment
   _____ Specific hazards of each chemical to which they may be exposed

   C. Emergency-response team members are trained in the following:
   _____ Procedures for shutdown of operations
   _____ Procedures for using, maintaining and replacing facility emergency and monitoring equipment

3. The following records are maintained for all employees:
   _____ Verification that training was completed by the employee
   _____ Description of the type and amount of introductory and continuing training
   _____ Documentation on and description of emergency-response drills conducted at the facility

4. A more comprehensive and detailed emergency-response training plan is maintained on site.

   Location: _____
   Responsible Person: _____
   Phone: _____

Reason: To provide a form for Hazardous Materials Management Plans and Hazardous Materials Inventory Statements in order to encourage uniformity throughout the country on what information to submit and how to submit it.

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

Analysis: If this code change is approved, the content will be revised editorially to comply with code appendix style conventions.

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will lend uniformity to hazardous materials information collection efforts.

Assembly Action: **None**

Final Hearing Results

F217-06/07 **AS**

Code Change No: F218-06/07

Original Proposal

Section: IBC [F] 307.1

Proponent: Gregory R. Keith, Professional heuristic Development, representing the Boeing Company

Revise as follows:

[F] 307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in Tables 307.1(1) and 307.1(2) per control ~~area~~s as constructed and located as required in Section 414. Hazardous occupancies ~~uses~~ are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *International Fire Code*.

Exceptions: The following shall not be classified as ~~in~~ Group H, but shall be classified as ~~in~~ the occupancy that they most nearly resemble.

~~1. Buildings and structures that contain not more than the maximum allowable quantities per control area of hazardous materials as shown in Tables 307.1(1) and 307.1(2), provided that such buildings are maintained in accordance with the *International Fire Code*.~~

~~2. Buildings utilizing control areas in accordance with Section 414.2 that contain not more than the maximum allowable quantities per control area of hazardous materials as shown in Tables 307.1(1) and 307.1(2).~~

~~3.~~ 1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.

~~4.~~ 2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.

~~5.~~ 3. Closed piping containing flammable or combustible liquids or gases utilized for the operation of Machinery or equipment.

~~6.~~ 4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140° (60°C) or higher In closed systems employing equipment listed by an approved testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour fire barriers or 1-hour horizontal assemblies or both.

~~7.~~ 5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).

~~8.~~ 6. Liquor stores and distributors without bulk storage.

~~9.~~ 7. Refrigeration systems.

~~10.~~ 8. The storage or utilization of materials for agricultural purposes on the premises.

~~11.~~ 9. Stationary batteries utilized for facility emergency power, uninterrupted power supply or Telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the *International Mechanical Code*.

~~12.~~ 10. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.

~~13.~~ 11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.

~~14.~~ 12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous Materials in quantities not exceeding the maximum allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.

~~15.~~ 13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.

Reason: Section 307.1 was modified in the 2006 Edition of the International Building Code. In an attempt to clarify the provisions of the code, one key point was missed. The appropriate and necessary reference to Tables 307.1(1) and 307.1(2) was removed from the enabling text. It is generally expected that one would find the technical charging requirement for Tables 307.1 in Section 307.1. The concept of maximum allowable quantities of hazardous materials based on Tables 307.1(1) and 307.1(2) is absolutely fundamental to the proper classification of Group H occupancies. This proper legal reference should be established in the charging text. It is noted that the reference to the tables first occurs in

Exception 1. Exceptions represent exceptions to the rule. What now occurs in Exception 1, is the rule. Accordingly, it is proposed to reintroduce the proper cross reference to Tables 307.1(1) and 307.1(2) into Section 307.1. Having done this, it renders Exception 1 as redundant and moot. Also, Exception 1 contains an IFC maintenance provision as a condition of classification as a non-Group H occupancy. Is this to say that buildings not maintained in accordance with the *International Fire Code* must be classified as Group H occupancies? This represents a potentially unenforceable provision. Additionally, Exception 2 is redundant as the control area concept is already addressed in Section 307.1. Approval of this proposal will clarify the code and increase uniformity in the proper classification of Group H occupancies.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal adds a needed reference to restore clarity to the text in referencing the appropriate tables and deletes redundant text.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Jeffrey Shapiro, PE, FSFPE, International Code Consultants, representing The Chlorine Institute, requests Approval as Modified by this public comment.

Modify proposal as follows:

[F] 307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in ~~Tables 307.1(1) and 307.1(2) per~~ control area<u>s complying with Section 414, ~~as~~ based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2) ~~constructed and located as required in Section 414~~</u>. Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *International Fire Code*.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: This public comment provides an editorial clean-up of the change made by this proposal to ensure that the section cannot be read to suggest that only a single control area is permitted, which was possible with the original wording.

Final Hearing Results

F218-06/07 **AMPC1**

Code Change No: F223-06/07

Original Proposal

Section: IBC [F] 414.1.3

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

Revise as follows:

[F] 414.1.3 Information required. <u>The hazardous material(s) to be used or stored shall be submitted with the maximum amount expected to be present for each classification of physical or health hazard as indicated in Tables 307.1(1) and 307.1(2). The submittal shall include a description of how the material will be used or stored</u>. ~~Separate~~

~~floor plans shall be submitted f~~ For buildings and structures with an occupancy in Group H ~~,~~ separate floor plans shall be submitted identifying the locations of anticipated contents and processes so as to reflect the nature of each occupied portion of every building and structure. A report identifying hazardous materials including, but not limited to, materials representing hazards that are classified in Group H to be stored or used, shall be submitted and the methods of protection from such hazards shall be indicated on the construction documents. The opinion and report shall be prepared by a qualified person, firm or corporation approved by the building official and shall be provided without charge to the enforcing agency.

Reason: Applying Section 307.1 requires that the code official know what classes and total amounts of hazardous materials in each class are to be present at any one time. Sections 307.1.1, 414.1.1 and 414.1.2 make it clear that hazardous materials in any quantity must comply with Section 414 and the *International Fire Code*. This language would indicate that the intent of the code is that the code official is entitled to have a listing of materials supplied for review against code requirements. However, the existing language found at [F] 414.1.3 limits the submission of additional information concerning the hazardous materials to Group H occupancies only.

The first problem with the existing language is that the code official needs information on the hazardous materials submitted to make a determination of the H Group, not after the determination is made. The second problem is that regardless of the Group H designation the code official needs to know what materials are to be present to apply Section 414 of the IBC and the appropriate chapters of the International Fire Code.

This proposal clarifies the need for a submittal of information concerning what hazardous materials will be present including maximum amounts to be provided for each hazard classification as referenced in Tables 307.1(1) and 307.1(2). It includes that a description of how the materials will be used or stored to be submitted to assist in identifying what hazards may be created by the handling or use of the material. This will assist the code official in making a proper determination of whether or not an H Group is involved and will provide needed information for applying Section 414 and appropriate Chapters of the International Fire Code whenever hazardous materials are present. It also clarifies that the submitter shall do the analysis necessary to provide a classification breakdown with total amounts in each class as compared to just submitting a listing of materials and leaving the code official the job of totaling up the amount in each class.

If the determination of a Group H is made the more extensive requirements for separate floor plans and a report prepared by a qualified person, firm or corporation would continue to apply unchanged other than an editorial revision to the language.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal provides clarification regarding the submittal of hazardous material information.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Jeffrey Shapiro, PE, FSFPE, International Code Consultants, representing the Chlorine Institute, requests Approval as Modified by this public comment.

Modify proposal as follows:

[F] 414.1.3 Information required. ~~The hazardous material(s) to be used or stored shall be submitted with the maximum amount expected to be present for each classification of physical or health hazard as indicated in Tables 307.1(1) and 307.1(2). The submittal shall include a description of how the material will be used or stored.~~ For buildings and structures with an occupancy in Group H , separate floor plans shall be submitted identifying the locations of anticipated contents and processes so as to reflect the nature of each occupied portion of every building and structure. A report shall be submitted to the code official identifying the maximum expected quantities of hazardous materials to be stored, used in a closed system and used in an open system, and subdivided to separately address hazardous materials classification categories based on Tables 307.1(1) and 307.1(2). ~~including, but not limited to, materials representing hazards that are classified in Group H to be stored or used, shall be submitted and~~ The methods of protection from such hazards, including but not limited to control areas, fire protection systems and Group H occupancies shall be indicated in the report and on the construction documents. The opinion and report shall be prepared by a qualified person, firm or corporation approved by the building official and shall be provided without charge to the enforcing agency.

Commenter's Reason: The approved change, which involved adding a new first sentence to this section, created overlap and inconsistency between the beginning and the end of the paragraph. The revisions maintain and better execute the intent of the proponent, while eliminating inconsistencies.

Final Hearing Results

F223-06/07 **AMPC1**

Code Change No: F224-06/07

Original Proposal

Sections: IBC [F] 415.3.2, [F] 415.2, [F] 307.2

Proponent: Gregory R. Keith, Professional heuristic Development, representing the Boeing Company

1. Revise as follows:

[F] 415.3.2 Group H-1 and H-2 or H-3 detached buildings. The storage of hazardous materials in excess of those amounts listed in Table 415.3.2 shall be in accordance with the provisions of Section 415.5. Where a detached building is required by Table 415.3.2, there are no requirements for wall and opening protection based on fire separation distance.

2. Delete without substitution:

[F] 307.2 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

~~**DETACHED BUILDING.** A separate single-story building, without a basement or crawl space, used for the storage or use of hazardous materials and located an approved distance from all structures.~~

3. Add new text as follows:

F] 415.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in the code, have the meanings shown herein.

DETACHED BUILDING. A separate single-story building, without a basement or crawl space, used for the storage or use of hazardous materials and located an approved distance from all structures.

Reason: Table 415.3.2 currently is not formally enabled by the text in Section 415.3.2. This proposal corrects this circumstance. Technical requirements in tables are generally legally established by proper charging language in the corresponding text sections in order to assist users in the proper determination of such requirements. Editorial convention, however, is to title a table based on that section where the term first appears in the code. In this instance, Section 415.5 provides the root requirement for detached buildings and enables Table 415.3.2. The proposed included cross reference will assist users in ascertaining those additional schematic requirements located in Section 415.5. Additionally, the definition of "detached building" has been relocated from Chapter 3 to Chapter 4. In this proper location, it can support applicable technical requirements. Approval of this proposal will clarify the code and increase uniformity in the proper determination of detached building requirements.

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

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposal does not include a reference to Section [F] 415.4, which also applies to Group H-1.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Gregory R. Keith, Professional heuristic Development, representing the Boeing Company, requests Approval as Modified by this public comment.

Modify proposal as follows:

[F] 415.3.2 Group H-1 and H-2 or H-3 detached buildings. The storage of hazardous materials in excess of those amounts listed in Table 415.3.2 shall be in accordance with the applicable provisions of Sections 415.4 and 415.5. Where a detached building is required by Table 415.3.2, there are no requirements for wall and opening protection based on fire separation distance.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: Table 415.3.2 currently is not formally enabled by the text in Section 415.3.2. This proposal corrects this oversight. It was pointed out during committee discussion in Orlando, that as written, one could interpret the provision as neglecting certain Group H-1 requirements. The proposal has been modified to address that concern.

Technical requirements in tables should be legally established by proper charging language in the text sections. Additionally, the definition of "detached building" has been relocated from Chapter 3 to Chapter 4. In this proper location, it can support applicable technical requirements. Approval of this proposal will clarify the code and increase uniformity in the proper determination of detached building requirements.

Final Hearing Results

F224-06/07 AMPC1

Code Change No: F225-06/07

Original Proposal

Section: IBC [F] 416.4 (New)

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

Add new text as follows:

[F] 416.4 Spray booths. Spray booths shall be designed, constructed and operated in accordance with the *International Fire Code*.

(Renumber subsequent sections)

Reason: Section 416 applies to the construction, installation and use of buildings and structures for the application of flammable finishes. Existing language provides limited information for spray rooms, Section 416.2, and spraying spaces, Section 416.3, leading one to believe there are no such requirements for spray booths. The proposed language simply places a pointer to the International Fire Code for the specifics of designing, constructing or operating spray booths and makes it clear that the intent of Section 416 includes spray booths.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies that the intent of Section [F] 416 is to be applicable to paint spray booths as well as spray rooms and spray space.

Assembly Action: **None**

Final Hearing Results

F225-06/07 AS

Code Change No: F228-06/07

Original Proposal

Sections: IEBC [F] 1406.4, [F] 1409 (New)

Proponent: Michael E. Dell'Orfano, South Metro Fire Rescue, representing ICC Code Correlation Committee

1. Delete without substitution:

~~**[F] 1406.4 Water supply.** Water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material accumulates.~~

2. Add new text as follows:

[F] SECTION 1409
WATER SUPPLY FOR FIRE PROTECTION

1409.1 When required. An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site.

Reason: During the 04/05 code change cycle, the ICC Code Correlation Committee was presented with Item No. CCC05-IEBC 3, which proposed to delete then-Section 1306.4 in order to be consistent with IFC Section 1413. However, in order to be consistent with the IFC, a new section must also be added in order to maintain requirements for water supplies during construction, as was done in IFC Section 1412.

Therefore, this proposal is intended to delete current IEBC Section 1406.4, which is not appropriate for the standpipe section, and add IEBC Section 1409 in order to address general water supply requirements during construction. This is consistent with the IFC.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal will resolve previously encountered problems with interpretation of the IEBC on when water supplies must be in place.

Assembly Action: **None**

Final Hearing Results

F228-06/07 **AS**

Code Change No: F230-06/07

Original Proposal

Section: IPC [F] 1202.1

Proponent: Cecil F. Hardee, Jr., County of Fairfax, Virginia, representing Virginia Plumbing and Mechanical Inspectors Association (VPMIA) and the Virginia Building Code Officials Association (VBCOA)

Revise as follows:

[F] 1202.1 Nonflammable medical gases. Nonflammable medical gas systems, inhalation anesthetic systems and vacuum piping systems shall be designed and installed in accordance with NFPA 99C.

Exceptions:

1. This section shall not apply to portable systems or cylinder storage.
2. Vacuum system exhaust terminations shall comply with the *International Mechanical Code.*

Reason: The purpose is to clarify the requirements of exhaust from vacuum piping systems. IPC references IMC to determine the requirements for exhaust discharge from medical gas systems. IMC doesn't specifically regulate the design of the vacuum piping system. IMC 501.2 regulates the exhaust discharge and Section 501.1.1 gives the specific requirements for termination of exhaust outlets of required exhaust systems.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal clarifies the code by adding a word that completes the technical term "exhaust terminations".

Assembly Action: **None**

Final Hearing Results

F230-06/07 **AS**

Code Change No: F231-06/07

Original Proposal

Section: 2705.5.1.11

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

Revise as follows:

~~**2705.2.2.1**~~ **2705.1.11 Design.** Systems shall be suitable for the use intended and shall be designed by persons competent in such design. Controls shall be designed to prevent materials from entering or leaving the process or reaction system at other than the intended time, rate, or path. Where automatic controls are provided, they shall be designed to be fail safe.

Reason: This section currently applies only to closed hazardous materials systems. Open systems should also meet the requirements of being suitable for the intended use and being designed by competent persons to prevent the unintended release of hazardous materials. No cost increase is expected, because hazardous materials systems should already meet this standard, as they are required to be approved in section 2703.2.3.

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

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's reason statement. The proposal properly relocates system design requirements so as to apply to both open and closed systems.

Assembly Action: **None**

Public Comments

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Jeffrey Shapiro, PE, FSFPE, International Code Consultants, representing The Chlorine Institute, requests Approval as Modified by this public comment.

Modify proposal as follows:

2705.1.11 Design. Systems shall be suitable for the use intended and shall be designed by persons competent in such design. Controls shall be designed to prevent materials from entering or leaving the process or reaction system at other than the intended time, rate, or path. Where automatic safety controls are ~~provided~~ used to prevent a dangerous condition or reaction, they shall be designed to be fail safe.

Commenter's Reason: This is a simple clarification. There is no need for all automatic controls to be fail safe because many such controls have nothing to do with and no impact on safety. Only those controls that are intended to be part of the safety system were intended to be encompassed by this requirement.

Final Hearing Results

F231-06/07 AMPC1

Code Change No: F232-06/07

Original Proposal

Sections: IBC [F] 415.6.3.2, [F] 415.6.3.4, [F] 415.6.3.4.1, [F] 415.6.3.5.2

Proponent: Philip Brazil, P.E., Reid Middleton, Inc., representing himself

Revise as follows:

[F] 415.6.3.2 Construction. Liquefied petroleum gas-distribution facilities shall be constructed in accordance with Section 415.6.3.3 for separate buildings, Section 415.6.3.4 for attached ~~buildings~~ structures or Section 415.6.3.5 for rooms within buildings.

[F] 415.6.3.4 Attached ~~buildings~~ structures. Where liquefied petroleum gas-distribution facilities are located in an attached structure, the attached perimeter shall not exceed 50 percent of the perimeter of the space enclosed and the facility shall comply with Sections 415.6.3.3 and 415.6.3.4.1. Where the attached perimeter exceeds 50 percent, such facilities shall comply with Section 415.6.3.5.

[F] 415.6.3.4.1 Fire separation. Separation of the attached structures shall be provided by fire barriers having a fire-resistance rating of not less than 1 hour and shall not have openings. Fire barriers between attached structures occupied only for the storage of LP-gas are permitted to have fire door assemblies that comply with Section ~~715~~ 706.7. Such fire barriers shall be designed to withstand a static pressure of at least 100 pounds per square foot (psf) (4788 Pa), except where the building to which the structure is attached is occupied by operations or processes having a similar hazard.

[F] 415.6.3.5 Rooms within buildings. Where liquefied petroleum gas-distribution facilities are located in rooms within buildings, such rooms shall be located in the first story above grade plane and shall have at least one exterior wall with sufficient exposed area to provide explosion venting as required in the *International Fire Code*. The building in which the room is located shall not have a basement or unventilated crawl space and the room shall comply with Sections 415.6.3.5.1 and 415.6.3.5.2.

[F] 415.6.3.5.2 Common construction. Walls and floor/ceiling assemblies common to the room and to the building within which the room is located shall be fire barriers with not less than a 1 hour fire-resistance rating and without openings. Common walls for rooms occupied only for storage of LP-gas are permitted to have ~~opening protectives~~ fire door assemblies complying with Section ~~715~~ 706.7. The walls and ceilings shall be designed to withstand a static pressure of at least 100 psf (4788 Pa).

Exception: Where the building, within which the room is located, is occupied by operations or processes having a similar hazard.

Reason: The purpose for this proposal is to correct several technical flaws in the provisions for liquefied petroleum gas-distribution facilities in attached structures and rooms within buildings. In Section 415.6.3.2 and the title of Section 415.6.3.4, "attached buildings" are changed to "attached structures" for consistency with use of the term "attached structures" in the provisions of Sections 415.6.3.4 and 415.6.3.4.1, and to maintain the distinction between the building and the attached structure that is made in Section 415.6.3.4.1 (last sentence).

In Sections 415.6.3.4.1 and 415.6.3.5.2, the reference to Section 715 to 706.7 to establish that the general limitations in Section 706.7 for protected openings in fire barriers are applicable to fire barriers in liquefied petroleum gas-distribution facilities. Without the change, a code user may conclude that the limitations in liquefied petroleum gas-distribution facilities are less than are generally required for fire barriers.

The Section 415.6.3.5.2, "opening protectives" are changed to "fire door assemblies" for consistency with the same requirement in Section 415.6.3.4.1 for attached structures. Otherwise, fire window assemblies and other forms of opening protection would be permitted.

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

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

[F] 415.6.3.4.1 Fire separation. ~~Separation of the a~~ Attached structures shall be ~~provided~~ separated from the building by fire barriers having a fire-resistance rating of not less than 1 hour and shall not have openings. Fire barriers between attached structures occupied only for the storage of LP-gas are permitted to have fire door assemblies that comply with Section 706.7. Such fire barriers shall be designed to withstand a static pressure of at least 100 pounds per square foot (psf) (4788 Pa), except where the building to which the structure is attached is occupied by operations or processes having a similar hazard.

(Portions of proposal not shown remain unchanged)

Committee Reason: Based on the proponent's reason statement. The proposal, with the modification, makes editorial refinements in the style of the code to make the LP-gas facility construction provisions clearer to the code user.

Assembly Action: **None**

Final Hearing Results

F232-06/07 **AM**