2013 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

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TENTATIVE ORDER OF DISCUSSION
2013 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE AND INTERNATIONAL WILDLAND-URBAN INTERFACE CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IFC code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes. Note also that in this cycle, the hearing order places the code changes affecting hazardous materials first to give them proper attention.

F249: Withdrawn by proponent

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F1 – 13
202

Proponent: Anthony C. Apfelbeck, Fire Marshal/Building Official, City of Altamonte Springs, FL representing Himself (ACApfelbeck@Altamonte.org)

Revise as follows:

Add the following IBC definitions to IFC Section 202.

SECTION 202
GENERAL DEFINITIONS

ACCESSIBLE UNIT. A *dwelling unit* or *sleeping unit* that complies with this code and the provisions for Accessible units in ICC A117.1.

[A] ADDITION. An extension or increase in floor area or height of a building or structure.

BUILDING ELEMENT. A fundamental component of building construction, listed in Table 601, which may or may not be of fire-resistance-rated construction and is constructed of materials based on the *building* type of construction.

CELL (Group I-3 occupancy). A room within a housing unit in a detention or correctional facility used to confine
inmates or prisoners.

DEAD LOAD. The weight of materials of construction incorporated into the *building*, including but not limited to
walls, floors, roofs, ceilings, *stairways*, built-in partitions, finishes, cladding and other similarly incorporated architectural and structural items, and the weight of fixed service equipment, such as cranes, plumbing stacks and risers, electrical feeders, heating, ventilating and air-conditioning systems and *automatic sprinkler systems*.

DESIGN PROFESSIONAL, REGISTERED. See "Registered design professional."

EMPLOYEE WORK AREA. All or any portion of a space used only by employees and only for work. *Corridors*, toilet rooms, kitchenettes and break rooms are not employee work areas.

FLOOD or FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

INTERIOR SURFACES. Surfaces other than weather exposed surfaces.

JOINT. The opening in or between adjacent assemblies that is created due to building tolerances, or is designed to allow independent movement of the building in any plane caused by thermal, seismic, wind or any other loading.

LIVE LOAD. A *load* produced by the use and occupancy ofthe building or other structure that does not include constructionor environmental *loads* such as wind load, snow load,rain load, earthquake load, flood load or *dead load*.

MEMBRANE PENETRATION. A breach in one side of a floor-ceiling, roof-ceiling or wall assembly to accommodate an item installed into or passing through the breach.

OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with *means of egress* and light and *ventilation* facilities meeting the requirements of this code.

PLATFORM. A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round *stages*; and similar purposes wherein there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.

PUBLIC ENTRANCE. An entrance that is not a *service entrance* or a *restricted entrance*.

ROOF COVERING. The covering applied to the *roof deck* for weather resistance, fire classification or appearance.

ROOFTOP STRUCTURE. A structure erected on top of the *roof deck* or on top of any part of a building.

SHAFT. An enclosed space extending through one or more *stories* of a building, connecting vertical openings in successive floors, or floors and roof.

SHAFT ENCLOSURE. The walls or construction forming the boundaries of a *shaft*.

SPECIAL INSPECTION. Inspection of construction requiring the expertise of an *approved special inspector* in order to ensure compliance with this code and the *approved construction documents*.

STAGE. A space within a building utilized for entertainment or presentations, which includes overhead hanging curtains, drops, scenery or stage effects other than lighting and sound.

STRUCTURE. That which is built or constructed.

SWIMMING POOL. Any structure intended for swimming, recreational bathing or wading that contains water over 24 inches (610 mm) deep. This includes in-ground, aboveground and on-ground pools; hot tubs; spas and fixed-inplace wading pools.

VENEER. A facing attached to a wall for the purpose of providing counted as adding strength to the wall.

WALKWAY, PEDESTRIAN. A walkway used exclusively as a pedestrian trafficway.

WALL. A vertical element with a horizontal length-to-thickness ratio greater than three, used to enclose space.

Reason: The above terms are utilized in the IFC. However, they are not defined in the IFC. They are defined in the IBC. If the term is utilized in the IFC, and there is an appropriate definition in the IBC, that definition should be extracted into the IFC for better use ability. The following lists the IFC locations using each of the above defined terms:

ACCESSIBLE UNIT. Used in IFC Section(s):

1008.1.1 Exception 7.
1008.1.5 Exception 3.
1008.1.7 Exception 3.
1010.7.3 Exception 1.
1010.7.4 Exception.

[A] ADDITION. Used in IFC Section(s):

202 - Definition of ALTERATION.
311.3 Exception 1.
507.5.2
510.6.1
3311.2

BUILDING ELEMENT. Used in IFC Section(s):

202 - Definition of BLEACHERS.
202 - Definition of FIRE-RESISTANCE RATING.
202 - Definition of FOLDING AND TELESCOPIC SEATING.
202 - Definition of GRANDSTAND.
1003.6
1028.1.1

CELL (Group I-3 occupancy). Used in IFC Section 907.2.6.3.3 Exception 1.

DEAD LOAD. Used in IFC Section 1104.16.5

DESIGN PROFESSIONAL, REGISTERED. See "Registered design professional."

EMPLOYEE WORK AREA. Used in IFC Section 907.5.2.3.2

FLOOD or FLOODING. Used in IFC Section(s):

913.2
5303.16.1
5303.16.5
5504.3.1.1.4
5704.2.7.8
5704.2.8.1
5704.2.8.5
5706.3.2.1
6104.3.2

INTERIOR SURFACES. Used in IFC Sections 202 - Definition of INTERIOR WALL AND CEILING FINISH. and 2404.3.2.2

JOINT. Used in IFC Section(s):

202 - Definition of Fire-Resistant Joint System
308.1.6.2
311.2.3
603.6.1
Section 703
909.10.2
909.13.1
910.3.5.1
1009.3.1.6
2307.9.1.4
2405.3.4.1
And numerous other sections

LIVE LOAD. Used in IFC Sections:

503.2.6
605.11.3.2.1
605.11.3.3.2
1104.16.5

MEMBRANE PENETRATION. Used in IFC Sections 1022.5 and 1026.3.

OCCUPIABLE SPACE. Used in IFC Sections 202 - Definition of DRY CLEANING ROOM. And Section 907.5.2.1.1

PLATFORM. Used in IFC Section(s):

202 – Definition of STAIRWAY
308.3 Exception 1.2
Table 1004.1.2
1009.3 Exception 8.

1009.4 Exception 4.
1009.13.2
1013.2 Exception 2, 3, 4 and 5.
1021.3.1
Numerous other locations.

PUBLIC ENTRANCE. Used in IFC Section(s):

905.3.3 (2) and (3)
905.4 (4)

ROOF COVERING. Used in IFC Section 105.6.23 (5)

ROOFTOP STRUCTURE. Used in IFC Sections 202 - Definition of PENTHOUSE and Section 317.3

SHAFT. Used in IFC Section(s):

316.2 as it refers to “shaftway.”
316.2.1
316.2.2
703.1
704
704.1
704.2
908.7 Exception 2.
909.5 (3)
909.16.2 (1)
911.2 (2) Exception.
1007.4 Exception 3.
1007.6
1022.6 (1)
Numerous other locations.

SHAFT ENCLOSURE. Used in IFC Section(s):

703.1
1022.6
5306.2.2

SPECIAL INSPECTION. Used in IFC Section(s):

909.3
909.18.8
909.18.8.1
909.18.8.2
909.18.8.3
5303.16.1
5704.2.8.1

STAGE. Used in IFC Section(s):

308.3 Exception 1 (1.2)
807.4.2.1
Table 903.2.11.6
905.3.4
905.3.4.1
905.5.1
914.6
1004.1.2
Numerous other locations.

STRUCTURE. Used in IFC Section(s):

202 - Definition of TENT and Definition of WHARF
301.1
303.2
304.1
304.3
304.3.3 Exception 2
Throughout 307

308.1.1
308.2
403.2
501.1
505.1
506.1
Numerous other locations.

SWIMMING POOL. Used in IFC Section(s):

202 - Definition of ASSEMBLY GROUP A-3 and Definition of ASSEMBLY GROUP A-4
Table 1004.1.2

VENEER. Used in IFC Section(s):

202 - Definition of GYPSUM BOARD and Definition of PLYWOOD AND VENEER MILLS
907.2.17
2801.1
2804.1
2805
2809.4 Exception

WALKWAY, PEDESTRIAN. Used in IFC Table 1016.2, Note a and Section1025.2 , Exception

WALL. Used in IFC Section(s):

304.3.3
304.3.4
305.2
311.2.3
503.1.1
508.1.5 (13.3)
Numerous other locations.

Cost Impact: None

F1-13

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

202-ACCESSIBLE UNIT (NEW)-F-APFELBECK.doc

F2 – 13
202 (IBC 202)

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLC representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

SECTION 202 (IBC 202)
GENERAL DEFINITIONS

CORROSIVE. A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact. A chemical shall be considered corrosive if, when tested using one of the *in vivo* or *in vitro* OECD test methods authorized ~~on the intact skin of albino rabbit by the method described~~ in DOTn 49 CFR 173.137, such chemical destroys or changes irreversibly the structure of the tissue at the point of contact following an exposure period of 4 hours. This term does not refer to action on inanimate surfaces.

Reason: Current IFC definition limited to albino rabbit testing exclusively does not comport with currently recognized methodologies (See *NFPA 400 – Hazardous Materials Code 2013 Edition*)

Cost Impact: This proposed code change will not increase the cost of construction and/or operation. It is likely to reduce the cost of hazard classification of unknown and re-evaluation of assumed known health hazards by employing simpler pre-emptive testing methodologies and reduce the burden of animal testing.

F2-13

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

202-CORROSIVE-F-MITCHELL

F3 – 13
202 (IBC [F] 202)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

DECORATIVE MATERIALS. All materials applied over the building interior finish for decorative, acoustical or other effect ~~(such as~~ including, but not limited to, curtains, draperies, fabrics, and streamers ~~and surface coverings)~~, and all other materials utilized for decorative effect ~~(such as~~ including, but not limited to, bulletin boards, artwork, posters, photographs, paintings, batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items~~)~~, including foam plastics and materials containing foam plastics. Decorative materials do not include wall coverings, ceiling coverings, floor coverings, ordinary window shades, interior finish and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

Reason: This is just a small cleanup in the definition of decorative materials to be consistent with section 807 of the code.

Cost Impact: Minimal

F3-13

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

202-DECORATIVE MATERIALS-F-HIRSCHLER

F4 – 13
202 (IBC [F] 202)

Proponent: Amy Carpenter, AIA, Pioneer Network Long Term Care Code Task Force

Revise as follows:

SECTION 202 (IBC [F] 202)
GENERAL DEFINITI0NS

DECORATIVE MATERIALS. All materials applied over the building *interior finish* for decorative, acoustical or other effect (~~such as~~ including but not limited to curtains, draperies, fabrics, streamers and surface coverings), and all other materials utilized for decorative effect (~~such as~~ including but not limited to, photographs, paintings, bulletin boards, artwork, posters, batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include floor coverings, ordinary window shades, *interior finish* and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

Reason: Companion proposal to IFC Section 807. Clarifying and expanding definition of decorative materials, to include paper-based products and for correlation.

Cost Impact: None

F4-13

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

F5 – 13
202 (New)

Proponent: Ronald Marts, Telcordia, representing AT&T, Verizon, CenturyLink (rmarts@telcordia.com)

Add new text as follows:

SECTION 202
GENERAL DEFINITIONS

ELECTROLYTE. The medium that provides the ion transport mechanism between the positive and negative electrodes of a cell.

SECTION 602
DEFINITIONS

602.1 Definitions. The following terms are defined in Chapter 2:

BATTERY SYSTEM, STATIONARY LEAD-ACID.
BATTERY TYPES.
COMMERCIAL COOKING APPLIANCES.
ELECTROLYTE.
HOOD.
Type I.
Type II.
REFRIGERANT.
REFRIGERATION SYSTEM.

Reason: This term, used in Section 608, needs to be defined. The definition comes from the IEEE Stationary Battery Standards Glossary.

Cost Impact: None.

F5-13

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

202-ELECTROLYTE (NEW)-MARTS

F6 – 13
202 (IBC [F] 202)

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

FLAMMABLE SOLID. A solid, other than a blasting agent or *explosive*, that is capable of causing fire through friction, absorption of moisture, spontaneous chemical change or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard. A chemical shall be considered a flammable solid as determined in accordance with the test method of CPSC 16 CFR Part 1500.44, if it ignites and burns with a self-sustained flame at a rate greater than ~~0.1~~ 0.0866 inch (~~2.5 mm~~ 2.2 mm) per second along its major axis.

Reason: The definition proposed is in line with GHS [Globally Harmonized System] which is now adopted by OSHA. When an MSDS is prepared today, a material classified as "Flammable Solids" is typically based on this definition and not the previous definition [existing language in the Fire Code]. For additional details please see http://www.osha.gov/dsg/hazcom/ghs.html.

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

F6-13

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

202-FLAMMABLE SOLID-F-KLAUSBRUCKNER

F7 – 13
202 (IBC [F] 202)

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

HIGHLY TOXIC. A material that produces a lethal dose or lethal concentration which falls within any of the following categories:

1. A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 g and 300 g each.
2. A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
3. A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Existing inhalation toxicity data which has been generated for 4 hour exposure should be multiplied by a factor of 2 for gases and vapors or a factor of 4 for dusts and mists to convert to the value for 1 hour exposure.

~~Mixtures of these materials with ordinary materials, such as water, may not warrant classification as highly toxic. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.~~

While categorization is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons. The degree of hazard depends on many variables which should be carefully considered individually and in combination. Some examples include:

1. Materials wherein the highly toxic component or mixtures thereof are inextricably bound and cannot be released present little or no potential for exposure.
2. Non-volatile, non-frangible solid hazardous materials existing in product forms and in the demonstrated absence of inhalable particles would not present the same inhalation hazard as the chemical components existing in a volatile, frangible state.
3. Mixtures of these materials with ordinary materials, such as water, may not warrant classification as highly toxic.

Reason: Most acute inhalation studies are run for 4 hr, as preferred in OECD 403 Acute Inhalation Toxicity and in OPPTS 870.1300 Acute Inhalation Toxicity. Conversion of 4 hr data to 1 hr data is given in GHS Purple Book, 4th Edition, 2011, Chapter 3.1 and in NFPA 704, section B.4.

Revised last paragraph includes language added to NFPA 400 in A.3.3.61.9.1.

Cost Impact: This proposed code change will not increase the cost of construction and/or operation. It is intended to provide descriptive clarification aligned with conventional acute test methods, GHS Purple Book, etc.

F7-13

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

202-HIGHLY TOXIC-F-MITCHELL

F8 – 13
202 (IBC [F] 202)

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

TOXIC. A chemical falling within any of the following categories:

1. A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 g and 300 g each.
2. A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram, but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
3. A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Existing inhalation toxicity data which has been generated for 4 hour exposure should be multiplied by a factor of 2 for gases and vapors or a factor of 4 for dusts and mists to convert to the value for 1 hour exposure.

While categorization is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons. The degree of hazard depends on many variables which should be carefully considered individually and in combination. Some examples include:

1. Materials wherein the highly toxic component or mixtures thereof are inextricably bound and cannot be released present little or no potential for exposure.
2. Non-volatile, non-frangible solid hazardous materials existing in product forms and in the demonstrated absence of inhalable particles would not present the same inhalation hazard as the chemical components existing in a volatile, frangible state.
3. Mixtures of these materials with ordinary materials, such as water, may not warrant classification as highly toxic.

Reason: Most acute inhalation studies are run for 4 hr, as preferred in OECD 403 Acute Inhalation Toxicity and in OPPTS 870.1300 Acute Inhalation Toxicity. Conversion of 4 hr data to 1 hr data is given in GHS Purple Book, 4th Edition, 2011, Chapter 3.1 and in NFPA 704, section B.4.

Second added paragraph includes language added to NFPA 400 in A.3.3.61.9. It should be added to this definition to be consistent with the definition for Highly Toxic.

Cost Impact: This proposed code change will not increase the cost of construction and/or operation. It is intended to provide descriptive clarification aligned with conventional acute test methods, GHS Purple Book, etc.

F8-13

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

202-TOXIC-F-MITCHELL

F9 – 13
305.5 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

305.5 Unwanted Fire Ignitions. Where acts or processes have caused repeated ignitions of unwanted fires, the act or process shall be modified to prevent future ignitions.

Reason: Many industrial processes have the potential to produce nuisance fires that generate unwanted alarms necessitating emergency responses which risk health and safety of firefighters and citizens. No other section of the code currently empowers the fire code official to mitigate such nuisance fires.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F9-13

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

305.5 (NEW)-F-ZUBIA-FCAC

F10 – 13
306.1

Proponent: Mark Ritchie, Houston, TX Fire Department, representing self

Revise as follows:

306.1 Motion picture projection rooms. Electric arc, xenon or other light source projection equipment which develops hazardous gases, dust or radiation and the projection of ribbon-type cellulose ~~nitrate~~ acetate film, regardless of the light source used in projection, shall be operated within a motion picture projection room complying with Section 409 of the *International Building Code*.

Reason: This section was not intended to address the projection of cellulose nitrate film. This section was intended to address projection of cellulose acetate film (safety film). The requirements of Section 409 of IBC are intended to provide construction requirements for a projection room where safety film is used and would not be compliant for use of the more hazardous cellulose nitrate film.

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

F10-13

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

306.1-F-RITCHIE

F11 – 13
307.2, 202

Proponent: Mark D. Lenhart, Greensteaders Nonprofit, representing self (info@greensteaders.org)

Revise as follows:

307.2 Permit required. A permit shall be obtained from the *fire code official* in accordance with Section 105.6 prior to kindling a fire for recognized silvicultural or range or wildlife management practices, prevention or control of disease or pests, or a bonfire. Application for such approval shall only be presented by and permits issued to the *owner* of the land upon which the fire is to be kindled.

Exception: Outdoor fires in totally enclosed, low emission, pyrolysis-based char-producing stoves, where the fuel consist of dry, solid, biomass-based organic matter, with the purpose of capturing carbon in the form of char, charcoal, or biochar. Fires so contained shall not be considered open burns.

Add new text as follows:

SECTION 202
GENERAL DEFINITIONS

PYROLYSIS BASED CHAR PRODUCING STOVE. A low emission, pyrolysis-based fire contained in an enclosed chamber, burning dry, solid biomass-based organic matter for the purpose of capturing carbon in the form of char, charcoal, or biochar. Pyrolysis-based stoves may also additionally be used for cooking, heating or other recreational purposes.

Reason: There is an emerging need for regulatory guidance for the public and for public city, fire and safety officials for the installation and operation of small scale pyrolysis based stoves that produce charcoal/biochar. There is a great interest among the agriculture/silviculture/horticultural community as well as gardeners to use charcoal/biochar to augment the soil for crop production, the long term capture of atmospheric carbon, extremely efficient and low emission energy harnessing from renewable biomass materials, and the minimization of toxic agricultural and urban run-off.

Charcoal/biochar is the solid carbon residue resulting from the pyrolysis (carbonization or destructive distillation) of carbonaceous raw materials/feedstock (i.e. wood and/or green biomass material) in an oxygen deficient environment or chamber. The heat causes the feedstock to release much of its water and other organic compounds (off gassing) leaving behind the residue (charcoal/biochar), which is rich in carbon. Charcoal/biochar is then crushed into smaller pieces or pulverized and added to soil. Charcoal/biochar production units vary in construction material, size, fuel type, feedstock and complexity. A typical simple unit consists of combustion chamber, pyrolysis chamber and a stack or chimney. The units can be made from steel, brick and/or cinder blocks or a combination of these materials. The commercial biochar producing industry is in it's infancy, forcing many individuals and small organizations to create their own biochar stocks. Additionally, production of Biochar is ideally a local effort, with a minimum of transportation of the main biomass fuel. For these reasons, home and community gardeners, farmers, university researchers, and landscapers are building small biochar producing stoves.

Given the novelty of the practice and technology, public fire officials are suggesting to public community garden managers that there be uniform guidelines for the use of these types of devices in the International Fire Code to avoid endless replicated efforts at every local municipality across the country.

There exists a strong need to provide a simple, unified code for small scale, small entity, non-commercial pyrolysis stoves to simplify the adoption of this environmentally friendly technology.

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

F11-13

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

307.2-F-LENHART

F12 – 13
308.1.1

Proponent: Bob D. Morgan, P.E., Fort Worth Fire Department, representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

308.1.1 Where prohibited. A person shall not take or utilize an open flame or light in a structure, vessel, boat or other place where highly flammable, combustible or explosive material is utilized or stored. Lighting appliances shall be well-secured in a glass globe and wire mesh cage or a similar *approved* device. Unmanned free-floating devices containing an open flame or other heat source including, but not limited to, sky lanterns shall be prohibited.

Reason: This issue of sky lanterns has become a serious concern among fire officials with many different amendments being adopted in an attempt to address the issue.

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

F12-13

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

308.1.1-F-MORGAN

F13 – 13
308.1.6.3 (New), 202 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Add new text as follows:

308.1.6.3 Sky lanterns. No person shall release or cause to be released an untethered sky lantern.

Add new definition as follows:

SECTION 202
GENERAL DEFINITIONS

SKY LANTERN. An unmanned device with a combustible fuel source that incorporates an open flame in order to make the device airborne.

Reason: Sky lanterns contain an open flame used to heat the air inside the device to make it airborne. Once airborne, these devices are subject to winds and other atmospheric conditions so that the location of the landfall is completely unknown and uncontrolled by the user. Obviously, uncontrolled open flame devices descending out of the sky have the significant potential to start wildfires and structural fires.

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

F13-13

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

308.1.6.3 (NEW)-F-APFELBECK

F14 – 13
310.3.1 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

310.3.1 Group I-2. In Group I-2 occupancies where smoking is prohibited, "No Smoking " signs are not required in interior locations of the facility where signs are displayed at all major entrances into the facility.

Reason: This proposal will provide correlation with NFPA 101 Section 19.7.4.2 which contains an exception for healthcare occupancies that allows for a facility to not install secondary "No Smoking Signs" throughout a facility if primary signs are prominently displayed at all major entrances. This exception is not currently included in the IFC. Since healthcare facilities already prohibit smoking, where signs are posted at the entrances it is redundant and unnecessary to also require the signs to be posted throughout a facility that does not permit smoking, has a staff trained to monitor and policies in place to quickly stop or prevent the action.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost impact: This proposal will not increase the cost of construction.

F14-13

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

310.3.1 (NEW)-F-BALDASSARRA-WILLIAMS-ADHOC-CTC

F15 – 13
312.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

SECTION 312
VEHICLE IMPACT PROTECTION

312.1 General. Vehicle impact protection required by this code shall be provided by posts that comply with Section 312.2 or by other *approved* physical barriers that comply with Section 312.3.

312.2 Posts. Guard posts shall comply with all of the following requirements:

1. Constructed of steel not less than 4 inches (102 mm) in diameter and concrete filled.
2. Spaced not more than 4 feet (1219 mm) between posts on center.
3. Set not less than 3 feet (914 mm) deep in a concrete footing of not less than a 15-inch (381 mm) diameter.
4. Set with the top of the posts not less than 3 feet (914 mm) above ground.
5. Located not less than 3 feet (914 mm) from the protected object.

312.3 Other barriers. ~~Physical barriers shall be a minimum of 36 inches (914 mm) in height and shall resist a force of 12,000 pounds (53 375 N) applied 36 inches (914 mm) above the adjacent ground surface.~~ Barriers other than posts specified in Section 312.2 that are designed to resist, deflect or visually deter vehicular impact commensurate with an anticipated impact scenario shall be permitted when approved.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Contrary to what one might assume by reading the code, the current text of Section 312.3 is not a performance-based alternative design basis for the prescriptive provisions in Section 312.2. Instead, the two sections provide redundant and unrelated approaches to providing impact barriers, and there is no known technical relationship between the two design approaches. Section 312.2 was sourced from the Uniform Fire Code, and it was included in the IFC so that jurisdictions transitioning from the Uniform Fire Code to the IFC would not be forced into having to follow new barrier design criteria. Likewise, Section 312.3 was sourced from the BOCA National Fire Prevention Code, and it was included in the IFC so that jurisdictions transitioning from the BOCA National Fire Prevention Code to the IFC would not be forced into having to follow new barrier design criteria. Given that the 2015 IFC will be the 6th IFC edition following the consolidation of legacy codes; it no longer makes sense to retain this inconsistency. The prescriptively specified bollards specified by Section 312.2 are well-established as the default norm for compliance.

This change revises Section 312.3 so that it is truly a performance option to Section 312.2. The text deliberately establishes a broad set of goals that must be achieved by the designer to fit a site-specific application, and the requirement places the onus on the designer to demonstrate selection of a satisfactory design scenario and a suitable solution to achieve approval by the fire code official. Although one might argue that Section 312.3 might simply be deleted in favor of relying on Section 104.9 (alternate materials and methods), it makes more sense to include the suggested guidance in Section 312.3.

In reviewing this proposal, some may wonder whether it is appropriate to maintain the currently specified 12,000 pound “force” criteria. The answer is “no.” This was deliberately deleted for a couple reasons. First, the 12,000-pound “force” is actually specified as a static load, i.e. a load with no associated impact velocity or acceleration. Without knowing an intended impact velocity, the kinetic energy resistance for a barrier cannot be accurately calculated. It is more appropriate for a performance requirement to accommodate determination of a suitable vehicle weight and impact speed as a design basis.

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

F15-13

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

312.3-F-ZUBIA-FCAC

F16 – 13
315.3.2

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

Revise as follows:

315.3.2 Means of egress. Combustible materials shall not be stored in exits, corridors or enclosures for stairways and ramps.

Reason: The code presently does not address storage of combustible materials in exit access corridors. The code prohibits storage in the exit, but says nothing about the corridor. This will provide the inspector with a tool to regulate the storage of combustible materials in a corridor.

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

F16-13

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

315.3.2-F-ZUBIA-FCAC

F17 – 13
315.3.5 (New), 903.3.1.1.1 (IBC [F] 903.3.1.1.1)

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

315.3.5 Rooms and areas exempted from automatic sprinkler system requirements. Storage shall not be permitted in any room or area where automatic sprinklers have been omitted in accordance with Section 903.3.1.1.1.

Revise as follows:

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

Reason: These exceptions in the IBC go beyond the requirements of NFPA 13 by inserting a heat detection system. Storage needs to be specifically addressed by this section as this exemption can be interpreted to allow storage in an unsprinklered room. Sprinkler systems adjacent to these rooms are not mandated to increase design criteria to accommodate this unsprinklered space. Fires in unsprinklered rooms with unknown or unpermitted storage could overcome the sprinkler system.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F17-13

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

315.3.5 (NEW)-F-ZUBIA-FCAC

F18 – 13
315.6 (New), 202 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

315.6 Storage in Plenums in Group I Occupancies. Storage shall not be permitted in plenums in Group I occupancies. Abandoned material in plenums in Group I occupancies shall be deemed to be storage and shall be removed. The accessible portion of abandoned cables in plenums in Group I occupancies that are not identified for future use with a tag shall be deemed storage and shall be removed.

SECTION 202
GENERAL DEFINITIONS

[M] PLENUM. An enclosed portion of the building structure, other than an occupiable space being conditioned, that is designed to allow air movement, and thereby serve as part of an air distribution system.

Reason: This new section is intended to introduce a concept that has been in the National Electrical Code (as well as in NFPA 90A) for a long time: plenums are intended for a specific use (see definition below), namely to be a part of the air distribution system so as to allow air movement. Plenums are also used (legitimately) for stringing communications and data cables as well as pipes and sprinkler pipes and other similar products. However, in actual fact, it is a common practice not to make the effort to remove products when they become obsolete. Examples include when an updated data system is being installed in the facility (and that typically occurs every 18-24 months). Normally, as the building is being rewired the old wires are cut off the grid but they are left in place and a new wiring system is added on top of them.

The tiles that often support plenums are not intended to support any significant weight and they can, therefore easily be overwhelmed by the added weight of storage or abandoned materials (such as abandoned cables). Recently, Bob Davidson and Sean DeCrane (Plenum Space Fuel Load, NFPA Annual Meeting 2009, M33) did an analysis that showed how the safety of firefighters is compromised by the weight of these abandoned cables. They point out that: “Plenum space fuel loads and wiring issues are a serious concern for fire fighters during interior firefighting operations.” Their key recommendation was: “Take out the abandoned wiring!!”

Although the primary reason to recommend the removal of abandoned materials in plenums is weight, fire safety should also be taken into account.

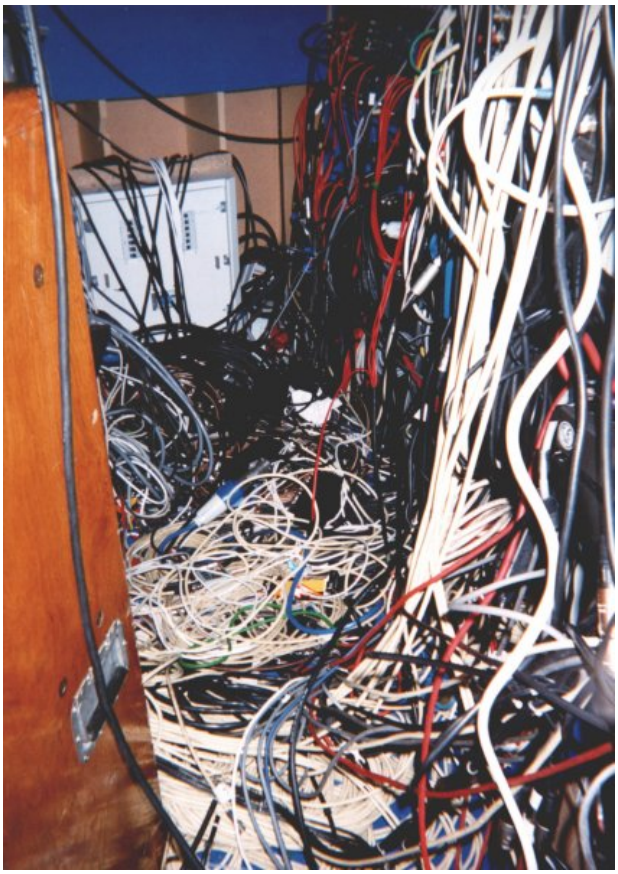
The introduction of a requirement such as the one being proposed here has long been believed not to be enforceable. This is probably true if it were to apply to all occupancies, primarily because fire code inspectors would rarely spend their time looking into plenums in existing buildings. However, the inspection of I occupancies occurs with enough regularity that there should be no significant difficulty in having inspectors identify the existence of abandoned products, especially abandoned cables, classify them as storage and demand their removal.

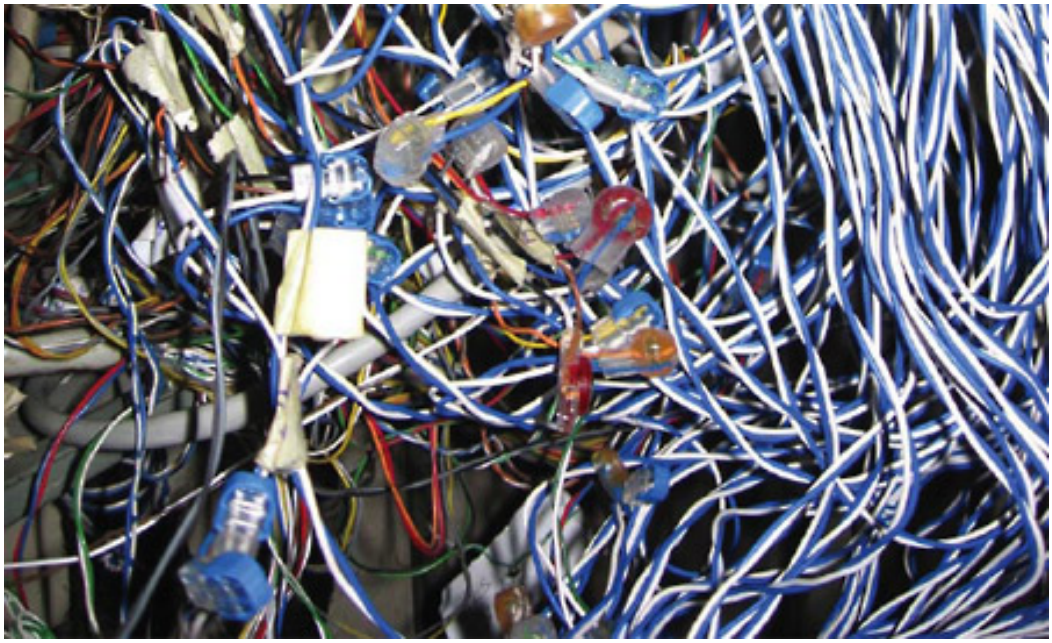
The proposal recommends that only the “accessible portions” of abandoned cables be removed, because there is no intent to cause potential damage to the building or facility by attempting to remove cables or circuits that are strung through walls, floors or other building elements.

This is a safety issue associated with the safety of firefighters and not an issue of the construction of the plenums (or of the use of materials installed in plenums) and is, therefore, suitable for the IFC and not the IMC. Note that the IMC does not specifically prohibit the use of plenums for storage, presumably because such a requirement would not be associated with the construction of the plenums. This issue is associated with General Safety Provisions and is, therefore, primarily suitable for the IFC.

Duplicating the IMC definition of PLENUM in the IFC will assist the fire code official in enforcement of this section.

Photographs of typical wiring in plenums, as found by Davidson and DeCrane, follow:





Cost Impact: Minimal

F18-12

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

315.6 (NEW)-F-HIRSCHLER

F19 – 13
318.1

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

318.1 Laundry carts with a capacity of 1 cubic yard or more. Laundry carts with an individual capacity of 1 cubic yard [200 gallons (0.76 m3)] or more, used in laundries within Group B, E, F-1, I, M and R-1 occupancies shall be constructed of noncombustible materials or materials having a peak rate of heat release not exceeding 300 kW/m^2 at a flux of 50 kW/m^2 when tested in a horizontal orientation in accordance with ASTM E 1354.

Exceptions:

1. Laundry carts in areas protected by an *approved automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1.
2. Laundry carts in coin-operated laundries.
3. Laundry carts in day care facilities.

Reason: Laundry carts are likely to be equally (if not more) hazardous in Group E and M occupancies as in B occupancies. The addition of these occupancies should improve fire safety.

Cost Impact: Minimal

F19-12

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

318.1-F-HIRSCHLER

F20 – 13
319 (New), 202 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Add new text as follows:

SECTION 319
WILDLAND-URBAN INTERFACE AREAS

319.1 General. Buildings, structures or premises within wildland-urban interface areas shall comply with the *International Wildland-Urban Interface Code.*

SECTION 202
GENERAL DEFINITIONS

WILDLAND-URBAN INTERFACE AREA. That geographical area where structures and other human development meets or intermingles with wildland or vegetative fuels.

Reason: This code change:

1. Provides a definition for a "Wildland-Urban Interface Area" in the IFC Section 202 extracted from the definition in the IWUIC.
2. Provides a direct referral to the "Wildland-Urban Interface Code" in a new Section 319 within the IFC.

This code change will integrate the designation of a "Wildland-Urban Interface Area" and the reference International Wildland-Urban Interface Code as an integral part of the IFC. Rather than forcing a local jurisdiction to adopt the IWUIC separately, the IWUIC will be adopted as a reference when the IFC is adopted. The reason for this is two fold:

1. The base IFC should contain Wildland-Urban Interface requirements as an integral part of the document due to the expanding prevalence of these types of hazards that are confronted by the fire official. Users should not be forced to adopt a second document to be able to utilize the IWUIC and effectively address these types of conditions. Wildland-urban interface fire prevention is no different from the other base fire prevention requirements of the IFC and should be included as part of the model fire prevention code.
2. Adding the direct reference to the IWUIC into the IFC will not burden any jurisdiction with the requirement of the document unless there is an actual "Wildland-Urban Interface Area" within the jurisdiction. If there is a "Wildland-Urban Interface Area" within the jurisdiction, then the code should be specifying that the WUIA needs to be protected appropriately and set the standard of protection.

Cost Impact: This code change proposal will increase the cost of construction. Some WUIA that are not currently protected with a code, but should be protected, will end up with protection under this code change.

F20-13

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

319 (NEW)-F-APFELBECK

F21 – 13
401.3.3, 907.6.5.3 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

401.3.3 Delayed notification. A person shall not, by verbal or written directive, require any delay in the reporting of a fire to the fire department.

> **Exception:** Where permitted by the Fire Chief, an approved supervising station shall be allowed to verify an alarm signal prior to reporting it to the public safety communications center. The verification process shall be in accordance with NFPA 72.

Add new text as follows:

907.6.5.3 Alarm Signal Verification. Where permitted by the Fire Chief, an approved supervising station shall be allowed to verify an alarm signal prior to reporting it to the public safety communications center. The verification process shall be in accordance with NFPA 72.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

The intent is to allow fire departments to require verification on both commercial and residential alarm signals in order to assist in effective dispatching of resources and/or reducing nuisance alarms. Currently NFPA 72 allows verification on residential systems (but gives choice of using it to the monitoring company). This would give discretion to the fire chief, and expand use to include commercial alarms which accounts for the majority of false alarms in the U.S.

These provisions allow fire departments to require that alarm monitoring centers attempt to verify an alarm signal before reporting to the 9-1-1 center. Having better information about the cause of alarm activation is critical as many departments have much smaller responses for an automatic alarm signal than for a working structure fire. Additionally, verification has been proven effective in reducing unwanted nuisance alarms. Alarm Verification is already performed extensively on residential fire alarms; this would allow it to be mandated on some or all systems, including commercial occupancies, when required by the Chief.

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

F21-13

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

401.3.3-F-ZUBIA-FCAC

F22 – 13
403.2

Proponent: Stephen DiGiovanni, Clark County, NV Fire Department, representing self.

Revise as follows:

403.2 Public safety plan. ~~In other than Group A or E occupancies,~~ ~~w~~Where the fire code official determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the fire code official shall have the authority to order the development of, or prescribe a plan for, the provision of an approved level of public safety.

Reason: The exception that eliminates this section from applying to Group A and E occupancies is removed. The majority of crowd management issues occur in places that are considered assembly occupancies. As such, this section would most reasonably apply to Group A occupancies. In addition, Group E occupancy buildings typically are public buildings that are used for a variety of functions that involve gathering of persons. These may be school functions or other community functions, such as voting locations, religious functions, etc. As such, this section would also apply to Group E occupancies. Removing this phrase permits the fire code official to address safety concerns stemming from public gatherings in all buildings, not just a select few.

Cost Impact: This proposal would increase the costs of holding indoor and outdoor gatherings in Group A and Group E occupancies where required by the fire code official to have a public safety plan.

F22-13

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

403.2-F-DIGIOVANNI

F23 – 13
403.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

403.3 Crowd managers. Trained crowd managers shall be provided for ~~facilities or~~ events where more than ~~1,000~~ 250 or more persons congregate. The minimum number of crowd managers shall be established at a ratio of one crowd manager to every 250 persons. ~~Where *approved* by the *fire code official*, the ratio of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an *approved automatic sprinkler system* or based upon the nature of the event.~~

Exceptions:

1. Where approved, the number of crowd managers shall be permitted to be reduced by up to 50 percent where the fire and life safety protection provided and the nature of the event warrant a reduction.
2. Gatherings exclusively for religious worship with an occupant load not exceeding 1,000.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

The current code has no requirement for crowd managers until the occupant load in a public assembly reaches 1,000, then the code requires five trained crowd managers for an occupant load of 1001. This is illogical, especially since one of the events that generated this requirement, the Station Nightclub Fire, had an occupant load of less than 500. Smaller venues sometimes place the public at greater risk than large ones for many reasons, including the fact that larger facilities have greater requirements for other fire protection features. NFPA 1 and NFPA 101 require crowd managers in all public assemblies (except churches), so approving this code change will bring the two regulations closer to conformity.

The formatting change to place the potential reduction in the number of crowd managers in an exception is editorial; the exception was also changed to limit the reduction to half of the required number of crowd managers. Recent events have again emphasized that fire is not the only reason people will need to quickly exit a facility, so reducing the number strictly on the basis of a sprinkler system may be problematic. The exception for places of worship with occupant loads up to 1,000 recognizes the fact that people who are in these places of assembly normally have a greater awareness of their surroundings, and are more familiar with egress routes because they attend the church on a more regular basis than those at performances, who tend to be more transient.

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

F23-13

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

403.3-F-ZUBIA-FCAC

F24 – 13
403.3.1 (New), 403.3.2 (New)

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

403.3.1 Training. Training for crowd managers shall be approved.

403.3.2 Duties. The duties of crowd managers shall include, but not be limited to:

1. Conduct an inspection of the area of responsibility and identify and address any egress barriers.
2. Conduct an inspection of the area of responsibility to identify and mitigate any fire hazards.
3. Verify compliance with all permit conditions, including those governing pyrotechnics and other special effects.
4. Direct and assist the event attendees in evacuation during an emergency.
5. Assist emergency response personnel where ~~if~~ requested.
6. Other duties required by the fire code official.
7. Other duties as specified in the fire safety plan

Reason: The Code requires "trained crowd managers", but doesn't provide any guidance or describe what that training should include. This has been an ongoing issue for enforcement personnel. This change is intended to address that void.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F24-13

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

403.3.1 (NEW)-F-ZUBIA-FCAC

F25– 13
403, 404, 405, 406.1.1, 406.3.3, 408, 311.6

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

SECTION 403 ~~408~~
~~USE AND OCCUPANCY-RELATED~~EMERGENCY PREPAREDNESS REQUIREMENTS

403.1 ~~408.1~~ General. In addition to the requirements of Section 401, occupancies, uses and outdoor locations shall comply with the emergency preparedness requirements set forth in Sections 403.2 through 403.11. Where a firesafety and evacuation plan is required by Sections 403.2 through 403.11, evacuation drills shall be in accordance with Section 405 and employee training shall be in accordance with Section 406. ~~In addition to the other requirements of this chapter, the provisions of this section are applicable to specific occupancies listed herein.~~

403.2 ~~408.2~~ Group A occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group A occupancies, other than those occupancies used exclusively for purposes of religious worship with an *occupant load* less than 2,000, and for buildings containing both a Group A occupancy and an atrium. Group A occupancies shall also comply with ~~the requirements of~~ Sections 403.2.1 through 403.2.4~~408.2.1 and 408.2.2 and Sections 401 through 406~~.

403.2.1 ~~408.2.1~~ Seating plan. In addition to the requirements of Section 404.2, t~~T~~he fire safety and evacuation plans for assembly occupancies shall include ~~the information required by Section 404.3 and~~ a detailed seating plan, *occupant load* and *occupant load* limit. Deviations from the *approved* plans shall be allowed provided the *occupant load* limit for the occupancy is not exceeded and the *aisles* and exit accessways remain unobstructed.

403.2.2 ~~408.2.2~~ Announcements. *(No change to current text)*

403.2.3 Fire watch personnel. Fire watch personnel shall be provided where required by Section 403.11.1.

403.2.4 Crowd managers. Crowd managers shall be provided where required by Section 403.11.3.

403.3 Group B occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group B occupancy where the Group B occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge* .

403.4 Group E occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group E occupancies and for buildings containing both a Group E occupancy and an atrium. Group E occupancies shall also comply with Section 403.4.1

403.4.1 ~~408.3~~ Group E occupancies ~~and Group R-2 college and university buildings~~. Group E occupancies shall comply with ~~the requirements of~~ Sections 403.4.1.1 through 403.4.1.3~~408.3.1 through 408.3.4 and Sections 401 through 406. Group R-2 college and university buildings shall comply with the requirements of Sections 408.3.1 and 408.3.3 and Sections 401 through 406.~~

403.4.1.1 ~~408.3.1~~ First emergency evacuation drill. *(No change to current text)*

~~**408.3.2 Emergency evacuation drill deferral.** In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.~~

403.4.1.2 ~~408.3.3~~ Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. ~~In Group R-2 college and university buildings, one required drill shall be held during hours after sunset or before sunrise.~~

403.4.1.3 ~~408.3.4~~ Assembly points. *(No change to current text)*

403.5 Group F occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group F occupancy where the Group F occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge* .

403.6 Group H Occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group H occupancies. Group H-5 occupancies shall also comply with Section 403.6.1.

403.6.1 ~~408.4~~ Group H-5 occupancies. Group H-5 occupancies shall comply with ~~the requirements of~~ Sections 403.6.1.1 through 403.6.1.4~~408.4.1 through 408.4.4 and Sections 401 through 407.~~

403.6.1.1 ~~408.4.1~~ Plans and diagrams. *(No change to current text)*

403.6.1.2 ~~408.4.2~~ Plan updating. The plans and diagrams required by Section 404, 403.6.1.1 and 407.6~~408.4.1~~ shall be maintained up to date and the *fire code official* and fire department shall be informed of ~~all~~ major changes.

403.6.1.3 ~~408.4.3~~ Emergency response team. Responsible persons shall be designated ~~the~~ as an on-site emergency response team and trained to be liaison personnel for the fire department. These persons shall aid the fire department in preplanning emergency responses, identifying locations where HPM is stored, handled and used, and be familiar with the chemical nature of such material. An adequate number of personnel for each work shift shall be designated.

403.6.1.4 ~~408.4.4~~ Emergency drills. *(No change to current text)*

403.7 Group I occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group I occupancies. Group I occupancies shall also comply with Sections 403.7.1 through 403.7.3

403.7.1 ~~408.5~~ Group I-1 occupancies. Group I-1 occupancies shall comply with ~~the requirements of~~ Sections 403.7.1.1 through 403.7.1.6~~408.5.1 through 408.5.5 and Sections 401 through 406.~~

403.7.1.1 ~~408.5.1~~ Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special ~~staff~~ employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of any resident with unusual needs.

403.7.1.2 ~~408.5.2~~ ~~Staff~~ Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by ~~the staff~~ employees at intervals not exceeding ~~least every~~ two months. A copy of the plan shall be readily available at all times within the facility.

403.7.1.3 ~~408.5.3~~ Resident training. *(No change to current text)*

403.7.1.4 ~~408.5.4~~ Drill frequency. *(No change to current text)*

403.7.1.5 Drill times. Drills times are not required to comply with the time requirements of Section 405.4.

403.7.1.6 408.5.5 Resident participation in drills. *(No change to current text)*

403.7.2 408.6 Group I-2 occupancies. Group I-2 occupancies shall comply with the requirements of Sections 403.7.2.1 through 403.7.2.3408.6.1 and 408.6.2 and Sections 401 through 406.

403.7.2.1 Drill times. Drills times are not required to comply with the time requirements of Section 405.4.

4037.2.2 408.6.1 Evacuation not required. *(No change to current text)*

403.7.2.3 408.6.2 Coded alarm signal. *(No change to current text)*

403.7.3 408.7 Group I-3 occupancies. Group I-3 occupancies shall comply with the requirements of Sections 403.7.3.1 through 403.7.3.4408.7.1 through 408.7.4 and Sections 401 through 406.

403.7.3.1 408.7.1 Employee training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. Training of new staff employees shall be provided promptly upon entrance on duty. Refresher training shall be provided at least annually.

403.7.3.2 408.7.2 Employee sStaffing. Group I-3 occupancies shall be provided with 24-hour staffing. Staff An employee shall be within three floors or 300 feet (91 440 mm) horizontal distance of the access door of each resident housing area. In Use Conditions 3, 4 and 5, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, the arrangement shall be such that the staff employee involved can start release of locks necessary for emergency evacuation or rescue and initiate other necessary emergency actions within 2 minutes of an alarm.

> **Exception:** An employeeStaff shall not be required to be within three floors or 300 feet (9144 mm) in areas in which all locks are unlocked remotely and automatically in accordance with Section 408.4 of the *International Building Code*.

403.7.3.3 408.7.3 Notification. Provisions shall be made for residents in Use Conditions 3, 4 and 5, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, to readily notify an employeestaff of an emergency.

403.7.3.4 408.7.4 Keys. Keys necessary for unlocking doors installed in a *means of egress* shall be individually identifiable by both touch and sight.

403.8 Group M occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group M occupancy, where the Group M occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge,* and for buildings containing both a Group M occupancy and an atrium.

403.9 Group R occupancies.

403.9.1 408.8 Group R-1 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-1 occupancies. Group R-1 occupancies shall also comply with the requirements of Sections 403.9.1.1 through 403.9.1.3.408.8.1 through 408.8.3 and Sections 401 through 406.

403.9.1.1 408.8.1 Evacuation diagrams. *(No change to current text)*

403.9.1.2 408.8.2 Emergency duties. *(No change to current text)*
403.9.1.3 408.8.3 Fire safety and evacuation instructions. *(No change to current text)*

403.9.2 ~~408.9~~ Group R-2 occupancies. Group R-2 occupancies shall comply with ~~the requirements of~~ Sections 403.9.2.1 through 403.9.2.3~~408.9.1 through 408.9.4 and Sections 401 through 406~~.

403.9.2.1. College and University Buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-2 college and university buildings. Group R-2 college and university buildings shall also comply with Sections 403.9.2.1 and 403.9.2.2.

403.9.2.1.1 First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.9.2.1.2 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. One required drill shall be held during hours after sunset or before sunrise.

403.9.2.2 ~~408.9.1~~ Emergency guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.9.2.2.1 through 403.9.2.2.3

403.9.2.2.1 Guide contents. ~~A f~~Fire emergency guides shall ~~be provided which~~ describe~~s~~ the location, function and use of fire protection equipment and appliances accessible to residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. ~~The~~ Gguides shall also include an emergency evacuation plan for each *dwelling unit*.

403.9.2.2.2 ~~408.9.3~~ Emergency guide m~~M~~aintenance. Emergency guides shall be reviewed and *approved* by the *fire code official.*~~in accordance with Section 401.2. Evacuation diagrams shall be reviewed and updated in accordance with Section 404.4.~~

403.9.2.2.3 ~~408.9.4~~ Emergency guide d~~D~~istribution. *(No change to current text)*

403.9.2.3 Evacuation diagrams for dormitories. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each dormitory sleeping unit. Evacuation diagrams shall be reviewed and updated as needed to maintain accuracy.

403.9.3 ~~408.10~~ Group R-4 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall also comply with ~~the requirements of~~ Sections 403.9.3.1 through 403.9.3.6~~408.10.1 through 408.10.5 and Sections 401 through 406~~.

403.9.3.1 ~~408.10.1~~ Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special ~~staff~~ employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of a resident with unusual needs.

403.9.3.2 ~~408.10.2~~ ~~Staff~~ Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding ~~the staff at least every~~ two months. A copy of the plan shall be readily available at all times within the facility.

403.9.3.3 ~~408.10.3~~ Resident training. *(No change to current text)*

403.9.3.4 ~~408.10.4~~ Drill frequency. *(No change to current text)*

403.9.3.5 Drill times. Drills times are not required to comply with ~~the time requirements of~~ Section 405.4.

403.9.3.6 ~~408.10.5~~ Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

Exception: Actual exiting from windows shall not be required. Opening the window and signaling for help shall be an acceptable alternative.

403.10 Special uses. Special uses shall be in accordance with Sections 403.10.1 through 403.10.3.

403.10.1 ~~408.11~~ Covered and open mall buildings. Covered and open mall buildings shall comply with the ~~provisions~~ requirements of Sections 403.10.1.1 through 403.10.1.6~~408.11.1 through 408.11.3~~.

403.10.1.1 Malls and mall buildings exceeding 50,000 square feet. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for covered malls exceeding 50,000 square feet (4645 m_2) in aggregate floor area and for open mall buildings exceeding 50,000 square feet (4645 m_2) in aggregate area within the perimeter line.

403.10.1.2 ~~408.11.1~~ Lease plan. In addition to the requirements of Section 404.2.2, a~~A~~ lease plan that includes the following information shall be prepared for each covered and open 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, elevator machine rooms and controls.
   3.5. Hose valve 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*.

403.10.1.3 ~~408.11.1.1~~ Lease plan approval. *(No change to current text)*

403.10.1.4 ~~408.11.1.2~~ Lease plan revisions. *(No change to current text)*

403.10.1.5~~408.11.2~~ Tenant identification. Tenant identification shall be provided for secondary exits from occupied tenant spaces that lead to an *exit corridor* or directly to the exterior of the building. ~~Each occupied tenant space provided with a secondary exit to the exterior or exit *corridor* shall be provided with tenant identification by~~ Tenant identification shall be posted on the exterior side of the exit or exit access door and shall identify the business name and/or address~~. Letters and numbers shall be posted on the *corridor* side of the door, be~~ using plainly legible letters and numbers that ~~and shall~~ contrast with their background.

Exception: Tenant identification is not required for anchor stores.

(Section 408.11.3 Moved to new Section 311.6)

403.10.1.6 Unoccupied tenant spaces. The fire safety and evacuation plan shall provide for compliance with the requirements for unoccupied tenant spaces in Section 311.

403.10.2 High-rise buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for high-rise buildings.

403.10.3 Underground buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for underground buildings.

403.11 Special requirements for public safety. Special requirements for public safety shall be in accordance with Sections 403.11.1 through 403.11.3.1.

~~SECTION 403~~
~~PUBLIC ASSEMBLAGES AND EVENTS~~

403.11.1~~403.1~~ Fire watch personnel. When, in the opinion of the *fire code official*, it is essential for public safety in a place of assembly or any other place where people congregate, because of the number of persons~~,~~ or the nature of the performance, exhibition, display, contest or activity, the *owner*, agent or lessee shall provide one or more fire watch personnel, as required and *approved*~~,~~. Fire watch personnel shall comply with Sections 403.11.1.1 and 403.11.1.2. ~~to remain on duty during the times such places are open to the public, or when such activity is being conducted.~~

~~**403.1.1 Duties.** Fire watch personnel shall keep diligent watch for fires, obstructions to *means of egress* and other hazards during the time such place is open to the public or such activity is being conducted and take prompt measures for remediation of hazards, extinguishment of fires that occur and assist in the evacuation of the public from the structures.~~

403.11.1.1 Duty Times. Fire watch personnel shall remain on duty during the times places requiring a fire watch are open to the public, or when an activity requiring a fire watch is being conducted.

403.11.1.2 Duties. On-duty fire watch personnel shall have the following duties:

1. Keep diligent watch for fires, obstructions to *means of egress* and other hazards
2. Take prompt measures for remediation of hazards and extinguishment of fires that occur
3. Take prompt measures to assist in the evacuation of the public from the structures.

403.11.2 ~~403.2~~ Public safety plan for gatherings. In other than Group A or E occupancies, where the *fire code official* determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the *fire code official* shall have the authority to order the development of or prescribe a public safety plan that provides an approved level of public safety and addresses the following items:~~, or prescribe a plan for, the provision of an *approved* level of public safety.~~

~~**403.2.1 Contents.** The public safety plan, where required by Section 403.2, shall address such items~~

1. ~~as~~ Emergency vehicle ingress and egress
2. ~~–~~Fire protection
3. ~~—~~Emergency egress or escape routes
4. Emergency medical services
5. ~~—~~Public assembly areas
6. ~~and~~ The directing of both attendees and vehicles~~,~~ ~~(~~including the parking of vehicles~~)~~
7. ~~,~~ Vendor and food concession distribution
8. ~~, and~~ The need for the presence of law enforcement
9. ~~, and~~ The need for fire and emergency medical services personnel~~ at the event~~.

403.11.3 ~~403.3~~ Crowd managers for gatherings exceeding 1,000 people. ~~Trained crowd managers shall be provided for~~ Where facilities or events involve a gathering of~~ where~~ more than 1,000 people, crowd managers shall be provided in accordance with Section 403.11.3.1.~~persons congregate. The minimum number of crowd managers shall be established at a ratio of one crowd manager to every 250~~

~~persons. Where *approved* by the *fire code official*, the ratio of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an *approved automatic sprinkler system* or based upon the nature of the event.~~

403.11.3.1 Number of crowd managers. The minimum number of crowd managers shall be established at a ratio of one crowd manager for ~~to~~ every 250 persons.

Exception: Where *approved* by the *fire code official*, the ~~ratio~~ number of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an *approved automatic sprinkler system* or based upon the nature of the event.

SECTION 404
FIRE SAFETY, ~~AND~~ EVACUATION AND LOCKDOWN PLANS

404.1 General. Where required by Section 403, f~~F~~ire safety, evacuation and lockdown plans ~~and associated drills~~ shall comply with ~~the requirements of~~ Sections 404.2 through 404.4.1~~404.5.1~~.

~~**404.2 Where required.** An *approved* fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings.~~

~~1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an *occupant load* less than 2,000.~~
~~2. Group B buildings having an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge*.~~
~~3. Group E.~~
~~4. Group F buildings having an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge*.~~
~~5. Group H.~~
~~6. Group I.~~
~~7. Group R-1.~~
~~8. Group R-2 college and university buildings.~~
~~9. Group R-4.~~
~~10. High-rise buildings.~~
~~11. Group M buildings having an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge*.~~
~~12. Covered malls exceeding 50,000 square feet (4645 m_2) in aggregate floor area.~~
~~13. Open mall buildings exceeding 50,000 square feet (4645 m_2) in aggregate area within perimeter line.~~
~~14. Underground buildings.~~
~~15. Buildings with an atrium and having an occupancy in Group A, E or M.~~

SECTION 405
EMERGENCY EVACUATION DRILLS

405.1 General. Emergency evacuation drills complying with ~~the provisions of this section~~ Sections 405.2 through 405.9 shall be conducted at least annually ~~in the occupancies listed in Section 404.2~~where firesafety and evacuation plans are required by Section 403 or when required by the *fire code official*. Drills shall be designed in cooperation with the local authorities.

405.2 Frequency. *(No change to current text)*

405.3 Leadership. *(No change to current text)*

405.4 Time. *(No change to current text)*

405.5 Record keeping. Records shall be maintained of required emergency evacuation drills and include the following information:

1. Identity of the person conducting the drill.
2. Date and time of the drill.
3. Notification method used.
4. ~~Staff members~~ Employees on duty and participating.
5. Number of occupants evacuated.
6. Special conditions simulated.
7. Problems encountered.
8. Weather conditions when occupants were evacuated.
9. Time required to accomplish complete evacuation.

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B[c]	Annually	Employees
Group E	Monthly[a]	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees[b]
Group R-1	Quarterly on each shift	Employees
Group R-2[d]	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees[b]
High-rise buildings	Annually	Employees

a. In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency~~*The* frequency shall be allowed to be modified in accordance with Section 408.3.2~~.
b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 403.9.3.6~~408.10.5~~. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
d. Applicable to Group R-2 college and university buildings in accordance with Section 403.9.2.1~~408.3~~.

406.1 General. Where fire safety and evacuation plans are required by Section 403, ~~E~~employees ~~in the occupancies listed in Section 404.2~~ shall be trained in ~~the~~ fire emergency procedures ~~described in their fire evacuation and fire safety plans~~. ~~Training shall be~~ based on plans prepared in accordance with Section 404.~~these plans and as described in Section 404.3.~~

~~**406.3.3 Emergency lockdown training.** Where a facility has a lockdown plan, employees shall be trained on their assigned duties and procedures in the event of an emergency lockdown. *(moved to Section 406.4)*~~

~~**406.3.4**~~ **406.3.3 Fire safety training.** *(No change to current text)*

406.4 ~~**406.3.3**~~ **Emergency lockdown training.** *(No change to current text)*

Revise as follows:

311.1 General. Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Sections 311.1.1 through 311.5.6~~5~~.

311.6. ~~408.11.3 Maintenance~~Unoccupied tenant spaces in mall buildings. Unoccupied tenant spaces in covered and open mall buildings shall be:

1. Kept free from the storage of any materials.
2. Separated from the remainder of the building by partitions of at least 0.5-inch-thick (12.7 mm) gypsum board or an *approved* equivalent to the underside of the ceiling of the adjoining tenant spaces.
3. Without doors or other access openings other than one door that shall be kept key locked in the closed position except during that time when opened for inspection.
4. Kept free from combustible waste and be broomswept clean.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal restructures Chapter 4 to place all of the core requirements in the front of the chapter in Section 403. The current code splits such requirements between Section 404.2 and Section 408, making the code difficult to follow and apply. Section 403 in this proposal includes the requirements previously included in Sections 404.2 and 408, which have been merged by occupancy classification or as otherwise appropriate.

The overall intent of this proposal is editorial revision. Provisions have been relocated and text has been edited in an effort to clarify what is believed to be the current intent without technical change and to improve readability. One section dealing with maintenance of unoccupied tenant spaces in malls was determined to be improperly located in Chapter 4 and was moved to Chapter 3 with other vacant use regulations.

In preparing this proposal, it was noted that the provisions for emergency evacuation drills for Group I-1 (403.7.1.6 of the rewrite) and Group R-4 (403.9.3.6 of the rewrite) are not consistent. This may have been deliberate when Chapter 4 was originally written, but it warrants a review to determine if the inconsistency is appropriate.

One change that was made corrects an error made by the Code Correlation Committee when they made what was believed to be an editorial addition to the code in Section 408.9.3 of the 2012 edition. That addition referenced Section 404.4 for review and updating of evacuation diagrams for any Group R-2 dormitory. The reference to Section 404.4 was incorrect because that section only relates to fire safety and evacuation plans, which are not required for Group R-2 except for college and university buildings. This error has been fixed in Section 403.9.2.3.

Because of the complexity of these revisions in legislative format, a clean copy of the final text is provided below to allow an easier review of the proposed text for the 2015 code:

SECTION 403
EMERGENCY PREPAREDNESS REQUIREMENTS

403.1 General. In addition to the requirements of Section 401, occupancies, uses and outdoor locations shall comply with the emergency preparedness requirements set forth in Sections 403.2 through 403.11. Where a firesafety and evacuation plan is required by Sections 403.2 through 403.11, evacuation drills shall be in accordance with Section 405 and employee training shall be in accordance with Section 406.

403.2 Group A occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group A occupancies, other than those occupancies used exclusively for purposes of religious worship with an *occupant load* less than 2,000, and for buildings containing both a Group A occupancy and an atrium. Group A occupancies shall also comply with Sections 403.2.1 through 403.2.4.

403.2.1 Seating plan. In addition to the requirements of Section 404.2, the fire safety and evacuation plans for assembly occupancies shall include a detailed seating plan, *occupant load* and *occupant load* limit. Deviations from the *approved* plans shall be allowed provided the *occupant load* limit for the occupancy is not exceeded and the *aisles* and exit accessways remain unobstructed.

403.2.2 Announcements. In theaters, motion picture theaters, auditoriums and similar assembly occupancies in Group A used for noncontinuous programs, an audible announcement shall be made not more than 10 minutes prior to the start of each program to notify the occupants of the location of the exits to be used in the event of a fire or other emergency.

Exception: In motion picture theaters, the announcement is allowed to be projected upon the screen in a manner *approved* by the *fire code official*.

403.2.3 Fire watch personnel. Fire watch personnel shall be provided where required by Section 403.11.1.

403.2.4 Crowd managers. Crowd managers shall be provided where required by Section 403.11.3.

403.3 Group B occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group B occupancy where the Group B occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge* .

403.4 Group E occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group E occupancies and for buildings containing both a Group E occupancy and an atrium. Group E occupancies shall also comply with Section 403.4.1

403.4.1 Group E occupancies . Group E occupancies shall comply with Sections 403.4.1.1 through 403.4.1.3

403.4.1.1First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.4.1.2 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires.

403.4.1.3 Assembly points. Outdoor assembly areas shall be designated and shall be located a safe distance from the building being evacuated so as to avoid interference with fire department operations. The assembly areas shall be arranged to keep each class separate to provide accountability of all individuals.

403.5 Group F occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group F occupancy where the Group F occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge* .

403.6 Group H Occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group H occupancies. Group H-5 occupancies shall also comply with Section 403.6.1.

403.6.1 Group H-5 occupancies. Group H-5 occupancies shall comply with Sections 403.6.1.1 through 403.6.1.4

403.6.1.1 Plans and diagrams. In addition to the requirements of Section 404 and Section 407.6, plans and diagrams shall be maintained in *approved* locations indicating the approximate plan for each area, the amount and type of HPM stored, handled and used, locations of shutoff valves for HPM supply piping, emergency telephone locations and locations of exits.

403.6.1.2 Plan updating. The plans and diagrams required by Section 404, 403.6.1.1 and 407.6 shall be maintained up to date and the *fire code official* and fire department shall be informed of major changes.

403.6.1.3 Emergency response team. Responsible persons shall be designated as an on-site emergency response team and trained to be liaison personnel for the fire department. These persons shall aid the fire department in preplanning emergency responses, identifying locations where HPM is stored, handled and used, and be familiar with the chemical nature of such material. An adequate number of personnel for each work shift shall be designated.

403.6.1.4 Emergency drills. Emergency drills of the on-site emergency response team shall be conducted on a regular basis but not less than once every three months. Records of drills conducted shall be maintained.

403.7 Group I occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group I occupancies. Group I occupancies shall also comply with Sections 403.7.1 through 403.7.3

403.7.1 Group I-1 occupancies. Group I-1 occupancies shall comply with Sections 403.7.1.1 through 403.7.1.6

403.7.1.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of any resident with unusual needs.

403.7.1.2 Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding two months. A copy of the plan shall be readily available at all times within the facility.

403.7.1.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

403.7.1.4 Drill frequency. Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation.

403.7.1.5 Drill times. Drill times are not required to comply with Section 405.4.

403.7.1.6 Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point.

403.7.2 Group I-2 occupancies. Group I-2 occupancies shall comply with Sections 403.7.2.1 through 403.7.2.3.

403.7.2.1 Drill times. Drill times are not required to comply with Section 405.4.

4037.2.2 Evacuation not required. During emergency evacuation drills, the movement of patients to safe areas or to the exterior of the building is not required.

403.7.2.3 Coded alarm signal. When emergency evacuation drills are conducted after visiting hours or when patients or residents are expected to be asleep, a coded announcement is allowed instead of audible alarms.

403.7.3 Group I-3 occupancies. Group I-3 occupancies shall comply with Sections 403.7.3.1 through 403.7.3.4.

403.7.3.1 Employee training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. Training of new employees shall be provided promptly upon entrance on duty. Refresher training shall be provided at least annually.

403.7.3.2 Employee staffing. Group I-3 occupancies shall be provided with 24-hour staffing. An employee shall be within three floors or 300 feet (91 440 mm) horizontal distance of the access door of each resident housing area. In Conditions 3, 4 and 5, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, the arrangement shall be such that the employee involved can start release of locks necessary for emergency evacuation or rescue and initiate other necessary emergency actions within 2 minutes of an alarm.

> **Exception:** An employee shall not be required to be within three floors or 300 feet (9144 mm) in areas in which all locks are unlocked remotely and automatically in accordance with Section 408.4 of the *International Building Code*.

403.7.3.3 Notification. Provisions shall be made for residents in Conditions 3, 4 and 5, as defined in "Occupancy Classification – Institutional Group I-3" in Chapter 2, to readily notify an employee of an emergency.

403.7.3.4 Keys. Keys necessary for unlocking doors installed in a *means of egress* shall be individually identifiable by both touch and sight.

403.8 Group M occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for buildings containing a Group M occupancy, where the Group M occupancy has an *occupant load* of 500 or more persons or more than 100 persons above or below the lowest *level of exit discharge,* and for buildings containing both a Group M occupancy and an atrium.

403.9 Group R occupancies.

403.9.1 Group R-1 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-1 occupancies. Group R-1 occupancies shall also comply with Sections 403.9.1.1 through 403.9.1.3.

403.9.1.1 Evacuation diagrams. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each hotel or motel sleeping unit.

403.9.1.2 Emergency duties. Upon discovery of a fire or suspected fire, hotel and motel employees shall perform the following duties:

1. Activate the fire alarm system, where provided.
2. Notify the public fire department.
3. Take other action as previously instructed.

403.9.1.3 Fire safety and evacuation instructions. Information shall be provided in the fire safety and evacuation plan required by Section 404 to allow guests to decide whether to evacuate to the outside, evacuate to an *area of refuge*, remain in place, or any combination of the three.

403.9.2 Group R-2 occupancies. Group R-2 occupancies shall comply with Sections 403.9.2.1 through 403.9.2.3.

403.9.2.1. College and University Buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-2 college and university buildings. Group R-2 college and university buildings shall also comply with Sections 403.9.2.1 and 403.9.2.2.

403.9.2.1.1 First emergency evacuation drill. The first emergency evacuation drill of each school year shall be conducted within 10 days of the beginning of classes.

403.9.2.1.2 Time of day. Emergency evacuation drills shall be conducted at different hours of the day or evening, during the changing of classes, when the school is at assembly, during the recess or gymnastic periods, or during other times to avoid distinction between drills and actual fires. One required drill shall be held during hours after sunset or before sunrise.

403.9.2.2 Emergency guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.9.2.2.1 through 403.9.2.2.3

403.9.2.2.1 Guide contents. Fire emergency guides shall describe the location, function and use of fire protection equipment and appliances accessible to residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. Guides shall also include an emergency evacuation plan for each *dwelling unit*.

403.9.2.2.2 Emergency guide maintenance. Emergency guides shall be reviewed and *approved* by the *fire code official.*

403.9.2.2.3 Emergency guide distribution. A copy of the emergency guide shall be given to each tenant prior to initial occupancy.

403.9.2.3 Evacuation diagrams for dormitories. A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required egress door from each dormitory sleeping unit. Evacuation diagrams shall be reviewed and updated as needed to maintain accuracy.

403.9.3 Group R-4 occupancies. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall also comply with Sections 403.9.3.1 through 403.9.3.6.

403.9.3.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of a resident with unusual needs.

403.9.3.2 Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding two months. A copy of the plan shall be readily available at all times within the facility.

403.9.3.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

403.9.3.4 Drill frequency. Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation.

403.9.3.5 Drill times. Drills times are not required to comply with Section 405.4.

403.9.3.6 Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

> **Exception:** Actual exiting from windows shall not be required. Opening the window and signaling for help shall be an acceptable alternative.

403.10 Special uses.

403.10.1 Covered and open mall buildings. Covered and open mall buildings shall comply with the requirements of Sections 403.10.1.1 through 403.10.1.6.

403.10.1.1 Malls and mall buildings exceeding 50,000 square feet. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for covered malls exceeding 50,000 square feet (4645 m2) in aggregate floor area and for open mall buildings exceeding 50,000 square feet (4645 m2) in aggregate area within perimeter line.

403.10.1.2 Lease plan. In addition to the requirements of Section 404.2.2, a lease plan that includes the following information shall be prepared for each covered and open mall building:

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, elevator machine rooms and controls.
3.5. Hose valve 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*.

403.10.1.3 Lease plan approval. The lease plan shall be submitted to the *fire code official* for approval, and shall be maintained on site for immediate reference by responding fire service personnel.

403.10.1.4 Lease plan revisions. The lease plans shall be revised annually or as often as necessary to keep them current. Modifications or changes in tenants or occupancies shall not be made without prior approval of the *fire code official* and building official.

403.10.1.5 Tenant identification. Tenant identification shall be provided for secondary exits from occupied tenant spaces that lead to an *exit corridor* or directly to the exterior of the building. Tenant identification shall be posted on the exterior side of the exit or exit access door and shall identify the business name and/or address using plainly legible letters and numbers that contrast with their background.

Exception: Tenant identification is not required for anchor stores.

403.10.1.6 Unoccupied tenant spaces. The fire safety and evacuation plan shall provide for compliance with the requirements for unoccupied tenant spaces in Section 311.

403.10.2 High-rise buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for high-rise buildings.

403.10.3 Underground buildings. An *approved* fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for underground buildings.

403.11 Special requirements for public safety.

403.11.1 Fire watch personnel. When, in the opinion of the *fire code official*, it is essential for public safety in a place of assembly or any other place where people congregate, because of the number of persons or the nature of the performance, exhibition, display, contest or activity, the *owner*, agent or lessee shall provide one or more fire watch personnel, as required and *approved*. Fire watch personnel shall comply with Sections 403.11.1.1 and 403.11.1.2.

403.11.1.1 Duty Times. Fire watch personnel shall remain on duty during the times places requiring a fire watch are open to the public, or when an activity requiring a fire watch is being conducted.

403.11.1.2 Duties. On-duty fire watch personnel shall have the following duties:

1. Keep diligent watch for fires, obstructions to *means of egress* and other hazards
2. Take prompt measures for remediation of hazards and extinguishment of fires that occur
3. Take prompt measures to assist in the evacuation of the public from the structures.

403.11.2 Public safety plan for gatherings. In other than Group A or E occupancies, where the *fire code official* determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the *fire code official* shall have the authority to order the development of or prescribe a public safety plan that provides an approved level of public safety and addresses the following items:

1. Emergency vehicle ingress and egress
2. Fire protection
3. Emergency egress or escape routes
4. Emergency medical services
5. Public assembly areas
6. The directing of both attendees and vehicles, including the parking of vehicles
7. Vendor and food concession distribution
8. The need for the presence of law enforcement
9. The need for fire and emergency medical services personnel.

403.11.3 Crowd managers for gatherings exceeding 1,000 people. Where facilities or events involve a gathering of more than 1,000 people, crowd managers shall be provided in accordance with Section 403.11.3.1.

403.11.3.1 Number of crowd managers. The minimum number of crowd managers shall be established at a ratio of one crowd manager for every 250 persons.

Exception: Where *approved* by the *fire code official*, the number of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an *approved automatic sprinkler system* or based upon the nature of the event.

Revise Section 404 as follows:

SECTION 404
FIRE SAFETY, EVACUATION AND LOCKDOWN PLANS

404.1 General. Where required by Section 403, fire safety, evacuation and lockdown plans shall comply with Sections 404.2 through 404.4.1.

(existing Section 404.2 is relocated and merged into Section 403 with the remaining sections renumbered)

Revise Section 405 as follows:

SECTION 405
EMERGENCY EVACUATION DRILLS

405.1 General. Emergency evacuation drills complying with Sections 405.2 through 405.9 shall be conducted at least annually where firesafety and evacuation plans are required by Section 403 or when required by the *fire code official*. Drills shall be designed in cooperation with the local authorities.

405.2 Frequency. Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.

405.3 Leadership. Responsibility for the planning and conduct of drills shall be assigned to competent persons designated to exercise leadership.

405.4 Time. Drills shall be held at unexpected times and under varying conditions to simulate the unusual conditions that occur in case of fire.

405.5 Record keeping. Records shall be maintained of required emergency evacuation drills and include the following information:

1. Identity of the person conducting the drill.
2. Date and time of the drill.
3. Notification method used.
4. Employees on duty and participating.
5. Number of occupants evacuated.
6. Special conditions simulated.
7. Problems encountered.
8. Weather conditions when occupants were evacuated.
9. Time required to accomplish complete evacuation.

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B[c]	Annually	Employees
Group E	Monthly[a]	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees[b]
Group R-1	Quarterly on each shift	Employees
Group R-2[d]	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees[b]
High-rise buildings	Annually	Employees

a. In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency.
b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 403.9.3.6. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
d. Applicable to Group R-2 college and university buildings in accordance with Section 403.9.2.1.

405.6 Notification. Where required by the *fire code official*, prior notification of emergency evacuation drills shall be given to the *fire code official*.

405.7 Initiation. Where a fire alarm system is provided, emergency evacuation drills shall be initiated by activating the fire alarm system.

405.8 Accountability. As building occupants arrive at the assembly point, efforts shall be made to determine if all occupants have been successfully evacuated or have been accounted for.

405.9 Recall and reentry. An electrically or mechanically operated signal used to recall occupants after an evacuation shall be separate and distinct from the signal used to initiate the evacuation. The recall signal initiation means shall be manually operated and under the control of the person in charge of the premises or the official in charge of the incident. No one shall reenter the premises until authorized to do
so by the official in charge.

Revise Section 406 as follows

406.1 General. Where fire safety and evacuation plans are required by Section 403, employees shall be trained in fire emergency procedures . based on plans prepared in accordance with Section 404.

406.2 Frequency. Employees shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the *fire code official* upon request.

406.3 Employee training program. Employees shall be trained in fire prevention, evacuation and fire safety in accordance with Sections 406.3.1 through 406.3.4.

406.3.1 Fire prevention training. Employees shall be apprised of the fire hazards of the materials and processes to which they are exposed. Each employee shall be instructed in the proper procedures for preventing fires in the conduct of their assigned duties.

406.3.2 Evacuation training. Employees shall be familiarized with the fire alarm and evacuation signals, their assigned duties in the event of an alarm or emergency, evacuation routes, areas of refuge, exterior assembly areas and procedures for evacuation.

(moved to Section 406.4)

406.3.3 Fire safety training. Employees assigned firefighting duties shall be trained to know the locations and proper use of portable fire extinguishers or other manual fire-fighting equipment and the protective clothing or equipment required for its safe and proper use.

406.4 Emergency lockdown training. Where a facility has a lockdown plan, employees shall be trained on their assigned duties and procedures in the event of an emergency lockdown.

Delete Section 408 (existing Section 408 has been relocated to Section 403):

Revise Section 311.1 as follows:

311.1 General. Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Sections 311.1.1 through 311.5.6.

Add a Section 311.6 as follows:

311.6. Unoccupied tenant spaces in mall buildings. Unoccupied tenant spaces in covered and open mall buildings shall be:

1. Kept free from the storage of any materials.
2. Separated from the remainder of the building by partitions of at least 0.5-inch-thick (12.7 mm) gypsum board or an *approved* equivalent to the underside of the ceiling of the adjoining tenant spaces.
3. Without doors or other access openings other than one door that shall be kept key locked in the closed position except during that time when opened for inspection.
4. Kept free from combustible waste and be broom swept clean.

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

F25-13

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

408.1-F-ZUBIA-FCAC

F26 – 13

404.2, 404.3.1, 404.3.2, Table 405.2, 408.3 (New), 408.3.1 (New), 408.3.2 (New), 408.3.3 (New), 408.3.4 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

404.2 Where required. An *approved* fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings:

1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an *occupant load* less than 2,000.
2. Group B.
   2.1. Buildings having an ambulatory care facility.
   2.2. Buildings having an *occupant load* of 500 or more *persons* or more than 100 *persons* above or below the lowest *level of exit discharge*.

3 through 15 *(No change to current text)*

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete, ~~or, where *approved*~~, by selected floors or areas only, or with a defend-in-place response.

2 through 9 *(No change to current text)*

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy including the following:
   2.1 ~~and p~~ Procedures for notifying occupants, including areas with a private mode alarm system.
   ~~i~~
   2.2 Procedures for ~~relocating~~ occupants under a defend-in-place response.
   2.3 Procedures ~~or~~ for evacuating occupants, including occupants who need assistance in evacuation.

3 through 7 *(No change to current text)*

405.2 Frequency. Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group B [c,d]	Annually	Employees
Group R-2 [~~d~~ e]	Four annually	All occupants

(Portions of table not shown remain unchanged)

a. The frequency shall be allowed to be modified in accordance with Section 408.3.2.
b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
c. Emergency evacuation drills are required in Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
d. Emergency evacuation drills are required in ambulatory care facilities in accordance with Section 408.3.
~~d~~e. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.

Add new text as follows:

408.3 Ambulatory Care Facilities. Ambulatory care facilities shall comply with the requirements of Sections 408.3.1 through 408.3.3 and Section 401 through 406.

408.3.1 Fire evacuation plan. The fire safety and evacuation plan required by Section 404 shall include a description of special staff actions. This shall include procedures for stabilizing patients in a defend in place response, staged evacuation, or full evacuation in conjunction with the entire building if part of a multi-tenant facility.

408.3.2 Fire safety plan. A copy of the plan shall be maintained at the facility at all times. Plan shall include the all of following in addition to the requirements of Section 404:

1. Locations where patients are located who are rendered incapable of self preservation.
2. Maximum number of patients rendered incapable of self preservation.
3. Area and extent of each Ambulatory Care Facility.
4. Location of adjacent smoke compartments or refuge areas, where required.
5. Path of travel to adjacent smoke compartments.
6. Location of any special locking, delayed egress or access control arrangements.

408.3.3 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

408.3.4 Emergency Evacuation Drills. Emergency evacuation drills shall comply with Section 405. Emergency evacuation drills shall be conducted at least four times per year.

Exceptions: The movement of patients to safe areas or to the exterior of the building is not required.

(Renumber subsequent sections)

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This code change proposal clarifies the code by accurately describing the documentation needed to understand the typical "defend in place" method of occupant protection. Defend-in-place is a widely used approach to protecting occupants who are bedridden, unconscious or otherwise unable to self-preserve in a fire event. The method relies on both active and passive fire protection systems as well as the actions of trained staff and responders. The heavy emphasis on staff action requires a comprehensive fire safety and evacuation plan.

Any building containing an ambulatory healthcare occupancy will, by definition, contain occupants who may be incapable of self- preservation. The intent of the current IBC requirements for ambulatory care is to create a type of defend-in-place environment. Fire safety and evacuation plans must be developed, reviewed and approved to support this strategy.

The reference to "defend-in-place" is added in Section 404.3.1 to recognize the defend- in-place method. This is not a new concept. The IBC and legacy codes have been written to support this concept for years, yet the code did not name or describe the concept until this cycle. Group A code change G68-12 was approved in 2012 to define the concept, with the understanding that this change would follow.

Fire safety plans should describe in the life safety strategy the method of notifying occupants, including the use of a private mode alarm system as allowed by code. Procedures for dealing with occupants in a defend-in-place strategy should also be described so that it is clear what the staff will be trained on and what the first responders should expect to encounter.

The new Section 408.3 adds requirements for how to create fire safety and evacuation plans for Ambulatory Care Facilities. This section does not include great detail, as there are many successful ways to approach a defend in place response. Rather, this section describes the minimum amount of information necessary aid in the review of facility and the plan. Fire evacuations plan are required to describe the special actions of staff, especially staff that must stabilize a patient prior to moving. This will be the basis of the staff education and training. This will also help the code official understand the expected performance of the building.

It is imperative that the building and fire official know the size and location of the facility as well as the number of patients who are incapable of self-preservation. This information will help the building official determine the proper classification and mitigations

required. It will also allow the fire official to preplan the response for a particular building. Any special characteristics of the means of egress, such as path to the adjacent smoke compartment and special locking arrangements should also be described to aid in verifying code compliance. Practically these documents will be the basis for staff training as well.

Fire safety plans are required to show the location of area where incapable patients are likely to be. They are required to show the location of smoke compartments, routes of travel, patient movement elevators and any locking constraints that might affect the horizontal evacuation of patients. All of these will be essential to robust staff training as well as operational planning for first responders.

Finally, the requirements for emergency evacuation drill have been merged into a single subsection for clarity. The only functional change is to delete the exception which would have allowed drills to not comply with the time requirements of Section 405.4. The committee felt that holding drill at unexpected time and varying conditions was a crucial component of staff training.

These requirements, while new to the fire code, have been a widely accepted practice in the facilities for years. This code change proposal has been reviewed by representatives from both the hospital and nursing home industry who have given their support to these changes.

Cost Impact: This proposal will not increase the cost of construction.

F26-13

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

404.2-F-WILLIAMS-ADHOC

F27 – 13
404.3.1, 404.3.2, 408.6, 408.6.1, 408.6.2, 408.6.3 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

404.3 Contents. Fire safety and evacuation plan contents shall be in accordance with Sections 404.3.1 and 404.3.2.

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete, ~~or, where *approved*~~, by selected floors or areas only, or with a defend-in-place response.

2 through 9 *(No change to current text)*

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy including the following:
   2.1. ~~and~~ Procedures for notifying occupants, including areas with a private mode alarm system. ~~,~~
   2.2 Procedures for ~~relocating~~ occupants under a defend-in-place response.
   2.3 Procedures ~~or~~ for evacuating occupants, including occupants who need assistance in evacuation.

3 through 7 *(No change to current text)*

408.6 Group I-2. Group I-2 occupancies shall comply with the requirements of Sections 408.6.1 through 408.6.3 and Section 401 through 406. ~~Drills are not required to comply with the time requirements of Section 405.4.~~

~~**408.6.1 Evacuation not required.** During emergency evacuation drills, the movement of patients to safe areas or to the exterior of the building is not required.~~

~~**408.6.2 Coded alarm signal.** When emergency evacuation drills are conducted after visiting hours or when patients or residents are expected to be asleep, a coded announcement is allowed instead of audible alarms.~~

Add new text as follows:

408.6.1 Fire evacuation plans. The fire safety and evacuation plans required by Section 404 shall include a description of special staff *actions*. Plan shall include all of the following in addition to the requirements of Section 404.

1. Procedures for evacuation for patients with needs for containment or restraint and post evacuation containment, where present.
2. A written plan for maintenance of the means of egress.
3. Procedure for a defend-in-place strategy.
4. Procedures for a full floor or building evacuation, where necessary.

408.6.2 Fire safety plans. A copy of the plan shall be maintained at the facility at all times. Plans shall include all of the following in addition to the requirements of Section 404:

1. Location and number of any patient sleeping rooms and operating rooms.

2. Location of adjacent smoke compartments or refuge areas.
3. Path of travel to adjacent smoke compartments.
4. Location of any special locking, delayed egress or access control arrangements.
5. Location of elevators utilized for patient movement in accordance with the fire safety plan, where provided.

408.6.3 Emergency Evacuation Drills. Emergency evacuation drills shall comply with Section 405.

Exceptions:

1. The movement of patients to safe areas or to the exterior of the building is not required.
2. Where emergency evacuation drills are conducted after visiting hours or where patients or residents are expected to be asleep, a coded announcement shall be an acceptable alternative to audible alarms.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/cc/ctc/index.html. Since its inception in April, 2005, the CTC has held 25 meetings – all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

This code change proposal clarifies the code by accurately describing the documentation needed to understand the typical "defend in place" method of occupant protection. Defend-in-place is a widely used approach to protecting occupants who are bedridden, unconscious or otherwise unable to self-preserve in a fire event. The method relies on both active and passive fire protection systems as well as the actions of trained staff and responders. The heavy emphasis on staff action requires a comprehensive fire safety and evacuation plan.

The reference to "defend-in-place" is added in Section 404.3.1 to recognize the defend- in-place method. This is not a new concept. The IBC and legacy codes have been written to support this concept for years, yet the code did not name or describe the concept until this cycle. Group A code change G68-12 was approved in 2012 to define the concept, with the understanding that this change would follow.

Fire safety plans should describe in the life safety strategy the method of notifying occupants, including the use of a private mode alarm system as allowed by code. Procedures for dealing with occupants in a defend-in-place strategy should also be described so that it is clear what the staff will be trained on and what the first responders should expect to encounter.

It is imperative that the building and fire code officials know the size and location of the facility as well as the number of patients who are incapable of self-preservation. This information will help the building official determine the proper classification and mitigations required. It will also allow the fire official to preplan the response for a particular building. Any special characteristics of the means of egress, such as path to the adjacent smoke compartment and special locking arrangements should also be described to aid in verifying code compliance. Practically these documents will be the basis for staff training as well.

Section 408.6 has been rewritten to accurately reflect the needs and the current practice for Group I-2 occupancies. This section requires the facility to describe the special actions of staff. Due to the special nature of some facilities, specific requirements are made locations where patients are restrained. Since these facilities contain a large number of carts, beds, and other mobile equipment a written plan for maintenance of the means of egress is required. This would address the practical operational needs of the facility while ensuring that the means of egress can be maintained free of obstructions. While these facilities are defend in place, catastrophic failure may require full evacuation. Facilities are asked to describe this procedure so that the first responders can preplan.

Fire safety plans are required to show the location of area where incapable patients are likely to be. They are required to show the location of smoke compartments, routes of travel, patient movement elevators and any locking constraints that might affect the horizontal evacuation of patients. All of these will be essential to robust staff training as well as operational planning for first responders.

Finally, the requirements for emergency evacuation drill have been merged into a single subsection for clarity. The only functional change is to delete the exception which would have allowed drills to not comply with the time requirements of Section 405.4. The committee felt that holding drill at unexpected time and varying conditions was a crucial component of staff training.

These requirements, while new to the fire code, have been a widely accepted practice in the facilities for years. This code

change proposal has been reviewed by representatives from both the hospital and nursing home industry who have given their support to these changes.

Cost Impact: This proposal will not increase the cost of construction.

F27-13

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

404.3.1-F-BALDASSARRA-WILLIAMS-ADHOC-CTC

F28 – 13
404.3.1

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdblack@neii.org)

Revise as follows:

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete or, where *approved*, by selected floors or areas only.
2. Procedures for employees who must remain to operate critical equipment before evacuating.
3. Procedures for the use of elevators to evacuate the building where occupant evacuation elevators complying with Section 3008 of the *International Building Code* are provided.
~~3~~4. Procedures for assisted rescue for persons unable to use the general means of egress unassisted.
~~4~~5. Procedures for accounting for employees and occupants after evacuation has been completed.
~~5~~6. Identification and assignment of personnel responsible for rescue or emergency medical aid.
~~6~~7. The preferred and any alternative means of notifying occupants of a fire or emergency.
~~7~~8. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
~~8~~9. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
~~9~~10. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.

Reason: Where Occupant Evacuation Elevators are included in a building design, their use must be specifically spelled out in the building's fire evacuation plan.

Cost Impact: This code change proposal will not increase construction costs.

F28-13

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

404.3.1-F-BLACK

F29 – 13
404.3.2, 202

Proponent: Gregory Wilson, representing Department of Homeland Security, Federal Emergency Management Agency (Gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., representing Federal Emergency Management Agency (rcquinn@earthlink.net).

Revise as follows:

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy and procedures for notifying, relocating or evacuating occupants, including occupants who need assistance.
3. Site plans indicating the following:
   - 3.1. The occupancy assembly point.
   - 3.2. The locations of fire hydrants.
   - 3.3. The normal routes of fire department vehicle access.
   - 3.4 Whether the site or any portion thereof, or the normal routes of fire department vehicle access, is located in a flood hazard area.

4. through 7. *(No change to current text.)*

Add new text as follows:

SECTION 202
GENERAL DEFINITIONS

[B] FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a floodplain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

Reason: Structure fire associated with flooding is fairly common. Most recently, many homes were damaged by fires after Hurricane Sandy. Significant structure fires occurred during flooding in Cedar Rapids, Iowa (2008) and Grand Forks, ND (1997). Although dwellings aren't required by the IFC to have Fire Safety and Evacuation Plans, the occupancies and buildings listed in Section 404.2 are vulnerable to fire following flood.

This proposal would require identification of flood hazard areas as part of Fire Safety and Evacuation Plans. Construction documents and site plans submitted with building permit applications already are required to show information about flood hazard areas, floodways, and design flood elevations (see Section 107.2.5).

The source of flood hazard information is the community's flood hazard map. Flood hazard area information is readily accessible. The Federal Emergency Management Agency has prepared maps for more than 21,000 local jurisdictions (counties, parishes, boroughs, cities, towns, villages, etc.). Jurisdictions that participate in the National Flood Insurance Program are required to make those maps accessible to the public, which means anyone responsible for preparing a fire safety and evacuation plan has access to the public information. In addition, FEMA's flood maps are available online https://msc.fema.gov (click on <Product Catalog>). For instruction on how make a PDF of a portion of a FEMA map, click on <FIRMette.>

Cost Impact: None.

F29-13

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

404.3.2-F-QUINN-WILSON

F30 – 13

404.3.2, Table 405.2, 408.5.1.1 (New), 408.5.1.2 (New), 408.5.3, 408.5.5, 408.5.6 (New), 408.10.1.1 (New), 408.10.5, 408.10.6 (New)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy and procedures for notifying, relocating or evacuating occupants, including occupants who need assistance.
3. Site plans indicating the following:
   3.1. The occupancy assembly point.
   3.2. The locations of fire hydrants.
   3.3. The normal routes of fire department vehicle access.
4. Floor plans identifying the locations of the following:
   4.1. Exits.
   4.2. Primary evacuation routes.
   4.3. Secondary evacuation routes.
   4.4. Accessible egress routes.
   4.5. Areas of refuge.
   4.6 Refuge areas
   4.7 ~~4.6~~. Exterior areas for assisted rescue.
   4.8 ~~4.7~~. Manual fire alarm boxes.
   4.9 ~~4.8~~. Portable fire extinguishers.
   4.10 ~~4.9~~. Occupant-use hose stations.
   4.11 ~~4.10~~. Fire alarm annunciators and controls.
5. A list of major fire hazards associated with the normal use and occupancy of the premises, including maintenance and housekeeping procedures.
6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B [c]	Annually	Employees
Group E	Monthly[a]	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift [a]	Employees[b]
Group R-1	Quarterly on each shift	Employees
Group R-2 [d]	Four annually	All occupants
Group R-4	Quarterly on each shift [a]	Employees[b]
High-rise buildings	Annually	Employees

a. The frequency shall be allowed to be modified in accordance with Sections 408.3.2, 408.5.6 and 408.10.6.
b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit

discharge.

d. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.

408.5.1.1 Fire evacuation plan. The fire evacuation plan required by Section 404 shall include a description of special staff actions. Plans shall include the following in addition to the requirements of Section 404.

1. In Group I-1 Condition 2 occupancies, procedures for evacuation through a refuge area in an adjacent smoke compartment and then to an exterior assembly point.

408.5.1.2 Fire safety plans. A copy of the plan shall be maintained at the facility at all times. Plans shall include the following in addition to the requirements of Section 404:

1. Location and number of any residents sleeping rooms.
2. Location of any special locking or egress control arrangements.

408.5.3 Resident training. Residents capable of assisting in their own evacuation shall be trained in the proper actions to take in the event of a fire. In Group I-1 Condition 2 occupancies training shall include evacuation through an adjacent smoke compartment and then to an exterior assembly point. The training shall include actions to take if the primary escape route is blocked. Where the resident is given rehabilitation or habilitation training, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

408.5.5 Resident participation. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

408.5.6 Emergency evacuation drill deferral. In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.

408.10.1.1 Fire safety plans. A copy of the plan shall be maintained at the facility at all times. Plans shall include the following in addition to the requirements of Section 404:

1. Location and number of any residents sleeping rooms.
2. Location of any special locking or egress control arrangements.

408.10.5 Resident participation. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

Exception: Actual exiting from emergency escape and rescue windows shall not be required. Opening the emergency escape and rescue window and signaling for help shall be an acceptable alternative.

408.10.6 Emergency evacuation drill deferral. In severe climates, the *fire code official* shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2.

Reason: The intent of this proposal is to clarify the requirements for Group I-1 and R-4 assembly points. It also clarifies the implementation of smoke compartments in the new Group I-1 Condition 2 as was approved for the 2015 IBC in the G 31-12. Finally it proposes severe climate flexibility for fire drill frequency.

The proposed change clarifies that Group I-1 Condition 2 “smoke compartment” refuge areas, as required in the G 31-12 Section 420, can be used as a temporary “refuge area” during evacuation prior to complete building evacuation..

The proposed code change allows for severe climate deferrals, similar to current Group E deferrals that are already allowed. This takes into consideration the possible danger to seniors inhabiting these occupancies, when they are required to go outside during fire drills when possible inclement weather is occurring. The proposal allows the fire code official to modify drill frequency. The provision is left as a general provision purposely due to the variations of severe climate throughout the country, whether it be hot or cold, winter or summer or from storms. It leaves up to local discretion, the opportunity to allow modifications.

(This is reflected in the additional section references in Note a to Table 405.2.) The modifications in actual practice may also include still conducting the drill, while not requiring residents to actually go outside during the drill at certain times of the year. The residents would still be trained to go outside to the outdoor assembly point during a real emergency situation.

The assembly point aspects of the proposed change are more clerical. The revisions are proposed essentially from the current wording in Group E clarifying that an assembly point is outdoors coinciding with the building evacuation concepts of both Group I-1 and R-4 irrelevant of the "Condition."

These changes are stand alone but have been coordinated with the Ad Hoc committee proposed IFC changes for Group I-2 so as not to conflict with those proposed changes. These changes have also been coordinated with the separate CTC proposed IFC changes for the Table 405.2 for fire and safety evacuation drills for both Groups I-1 and R-4.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F30-13

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

404.3.2-F-BALDASSARRA-CTC

F31 – 13
Table 405.2

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
~~Group B[e]~~	~~Annually~~	~~Employees~~
Group B[c] (transient[e])	Annually	Employees
Group B[c] (nontransient[f])	Annually	All occupants
Group E	Monthly[a]	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees[b]
Group R-1	Quarterly on each shift	Employees
Group R-2[d]	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees[b]
High-rise buildings	Annually	Employees

a. through d. *(No changes to current text)*
e. Applicable to Group B occupancies primarily used by occupants for short term use for less than 30 days.
f. Applicable to Group B occupancies primarily used by occupants for long term use for more than 30 days.

Reason: The intent of this code change is to provide occupants who are working in a Group B occupancy for more than 30 days to have an opportunity to participate in an annual fire and evacuation drill. Currently, only the employees (i.e., building staff) in a Group B occupancy have an opportunity to participate in an annual fire and evacuation drill. Having building occupants participate in an annual drill will provide educational instruction and practice for the building occupants evacuating/relocating as well as serve as a verification tool that the fire safety and evacuation plan, as developed, is functional. An additional benefit is that practice makes perfect when it comes to effective occupant egress during an evacuation and enables occupants to be familiar with egress routes and the fire safety and evacuation plan's details.

It should also be emphasized it is not the intent of this code change to require occupants in all Group B occupancies to participate in fire and evacuation drills. In certain Group B occupancies where occupants are staying or working for less than 30 days, occupants will not be required to participate in an emergency egress and relocation drill. For example, it would not be practical or reasonable for patients in an ambulatory health care facility (considered a Group B occupancy) to participate in a periodic evacuation drill. For these types of circumstances, building employees will still provide the necessary procedures in case of fire to occupants prior to an emergency and facilitate and direct occupants during the emergency regardless of whether the occupants participate in the annual fire and emergency drill.

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

F31-13

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

405.2T #1-F-FRABLE

F32 – 13
Table 405.2, 408.5.4, 408.10.4

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 405
EMERGENCY EVACUATION DRILLS

405.2 Frequency. Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B ~~c~~ b	Annually	Employees
Group E	Monthly[a]	All occupants
Group F	Annually	Employees
~~Group I~~	~~Quarterly on each shift~~	~~Employees~~[b]
Group I -1	Twice on each shift per year	All occupants
Group I -2	Quarterly on each shift	Employees
Group I -3	Quarterly on each shift	Employees
Group I -4	Monthly	All occupants
Group R-1	Quarterly on each shift	Employees
Group R-2 ~~d~~ c	Four annually	All occupants
Group R-4	~~Quarterly on each shift~~ Twice on each shift per year	~~Employees~~[b] All occupants
High-rise buildings	Annually	Employees

a. The frequency shall be allowed to be modified in accordance with Section 408.3.2.

b. ~~Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.~~

b.c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

c.d. ~~Applicable to~~ Emergency evacuation drills in Group R-2 college and university buildings shall be in accordance with Section 408.3. Other Group R-2 occupancies shall be in accordance with Section 408.9.

408.5.4 Drill frequency. ~~Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift.~~ In addition to the evacuation drills in required in Section 405.2, employees shall participate in an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.

408.10.4 Drill frequency. ~~Emergency evacuation drills shall be conducted at least six times per year, two times per year on each shift.~~ In addition to the evacuation drills in required in Section 405.2, employees shall participate in an additional two times a year on each shift. Twelve drills with all occupants shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.

Reason: The intent is to clarify the requirements for Group I-1, I-4 and R-4 fire and safety evacuation drill requirements. Table 405.2 is expanded to indicate clearly when employees and residents/children are required to participate in the drills. Group I-1 and R-4 require resident's participation for 6 drills a year (common practice). The Group I-4 should have drills consistent with Group E facilities.

Current footnote b does not make logical sense to reference Group R-4 drill participation for residents for Group I facilities. The requirement has been specifically addressed in the appropriate use group section.

Revisions to current footnote d is a clarification for dorms vs. apartments.

Group I-1, must use the provisions in Section 404 in addition to the concerns specific to Group I-1. In Section 408.5.4, staff is required to have additional practice drills. This will equal what was in the table for staff to do quarterly drills on each shift. Section 408.5.5 resident participation is coordinated with Group R-4 language in Section 408.10.5.

In Section 408.10.4, staff is required to have additional practice drills. This will equal what was in the table for staff to do quarterly drills on each shift.

The Adhoc Health Care committee has proposals to fire and safety evacuation plans and drills for Group I-2 and Ambulatory Care Facilities. This proposal can be accepted independently, but would also work in conjunctions with these proposals.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F32-13

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

405.2T-F-BALDASSARRA-CTC

F33 – 13
Table 405.2

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Employees
Group B[c]	Annually	Employees
Group E	Monthly[a]	All occupants
Group F	Annually	Employees
Group I	Quarterly on each shift	Employees[b]
Group R-1	Quarterly on each shift	Employees
Group R-2[d]	Four annually	All occupants
Group R-4	Quarterly on each shift	Employees[b]
~~High-rise buildings~~	~~Annually~~	~~Employees~~
High-rise buildings (transient[e])	Annually	Employees
High-rise buildings (non transient[f])	Annually	All occupants

a. The frequency shall be allowed to be modified in accordance with Section 408.3.2.
b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.
c. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
d. Applicable to Group R-2 college and university buildings in accordance with Section 408.3.
e. Applicable to high-rise buildings primarily used by occupants for short term use for less than 30 days.
f. Applicable to high-rise buildings primarily used by occupants for long term use for more than 30 days.

Reason: The intent of this code change is to provide occupants in high-rise buildings, for more than 30 days to have an opportunity to participate in an annual fire and evacuation drill. Currently, only the employees (i.e., building staff), have an opportunity to participate in an annual fire and evacuation drill. Having building occupants participate in an annual drill will provide educational instruction and practice for the building occupants evacuating/relocating as well as serve as a verification tool that the fire safety and evacuation plan, as developed, is functional. An additional benefit is that practice makes perfect when it comes to effective occupant egress during an evacuation and enables occupants to be familiar with egress routes and the fire safety and evacuation plan's details.

It should also be emphasized it is not the intent of this code change to require occupants in all high-rise buildings to participate in fire and evacuation drills, In certain high-rise buildings where occupants are staying or working les than 30 days, occupants will not be required to participate in an emergency egress and relocation drill. For example, it would not be practical or reasonable to require occupants in high-rise hospitals, hotels, or correctional facilities to participate in an evacuation drill. For these types of circumstances, building employees will still provide the necessary procedures in case of fire to occupants prior to an emergency and facilitate and direct occupants during the emergency regardless of whether the occupants participate in the annual fire and emergency drill.

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

F33-13

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

405.2T #2-F-FRABLE

F34 – 13
408.12 (New)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Add new text as follows:

408.12 Buildings using occupant evacuation elevators. In buildings using occupant evacuation elevators in accordance with Section 3008 of the *International Building Code*, the fire safety and evacuation plan and the training required by Section 404 and Section 406, respectively, shall incorporate specific procedures for the occupants using such elevators.

Reason: This would seem to need clarification.

Cost Impact: The provision might increase operational costs but not construction costs.

F34-13

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

408.12-Godwin

F35 – 13
408.12 (New)

Proponent: Dwight G. Jones, B.A., Elevaed Medical Inc., representing self (dwight.jones@elevaed.com)

Add new text as follows:

408.12 Public access automated external defibrillators. In high-rise buildings, the main elevator lobby shall be provided with an automated external defibrillator (AED) in an approved and visible location that is accessible to the public.

Reason: Sudden cardiac arrest (SCA), a leading cause of death, takes longer to attend by EMS in high-rise buildings (call volume, urban traffic, security). Please review http://elevaed.com

The 'Chain of Survival' is broken, because EMS cannot reliably defibrillate patients within 3-5 minutes, after which progressive organ damage or death occurs. Survival rates are typically single digit, and in this rapidly growing demographic, failed EMS efforts to date have become an intractable and very costly public health problem.

High-rises do, however, offer compact advantages for sharing the cost of an AED, for education in its use, and their elevators enable prompt access by bystanders or volunteers. The most critical factor is having an AED in the building beforehand - one that is publicly visible and accessible 24/7, to bridge the time until the arrival of EMS – which is the sole purpose of an AED. EMS can then arrive within a practical timeframe to consolidate successful defibrillations.

Currently just 2.1% of SCA's have an AED applied by bystanders (Weisfeldt JACC 2010). As a safety agency, the building and fire coding authorities are the appropriate regulators for harmonizing AED deployment. Governments, as legislative agencies, have too many layers and independent AHJ's for uniform and structured adoption, and their statutes largely address 'public' buildings, when most high-rises are privately owned. Local EMS are rescue agencies that act on existing regulations.

This is a *heart safety* issue–a valid parameter for the evolving Green Building initiative–and the coding authorities have a straightforward opportunity to rationalize our (currently chaotic) AED distribution throughout the built environment. AEDs will shortly be connected to the Internet, leading to improved monitoring/assistance by in-building personnel, volunteers and NG9-1-1.

These locations must have a fixed IP address, be documented in databases, and become standardized and trusted. High-rise elevator lobbies will anchor the AED in the public's mind, greatly leveraging its cost, while expanding its use and effectiveness.

This topology also promises to protect adjacent buildings within a two minute radius.

SCA survival in high-rises can possibly improve by an order of difference when supported by cellular communications, volunteer teams, and a location standard. AEDs cannot perform from security guard lunch rooms and desk drawers as they are now expected to do, when they exist at all.

The property management industry will also benefit from unequivocal coding for AEDs. This proposal specifies basic AEDs for high-rise buildings as defined in the code, and their cost or retrofitting is a modest expense in the context of such buildings.

These singular devices will then protect residents and workers around the clock, regardless of their income or health insurance status. The public expects and deserves our attention to this issue, and the world anticipates our leadership in coding for health safety.

Disclosure Statement: Dwight G. Jones and Elevaed are volunteer public advocates only, and have no business relationships or funding from any providers of AEDs, emergency equipment or services.

The following is a letter of support from Dr. Gordon Tomaselli, President, American Heart Association.

August 5, 2011

Dwight G. Jones, CEO
Elevaed Technologies
4550 Birch Bay Lynden Road
Blaine WA 98230-9436

Dear Mr. Jones:

Since 1995 the American Heart Association has recommended the development of lay rescuer AED programs to improve survival rates from out of hospital cardiac arrest. And over the past several years, we have published additional focused scientific statements on lay rescuer AED programs and reducing barriers to bystander CPR – both critical elements in the chain of survival that can greatly improve a cardiac arrest victim's chances of survival.

As recommended in our *2010 AHA Guidelines for CPR & ECC*, and based on peer-reviewed, published research studies, AED programs should be established in public locations where there is a reasonable likelihood of a witnessed cardiac arrest (eg, airports, casinos and sports facilities). We certainly appreciate the innovative approach you've outlined in your proposal to improve out-of-hospital cardiac survival in high rise buildings; it would certainly be beneficial to see the proposal studied in a formal manner and in addition, to see those results published in a peer-reviewed medical journal.

We would be pleased to have you submit a research application to either our Affiliate or National Center Research Program for review. You can learn more about research funding opportunities here: http://my.americanheart.org/professional/Research/Research_UCM_316889_SubHomePage.jsp

I wish you and your company well as you seek to improve sudden cardiac arrest survival.

Sincerely,

Gordon F. Tomaselli, MD, FAHA
President
American Heart Association/American Stroke Association

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

F35-13

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

408.12 (NEW)-F-JONES

F36 – 13
501.5 (New)

Proponent: Michael Jacoby, Seven Valleys, PA, representing self

Add new text as follows:

501.5 Geographic location data. A facility or site's geographic location information or data, being a site's set of latitude and longitude coordinate values, are to be centered on a facility's or structure's main front entrance. Such information shall be provided by a Registered Professional Land Surveyor (PLS), licensed by the appropriate governing authority, using the Datum-World Geodetic System (WGS84). The site's coordinate data shall be recorded in decimal degrees in a numeric format with a tolerance of ±1 m, including the associated hemispheric value where applicable. The information shall include the name of the certifying PLS in the title block area of the facility's construction documents required by Section 105.4.

Reason: By having accurate GPS coordinate data recorded on construction documents for fire service planning / environmental preparedness to protect communities, families or loved ones especially those with special needs, at time of a review as per section should be very easy for officials to understand especially if you've ever been directed to go to a wrong location in times of crisis or need because of having ambiguous locational information in data systems.

In other words when using a set of coordinates for a site/facility by a licensed professional surveyor that are centered on the entrance of a facility at the time of construction, now that everybody is using GPS locational data for their devices, it should start to eliminate the continuing locational data problems being discovered today in mapping databases (GIS shaped layers) that you might have already encountered locally… when using an address/house number method to determine a location or when Out-Of-Area-Assistance is required in times of crisis or need, especially when every second counts..

Again simply put… State Highway Numbers, Road Names and Postal Delivery Addresses may change throughout the years but a site's set of latitude and longitude coordinates will always stay constant.

Cost Impact: The cost of providing the certified lat/long information/data (GPS coordinates) recorded on construction documentation will be absorbed by the developer/builder or others submitting the construction documents for review.

F36-13

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

501.5 (NEW)-F-JACOBY

F37 – 13
503.1.1

Proponent: Erin Crowley, Code Consultants, Inc, representing self.

Revise as follows:

503.1.1 Buildings and Facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a abuilding hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the fist story of the building as measured by an approved route around the exterior of the building or facility.

~~Exception~~ Exceptions: The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where any of the following conditions occur:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

Reason: Revising the Exception fixes and clarifies the language to match the original intent of the section based on the UFC. The intent of the original UFC requirement was that each of the three items above would be applied as an independent exception. As written currently, it could be interpreted to mean that one would have to meet all three items in order to benefit from the increase, which was not the original intent of the requirement.

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

F37-13

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

503.1.1-F-CROWLEY

F38 – 13
503.1.1

Proponent: Adria Smith, Fountain Valley Fire Department, representing the California Fire Chiefs Association (adria.smith@fountainvalley.org); Kevin Reinertson, Division Chief, representing the California State Fire Marshal's Office

Revise as follows:

503.1.1 Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exceptions:

1. The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:
   1.1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
   1.2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
   1.3. There are not more than two Group R-3 or Group U occupancies.
2. Where approved by the fire code official, fire apparatus access roads shall be permitted to be exempted or modified for solar photovoltaic power generation facilities.

Reason: Exception two (other exceptions are existing and renumbered) is provided to address photovoltaic panel system/array power generation facilities. The 2012 IFC does not specifically require or exempt these types of facilities. This proposal intends to provide additional guidance to afford jurisdictions avenues to determine if a fire apparatus road is needed for hazard mitigation or if it can be exempted.

Section 503 is specifically scoped to "buildings and facilities". Power generation sites that utilize a ground mounted photovoltaic system/array would not be considered a building. However, they would be considered a facility as defined in Section 202 and are therefore subject to Section 503.

A ground mounted photovoltaic panel system/array is also considered a structure as defined in IFC Section 202. Although, where ground mounted photovoltaic panel systems/arrays are mounted on a support structure and the support structure does not create or allow for a use below (e.g. parking, lunch/shade structures, etc.), the structure should be considered equipment.

Therefore, sound rational judgment should be made if IFC, Section 503 is to be applied to a solar generation facility. Not all conditions or facilities of similar type or function necessitate fire apparatus access roads and not all structures are subject to IFC Section 503. The IFC is not clear in its application or scope when applying Section 503 to equipment, specifically ground mounted photovoltaic systems/arrays. However, when other buildings or structures are located on the site, an evaluation and/or classification of the use may require fire apparatus access.

Thus, consideration must be given to the purpose of fire apparatus access roads within these facilities and how the section would be applied.

It is important to note that Section 503 does provide exceptions for length, dimensions, and other specifications based on conditions such as terrain, climate, or other similar concerns.

Several issues arise when applying Section 503 to ground mounted photovoltaic systems/arrays. When considering the issues listed below, one should also consider other available code requirements that provide for appropriate hazard mitigation and risk reduction. Issues for consideration include:

1. Risk/hazard to be mitigated
2. Risk/hazard to firefighters or other emergency responders
3. Interest of public safety and welfare
4. Economics
5. Intended access use
6. Fuel load of the facility and adjacent areas that impact the facility
7. Array configuration (tightly spaced, access aisles, height)
8. Actual hazard to public safety and welfare

Cost Impact: This proposal will not increase the cost of construction.

F38-13

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

503.1.1-F-REINERTSON-SMITH

F39 – 13
503.2.2

Proponent: Carl D. Wren, P.E., Austin Fire Department, representing self (carl.wren@austintexas.gov)

Revise as follows:

503.2.2 Authority. The fire code official shall have the authority to require or permit an increase or a decrease in the minimum access widths where ~~they are inadequate for fire or rescue operations~~ necessary to meet the public safety objectives of the jurisdiction.

Reason: Fire departments respond to many types of emergency situations and the jurisdictions they serve may have traffic safety criteria that have an impact on the design of access roadways used by emergency response vehicles. It would also seem to be a wise course of action for the fire service and ICC to acknowledge and, when it is possible, to assist in developing methods of improving the safety of the public by helping to prevent injuries and deaths from hazards other than fire.

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

F39-13

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

503.2.2 -F-WREN

F40 – 13
503.3

Proponent: Barry Greive, representing Target Corporation (barry.greive@target.com)

Revise as follows:

503.3 Marking. Where required by the fire code official, approved signs <u>every 75 lineal feet</u> or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

Reason: There is currently no direction in the code on how far apart these signs need to be. Because there is no clear direction in the current provision enforcement of this regulation is inconsistent. A normal space for parallel parking is 25 feet long and this spacing will allow more than enough signs in any general location to be clearly visible and legible to notify people no parking is allowed, and the distance is within normal viewing distances for signs.

Cost Impact: This will not increase the cost of construction

F40-13

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

503.3-F-GRIEVE

F41 – 13
503.4

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Sections 503.2.1 and 503.2.2 shall be maintained at all times.

Reason: IFC Section 503.2.2 permits the fire code official to require fire apparatus access roads to be widened when inadequate for fire and rescue operations. This section is most commonly used to require wider fire apparatus access roads for ladder trucks and around fire hydrants (as found in Appendix D), but could be for areas that are susceptible to traffic congestion.

However, there is no way in the current IFC to enforce these wider fire apparatus access road requirements since 503.4 only references Section 503.2.1 which, in turn, only requires the 20 foot width requirement.

This code change will permit the fire code official to enforce required widths of fire apparatus access roads after installation.

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: This change has no cost impact, but is to enforce requirements in place at the time of construction.

F41-13

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

503.4-F-NICHOLS

F42 – 13
503.4.1

Proponent: Carl D. Wren, P.E., Austin Fire Department, representing self (carl.wren@austintexas.gov)

Revise as follows:

503.4.1 Traffic calming devices. ~~Traffic calming devices shall be prohibited unless approved by the fire code official.~~ The fire code official and the jurisdiction's traffic engineer shall work collaboratively to plan, design, and install traffic calming devices. Approved traffic calming devices shall be designed to provide for adequate emergency vehicle access in addition to mitigating unsafe traffic conditions identified by the traffic engineer.

Reason: Fire departments respond to many types of emergency situations and the jurisdictions they serve may have traffic safety criteria that have an impact on the design of access roadways used by emergency response vehicles. The design of traffic calming features has been changing over the years as traffic engineers better understand measures that can change how people drive their vehicles. Since data available from the Centers for Disease Control indicate that annual traffic fatalities involving pedestrians likely exceed fire deaths in the United States (see http://www.edc.gov/motorvehiclesafety/pedestrian_safety/factsheet.html), it would also seem to be a wise course of action for the fire service and ICC to encourage collaboration with traffic engineers and, when it is possible, to assist in developing methods of improving the safety of the public by helping to prevent injuries and deaths from hazards other than fire.

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

F42-13

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

503.4.1-F-WREN

F43 – 13
IFC 505.1; IBC [F] 501.2; IPMC [F] 304.3; IRC R319.1

THIS IS A 4 PART CODE CHANGE. PARTS I THROUGH III WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE. PART IV WILL BE HEARD BY THE IRC B/E CODE DEVELOPMENT COMMITTEE. ALL 4 PARTS WILL BE HEARD AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMMITTEES.

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

PART I – INTERNATIONAL FIRE CODE

Revise as follows:

505.1 Address identification. New and existing buildings shall ~~have~~ be provided with approved address ~~numbers, building numbers or approved building~~ identification. The address identification shall be legible and placed in a position that is ~~plainly legible and~~ visible from the street or road fronting the property. ~~These numbers~~ Address identification characters shall contrast with their background. ~~Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response.~~ Address numbers shall be Arabic numbers ~~or alphabetical letters~~. Numbers shall not be spelled out. ~~Numbers~~ Each character shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. 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. Address ~~numbers~~ identification shall be maintained.

PART II – INTERNATIONAL BUILDING CODE

Revise as follows:

[F] 501.2 Address identification. New and existing buildings shall be provided with approved address ~~numbers or letters~~identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) in height and not less than 0.5 inch (12.7 mm) in width. ~~They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property.~~ ~~When~~ Where required by the fire code official, address ~~numbers~~ identification shall be provided in additional approved locations to facilitate emergency response. 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. Address ~~numbers~~ identification shall be maintained.

PART III – INTERNATIONAL PROPERTY MAINTENANCE CODE

Revise as follows:

[F] 304.3 ~~Premises~~ Address identification. Buildings shall ~~have~~ be provided with approved address ~~numbers~~ identification. The address identification shall be legible and placed in a position to be ~~plainly legible and~~ visible from the street or road fronting the property. ~~These numbers~~ Address identification characters shall contrast with their background. Address numbers shall be Arabic numerals ~~or alphabet letters~~. Numbers shall not be spelled out. ~~Numbers~~ Each character shall be a minimum of 4 inches (102 mm) in height with a minimum stroke width of 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response.

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. Address identification shall be maintained.

PART IV – INTERNATIONAL RESIDENTIAL CODE

Revise as follows:

R319.1 Address ~~numbers~~ identification. Buildings shall ~~have~~ be provided with approved address ~~numbers, building numbers or approved building~~ identification. The address identification shall be legible and placed in a position that is ~~plainly legible and~~ visible from the street or road fronting the property. ~~These numbers~~ Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers ~~or alphabetical letters~~. Numbers shall not be spelled out. ~~Numbers~~ Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of ~~½~~ 0.5 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. 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 sign or means shall be used to identify the structure. Address identification shall be maintained.

Reason: When the address numbers are difficult to find, read or identify, the result is a delay in the emergency response, whether it be for fire, medical assistance, or law enforcement. Address numbers which are spelled out in alpha characters, add to this difficultly in quickly responding to emergency situations.

This proposal will require that the address numbers are numeric and clearly identifiable. There are correlating sections in the IBC, IFC, IPMC and IRC with regard to address identification.

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

F43-13
PART I - INTERNATIONAL FIRE CODE

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

PART II - INTERNATIONAL BUILDING CODE

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

PART III - INTERNATIONAL PROPERTY MAINTENANCE CODE

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

PART IV - INTERNATIONAL RESIDENTIAL CODE

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

505.1-F-ZUBIA-FCAC

F44 – 13
507.2

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

507.2 Types water supply. A water supply shall consist of approved reservoirs, pressure tanks, elevated tanks, water mains, fire department mobile water supply resources or other approved ~~fixed~~ systems capable of providing the required fire flow.

Reason: The current code language in 507.2 does not allow the fire code official to consider fire department rural water supply operations involving tanker shuttles as a means of meeting the required fire flow. For a vast majority of rural areas, the only means of providing a water supply is via a tanker shuttle type operation. This code change will recognize this capability as a reasonable alternative to providing the required water supply. The term “approved” is also added to provide an oversight by the fire code official /Fire Chief in determining if a water supply is appropriate for utilization in providing the needed fire flow.

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

F44-13

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

507.2-F-APFELBECK

F45 – 13
507.4, Chapter 80

Proponent: Bob D. Morgan, P.E., Fort Worth, TX Fire Department representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

507.4 Water supply test <u>date and information</u>. <u>The water supply test used for hydraulic calculation of fire protection systems shall be conducted in accordance with NFPA 291 and within one year of sprinkler plan submittal, or as otherwise approved by the fire code official.</u> The fire code official shall be notified prior to the water supply test. Water supply tests shall be witnessed by the fire code official, <u>as required</u> ~~or approved documentation of the test shall be provided to the fire code official prior to final approval of the water supply system~~. <u>The exact location of the static/residual hydrant and the flow hydrant shall be indicated on the design drawings. All fire protection plan submittals shall be accompanied by waterflow test report information, or as otherwise approved by the fire code official. At a minimum, the waterflow test report shall indicate the documented fluctuation of the water supply system in question, in accordance with the water supply operator or authority, for an entire year. The fire protection designer shall then design the fire protection system including this fluctuation information, in accordance with the applicable referenced NFPA standard.</u>

Add new standard to Chapter 80 as follows:

NFPA

<u>291-13 *Recommended Practice for Fire Flow Testing and Marking of Hydrants* 507.4</u>

Reason: Water supply system fluctuation is regularly ignored in fire protection design. Often times, a sprinkler system is designed based on a fire hydrant flow test that only represents one point in time throughout the year when water supply systems may fluctuate up to 50 psi in some areas or more, based on summer vs. winter demands of the systems. This information is critical to ensure that such fire protection systems are designed to account for this potential fluctuation.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 291-13, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F45-13

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

507.4-F-MORGAN

F46 – 13
508.1.3 (IBC [F] 911.1.3)

Proponent: Stephen DiGiovanni, Clark County Fire Department, representing self.

Revise as follows:

508.1.3 (IBC [F] 911.1.3) Size. The fire command center shall be a minimum of 0.015 percent of the total building area of the facility served or 200 square feet (19m^2) in area, whichever is greater, with a minimum dimension of 0.7 times the square root of the room area, or 10 feet (3048 mm), whichever is greater.

Reason: The purpose of this amendment is to provide a means to have larger fire command centers for larger facilities. The effect of this change is that buildings that are greater than 1.33 million square feet in total area will require larger fire command centers than the minimum required size of 200 square feet. For reference, this formula would require a fire command center of 750 square feet for a building that is 5 million square feet, and would require a fire command center of 1,500 square feet for a building that is 10 million square feet. These are not seen as unreasonable sizes for a Fire Command Center, in comparison to the associated building sizes.

The amendment also calls for a concurrent calculation for minimum room dimension. The calculation uses a square root of the building area, and applying a 0.7 factor. For the base code required area of 200 square feet, please note that the square root of 200 is approximately 14.14, and the application of the 0.7 factor yields 9.90, which is very close to the base code dimension of 10 feet.

The model codes have set forth varying minimum sizes for Fire Command Centers. For instance, the 2000-2006 editions of the International Building Code set forth a minimum size of 96 square feet, with a minimum dimension of 8 feet. Application of the formula in this amendment would result that a 96 square feet fire command center would be sufficient for a building with area of 640,000 square feet. The square root of 96 is 9.80, and application of the 0.7 factor yields 6.86, which is somewhat close to the base code dimension of 8 feet.

There have been problems with fire command centers that are sized too small for the amount of control equipment and panels that are required for the building. At times, sufficient communication does not occur between the architect and the fire alarm designers, and the fire command center has been sized too small to comfortably accommodate the required equipment. Larger buildings will have more equipment due to the amount of elevators, generators, smoke removal systems, fire alarm nodes, plans, etc, that are present in larger buildings. The list of required items in the fire command centers has been expanded, further stressing the available space of fire command centers. Further, the larger buildings may have unusual fire protection systems, such as deluge systems, video smoke detection, etc., which may require additional control panels and space in the fire command center. It is important to anticipate these issues and develop requirements for larger rooms to accommodate the equipment required in larger facilities.

Please note that this amendment does not increase fire command size until the building exceeds 1.33 million square feet. For smaller buildings, this amendment has no impact.

Cost Impact: Requires additional space for larger buildings over 1.33 million square feet, impact would be lost space to other uses and costs of expanding boundaries of the fire command center.

F46-13

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

508.1.3-F-DIGIOVANNI

F47 – 13
508.1.5 (New), 315.3.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

508.1.5 Storage. Storage unrelated to operation of the Fire Command Center shall be prohibited.

(Renumber subsequent section)

Revise as follows:

315.3.3 Equipment rooms. Combustible material shall not be stored in boiler rooms, mechanical rooms, ~~or~~ electrical equipment rooms or in fire command centers as specified in Section 508.1.5.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Fire command centers need to be dedicated to firefighting operations.

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

F47-13

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

508.1.6 (NEW)-F-ZUBIA-FCAC

F48 – 13
509.1.1

Proponent: Bob D. Morgan, P.E., Fort Worth, TX Fire Department representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

509.1.1 Utility identification. Where required by the *fire code official*, gas shutoff valves, electric meters, service switches and other utility equipment shall be clearly and legibly marked by signs to identify the unit or space that it serves. ~~Identification shall be made in an *approved* manner, readily visible and shall be maintained~~. Lettering for such signs shall have a minimum height of 2 inches (50.8 mm) where located indoors and 4 inches (101.6 mm) where located outdoors, or as approved by the *fire code official*. The letters shall be of a color that contrasts with the background. Signs shall be readily visible and shall be maintained.

Reason: Provides for more consistency with regards to such signage and more guidance to owners/operators and designers to ensure compliance is achieved. Additionally, this addresses an issue of legibility when very small signs are utilized for this purpose.

Cost Impact: The code change proposal will not increase the cost of construction. The signage is already required – this just provides a guide as to the size of such.

F48-13

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

509.1.1-F-MORGAN

F49 – 13
510.1, 510.6.3

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

510.1 Emergency responder radio coverage in new buildings. Where required by the fire code official, new buildings shall have approved radio coverage for emergency responders within the building. ~~based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building.~~ The requirement shall be based on approved calculations and reports showing the need for such system based upon existing coverage, building location, building properties, and building layout. This section shall not require improvement of the existing public safety communication systems.

Exceptions:

1. Where approved by the building official and the fire code official , a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained in lieu of an approved radio coverage system.
2. ~~Where it is determined by the fire code official that the radio coverage system is not needed.~~
2~~3~~. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.

~~**510.6.3 Field testing.** Agency personnel shall have the right to enter onto the property at any reasonable time to conduct field testing to verify the required level of radio coverage.~~

Reason: This code change proposal is to modify the administrative provisions of the requirements and enforcement of the emergency responder radio coverage. The proposal does not intend to change any technical requirement of the section.

Currently, every building would need to be evaluated for emergency responder radio coverage. The only true way out of this requirement is for the fire code official to state that it isn't needed. The problem with that is 1) there is no standardized test that a fire code official can easily reference to make an appropriate decision and 2) the only baseline is to reference the exterior of a building that hasn't even been built yet.

The proposed code language changes the enforcement to that similar to key boxes, where the fire code official can require it, based on a study or report. This doesn't place the fire code official in a single-point 'yes or no' decision on a system that he/she may have little knowledge in as well as give direct reference to some of the variables that need to be dealt with in evaluating emergency responder radio coverage.

Section 510.6.3 is proposed for deletion since rights of officials on entry to premises is not a condition of technical requirements within the IFC, rather an administrative process requirement.

Cost Impact: This proposal will not affect the cost of construction.

F49-13

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

510.1-F-NICHOLS

F50 – 13
511 (New); 1103.3 (New)

Proponent: Robert Trotter, MCP, Tennessee Code Development Committee (bobtrotter1023@aol.com)

Add new text as follows:

SECTION 511
FIRE SERVICE ELECTRICAL DISCONNECT

511.1 General. All new buildings shall be provided with a fire service electrical disconnect designed to operate a building's shunt trip switch to disconnect electrical power to the building or heavy equipment. Existing buildings shall be provided with a fire service electrical disconnect as required by Section 1103.3.

511.2 Location. The fire service electrical disconnect shall be installed in a location approved by the *fire code official*.

511.2 Alternative locations. The *fire code official* is authorized to require a fire service electrical disconnect at alternative locations for operations including, but not limited to: wind generation stations, solar photovoltaic power system installations, light rail power distribution stations, and amusement parks.

511.3 Enclosure. The shunt trip switch shall be housed in a watertight NEMA container. The switch and NEMA container shall be housed in a secure device operable only by a fire department master key.

511.3.1 Listing. The electrical disconnect enclosure shall be listed in accordance with UL1037.

511.5 Signage. Where the fire service electrical disconnect serves a portion of a building, specific equipment, or alternative locations, an approved sign shall be posted in a readily visible location to indicate the building portion or equipment that the shunt trip serves.

Add new text as follows:

1103.3 Fire Service Electrical Disconnect. Existing buildings shall be provided with a fire service electrical disconnect in accordance with Section 511.

(Renumber subsequent sections)

Reason: Fundamentally, the fire service electrical disconnect is required to provide first responders the ability to safely disconnect electrical power to the building or heavy equipment, and alternative installations so that firefighters are not exposed to shock hazards or injured by equipment in operation during fire suppression and rescue operations.

The principle reason for fire service electrical disconnect is described in Section 101.2 Scope (5) "Conditions affecting the safety of fire fighters and emergency responders during emergency operations". Fire fighters operating in a building with energized electrical service poses extreme risks…risks that can be reduced or eliminated.

The 2008 edition of NFPA 1001, *Standard for Fire Fighter Professional Qualifications* requires Fire Fighter I candidates to requisite knowledge and skills relative to utility control devices.

Chapter 5: Fire Fighter I

5.3 Fireground Operations.
5.3.18 Turn off building utilities, given tools and an assignment, so that the assignment is safely completed.

(A) Requisite Knowledge. Properties, principles, and safety concerns for electricity, gas, and water systems; utility disconnect methods and associated dangers; and use of required safety equipment.
(B) Requisite Skills. The ability to identify utility control devices, operate control valves or switches, and assess for related hazards.

Cost Impact: The code change proposal will increase the cost of construction. The cost is expected to be less than $1,250 per installation site.

F50-13

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

511 (NEW)-F-TROTTER

F51 – 13
601.2 (New)

Proponent: Ian Hardage, San Ramon Valley Fire Protection District (ihardage@srvfire.ca.gov) and Amber Anderson, Cosumnes CSD Fire Department (AmberAnderson@csdfire.com), representing California Fire Chiefs Association

Add new text as follows:

601.2 Construction documents. The fire code official shall have the authority to require construction documents and calculations for the installation, rehabilitation or modification of building services and systems necessary to comply with this chapter. Construction documents for building systems shall be submitted for review and approval prior to installation or modification.

(Renumber subsequent sections)

Reason: We all know that construction documents and related calculations for building services and systems must be reviewed before a system is installed. Factors, such as classification of the hazard, amount of material, type of equipment, devices, and design criteria are just a few examples of what is to be considered when reviewed by the fire code official.

In some instances, shop drawings and supporting documentation such as equipment data sheets, manufacturer's installation instructions and warnings, listing sheets, etcetera for specialized building systems may not be prepared during the initial submittal for building construction, but rather may be a deferred submittal by the specializing contractor. It is not uncommon for a jurisdiction to request additional information or to issue a separate construction or operational permit, based on IFC Section 105 for these types of systems from that of the original building permit. This allows the owner or contractor to begin initial construction without delay. This proposal is not meant to require a separate permit. It is also not meant to say that these systems can not be reviewed during the initial architectural submittal. It is meant to assist the owner, contractor, architect, or engineer as well as the local authority having jurisdiction through the construction process by allowing the fire code official to required construction documents when needed, similar to IFC Sections 501, 901, 907, 909, 1101, 2301, 2311, 3103, 3201, and 6101.

Increases in construction costs would only occur if an authority having jurisdiction chose to implement a separate fee for review. All other costs such as design drawings and construction of the system should already be included in the original design budget. We feel that any cost increase by an AHJ would likely be significantly less than any delays in construction or operation of the system when such system is determined to be non-compliant with codes and standards enforced by the fire code official at a time less than ideal for the customer such as at final inspection.

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

F51-13

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

601.2 (NEW)-F-ANDERSON-HARDAGE

F52 – 13
604.1 (IBC [F] 2702.1)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

604.1 (IBC [F] 2702.1) Installation. Emergency and standby power systems required by this code or the *International Building Code* (IBC: *International Fire Code*) shall be installed in accordance with this code, the *International Building Code* (IBC: *International Fire Code*), NFPA 110 and NFPA 111. Existing installations shall be maintained in accordance with the original approval.

Reason: This proposal is potentially editorial or simply a correlation issue, but if not, it plugs a substantial hole in the installation requirements for these systems.

At first glance Section 604.1 appears thorough, however, though it refers to the IBC for when systems are required, it does not refer to the IBC for the actually installation. The IBC reference is important for addressing structural, flooding and other installation requirements.

To solve the issue the "*International Building Code*" has been added to the installation requirement portion of Section 604.1.

Cost impact: This proposal will not increase the cost of construction.

F52-13

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

604.1-F-DAVIDSON

F53 – 13
604.1 (IBC [F] 2702.1), 202

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

604.1 (IBC [F] 2702.1) ~~Installation~~ General. Emergency power systems and standby power systems ~~required by this code or the *International Building Code* shall be installed in accordance with this code, NFPA 110 and NFPA 111. Existing installations shall be maintained in accordance with the original approval.~~ shall comply with Sections 604.1.1 through 604.1.7 (IBC [F] 2702.1.1 through [F] 2702.1.6).

604.1.1 (IBC [F] 2702.1.1) Stationary generators. Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200.

604.1.2 (IBC [F] 2702.1.2) Electrical. Emergency power systems and standby power systems shall be installed in accordance with NFPA 70, NFPA 110 and NFPA 111.

604.1.3 (IBC [F] 2702.1.3) Load transfer. Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. Standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost unless specified otherwise in this code.

604.1.4 (IBC [F] 2702.1.4) Load duration. Emergency power systems and standby power systems shall be designed to provide the required power for a minimum duration of two hours without being refueled or recharged, unless specified otherwise in this code.

604.1.5 (IBC [F] 2702.1.5) Uninterruptable power source. An uninterrupted source of power shall be provided for equipment when required by the manufacturer's instructions, the listing, this code, or applicable referenced standards.

604.1.6 (IBC [F] 2702.1.6) Interchangeability. Emergency power systems shall be an acceptable alternative for installations that require standby power systems.

604.1.7 Maintenance. Existing installations shall be maintained in accordance with the original approval and Section 604.3.

Add new text as follows:

SECTION 202
DEFINITIONS

EMERGENCY POWER SYSTEM. A source of automatic electric power of a required capacity and duration to operate required life safety, fire alarm, detection and ventilation systems in the event of a failure of the primary power. Emergency power systems are required for electrical loads where interruption of the primary power could result in loss of human life or serious injuries.

STANDBY POWER SYSTEM. A source of automatic electric power of a required capacity and duration to operate required building, hazardous materials or ventilation systems in the event of a failure of the primary power. Standby power systems are required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This

includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

The requirements for emergency and standby power system are not treated in a consistent manner in the I-codes. This is one of several proposals designed to add consistency to these requirements. This proposal accomplishes the following:

1. Introduces definitions for emergency power systems and standby power systems that are consistent with definitions in NFPA 110 and NFPA 111.
2. Provides definitive requirements for maximum load transfer times. Emergency power systems must automatically transfer loads within 10 seconds after primary power is lost and standby power systems must automatically transfer loads within 60 seconds after primary power is lost. These times are allowed to vary if so specified in the code
3. To properly design emergency and standby power systems the minimum load duration must be known. This proposal introduces a default minimum two hour duration for systems unless another load duration is specified.
4. Uninterruptible power sources must be provided if required by the manufacturer's instructions, the listing, the code, or applicable referenced standards, such as NFPA 72.
5. A new section clarifies that an emergency power system can be provided to power loads for equipment that requires a standby power source.

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

F53-13

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

604.1 (NEW)-F-ZUBIA-FCAC

F54 – 13
604.1.2 (New) (IBC [F] 2702.1.2), Chapter 80

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Add new text as follows:

604.1.1(IBC [F] 2702.1.1) Stationary generators. Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200

604.1.2 (IBC [F] 2702.1.2) Group I-2 Occupancies. In Group I-2 occupancies, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the *International Building Code*, the system shall be located and installed in accordance with ASCE 24.

Add new standard to Chapter 80 as follows:

ASCE 24-05	Flood Resistant Design and Construction	604.1.2

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

There is no way to get to the requirements or limitations regarding generator placement for healthcare facilities that are in the standard if the code text for the specific code section does not take you there.

The Adhoc committee on healthcare identified this coordination oversight as it has been identified in healthcare facilities and that generators are being installed in areas subject to flooding, and although they were designed to meet the structural loads for the flooding, they would operationally fail.

There is no cost impact for these requirements because the compliance with ASCE 24 is required for these facilities; specific reference to ASCE for coordination of requirements applicable to healthcare facilities that require emergency or standby power systems per federal, state and licensing agency requirements and references. Also, both this section and this proposal are not intended to be retroactive in application. The AHC has a separate code change that would require facilities to do a risk assessment of existing installations.

It is an installation construction requirement that is not specifically addressed in the code; emergency and standby power by generators is necessary for life safety and preservation for healthcare and for other occupancies and uses as specified in 2702.

Note that G80-12 added requirements for essential electrical systems in I-2 occupancies. This is simply a continuation of that concept. This proposal is furthering the reliability of the essential electrical systems when they will be needed most by specifically referencing to ASCE 24. The additional language referencing Section 1612.3 is similar to that used in Section 3001.2 for elevators.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

Analysis: The standard proposed for inclusion in the code, ASCE 24-05, is currently referenced in the IBC. An update in the year edition of that standard will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

F54-13

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

604.1.2 (NEW)-F-WILLIAMS-ADHOC

F55 – 13
604.2.14.1.3 (IBC [F] 403.4.8.2) (New)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (rjd@davidsoncodeconcepts.com)

Add new text as follows:

604.2.14.1 (IBC [F] 403.4.8.1) Standby power. A standby power system shall be provided. Where the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 of the International Building Code or horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both. System supervision with manual start and transfer features shall be provided at the fire command center.

604.2.14.1.1 Fuel supply. (No change to current text.)

604.2.14.1.2 Capacity. (No change to current text.)

604.2.14.1.3 (IBC [F] 403.4.8.2) Fuel line piping protection: Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in by fire barriers or by an approved piping protective system that have a fire-resistance rating of not less than 2 hours. Where gypsum wallboard is used, joints on the piping side of the enclosure are not required to be taped. Access openings into the enclosure shall be protected by approved fire protection-rated assemblies.

(Renumber subsequent sections)

Reason: Currently IFC Section 604.2.14.1 and IBC Section [F] 403.4.8.1 require the generator to be protected from a fire within the occupancy by enclosure with 2 hour fire-resistance rated construction.

However, for diesel fueled generators it is common to supply the generators with a day tank and resupply the day tank via remote fuel oil tanks and the fuel line piping from those remote tanks to the generator can be exposed to the fire the generator has been protected against. Loss of the fuel line due to fire exposure has the same impact as loss of the generator itself from fire exposure. The wording only refers to "fuel lines' to also provide protection in those cases where a gaseous fuel supply is approved for use.

This proposal calls for fire-resistance protection of those portions of the fuel line piping that are located outside of the fire-resistance rated room the generator is located in. A portion of the new language was taken from IBC Section [F]415.10.6.4 where protection of HPM supply piping is provided for.

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

F55-13

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

604.2.14.1.3 (NEW)-F-DAVIDSON

F56 – 13
604.2.1 through 604.2.18 (IBC [F] 2702.2.1 through [F] 2702.2.20)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee

Revise as follows:

IFC Sections 604.2.1 through 604.2.18 (IBC Sections [F] 2702.2.1 through [F] 2702.2.20): Arrange these sections in alphabetical order by title.

Reason: There does not appear to be a single method followed for arranging the order of these sections. This proposal will make it easier to locate requirements for specific systems.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F56-13

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

604.2.1-F-ZUBIA-FCAC

F57 – 13
604.3 (New) [IBC [F] 2702.3 (New)]; Chapter 80 (IBC Chapter 35)

Proponent: Bob Eugene, representing Underwriters Laboratories (Robert.Eugene@ul.com)

Add new text as follows:

604.3 (IBC [F] 2702.3) Critical circuits. Cables used for survivability of critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

(Renumber subsequent sections)

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

UL

2196-2001 Tests for Fire Resistive Cables, with revisions through December 7, 2003...604.3 (2703.2)

Reason: UL 2196 is the ANSI approved standard for tests of fire resistive cables. NFPA 20 (fire pumps) and NFPA 72 (fire alarm) include selective survivability requirements to assure integrity of certain critical circuits. NFPA 70 does not specify the applicable standard within the mandatory provisions of the code, but recognizes electrical circuit protective systems as an alternate to listed cables. An electrical circuit protective system is a field assembly of components that must be installed according to the listing requirements and manufacturer's instructions in order to maintain the listing for the system. There are more than two dozen electrical circuit protective systems listed in the UL Fire Resistance Directory.

Cost Impact: The code change proposal may or may not increase the cost of construction. Such systems are already commonly installed.

F57-13

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

604.3 (NEW)-F-EUGENE

F58 – 13

IFC 604.1, 604.1.2 (New) (IBC [F] 2702.1.2 (New)), 604.2 (IBC [F] 2702.2), 604.3 (IBC [F] 2702.3), 604.4, 604.5

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Revise as follows:

SECTION 604
EMERGENCY AND STANDBY POWER SYSTEMS

604.1 Installation. Emergency and standby power systems required by this code or the *International Building Code* shall be installed in accordance with this code, NFPA 110 and 111. Existing installations shall be maintained in accordance with the original approval, except as specified in Chapter 11.

604.1.2 (IBC [F] 2702.1.2) Critical Operations Power Systems (COPS). Critical Operations Power Systems necessary to maintain continuous power supply to facilities or parts of facilities that require continuous operation for the reasons of public safety, emergency management, national security, or business continuity, shall comply with NFPA 70.

604.2 (IBC [F] 2702.2) Where required. Emergency and standby power systems shall be provided where required by Sections 604.2.1 through ~~604.2.18.4~~ 604.2.24 or other applicable referenced code.

604.2.1 (IBC [F] 2702.2.1) ~~Group A occupancies.~~ Emergency voice/alarm communications systems. Emergency power shall be provided for emergency voice/alarm communications systems in ~~Group A~~ the following occupancies, and as required in other sections of this code, in accordance with Section 907.5.2.2.5 ~~907.2.1.1~~.

Covered and Open Malls in accordance with Section 604.2.13.
Group A occupancies in accordance with Sections 907.2.1.1 and 907.5.2.2.4.
Group E occupancies in accordance with Section 907.2.3
Special Amusement buildings in accordance with Section 907.2.12.3
High rise buildings in accordance with Section 907.2.13
Atriums in accordance with Section 907.2.14
Deep Underground buildings in accordance with Section 907.2.19
Occupant Evacuation Elevators in accordance with Section 3008.10

604.2.2 (IBC [F] 2702.2.2) Smoke control systems. Standby power shall be provided for smoke control systems in the following occupancies, or as required in other sections of this code, in accordance with Section 909.11:

Covered mall building, *International Building Code* in accordance with Section 404.5
Atriums, *International Building Code* in accordance with Section 404.7
Underground buildings, *International Building Code* in accordance with Section 405.5
Group I-3, *International Building Code* in accordance with Section 408.9
Stages, *International Building Code* in accordance with Section 410.3.7.2
Special Amusement buildings (as applicable to Group A's), *International Building Code* in accordance with Section 411.1
Smoke protected seating in accordance with Section 1028.6.2.1

604.2.3 (IBC [F] 2702.2.3) Exit signs. Emergency power shall be provided for *exit* signs in accordance with Section 1011.6.3.

604.2.4 (IBC [F] 2702.2.4) Means of egress illumination. Emergency power shall be provided for *means of egress* illumination in accordance with Section 1006.3.

604.2.9 (IBC [F] 2702.2.9) Membrane structures. Emergency power shall be provided for *exit* signs in temporary tents and membrane structures in accordance with Section 3103.12.6.1. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures in accordance with the *International Building Code*.

604.2.15 (IBC [F] ~~2702.2.16~~ 2702.2.14) Group I-2 Occupancies. Essential electrical systems for Group I-2 occupancies shall be in accordance with Section 407.11 of the *International Building Code*.

~~604.2.15~~ 604.2.16 (IBC [F] ~~2702.2.16~~ 2702.2.15) Underground buildings. *(No change to current text)*

~~604.2.16~~ 604.2.17 (IBC [F] ~~2702.2.17~~ 2702.2.16) Group I-3 occupancies. *(No change to current text)*

~~604.2.17~~ 604.2.18 (IBC [F] ~~2702.2.18~~ 2702.2.17) Airport traffic control towers. *(No change to current text)*

~~604.2.18~~ 604.2.19 (IBC [F] ~~2702.2.19~~ 2702.2.18) Elevators. *(No change to current text)*

604.2.20 (IBC [F] ~~2702.2.20~~ 2702.2.19) Smokeproof enclosures and Stair Pressurization Alternative. Standby power shall be provided for smokeproof enclosures. The stair pressurization alternative and associated automatic fire detection systems in accordance with the *International Building Code*, Section 909.20.6.2.

604.2.21 (IBC [F] 2702.2.20) Elevator pressurization. Standby power shall be provided for elevator pressurization system in accordance with the *International Building Code*, Section 909.21.5.

604.2.22 (IBC [F] 2702.2.21) Elimination of Smoke Dampers in Shaft Penetrations. Standby power shall be provided when eliminating the smoke dampers in ducts penetrating shafts in accordance with the *International Building Code*, Section 717.5.3, exception 2.3.

604.2.23 (IBC [F] 2702.2.22) Common exhaust systems for clothes dryers. Standby power shall be provided for common exhaust systems for clothes dryers located in multistory structures in accordance with the *International Mechanical Code* Section 504.8, item 7.

604.2.24 (IBC [F] 2702.2.23) Common exhaust systems for domestic kitchen exhaust. Standby power shall be provided for common exhaust systems for domestic kitchens using common exhaust systems located in multistory structures in accordance with the *International Mechanical Code* Section 505.3.

604.2.25 (IBC [F] 2702.2.24) Hydrogen Cutoff Rooms. Standby power shall be provided for mechanical ventilation and gas detection systems of Hydrogen Cutoff Rooms in accordance with the *International Building Code*, Section 421.8.

604.2.26 Means of Egress Illumination in Existing Buildings. Emergency power shall be provided for *means of egress* illumination in accordance with Section 1104.5 and 1104.5.1 where required by the fire code official.

604.3 (IBC [F] 2702.3) Energy time duration. Unless a time limit is specified by the fire code official, in this chapter or elsewhere in this code, or in any other referenced code or standard, the emergency and standby power system shall be supplied with enough fuel or energy storage capacity for not less than 2-hour full-demand operation of the system.

Exception: Where *approved*, natural gas from a utility provider shall meet the intent of this section.

~~604.3~~ 604.4 Maintenance. *(No change to current text)*

~~604.4~~ 604.5 Operational inspection and testing. *(No change to current text)*

~~604.5~~ 604.6 Emergency lighting equipment. *(No change to current text)*

~~604.6~~ 604.7 Supervision of maintenance and testing. *(No change to current text)*

IBC ~~[F] 2702.2.14 Covered and open mall buildings.~~ ~~Standby power shall be provided for voice/alarm communication systems in covered and open mall buildings in accordance with Section 402.7.3.~~

[F] ~~2702.2.15~~ 2702.2.13 High-rise buildings. Emergency and standby power shall be provided in high-rise buildings in accordance with Sections 403.4.8 and 403.4.9.

IBC [F] ~~2702.3~~ 2702.4 Maintenance. Emergency and standby power systems shall be maintained and tested in accordance with the *International Fire Code*.

Reason: These provisions provide a laundry list that seems to have fallen out of date, are incomplete and don't match. This is intended to bring them into better coordination.

The following section is from G80-12, approved last cycle.

> **604.2.15 Group I-2 Occupancies.** Essential electrical systems for Group I-2 occupancies shall be in accordance with the *International Building Code*, Section 407.11.

> The following section is based on M73-12, approved last cycle:

> **604.2.24 Common exhaust systems for domestic kitchen exhaust.** Standby power shall be provided for common exhaust systems for domestic kitchens using common exhaust systems located in multistory structures in accordance with the *International Mechanical Code* Section 505.3.

A new reference to COPS in NFPA 70 is provided. While it is unusual to specifically list a use in NFPA 70, this seems justified at least for discussion.

Also, provided is a specified Energy time duration. It seems to add clarity.

Everything else should be a reference to a code provision that already exists.

Possible Modifications:

Depending on any controversy, the following are two options for modifications:

1. Modify out the reference to COPS.

> **~~604.1.2 Critical Operations Power Systems (COPS).~~** ~~For Critical Operations Power Systems necessary to maintain continuous power supply to facilities or parts of facilities that require continuous operation for the reasons of public safety, emergency management, national security, or business continuity, see NFPA 70.~~

2. Modify the Energy time duration to accommodate areas in earthquake zones or hurricane zones who might desire more time as follows:

a. change to a fill in the blank.

> **604.3 Energy time duration.** Unless a time limit is specified by the fire code official, in this chapter or elsewhere in this code, or in any other referenced code or standard, the emergency and standby power system shall be supplied with enough fuel or energy storage capacity for not less than [*fill-in*]-hour full-demand operation of the system.

b. or;

> **604.3 Energy time duration.** Unless a time limit is specified by the fire code official, in this chapter or elsewhere in this code, or in any other referenced code or standard, the emergency and standby power system shall be supplied with enough fuel or energy storage capacity for not less than 2-hour full-demand operation of the system, or longer when designated by the *code official* in accordance with an acceptable normal procedural process.

Reference to COPS can be modified out. However, if NFPA 70 is adopted by the jurisdiction, then it's listing here as a reminder would seem appropriate.

Cost Impact: Most items are already required. As such, this change will not increase the cost of construction.

Analysis: The text shown at Section **604.2.15 (IBC [F] ~~2702.2.16~~ 2702.2.14) Group I-2 Occupancies**. Is the text of approved code change G80-12 (AMPC) and is shown as current text for clarity.

F58-13

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

604.1-F-GODWIN

F59 – 13

604 (IBC [F] 2702) among others; 907.5.2.2.5 (IBC [F] 907.5.2.2.5); IMC [F] 513.11, [F]513.11.1 (New); IWUIC 404.10.3; IEBC 805.4.5

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFC COMMITTEE AND PART II WILL BE HEARD BY THE IEBC COMMITTEE AS TWO SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THOSE COMMITTEES.

PART I – INTERNATIONAL FIRE CODE

EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 402.7.3 Emergency ~~Standby~~ power. *Covered mall buildings* greater than 50,000 square feet (4645 m2) in area and *open mall buildings* greater than 50,000 square feet (4645 m2) within the established perimeter line shall be provided with ~~standby~~ emergency power ~~systems~~ that is ~~are~~ capable of operating the *emergency voice/alarm communication system* in accordance with Section 2702.

[F] 907.5.2.2.5 Emergency power. Emergency voice/alarm communications systems shall be provided with ~~an *approved*~~ emergency power ~~source~~ in accordance with Section 2702. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

[F] ~~2702.2.1 Group A occupancies.~~ ~~Emergency power shall be provided for emergency voice/alarm communication systems in Group A occupancies in accordance with Section 907.5.2.2.4.~~

[F] ~~2702.2.14 Covered and open mall buildings.~~ ~~Standby power shall be provided for voice/alarm communication systems in *covered and open mall buildings* in accordance with Section 402.7.3.~~

[F] 2702.2.1 Emergency voice/alarm communication systems. Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

Revise the IFC as follows:

~~604.2.1 Group A occupancies.~~ ~~Emergency power shall be provided for emergency voice/alarm communication systems in Group A occupancies in accordance with Section 907.2.1.1.~~

~~604.2.13 Covered and open mall buildings.~~ ~~Covered mall buildings exceeding 50,000 square feet (4645 m2) and open mall buildings exceeding 50,000 square feet (4645 m2) within the established perimeter line shall be provided with standby power systems that are capable of operating the emergency voice/alarm communication system.~~

604.2.1 Emergency voice/alarm communication systems. Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. 5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

907.5.2.2.5 Emergency power. Emergency voice/alarm communications systems shall be provided with ~~an *approved*~~ emergency power ~~source~~ in accordance with Section 604. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

SMOKE CONTROL SYSTEMS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 404.7 Standby power. Equipment required to provide smoke control shall be provided with standby power in accordance with ~~connected to a standby power system in accordance with~~ Section 909.11.

[F] 909.11 Standby power ~~Power systems~~. ~~The~~ ~~s~~Smoke control systems shall be provided with standby power in accordance with Section 2702. ~~shall be supplied with two sources of power. Primary power shall be from the normal building power systems. Secondary power shall be from an approved standby source complying with Chapter 27 of this code.~~

[F] 909.11.1 Equipment room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gears and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. ~~The transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power.~~

909.20.6.2 Standby power. Mechanical vestibule and *stair* shaft ventilation systems and automatic fire detection systems shall be provided with ~~powered by an *approved*~~ standby power in accordance with Section 2702. ~~system conforming to Section 403.4.8 and Chapter 27.~~

909.21.5 Standby power. The pressurization system shall be provided with standby power in accordance with Section 2702. ~~from the same source as other required emergency systems for the building.~~

[F] 2702.2.2 Smoke control systems. Standby power shall be provided for smoke control systems as required in ~~in accordance with~~ Sections 404.7, 909.11, 909.20.6.2, and 909.21.5.

[F] ~~2702.2.20 Smokeproof enclosures.~~ ~~Standby power shall be provided for smokeproof enclosures as required by in Section 909.20.6.2.~~

Revise the IFC as follows:

604.2.2 Smoke control systems. Standby power shall be provided for smoke control systems as required in ~~in accordance with~~ Section 909.11.

909.11 Standby power ~~Power systems~~. ~~The~~ ~~s~~Smoke control systems shall be provided with standby power in accordance with Section 2702. ~~shall be supplied with two sources of power. Primary power shall be from the normal building power systems. Secondary power shall be from an approved standby source complying with Chapter 27 of this code.~~

909.11.1 Equipment room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gears and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. ~~The transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power.~~

Revise the IMC as follows:

[F] 513.11 Power systems. ~~The s~~Smoke control system shall be supplied with standby power in accordance with Section 2702 of the International Building Code. ~~two sources of power. Primary power shall be the normal building power systems. Secondary power shall be from an *approved* standby source complying with Chapter 27 of the *International Building Code*.~~

[F] 513.11.1 Equipment room. The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gear and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour fire-resistance rated fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *International Building Code*, or both. Power distribution from the two sources shall be by independent routes. ~~Transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power. The systems shall comply with NFPA 70.~~

EXIT SIGNS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 2702.2.3 Exit signs. Emergency power shall be provided for *exit* signs as required in ~~in accordance with~~ Section 1011.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

Revise the IFC as follows:

604.2.3 Exit signs. Emergency power shall be provided for *exit* signs as required in ~~in accordance with~~ Section 1011.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

MEANS OF EGRESS ILLUMINATION

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 2702.2.4 Means of egress illumination. Emergency power shall be provided for *means of egress* illumination as required in ~~in accordance with~~ Section 1006.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

Revise the IFC as follows:

604.2.4 Means of egress illumination. Emergency power shall be provided for *means of egress* illumination in accordance with Sections 1006.3 and 1104.5.1.

1104.5.1 Emergency power duration and installation. Emergency power for means of egress illumination shall be provided in accordance with Section 604. In other than Group I-2, ~~the~~ emergency power ~~system shall provide power~~ shall be provided for not less than 60 minutes. ~~and consist of storage batteries, unit equipment or an on-site generator.~~ In Group I-2, ~~the~~ emergency power ~~system shall provide power~~ shall be provided for not less than 90 minutes. ~~and consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 604.~~

ELEVATORS AND PLATFORM LIFTS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 2702.2.5 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 1007.4, 1007.5, 3003.1, 3007.9 and 3008.9.

~~**[F] 2702.2.5 Accessible means of egress elevators.** Standby power shall be provided for elevators that are part of an *accessible means of egress* in accordance with Section 1007.4.~~

~~**[F] 2702.2.6 Accessible means of egress platform lifts.** Standby power in accordance with this section or ASME A 18.1 shall be provided for platform lifts that are part of an *accessible means of egress* in accordance with Section 1007.5.~~

~~**[F] 2702.2.19 Elevators.** Standby power for elevators shall be provided as set forth in Sections 3003.1, 3007.9 and 3008.9.~~

Revise the IFC as follows:

~~**604.2.5 Accessible means of egress elevators.** Standby power shall be provided for elevators that are part of an accessible *means of egress* in accordance with Section 1007.4.~~

~~**604.2.6 Accessible means of egress platform lifts.** Standby power in accordance with this section or ASME A18.1 shall be provided for platform lifts that are part of an accessible *means of egress* in accordance with Section 1007.5.~~

604.2.18 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 607.2, 1007.4, and 1007.5.

Relocate IFC sections and renumber the remaining sections.

607.2 Standby power. ~~**604.2.18 Elevators.**~~ In buildings and structures where standby power is required or furnished to operate an elevator, standby power shall be provided in accordance with Section 604. ~~the o~~Operation of the system shall be in accordance with Sections ~~604.2.18.1 through 604.2.18.4~~ 607.2.1 through 607.2.4.

607.2.1 ~~**604.2.18.1**~~ **Manual transfer.** (No change to current text.)

607.2.2 ~~**604.2.18.2**~~ **One elevator.** (No change to current text.)

607.2.3 ~~**604.2.18.3**~~ **Two or more elevators.** (No change to current text.)

607.2.4 ~~**604.2.18.4**~~ **Machine room ventilation.** (No change to current text.)

HORIZONTAL SLIDING DOORS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 2702.2.7 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors as required in ~~in accordance with~~ Section 1008.1.4.3. The standby power supply shall have a capacity to operate a minimum of 50 closing cycles of the door.

Revise the IFC as follows:

604.2.7 Horizontal sliding doors. Standby power shall be provided for horizontal sliding doors as required in ~~in accordance with~~ Section 1008.1.4.3. The standby power supply shall have a capacity to operate a minimum of 50 closing cycles of the door.

MEMBRANE STRUCTURES

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 2702.2.9 Membrane structures. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures as required in ~~in accordance with~~ Section 3102.8.2. Standby power shall be provided for a duration of not less than four hours. Auxiliary inflation systems in temporary air-supported and air-inflated membrane structures shall be provided in accordance with Section 3103.10.4 of ~~Emergency power shall be provided for *exit* signs in temporary tents and membrane structures in accordance with~~ the *International Fire Code*.

Revise the IFC as follows:

604.2.9 Membrane structures. ~~Emergency power shall be provided for *exit* signs in temporary tents and membrane structures in accordance with Section 3103.12.6.1.~~
Standby power shall be provided for auxiliary inflation systems in permanent membrane structures in accordance with Section 2702 of the *International Building Code*. Auxiliary inflation systems shall be provided in temporary air-supported and air-inflated membrane structures in accordance with Section 3103.10.4.

3103.10.4 Auxiliary inflation systems ~~power~~. Places of public assembly for more than 200 persons shall be furnished with an auxiliary inflation system capable of powering a blower with the capacity to maintain full inflation pressure with normal leakage in accordance with Section 3103.10.3 for a minimum duration of four hours. The auxiliary inflation system can be either a fully automatic auxiliary engine-generator set ~~capable of powering one blower continuously for 4 hours,~~ or a supplementary blower powered by an internal combustion engine which shall be automatic in operation. The system shall be capable of automatically operating the required blowers at full power within 60 seconds of a commercial power failure.

SEMICONDUCTOR FABRICATION FACILITIES

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 415.10.10 Emergency power system. An emergency power system shall be provided in Group H-5 occupancies in accordance with Section 2702. ~~where required in Section 415.10.10.1.~~ The emergency power system shall ~~be designed to~~ supply power automatically to ~~required~~ the electrical systems specified in Section 415.10.10.1 when the normal electrical supply system is interrupted.

[F] 415.10.10.1 Required electrical systems. Emergency power shall be provided for electrically operated equipment and connected control circuits for the following systems:

1. through 6. (No change to current text.)
7. Manual and automatic *fire alarm* systems.
8. through 11. (No change to current text.)

[F] 2702.2.8 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in ~~in accordance with~~ Section 415.10.10.

Revise the IFC as follows:

604.2.8 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in ~~in accordance with~~ Section 2703.15.

2703.15 Emergency power system. An emergency power system shall be provided in Group H-5 occupancies in accordance with ~~where required by~~ Section 604. The emergency power system shall ~~be designed to~~ supply power automatically to ~~required~~ the electrical systems specified in Section 2703.15.1 when the normal supply system is interrupted.

HAZARDOUS MATERIALS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 414.5.3 Emergency or standby power. Where mechanical *ventilation*, treatment systems, temperature control, alarm, detection or other electrically operated systems are required by the *International Fire Code* or this code, such systems shall be provided with ~~an~~ emergency or standby power ~~system~~ in accordance with Section 2702 ~~Chapter 27~~.**Exceptions:** ~~1.~~

[F] 414.5.3.1 Exempt applications. Emergency or standby power are not required for ~~the following storage areas: 1.1. M~~ mechanical ventilation systems provided *for:*

1. S~~s~~torage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding 6.5 gallons (25 L) capacity.
   ~~1.2~~1.1. Storage ~~areas for~~ of Class 1 and 2 oxidizers.
   ~~1.3~~1.2. Storage ~~areas for~~ of Class II, III, IV and V organic peroxides.
   ~~1.4~~1.3. Storage~~, use and handling areas for~~ of asphyxiant, irritant and radioactive gases.
   ~~1.5. For storage, use and handling areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2 of the *International Fire Code*.~~

[F] 414.5.3.2 Fail-safe engineered systems. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

[F] 421.8 Standby power. Mechanical *ventilation* and gas detection systems shall be ~~connected to a~~ provided with standby power ~~system~~ in accordance with Section 2702. ~~Chapter 27.~~

[F] 2702.2.10 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials as required in ~~in accordance with~~ Sections 414.5.3 and 421.8 and the *International Fire Code*.

Revise the IFC as follows:

604.2.10 Hazardous materials. Emergency ~~or standby~~ power shall be provided in occupancies with hazardous materials as required in the following ~~in accordance with~~ sections ~~5004.7 and 5005.1.5.~~:

Hazardous materials – 5001.3.3.10
Highly toxic and toxic gases - 6004.2.2.8, 6004.3.4.2
Organic peroxides - 6204.1.11

5004.7 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 ~~NFPA 70 and~~ Section 604.

~~**Exceptions:**~~

5004.7.1 Exempt applications. Standby or emergency power is not required for ~~M~~mechanical ventilation systems provided for:

1. Storage of Class IB and Class IC flammable and *combustible liquids* in closed containers not exceeding 61/2 gallons (25 L) capacity.
2. Storage ~~areas for~~ of Class 1 and 2 oxidizers.
3. Storage ~~areas for~~ of Class II, III, IV and V organic peroxides.
4. Storage ~~areas for~~ of asphyxiant, irritant and radioactive gases.
5. ~~For storage areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2.~~

5004.7.2 Fail-safe engineered systems. ~~6.~~ Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

5005.1.5 Standby or emergency power. Where mechanical ventilation, treatment systems, temperature control, manual alarm, detection or other electrically operated systems are required in this code, such systems shall be provided with ~~an~~ emergency or standby power ~~system~~ in accordance with ~~NFPA 70 and~~ Section 604.

~~**Exceptions:** 1.~~

5005.1.5.1 Exempt applications. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an *approved* fail-safe engineered system is installed.

~~2. Systems for highly toxic or toxic gases shall be provided with emergency power in accordance with Sections 6004.2.2.8 and 6004.3.4.2.~~

6004.2.2.8 Emergency power. Emergency power shall be provided for the following systems in accordance with the Section 604~~. and NFPA 70 shall be provided in lieu of standby power where any of the following systems are required~~:

1. through 7. *(No change to current text.)*

6004.2.2.8.1 Fail-safe engineered systems. ~~Exception:~~ Emergency power ~~is~~ shall not be required for mechanical exhaust ventilation, treatment systems and temperature control systems where *approved* fail-safe engineered systems are installed.

6204.1.11 Standby power. Standby power ~~in accordance with Section 604 shall be provided for storage areas of Class I and unclassified detonable organic peroxide.~~ shall be provided in accordance with

Section 604 for the following systems used to protect Class I and unclassified detonable organic peroxide:

1. through 7. *(No change to current text.)*

6204.1.11.1 Fail-safe engineered systems. ~~Exception:~~ Standby power shall not be required for mechanical exhaust ventilation, treatment systems and temperature control systems where *approved* fail-safe engineered systems are installed.

HIGH RISE BUILDINGS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 403.4.8 Standby and emergency power. A standby power system complying with Section 2702 ~~Chapter 27~~ and Section 3003 shall be provided for the standby power loads specified in 403.4.8.2. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 403.4.8.3.~~Where elevators are provided in a *high-rise building* for *accessible means of egress*, fire service access or occupant self-evacuation, the standby power system shall also comply with Sections 1007.4, 3007 or 3008, as applicable.~~

[F] 403.4.8.1 Equipment room. ~~Special requirements for standby power systems.~~ If the standby or emergency power system includes ~~is~~ a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. System supervision with manual start and transfer features shall be provided at the *fire command center*.

[F] 403.4.8.2 Standby power loads. The following are classified as standby power loads:

1. Power and lighting for the *fire command center* required by Section 403.4.6;
2. *Ventilation* and automatic fire detection equipment for *smokeproof enclosures*; and
3. Elevators.
4. Where elevators are provided in a *high-rise building* for *accessible means of egress*, fire service access or occupant self-evacuation, the standby power system shall also comply with Sections 1007.4, 3007 or 3008, as applicable.

[F] ~~403.4.9 Emergency power systems.~~ ~~An emergency power system complying with Chapter 27 shall be provided for emergency power loads specified in Section 403.4.9.1.~~

[F] ~~403.4.9.1~~ 403.4.8.3 Emergency power loads. The following are classified as emergency power loads:

1. Exit signs and *means of egress* illumination required by Chapter 10;
2. Elevator car lighting;
3. *Emergency voice/alarm communications systems*;
4. Automatic fire detection systems;
5. *Fire alarm* systems; and
6. Electrically powered fire pumps.

[F] 2702.2.15 High-rise buildings. Emergency and standby power systems shall be provided in high-rise buildings as required in ~~in accordance with~~ Section~~s~~ 403.4.8~~ and 403.4.9~~.

Revise the IFC as follows:

604.2.14 High-rise buildings. Standby power and emergency power ~~, light and emergency systems in high-rise buildings~~ shall be provided as required in Section 403 of the International Building Code, and shall be in accordance with Section 604. ~~comply with the requirements of Sections 604.2.14.1 through 604.2.14.3.~~

~~**604.2.14.1 Standby power.** A standby power system shall be provided. Where the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with 2-hour *fire barriers* constructed in accordance with Section 707 of the *International Building Code* or *horizontal assemblies* constructed in accordance with Section 711 of the *International Building Code*, or both. System supervision with manual start and transfer features shall be provided at the *fire command center*.~~

~~**604.2.14.1.1 Fuel supply.** An on-premises fuel supply, sufficient for not less than 2-hour full-demand operation of the system, shall be provided.~~
~~**Exception:** When *approved*, the system shall be allowed to be supplied by natural gas pipelines.~~

~~**604.2.14.1.2 Capacity.** The standby system shall have a capacity and rating that supplies all equipment required to be operational at the same time. The generating capacity is not required to be sized to operate all of the connected electrical equipment simultaneously.~~

~~**604.2.14.1.3 Connected facilities.** Power and lighting facilities for the *fire command center* and elevators specified in Sections 403.4.8.2 and 403.6 of the *International Building Code*, as applicable, shall be transferable to the standby source. Standby power shall be provided for at least one elevator to serve all floors and be transferable to any elevator.~~

~~**604.2.14.2 Separate circuits and luminaires.** Separate lighting circuits and luminaires shall be required to provide sufficient light with an intensity of not less than 1 footcandle (11 lux) measured at floor level in all *means of egress corridors*, *stairways*, smokeproof enclosures, elevator cars and lobbies, and other areas that are clearly a part of the escape route.~~

~~**604.2.14.2.1 Other circuits.** Circuits supplying lighting for the *fire command center* and mechanical equipment rooms shall be transferable to the standby source.~~

~~**604.2.14.3 Emergency systems.** *Exit* signs, *exit* illumination as required by Chapter 10, electrically powered fire pumps required to maintain pressure, and elevator car lighting are classified as emergency systems and shall operate within 10 seconds of failure of the normal power supply and shall be capable of being transferred to the standby source.~~

> ~~**Exception:** *Exit* sign, *exit* and *means of egress* illumination are permitted to be powered by a standby source in buildings of Group F and S occupancies.~~

UNDERGROUND BUILDINGS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 405.8 Standby and emergency power. A standby power system complying with Section 2702 ~~Chapter 27~~ shall be provided for the standby power loads specified in Section 405.8.1. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Section 405.8.2.

[F] 405.8.1 Standby power loads. The following loads are classified as standby power loads:

1. Smoke control system.
2. *Ventilation* and automatic fire detection equipment for *smokeproof enclosures.*
3. Fire pumps.
4. ~~Standby power shall be provided for e~~Elevators, as required in ~~in accordance with~~ Section 3003.

[F] ~~405.8.2 Pick-up time.~~ ~~The standby power system shall pick up its connected loads within 60 seconds of failure of the normal power supply.~~

[F] ~~405.9 Emergency power.~~ ~~An emergency power system complying with Chapter 27 shall be provided for emergency power loads specified in Section 405.9.1.~~

[F] ~~405.9.1~~ 405.8.2 Emergency power loads. The following loads are classified as emergency power loads:

1. through 5. *(No change to current text.)*

[F] 2702.2.16 Underground buildings. Emergency and standby power shall be provided in underground buildings as required in ~~in accordance with~~ Sections 405.~~8 and 405.9~~.

Revise the IFC as follows:

604.2.15 Underground buildings. Emergency and standby power ~~systems~~ shall be provided in underground buildings ~~covered~~ as required in ~~Chapter 4~~ Section 405 of the *International Building Code* ~~shall comply with Sections 604.2.15.1 and 604.2.15.2.~~ and shall be in accordance with Section 604.

~~604.2.15.1 Standby power.~~ ~~A standby power system complying with this section and NFPA 70 shall be provided for standby power loads as specified in Section 604.2.15.1.1.~~

~~604.2.15.1.1 Standby power loads.~~ ~~The following loads are classified as standby power loads:~~

~~1. Smoke control system.~~
~~2. Ventilation and automatic fire detection equipment for smokeproof enclosures.~~
~~3. Fire pumps.~~
~~4. Standby power shall be provided for elevators in accordance with Section 3003 of the *International Building Code*.~~

~~604.2.15.1.2 Pickup time.~~ ~~The standby power system shall pick up its connected loads within 60 seconds of failure of the normal power supply.~~

~~604.2.15.2 Emergency power.~~ ~~An emergency power system complying with this code and NFPA 70 shall be provided for emergency power loads as specified in Section 604.2.15.2.1.~~

~~604.2.15.2.1 Emergency power loads.~~ ~~The following loads are classified as emergency power loads:~~

~~1. Emergency voice/alarm communication systems.~~
~~2. Fire alarm systems.~~
~~3. Automatic fire detection systems.~~
~~4. Elevator car lighting.~~
~~5. *Means of egress* lighting and *exit* sign illumination as required by Chapter 10.~~

GROUP I-3 OCCUPANCY DOOR LOCKS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part. See Part XX for this subject in the IEBC.*

Revise the IBC as follows:

[F] 408.4.2 Power-operated doors and locks. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702. ~~and either emergency power or a remote mechanical operating release shall be provided.~~

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required when remote mechanical operating releases are provided.

[F] 2702.2.17 Group I-3 occupancies. Emergency power shall be provided for power operated doors and locks in Group I-3 occupancies as required in ~~in accordance with~~ Section 408.4.2.

Revise the IFC as follows:

604.2.16 Group I-3 occupancies. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 604. ~~and either emergency power or a remote mechanical operating release shall be provided.~~

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required when remote mechanical operating releases are provided.

AIRPORT TRAFFIC CONTROL TOWERS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

~~**[F] 2702.2.18 Airport traffic control towers.** Standby power shall be provided in airport traffic control towers in accordance with Section 412.3.4.~~

~~**[F] 412.3.4 Standby power.** A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height.~~
~~Power shall be provided to the following equipment:~~

~~1. Pressurization equipment, mechanical equipment and lighting.~~
~~2. Elevator operating equipment.~~
~~3. *Fire alarm* and smoke detection systems.~~

Revise the IFC as follows:

~~**604.2.17 Airport traffic control towers.** A standby power system shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:~~

~~1. Pressurization equipment, mechanical equipment and lighting.~~
~~2. Elevator operating equipment.~~
~~3. Fire alarm and smoke detection systems.~~

SMOKE ALARMS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] 907.2.11.4 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 backup shall be connected to an emergency electrical system <u>in accordance with Section 2702</u>. 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 where they are connected to an emergency electrical system <u>that complies with Section 2702.</u>

Revise the IFC as follows:

907.2.11.4 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 <u>in accordance with Section 604</u>. 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 where they are connected to an emergency electrical system <u>that complies with Section 604.</u>

EMERGENCY ALARM SYSTEMS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Revise the IBC as follows:

[F] <u>414.7.4 Emergency alarm systems.</u> <u>*Emergency alarm systems*</u> <u>shall be provided with emergency power in accordance with Section 2702.</u>

[F] <u>2702.2.21 Emergency alarm systems.</u> <u>Emergency power shall be provided for emergency alarm systems as required by Section 414.7.4.</u>

Revise the IFC as follows:

604.2.19 Emergency alarm systems. Emergency power shall be provided for emergency alarm systems as required by Section 414 of the International Building Code.

EMERGENCY RESPONDER RADIO COVERAGE SYSTEMS

NOTE: *The normal convention for portraying code changes to duplicated texts is by showing the parallel section numbers (e.g., "**907.5.2 (IBC [F] 907.5.2)**" or "**1011.6.3 (IFC [B] 1011.6.3**"). In this code change, however, for improved clarity, duplicate texts are shown for each code in this part.*

Add a new Section 2702.2.21 to the IBC as follows:

[F] 2702.2.21 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems required in Section 915 and the *International Fire Code*. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

Revise the IFC as follows:

510.4.2.3 Standby power. ~~Secondary power~~. Emergency responder radio coverage systems shall be provided with ~~an *approved* secondary source of~~ standby power in accordance with Section 604. The ~~secondary~~ standby power supply shall be capable of operating the emergency responder radio coverage system for a ~~period of at least~~ duration of not less than 24 hours. ~~When primary power is lost, the power supply to the emergency responder radio coverage system shall automatically transfer to the secondary power supply.~~

604.2.19 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems as required in Section 510.4.2.3. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.

FLARING SYSTEMS FOR MECHANICAL REFRIGERATION

Revise the IFC as follows:

606.12.5 Flaring systems. Flaring systems for incineration of flammable refrigerants shall be designed to incinerate the entire discharge. The products of refrigerant incineration shall not pose health or environmental hazards. Incineration shall be automatic upon initiation of discharge, shall be designed to prevent blowback and shall not expose structures or materials to threat of fire. Standby fuel, such as LP gas, and standby power shall have the capacity to operate for one and one-half the required time for complete incineration of refrigerant in the system. Standby electrical power, where required to complete the incineration process, shall be in accordance with Section 604.

WATER SUPPLY POWER

Revise the IWUIC as follows:

404.10.3 Standby power. Standby power shall be provided to pumps, controllers and related electrical equipment so that ~~S~~stationary water supply facilities within the *wildland-urban interface area* that are dependent on electrical power can provide the required ~~to meet adequate~~ water supply. The standby power system shall be ~~demands shall provide standby power systems~~ in accordance with Section 2702 ~~Chapter 27~~ of the *International Building Code*~~,~~ and Section 604 of the *International Fire Code.* ~~and NFPA 70 to ensure that an uninterrupted water supply is maintained.~~ The standby power source shall be capable of providing power for a minimum of two hours.

Exceptions: *(No change to current text.)*

PART II - INTERNATIONAL EXISTING BUILDING CODE

GROUP I-3 OCCUPANCY DOOR LOCKS

Revise the IEBC as follows:

IEBC 805.4.5 Emergency power source in Group I-3. Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702 of the International Building Code.

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1.
2. Emergency power is not required where remote mechanical operating releases are provided.

~~Work areas in buildings of Group I-3 occupancy having remote power unlocking capability for more than 10 locks shall be provided with an emergency power source for such locks. Power shall be arranged to operate automatically upon failure of normal power within 10 seconds and for a duration of not less than 1 hour.~~

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.
This proposal is part of a comprehensive rewrite of the I-Codes emergency and standby power requirements. Some edits are made to provide consistency in how standby power is referenced in the codes.

Part I - INTERNATIONAL FIRE CODE

Emergency voice/alarm communication systems: Emergency voice/alarm communication systems are required to include an emergency power source in IBC/IFC Section 907.5.2.2.5. A reference to these systems has been added to IBC 2702.2 and IFC 604.2. With the addition of this requirement it is no longer necessary to indicate that these systems are required in covered malls and Group A occupancies, which are just two of the many occupancies and building types that require emergency voice/alarm communication systems.
All reference in the IFC and IBC to emergency voice/alarm communication systems requires them to be provided with a source of emergency power, except for IBC Section 402.7.3. This oversight was corrected.

Smoke control systems: Smoke control systems are required to include a standby power source in IBC/IFC Section 909.11. In addition the IBC requires standby power to be provided for smoke control systems or components of the systems in Sections 404.7, 909.20.6.2, and 909.21.5. A reference to these section have been added to IBC 2702.2.
By referencing section 909.20.6.2 in Section 2702.2.2, it is no longer necessary to include Section 2702.2.20 smokeproof enclosure reference.
IBC/IFC 909.11and IMC 513.11 were rather lengthy and included requirements for standby power equipment rooms. These were broken off and put in Section 909.11.1 and 513.11.1. The reference to automatically transferring to standby power within 60 seconds is included in a separate code proposal for Sections 2702.1 and 604.1, and does not need to be repeated here.

Exit signs: The proposal updates references to emergency power requirements by including the appropriate IFC and IBC code sections that specify requirements for emergency power supply and operation of Exit Signs.

Means of egress illumination: Details on system components in 1006.3.1 have been eliminated because these are covered in the revised IFC Section 604.1 and IBC Section 2702.1 requirements. The last part of IFC Section 1006.3 was renumbered 1006.3.1 to match the format used in the equivalent IBC requirements.

Elevators and platform lifts: In IBC Section 2702.2 and IFC Section 604.2, references to three types of elevators or platform lifts were consolidated into a single reference to elevators and platform lifts.

Requirements for the specific rating of the standby systems required in 3007.9 and 3008.9 were removed since they are covered under another comprehensive rewrite of IBC Section 2702.1 and IFC Section 604.1.
Elevator requirements in IFC Section 604.2.18 were relocated to IFC Section 607, which covers similar elevator requirements.

Horizontal sliding doors: The requirement for the standby power supply to have a capacity to operate a minimum of 50 opening and closing cycles of the door is based on requirements in NFPA 80, Section 9.4.2.2.2.

Membrane structures: The IBC and IFC require auxiliary inflation systems to be provided for air-supported and air-inflated membrane structures. (The IBC covers permanent membrane structures and the IFC covers temporary membrane structures). The differences are that permanent air-inflated membrane structures include standby power as covered by Section 2702 of the IBC. Temporary air-inflated membrane structures are required to include an automatic engine-generator set or a blower powered by an internal combustion engine to serve as an auxiliary inflation system in the event of a commercial power failure. These are not required to be permanently installed.

Semiconductor fabrication facilities: Automatic fire alarm systems are required to be provided with emergency power, which is consistent with NFPA 72.

Hazardous materials: Reference in Section 2702 of the IBC for emergency power for pyrophoric materials to be provided in accordance with the IFC was removed since backup power is not required in IFC Chapter 64.
IBC Section 414.5.3 and IFC Section 5004.7 were reformatted with no substantive changes to the systems that do not require emergency or standby power and fail-safe engineered systems.
In IBC Section 414.5.3 the requirements to provide emergency power for ventilation systems required by the IBC (or this code) were removed. This eliminates the need to provide emergency power for normal building ventilation systems as required by Section 1203.
In looking at the hazardous material related systems that require a secondary power source, they all fall under the definition of emergency power system as included in NFPA 110. Therefore reference to standby power was removed from this section.
References for emergency power were added to Sections 53, 54, 55, 57, 61 and 63 since these sections include requirements for system that require emergency power per Section 5001.3.3.10.

High rise buildings: The scope of IFC Section 604 covers emergency and standby power system, and yet sections 604.2.14.1 through 604.2.14.3 either duplicated requirements in revised Section 604.1, (covered under a separate proposal), or covered electrical system components that are not part of the standby or emergency power system. These requirements were eliminated. If the desire is to include these systems in the IFC they should be placed in a more appropriate location.

Underground buildings: Sections 604.2.15.1 through 604.2.15.2.1 duplicate some, but not all of the IBC requirements for underground buildings, and were therefore eliminated. If the desire is to include these details in the IFC they should be added in their entirety.

Group I-3 occupancy door locks: The proposal updates references to emergency power requirements by including the appropriate IFC and IFC code sections that specify requirements for emergency power supply and operation of power-operated door locks.

Airport traffic control towers: There is no reason to call out emergency and standby power requirements for aircraft traffic control towers. These requirements are specified for the types of electrical systems that will be provided, such as exit signs, egress illumination, elevators, smoke control, etc. In addition there is an error in some of the criteria since emergency power is required for fire alarm and smoke detection equipment and lighting of the means of egress. If the desire is to include a list of all possible emergency and standby power loads that can be included in these towers that can be done.

Smoke alarms: The proposal updates references to emergency power requirements by including the appropriate IFC and IBC code sections that specify requirements for emergency power supply and operation of Smoke Alarms.

Emergency alarms systems: Emergency power for emergency alarm systems is not currently required in either the IBC or the IFC, but it should be, based on the proposed definition of emergency power system.

Emergency responder radio coverage systems: Reference to standby power for emergency responder radio coverage systems was inadvertently left out of IBC Section 2702 and IFC Section 604.

Flaring systems for mechanical refrigeration: The proposal updates references to emergency power requirements by including the appropriate IFC code sections that specify requirements for emergency power supply and operation of flaring systems for mechanical refrigeration.

Clothes dryer exhaust systems: The proposal updates IMC references to stand-by power requirements by including the appropriate IBC code sections that specify requirements for stand-by power supply and operation of clothes dryer exhaust systems.

Water supply power: The proposal updates IWUI references to stand-by power requirements for pumps, controllers and related electrical equipment so that stationary water supply facilities within the *wildland-urban interface* by including the appropriate IFC and IBC code sections that specify requirements for stand-by power supply and operation of specified water supply equipment.

Part II - INTERNATIONAL EXISTING BUILDING CODE

Group I-3 occupancy door locks in the IEBC: The IEBC format was revised to more closely correlate with the IBC and IFC.

Cost Impact: This code change will increase the cost of construction

F59-13
PART I – INTERNATIONAL FIRE CODE

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

PART II – INTERNATIONAL EXISTING BUILDING CODE

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

604.2.1(NEW)-F-ZUBIA-FCAC

F60 – 13
604.19 (New) [IBC [F] 2702.2.21 (New)]

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

604.19 (IBC [F] 2702.2.21) Hydrogen gas rooms. Standby power shall be provided for mechanical ventilation and gas detection systems in accordance with Section 5808.8.

Reason: .This proposal is primarily an editorial cleanup, the standby power is already required, it just never got added to the list of where required in IBC Section [F]2702.2 and IFC Section 604.2.

Note: There is a separate proposal to create IFC Section 5808 by copying the language from IBC Section 421. If that proposal fails the reference in proposed Section 604.19 would be IBC Section [F]421.8.

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

F60-13

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

604.19-F-DAVIDSON

F61 – 13
605.11

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through 605.11.4, the International Building Code and NFPA 70.

Exception: Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of ~~this~~ Sections 605.11.2 through 605.11.3.3.3.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

Relocation of exception to a more appropriate section. The exception should not be applicable to all the requirements of Section 605.11. Markings should still be required on Group U Occupancies.

Cost Impact: No Impact on Construction Costs

F61-13

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

605.11-F-CAIN-SMIRNOW

F62 – 13
605.11, 605.11.3, 605.11.3.2, 605.11.3.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through 605.11.4, the *International Building Code* and NFPA 70.

~~**Exception:** Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this section.~~

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.3.

~~**Exceptions:**~~

1. ~~Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.~~
2. ~~Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.~~

Exception: Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures.

605.11.3.2 ~~Residential~~ Solar photovoltaic systems for one- and two-family dwellings. ~~Access to residential~~ Solar photovoltaic systems for one- and two-family dwellings shall ~~be provided in accordance~~ comply with Sections 605.11.3.2.1 through 605.11.3.2.~~4~~5.

605.11.3.2.1 Size of solar photovoltaic array. Each photovoltaic array shall be limited to 150 feet (45 720 mm) by 150 feet (45 720 mm). Multiple arrays shall be separated by a 3-foot-wide (914 mm) clear access pathway.

605.11.3.2.~~1~~2 ~~Residential buildings with hip~~ Hip roof layouts. Panels~~/~~ and modules installed on ~~residential buildings~~ one- and two-family dwellings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels~~/~~ and modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.2.~~2~~3 ~~Residential buildings with a s~~Single ridge roofs. Panels~~/~~ and modules installed on ~~residential buildings~~ one- and two-family dwellings with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels~~/~~ and modules are located.

Exception: This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.2.34 ~~Residential buildings with r~~Roofs with hips and valleys. Panels~~/~~ and modules installed on ~~residential buildings~~ one- and two-family dwellings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.2.45 ~~Residential building~~ Allowance for smoke ventilation operations. Panels~~/~~ and modules installed on ~~residential buildings~~ one- and two-family dwellings shall be located no ~~higher~~ less than 3 feet (914 mm) ~~below~~ from the ridge in order to allow for fire department smoke ventilation operations.

Exception: Panels and modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

605.11.3.3 Other than ~~residential buildings~~one- and two-family dwellings. Access to systems for occupancies other than one- and two-family dwellings shall be provided in accordance with Sections 605.11.3.3.1 through 605.11.3.3.3.

Exception: Where it is determined by the fire code official that the roof configuration is similar to that of a one- or two-family dwelling, the residential access and ventilation requirements in Sections 605.11.3.2.1 through 605.11.3.2.4 shall be permitted to be used.

605.11.3.3.1 Access. There shall be a minimum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76 200 mm) or less, ~~there~~ the clear perimeter around the edges of the roof shall be permitted to be reduced to a minimum 4-foot-wide (1290 mm) ~~clear perimeter around the edges of the roof~~.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal is primarily an editorial clarification to Section 605.11.3. There is only one section which contains new text, it is Section 605.11.3.2.1. The sections and their revisions are noted below:

605.11 Exc:	This exception eliminates all requirements for solar PV systems located on Group U structures. This exception inadvertently eliminates the requirements for listing of components, marking and location of disconnects. This exception is relocated to Section 605.11.3 so that it only eliminates the requirements for access and pathways which will then retain the listing and marking requirements.
605.11.3 Exc 1:	This exception is actually a requirement; it is not an exception. Therefore, the exception is deleted and the text has been relocated to Section 605.11.3.2.1.
605.11.3 Exc 2:	This is an exception based on the need for the ability to vertically ventilate smoke through the roof. Section 605.11.3.2.5 (renumbered from 605.11.3.2.4) deals with smoke ventilation. The exception is intended to apply to a specific set of requirements regarding smoke ventilation. If the exception is left in this section, it exempts these systems from all of the requirements in this entire section. Therefore this exception has been relocated to Section 605.11.3.2.5.
605.11.3.2:	The title of this section is revised to correlate with the text of the section. The text only applies to one- and two-family dwellings so the term “residential” is removed from the title.

Also, the section is revised by deleting the reference to ‘access’ since the subsections deal with more than access, and additional access requirements are found in 605.11.3.1.

605.11.3.2.1: This section originates from 605.11.3 Exception 1. It is relocated to the section which applies to dwellings and is inserted as a requirement.

Additionally, the 2nd sentence is added as a new requirement. The current requirements limit the size of each PV array but provide no guidance as to the required separation between multiple PV arrays. This requirement fills that void by requiring a 3

foot separation between PV arrays. The 3 foot distance is the same spacing requirement found around PV arrays to the edge of roof or to the ridge of the roof, and provides for access around the arrays.

605.11.3.2.2: Renumbered from 605.11.3.2.1. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.
605.11.3.2.3: Renumbered from 605.11.3.2.2. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.
605.11.3.2.4: Renumbered from 605.11.3.2.3. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.
605.11.3.2.5: Renumbered from 605.11.3.2.4. The text is revised to correlate with the previous sections regarding one- and two-family dwellings.

Additionally, the exception is added which was previously located in Section 605.11.3. This exception is based on the need for the ability to vertically ventilate smoke through the roof, and Section 605.11.3.2.5 deals with smoke ventilation.

605.11.3.3: The text is revised to correlate with the previous revisions regarding one- and two-family dwellings.
605.11.3.3.1: This exception is reworded into an actual exception which states that the required clearance is allowed to be reduced to 4', rather than requiring a clearance of 4'.

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

F62-13

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

605.11 #2-F-ZUBIA-FCAC

F63 – 13
605.11, 605.11.5 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through ~~604.11.4~~ 605.11.5, the International Building Code and NFPA 70.

> ~~**Exception:** Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this Section.~~

605.11.5 Group U structures. Solar photovoltaic arrays on detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall comply with Sections 605.11 through 605.11.2 and this section. Photovoltaic power systems on ground mounted structures shall also comply with 605.11.4.

Reason: As written the code exempts photovoltaic arrays located on detached canopies and similar structures from complying with the IBC, NFPA 70 and the important emergency responder marking requirements in Sections 605.11.1 and 605.11.2. This proposal requires these arrays to comply with these basic safety requirements, but not the access and pathway requirements in Section 605.11.3. If the group U structure is ground based it is required to also comply with the section 605.11.4 ten foot clear space requirements.

For consistency, the language chosen for this new section is similar to the wording in section 605.11.4.

Cost Impact: A cost increase will be associated with compliance with these requirements when solar PV arrays are installed on Group U occupancies

F63-13

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

605.11 #1-F-ZUBIA-FCAC

F64 – 13
605.11.1, 605.11.2

Proponent: Steve Thomas, Colorado Code Consulting, LLC representing self (sthomas@coloradocode.net)

Revise as follows:

~~**605.11.1 Marking.** Marking is required on interior and exterior direct-current (DC) conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects.~~

~~**605.11.1.1 Materials.** The materials used for marking shall be reflective, weather resistant and suitable for the environment. Marking as required in Sections 605.11.1.2 through 605.11.1.4 shall have all letters capitalized with a minimum height of 3/8 inch (9.5 mm) white on red background.~~

~~**605.11.1.2 Marking content.** The marking shall contain the words "WARNING: PHOTOVOLTAIC POWER SOURCE."~~

~~**605.11.1.3 Main service disconnect.** The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated.~~

~~**605.11.1.4 Location of marking.** Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mm) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.~~

~~**605.11.2 Locations of DC conductors.** Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.~~

Reason: The language in these sections relate to the installation of the electrical system for photovoltaic systems. They do not belong in the fire code. The language in this section is similar to that of the NEC. They are already included in the National Electrical Code (NEC), NFPA 70 Article 690.31. The NEC is already referenced in Chapter 27 of the IBC. It states "Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of NFPA 70". Section 102.4 of the IFC states that the design and construction of buildings shall comply with the IBC. Therefore, the requirements are duplicative and are not needed in the IFC. By having similar requirements in two different codes, there is a great potential for conflicts.

It is my understanding that the original proponent of this section intended to remove the requirements after the NEC adopted requirements for PV electrical installations. They have made those additions and therefore they should be removed from the IFC.

In addition, the ICC decided many years ago to not include electrical installation requirements in any of its codes. We should maintain this position in the fire code as well.

Cost Impact: This change will not affect the cost of construction.

F64-13

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

605.11.1-F-THOMAS

F65 – 13
605.11.1.2

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.1.2 Marking content. The marking shall contain the words "~~WARNING:~~ PHOTOVOLTAIC POWER SOURCE."

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

This proposal will create consistency with NEC. Consistent prescribed language for labels will eliminate a conflict where multiple labels must be printed for the same purpose.

Cost Impact: This proposal will reduce construction costs by not having to have two different labels on equipment.

F65-13

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

605.11.1.2-F-CAIN-SMIRNOW

F66 – 13
605.11.2

Proponent: Dennis Grubb, Orange County Fire Authority, Representing the California Fire Chiefs Association; Kevin Reinertson, Division Chief, Representing the California State Fire Marshal's Office (adria.paesani@fountainvalley.org)

Revise as follows:

605.11.2 Locations of DC conductors. Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of and parallel with load bearing members.

Exception: Where it is not practical to run conduit along the bottom of or parallel with load bearing members, the conduit shall be installed a minimum of 10 inches below the roof as measured from the interior side of the roof sheathing.

Reason: The intent of 2012 International Fire Code, Section 605.11.3 for DC runs in a building is to allow firefighters to ventilate a structure without the inadvertently cutting through a live DC line and being electrocuted. Firefighters are trained not to cut through structural members so running the conduit below these members would preclude the DC line being cut. The current language does not specify the direction the DC line must follow. Running the DC line perpendicular to, but runs along the bottom of the load bearing members can easily be interpreted as code compliant. Adding "and parallel with" clearly defines what the intent of the code section is.

There are many PV system configurations when in is not practical to run the DC line directly below load bearing members. Although firefighting ventilation techniques vary slightly across the country, keeping the DC line 10 inches below the roof creates a safety zone for the chain saw to operate without compromising firefighter safety while providing flexibility in the installation.

Cost Impact: This proposal will not increase the cost of construction.

F66-13

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

605.11.2-F-GRUBB

F67 – 13
605.11.2

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.2 Locations of DC conductors. Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. ~~Conduit shall run along the bottom of load bearing members.~~ Placement of conduit shall be in accordance with NFPA 70.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

NFPA 70 provides requirements for placement of conduit beneath roof surfaces, for protection of fire fighters. The requirements of NFPA 70 are more specific, and should govern the installation by reference. The NEC recognized roof ventilation techniques will not be used in the portions of roof covered by PV panels.

2011 NEC 690.31(E)(1) Beneath Roofs. Wiring methods shall not be installed within 25 cm (10 in.) of the roof decking or sheathing except where directly below the roof surface covered by PV modules and associated equipment. Circuits shall be run perpendicular to the roof penetration point to supports a minimum of 25 cm (10 in.) below the roof decking.

Cost Impact: There is no cost impact with this proposal.

F67-13

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

605.11.2-F-CAIN-SMIRNOW

F68 – 13
605.11.3, 605.11.3.2.5 (New)

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.3.

Exceptions~~s~~:

1. ~~Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.~~
2. ~~2.~~ Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

605.11.3.2.5 Pathways. Residential structures shall be designed so that each photovoltaic array is not greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

The exception is not a written correctly. It is written as a code requirement. We have relocated it to a more appropriate section by adding it to the residential occupancy section.

Cost Impact: No cost impact

F68-13

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

605.11.3 #1-F-CAIN-SMIRNOW

F69 – 13
605.11.3

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.3.

Exceptions:

1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.
2. ~~Panels/modules shall be permitted to be located up to the roof ridge~~ Roof access, pathways, and spacing requirements need not be provided where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

This proposal provides better language to address roof access for firefighters. The language is consistent with the charging statement. Different fire agencies have different ways to ventilate roof systems. If a fire department has a policy of not accessing roofs, the requirements for roof access are not necessary. This only applies in those cases. Where departments have a policy of accessing roofs, they will still be able to require the access pathways and spacing requirements.

Cost Impact: No cost impact

F69-13

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

605.11.3 #2-F-CAIN-SMIRNOW

F70 – 13
605.11.3, 605.11.3.2.4

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 605.11.3.1 through 605.11.3.3.3.

Exceptions:

1. ~~1.~~ Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.
2. ~~2. Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.~~

605.11.3.2.4 Residential building smoke ventilation. Panels/modules installed on residential buildings shall be located no higher than 3 feet (914 mm) below the ridge in order to allow for fire department smoke ventilation operations.

Exception: Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined that vertical ventilation techniques will not be employed.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

This proposal relocates the exception for alternative ventilation methods to a more appropriate section. Section 605.11.3.2.4 is the section that requires the panels to be located 3 feet below the ridge. Therefore, it is a better location for the exception. It is a more specific exception to the placement of panels to the ridge.

Cost Impact: No cost impact

F70-13

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

605.11.3 #3-F-CAIN-SMIRNOW

F71 – 13
605.11.3.2

Proponent: Jennifer G. Gallegos, Development Services Department, City of San Antonio, TX, representing Self

Revise as follows:

605.11.3.2 Residential Systems for ~~one- and two-family family dwellings~~ Group R buildings.
Access to residential systems for ~~one- and two-family dwellings~~ Group R buildings shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.4.

Reason: After discussions with ICC Staff, the referenced code change corrects the intent of the application of pathways to Group R buildings regulated by the International Building Code (IBC). The code proponent did not mention Group R buildings regulated by the International Residential Code (IRC) in his code change proposal or rationale. The current language has caused confusion for jurisdictions and customers as they believe that the code change applies to Group R buildings regulated by the IRC. This has place an undue hardship on Group R buildings regulated by the IRC and homeowners who now are required to comply with these provisions. The Significant Changes to the IFC 2012 Edition also states:

The provisions of Section 605.11.3 address the placement of PV arrays on building roofs. These requirements apply to buildings regulated by the IBC, including Group R-3 uses; they do not apply to buildings regulated by the International Residential Code for One- and Two-Family Dwellings (IRC).

Cost Impact: This will increase not increase the cost of construction as this code change is for clarification purposes only.

F71-13

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

605.11.3.2-F-GALLEGOS

F72 – 13
605.11.3.2, 605.11.3.3

Proponent: Tim Pate, City and County of Broomfield, CO, representing Colorado Chapter Code Change Committee

Revise as follows:

605.11.3.2 Residential systems ~~for one- and two-family dwellings.~~ Access to residential systems ~~for one- and two-family dwellings~~ shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.4.

605.11.3.3 Other than residential buildings. Access to systems for occupancies other than ~~one- and twofamily dwellings~~ residential shall be provided in accordance with Sections 605.11.3.3.1 through 605.11.3.3.3.

> **Exception:** Where it is determined by the *fire code official* that the roof configuration is similar to that of a residential occupancy ~~one- or two-family dwelling~~, the residential access and ventilation requirements in Sections 605.11.3.2.1 through 605.11.3.2.4 shall be permitted to be used.

Reason: This code change proposal will add specific language that will clarify that these new provisions for access to PV systems only apply to structures built under the IBC and not under the IRC. The new language will differentiate between residential and non residential occupancies. Residential occupancies could include an R-3 single family if being built under the IBC but would typically include multifamily residential. The proponent of this code change did not intend to make these provisions apply to IRC structures and even the book published by ICC for significant changes to the IFC says this is not to apply to IRC structures. I have already seen some confusion by Fire Departments and Fire Districts with the language “one and two family dwellings” and if it should apply to IRC structures. This added language will help clear up this confusion.

Cost Impact: Will not increase cost of construction

F72-13

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

605.11.3.2-F-PATE

F73 – 13
605.11.3.2.1, 605.11.3.3.2

Proponent: Steve Orlowski, representing National Association of Home Builders (NAHB) (sorlowski@nahb.org)

Revise as follows:

605.11.3.2.1 Residential buildings with hip roof layouts. Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a ~~structurally strong~~ location on the building capable of supporting ~~the live load of~~ fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

605.11.3.3.2 Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting ~~the live load of~~ fire fighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting ~~the live load of~~ fire fighters accessing the roof.
3. Shall be a straight line not less than 4 feet (1290 mm) clear to skylights or ventilation hatches.
4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.
5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

Reason: Changes proposed in this code proposal are two minor editorial fixes to remove language that is currently in the IFC. The first change is to remove the ambiguous term structurally strong, which is not only redundant it does nothing to provide the user with any new information. Roofs by default must be structurally sound and meet the required engineering design loads. None of the residential or commercial structural design manuals, nor the IRC or the IBC give a calculation value for the live load of a fire fighter, which is why we are proposing to remove this term from the IFC.

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

F73-13

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

605.11.3.2.1-F-ORLOWSKI

F74 – 13
605.11.3.3.2, 605.11.3.3.3

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (JSmirnow@seia.org)

Revise as follows:

605.11.3.3.2 Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting the live load of firefighters accessing the roof.
2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.
3. Shall be a straight line not less than 4 feet (1290 mm) clear to ~~skylights~~ roof standpipes or ventilation hatches.
4. ~~Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.~~
5. ~~5~~ 4. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

605.11.3.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.
2. Smoke ventilation options between array sections shall be one of the following:
   2.1. A pathway 8 feet (2438 mm) or greater in width.
   2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or smoke and heat vents on at least one side.
   2.3. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) “venting cutouts” every 20 feet (6096 mm) on alternating sides of the pathway.

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association’s (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

The purpose of pathways in 605.11.3.3.2 is for access for firefighters. Access is necessary for roof standpipes and ventilation hatches. Access to skylights should not have the same level of priority as equipment specifically installed for firefighting operations. Some roofs have skylights every 20 feet whereas ventilation hatches are normally required far less frequently. Buildings with numerous skylights have them primarily for interior lighting, not ventilation opportunities. Section 605.11.3.3.3 allows for the use of skylights for smoke ventilation at the areas between array sections. Removing the reference to skylights in 605.11.3.3.2 clarifies that pathways are not required to every skylight.

Arrays on buildings with few skylights will normally plan for array sections to coincide with the skylights since the skylight areas are already lost mounting space.

Cost Impact: No cost impact

F74-13

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

605.11.3.3.2-F-CAIN-SMIRNOW

F75 – 13
605.12 (New), 202 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

605.12 Abandoned wiring in plenums. Accessible portions of abandoned cables in air handling plenums in Group I occupancies shall be removed. Cables that are unused and have not been tagged for future use shall be considered abandoned.

SECTION 202
GENERAL DEFINITIONS

[M] PLENUM. An enclosed portion of the building structure, other than an occupiable space being conditioned, that is designed to allow air movement, and thereby serve as part of an air distribution system.

Reason: This new section is intended to introduce a concept that has been in the National Electrical Code (as well as in NFPA 90A) for a long time: plenums are intended for a specific use (see definition below), namely to be a part of the air distribution system so as to allow air movement. Plenums are also used (legitimately) for stringing communications and data cables as well as pipes and sprinkler pipes and other similar products. However, in actual fact, it is a common practice not to make the effort to remove products when they become obsolete. Examples include when an updated data system is being installed in the facility (and that typically occurs every 18-24 months). Normally, as the building is being rewired the old wires are cut off the grid but they are left in place and a new wiring system is added on top of them.

The tiles that often support plenums are not intended to support any significant weight and they can, therefore easily be overwhelmed by the added weight of storage or abandoned materials (such as abandoned cables). Recently, Bob Davidson and Sean DeCrane (Plenum Space Fuel Load, NFPA Annual Meeting 2009, M33) did an analysis that showed how the safety of firefighters is compromised by the weight of these abandoned cables. They point out that: “Plenum space fuel loads and wiring issues are a serious concern for fire fighters during interior firefighting operations.” Their key recommendation was: “Take out the abandoned wiring!!”

Although the primary reason to recommend the removal of abandoned materials in plenums is weight, fire safety should also be taken into account.

The introduction of a requirement such as the one being proposed here has long been believed not to be enforceable. This is probably true if it were to apply to all occupancies, primarily because fire code inspectors would rarely spend their time looking into plenums in existing buildings. However, the inspection of I occupancies occurs with enough regularity that there should be no significant difficulty in having inspectors identify the existence of abandoned products, especially abandoned cables, classify them as storage and demand their removal.

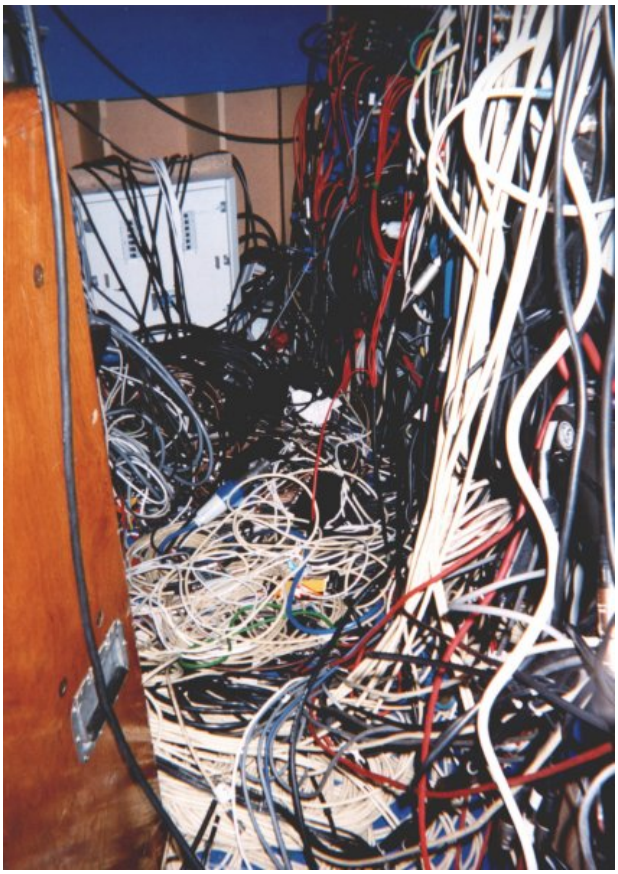
The proposal recommends that only the “accessible portions” of abandoned cables be removed, because there is no intent to cause potential damage to the building or facility by attempting to remove cables or circuits that are strung through walls, floors or other building elements.

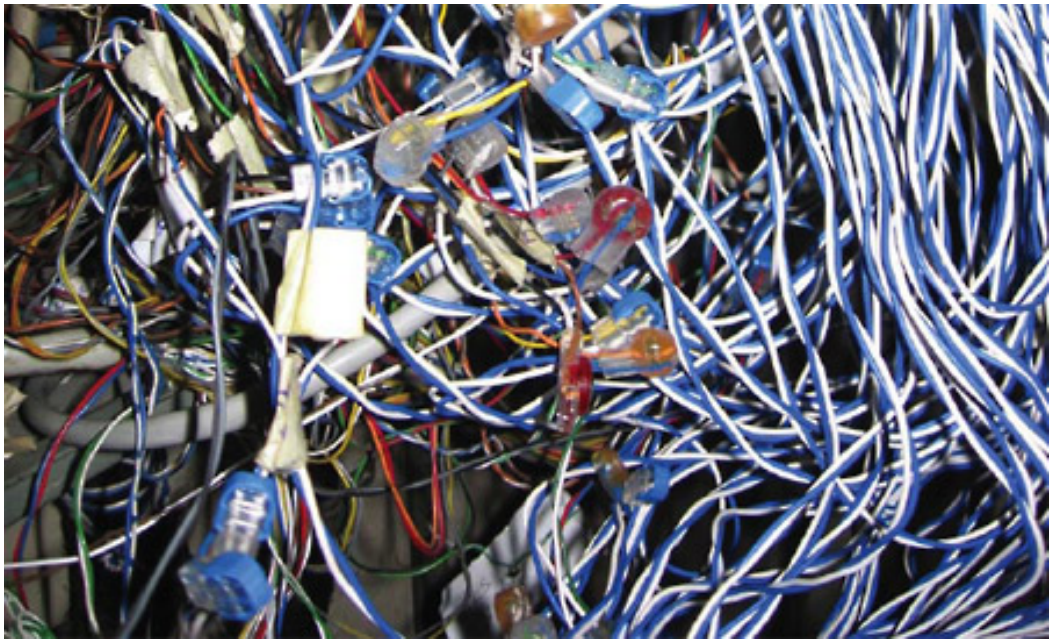
A similar, but broader, proposal was made in 2009 and disapproved (F38-09/10) with the following language: “The committee felt that the subject matter is adequately addressed in NFPA 70 where it belongs. The committee was also concerned that the proposal would put the fire code official in the role of being an electrical inspector and that these issues are manageable under the building permit process.”

Unfortunately the requirement to remove abandoned cables is not being enforced. This proposal has a much more limited scope than F38-09/10 and would not require the fire code official to act as an electrical inspector because he/she would simply have to ascertain that the cables are not connected to any active circuits and not tagged before requiring their removal.

This issue is particularly suitable for Chapter 6 (and section 605) of the IFC since it addresses electrical equipment, wiring and hazards, which are not necessarily electrical hazards but address other safety issues, such as illumination, temporary wiring and unapproved conditions, compliance with all of which is being inspected by the fire code official.

Photographs of typical wiring in plenums, as found by Davidson and DeCrane, follow:





Cost Impact: Minimal

F75-12

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

605.12 (NEW)-F-HIRSCHLER

F76 – 13
606.5 (New)

Proponent: Mona Casey, United Parents to Restrict Open Access to Refrigerant, representing the United Parents to Restrict Open Access to Refrigerant

Add new text as follows:

606.5 Access port protection. Refrigerant circuit access ports located outdoors shall be fitted with locking-type, tamper-resistant caps or shall be otherwise secured to prevent unauthorized access.

Exception: Refrigerant circuit access ports on equipment installed in controlled areas such as on roof tops with locked and alarmed access hatches or doors.

(Renumber subsequent sections.)

Reason: The purpose of this code change proposal is to add language to the code for securing refrigerant access ports, which will help reduce injuries and fatalities resulting from unauthorized access to refrigerant. Refrigerants are controlled substances that must be properly protected. The IMC currently has requirements for protection of refrigerant ports. This will add the requirements to the IFC to be consistent with the IMC. It will also provide the fire official with proper code language to enforce the requirement.

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

Analysis: Proposed Section 606.5 (without the exception) is identical to IMC Section 1101.10.

F76-13

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

606.5 (NEW)-F-CASEY.doc

F77 – 13
606.9.2 (IMC [F] 1106.5.2)

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.9.2 (IMC [F] 1106.5.2) Ventilation system. A clearly identified switch of the break-glass type or with an approved tamper resistant cover shall provide on-only control of the *machinery room* ventilation fans.

Reason: Correlation with Section 606.9.1 (IMC **[F]**1106.5.1), which also permits a tamper resistant covered switch in lieu of a break glass type.

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

F77-13

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

606.9.2-F-SHAPIRO

F78 – 13
606.10

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.10 Emergency pressure control system. Permanently installed r~~R~~efrigeration systems containing more than 6.6 pounds (3 kg) of flammable, toxic or highly toxic refrigerant or ammonia shall be provided with an emergency pressure control system in accordance with Sections 606.10.1 and 606.10.2.

Reason: When the provisions for emergency pressure control systems were added to the code, they were provided as an alternative to manual emergency control boxes, which were previously required by some legacy codes. The emergency control box provisions didn't apply to portable refrigeration equipment, such as agricultural cooling trailers used in fields and at processing facilities, and it was never intended that emergency pressure control systems be applied to portable equipment either. Nevertheless, the current code text doesn't provide an exclusion for portable equipment, and lacking that exclusion, the intent of the code is currently unclear. The proposed revision fixes the oversight.

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

F78-13

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

606.10-F-SHAPIRO

F79 – 13
606.12

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration

Revise as follows:

606.12 Discharge and termination of pressure relief ~~devices~~ and purge systems. Pressure relief devices, fusible plugs and purge systems discharging to the atmosphere from ~~for~~ refrigeration systems containing ~~more than 6.6 pounds (3 kg) of~~ flammable, toxic or highly toxic refrigerants or ammonia shall ~~be provided with an *approved* discharge system as required by~~ comply with Sections ~~606.12.1~~ 606.12.2, ~~606.12.2~~ 606.12.3 and ~~606.12.3~~ 606.12.4.

606.12.1 Fusible plugs and rupture members. Discharge piping and devices connected to the discharge side of a fusible plug or rupture member shall have provisions to prevent plugging the pipe in the event of the fusible plug or rupture member functions.

~~**606.12.1**~~ **606.12.2 Flammable refrigerants.** Systems containing more than 6.6 pounds (3 kg) of flammable refrigerants having a density equal to or greater than the density of air shall discharge vapor to the atmosphere only through an *approved* treatment system in accordance with Section 606.12.5~~4~~ or a flaring system in accordance with Section ~~606.12.5~~ 606.12.6. Systems containing more than 6.6 pounds (3 kg) of flammable refrigerants having a density less than the density of air shall be permitted to discharge vapor to the atmosphere provided that the point of discharge is located outside of the structure at not less than 15 feet (4572 mm) above the adjoining grade level and not less than 20 feet (6096 mm) from any window, ventilation opening or *exit.*

~~**606.12.2**~~ **606.12.3 Toxic and highly toxic refrigerants.** Systems containing more than 6.6 pounds (3 kg) of toxic or highly toxic refrigerants shall discharge vapor to the atmosphere only through an *approved* treatment system in accordance with Section ~~606.12.4~~ 606.12.5 or a flaring system in accordance with Section ~~606.12.5~~ 606.12.6.

~~**606.12.3**~~ **606.12.4 Ammonia refrigerant.** Systems containing more than 6.6 pounds (3 kg) of ammonia refrigerant shall discharge vapor to the atmosphere through an *approved* treatment system in accordance with Section ~~606.12.4~~ 606.12.5, a flaring system in accordance with Section ~~606.12.5~~ 606.12.6, or through an *approved* ammonia diffusion system in accordance with Section ~~606.12.6~~ 606.12.7, or by other *approved* means.

Exceptions:

1. Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.
2. When the *fire code official* determines, on review of an engineering analysis prepared in accordance with Section 104.7.2, that a fire, health or environmental hazard would not result from discharging ammonia directly to the atmosphere.

(Renumber subsequent sections)

Reason: The revisions accomplish an editorial cleanup of Section 606.12 and subordinate sections. No technical changes are intended. Section 606.12 has been revised to simply be a charging paragraph for the entire section. The requirements for individual refrigerant classes are now fully contained in the subordinate sections for each class, including the 6.6 pound threshold. The title of 606.12 has been expanded to make it clear that the content of existing section is not limited to termination of vents. This is because the existing section also covers purging, and the second sentence of 606.12 is not related to vent termination. That sentence has been separated into its own subsection, which is not restricted by refrigerant classification, because it applies to fusible plugs and rupture members for ALL refrigeration systems (this is consistent with ASHRAE 15, Section 9.7.8).
The addition of "discharging to atmosphere" in Section 606.12 is consistent with the existing text in the sections governing flammable and toxic/highly toxic refrigerants and ammonia. Each of these sections contains a similar phrase, and this has been duplicated into Section 606.12 to make it clear that restrictions on vent termination do not and never have applied to relief arrangements that are internal to a system (i.e. not routed to atmosphere).

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

F79-13

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

606.12-F-SHAPIRO

F80 – 13
606.12.1 (New), Chapter 80

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.12.1 Standards. Refrigeration systems and the buildings in which such systems are installed shall be in accordance with ASHRAE 15.

606.12.1.1 Ammonia Refrigeration. Refrigeration systems using ammonia refrigerant and the buildings in which such systems are installed shall comply with the following standards:

1. IIAR-2 for system design and installation
2. IIAR-6 for maintenance and inspection
3. IIAR-7 for operating procedures
4. IIAR-8 for decommissioning.

Add standards to Chapter 80 as follows:

IIAR

International Institute of Ammonia Refrigeration
1001 N. Fairfax Street, Suite 503
Alexandria, VA 22314

IIAR-2-2014	*Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems*
IIAR-6-2014	*Maintenance and Inspection of Closed-Circuit Ammonia Mechanical Refrigerating Systems*
IIAR-7-2013	*Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating*
IIAR-8-2014	*Decommissioning of Closed- Circuit Ammonia Mechanical Refrigerating Systems*

Reason: The International Institute of Ammonia Refrigeration is completing a suite of standards to prescribe regulations for the safe design, installation, operation, maintenance, inspection and decommissioning of ammonia refrigeration systems. All of these documents will be ANSI standards. As the leading organization representing the interests of the ammonia refrigeration industry, IIAR believes that it is essential for facilities with ammonia refrigeration systems to follow the requirements in these standards, which are being written as enforceable documents, as a basis of providing for the safety of the these facilities as well as surrounding communities.

With the exception of IIAR-2, the remaining standards are at various stages of completion with respect to the ANSI process, and it is anticipated that all will be completed prior to conclusion of the 2013 ICC code cycle.

Note that IIAR-2 is already adopted by the IMC, and it is being proposed for adoption by the IFC as well because the standard includes requirements governing refrigerant leak detection alarms and other topics scoped to the IFC.

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

Analysis: A review of the standards proposed for inclusion in the code, IIAR-6, -7 and -8, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. IIAR-2-99 with 2005 addendum is currently referenced in the IMC. An update in the year edition of that standard will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

F80-13

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

606.12.1 (NEW)-F-SHAPIRO

F81 – 13
606.12.3

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

606.12.3 Ammonia refrigerant. Systems containing more than 6.6 pounds (3 kg) of ammonia refrigerant shall discharge vapor to the atmosphere in accordance with one of the following methods: ~~through an *approved* treatment system in accordance with Section 606.12.4, a flaring system in accordance with Section 606.12.5, or through an *approved* ammonia diffusion system in accordance with Section 606.12.6, or by other *approved* means.~~

Exceptions~~:~~ ~~1.~~ Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.

1. ~~2~~ Directly to atmosphere ~~W~~when the *fire code official* determines, on review of an engineering analysis prepared in accordance with Section 104.7.2, that a fire, health or environmental hazard would not result from atmospheric discharge~~ing~~ of ammonia ~~directly to the atmosphere~~
2. Through an *approved* treatment system in accordance with Section 606.12.4
3. Through a flaring system in accordance with Section 606.12.5
4. Through an *approved* ammonia diffusion system in accordance with Section 606.12.6
5. By other *approved* means.

Reason: Exception 2 in the current text isn't really an exception. It's just another discharge option in addition to the four that are listed in the current base paragraph. The proposed revision restructures the existing text to make this clear, and it duplicates the 6.6 pound threshold currently provided in the parent paragraph (606.12) for clarity. No technical change is intended.

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

F81-13

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

606.12.3-F-SHAPIRO

F82 – 13
607.4 (New)

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdblack@neii.org)

Add new text as follows:

607.4 Occupant evacuation elevator lobbies. Where occupant evacuation elevators are provided in accordance with Section 3008 of the *International Building Code,* occupant evacuation elevator lobbies shall be maintained free of storage and furniture.

[Renumber subsequent sections]

Reason: The proposed text replicates an identical requirement in Section 607.3 for fire service access elevators. It is just as important for occupant evacuation elevator lobbies to be maintained free of storage and furniture if the elevators are to be available and safe for building occupants to use this system to evacuate the building in case of fire.

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

F82-13

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

607.4 (NEW) #1-F-BLACK

F83 – 13
607.4 (New)

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdblack@neii.org)

Add new text as follows:

607.4 Water protection of hoistway enclosures. Methods to prevent water from infiltrating into a hoistway enclosure required by Section 3007.4 and Section 3008.4 of the *International Building Code* shall be maintained.

[Renumber subsequent sections]

Reason: The referenced sections of the International Building Code provide performance criteria to ensure that water from the operation of an automatic sprinkler system outside of an enclosed fire service access or occupant evacuation elevator lobby does not enter the hoistway and compromise the function of the elevator. Drains in the lobbies or drainage trenches at the hoistway door openings are two of many ways these requirements can be met. As drain openings are subject to clogging by dirt and debris, it is important that the integrity of these systems be maintained if the elevators are to remain function in case of a fire.

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

F83-13

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

607.4 (NEW) #2-F-BLACK

F84 – 13
607.5, 607.5.1, 607.5.2, 607.5.3

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdblack@neii.org)

Revise as follows:

607.5 Standardized fire service elevator keys. Buildings with elevators equipped with Phase I emergency recall, Phase II emergency in-car operation, or a fire service access elevator shall be equipped to operate with a standardized fire service elevator key ~~*approved* by the *fire code official*~~ complying with ASME A17.1/CSA B44.

~~**Exception:** The owner shall be permitted to place the building's nonstandardized fire service elevator keys in a key box installed in accordance with Section 506.1.2.~~

~~**607.5.1 Requirements for standardized fire service elevator keys.** Standardized fire service elevator keys shall comply with all of the following:~~

~~1. All fire service elevator keys within the jurisdiction shall be uniform and specific for the jurisdiction. Keys shall be cut to a uniform key code.~~
~~2. Fire service elevator keys shall be of a patent-protected design to prevent unauthorized duplication.~~
~~3. Fire service elevator keys shall be factory restricted by the manufacturer to prevent the unauthorized distribution of key blanks. No uncut key blanks shall be permitted to leave the factory.~~
~~4. Fire service elevator keys subject to these rules shall be engraved with the words "DO NOT DUPLICATE."~~

~~**607.5.2 Access to standardized fire service keys.** Access to standardized fire service elevator keys shall be restricted to the following:~~

~~1. Elevator owners or their authorized agents.~~
~~2. Elevator contractors.~~
~~3. Elevator inspectors of the jurisdiction.~~
~~4. *Fire code officials* of the jurisdiction.~~
~~5. The fire department and other emergency response agencies designated by the *fire code official*.~~

~~**607.5.3 Duplication or distribution of keys.** No person shall duplicate a standardized fire service elevator key or issue, give, or sell a duplicated key unless in accordance with this code.~~

607.5.4 Responsibility to provide keys. The building *owner* shall provide up to three standardized fire service elevator keys where required by the *fire code official*, upon installation of a standardized fire service key switch or switches in the building.

Reason: The National Elevator Industry Inc. (NEII) agrees with the reason this section was added to the 2012 International Fire Code, that firefighters need a standardized fire service elevator key that is secure and that will work throughout a jurisdiction. However, this is already a requirement in the ASME A17.1/CSA B44 Safety Code for Elevators and Escalators referenced by the International Fire Code:

ASME A17.1-2010/CSA B44-10
SECTION 2.27
EMERGENCY OPERATION AND SIGNALING DEVICES

2.27.8 Switch Keys

The key switches required by 2.27.2 through 2.27.5 for all elevators in a building shall be operable by the FEO-K1 key. The keys shall be Group 3 Security (see 8.1). A separate key shall be provided for each switch. These keys shall be kept on the premises in a location readily accessible to firefighters and emergency personnel, but not where they are available to the public. This key shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521 starting at the tab sequenced clockwise as viewed from the barrel end of the key. The key shall be coded "FEO-K1." The possession of the "FEO-K1" key shall be limited to elevator personnel, emergency personnel, elevator equipment manufacturers, and authorized personnel during checking of Firefighters' Emergency Operation (see 8.1 and 8.6.11.1).

Where provided, a lock box, including its lock and other components, shall conform to the requirements of UL 1037 (see Part 9).

NOTE (2.27.8): Local authorities may specify additional requirements for a uniform keyed lock box and its location to contain the necessary keys.

Group 3 Security is specified in Section 8.1:

8.1.4 Group 3: Emergency Operation

Group 3 covers access or operation of equipment by emergency, authorized, and elevator personnel.

Simply, this requirement is unnecessary because the need it purports to address is already covered by the code's referenced standard. However, there is a greater problem with having a requirement in the International Fire Code that conflicts with the firefighter key requirements of ASME A17.1/CSA B44.

The proponents of this code provision proposed in the 2012 cycle dismissed the conflict between the IFC and ASME code by claiming that Section 102.7 of the IFC resolves this by stating, "Where differences occur between the provisions of this code and the referenced standards, the provisions of this code apply." This argument may be true for most codes and standards referenced in the I-Codes, but is incorrect in this case.

In many jurisdictions in the United States (e.g., Wisconsin) the building code, fire code and elevator code are enacted by different pieces of legislation and regulated by entirely different state or municipal rules and agencies. Because of this, one department enforces the fire code, another the elevator code, and neither official is obligated or legally able to recognize the requirements of the other. In other words, Section 102.7 of the IFC does not "trump" the laws and rules that adopt and regulate these jurisdictions' elevator codes.

The result is that the State Fire Marshall will require one firefighters' elevator key (the IFC key), the Chief Elevator Inspector will require another (The ASME A17.1 FEO-K1 key), neither will have priority over the other, and the building owner will be continuously in violation of one law or the other.

The other major problem with this new section of the code is that, unlike the demands placed on proponents for most I-Code changes, no evidence was offered to support the need for this change. There was (and is) no evidence that firefighters have been hampered in fighting a building fire because some unauthorized person was using an ASME A17.1 FEO-K1 key at the time. No loss of life or property because some pizza delivery person was able to acquire a firefighter elevator key on the internet (as alleged in the testimony on this code change) and deny elevator use for firefighters or emergency personnel.

Ironically, we found that in Massachusetts the only reported misuses of firefighter keys were by EMTs. EMTs are authorized to be given the special IFC fire key by the existing code text!

A Captain in the Toronto Fire Department who has fought countless high-rise fires in his career dismissed the need for some special fire service elevator key that exceeds the requirements of ASME A17.1/CSA B44 by asking, "What can you do with it? Ride an elevator up and down, up and down until you're bored or sick?" As dismissive as the Captain's statement may be, it demonstrates how unnecessary it is for the IFC to create special requirements for keys that conflict with the ASME requirements that have been in place (and referenced by the IFC and IBC) for years. This code section "solves" a problem that does not exist while creating many more for the Fire Marshall, Elevator Inspector, and building owner.

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

F84-13

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

607.5-F-BLACK

F85 – 13
608.1.1 (New)

Proponent: Ronald Marts, Telcordia, representing AT&T, Verizon, CenturyLink (rmarts@telcordia.com)

Add new text as follows:

608.1.1 Applicability. The requirements in Section 608 shall supersede all the hazardous material designations, permits, and requirements in Chapter 50.

Reason: Chapter 50 does a good job of identifying 14 exceptions to Hazardous Materials. Number 7 is battery systems as regulated in Section 608. Section 608 needs to identify itself as one of those exceptions, thus cross-referencing to Chapter 50.

Many fire and local code officials have insisted that battery systems are hazardous, forcing owners to identify these spaces as Hazardous Uses and imposing restrictions and further requirements on their operations of the space. This in turn increases the expense to the user and incorrectly identifies the space hazards to occupants and emergency responders. The requirements by code officials to obtain a Hazardous Materials Operating Permit and submit Hazardous Materials Inventory Statement, or Hazardous Materials Management Plan are removed by the development and use of this Chapter.

The requirement for the user to report site gross quantities of sulfuric acid in compliance with SARA Title III does not constitute the installation as a hazardous material installation per Section 608 of the code.

Section 608 discusses batteries that are in use, not those batteries that are in storage, such as a warehouse, waiting for shipment to be used.

Section 608 was taken from Article 64 of the UFC, and has been modified over the last few cycles to include new technologies of batteries. Article 64 was written to properly represent the use of Stationary Battery Systems and address specific installation and operational concerns. This early development and adoption was worked out among the Uniform Fire Code (UFC) staff, several regional fire chiefs associations throughout the country, Telcordia and Hughes Associates. Article 64 was accepted during the code hearings in Spokane Washington in August of 1994.

Cost Impact: None.

F85-13

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

608.1.1 (NEW)-F-MARTS

F86 – 13
608.6.1 (IMC [F] 502.4.1), Chapter 80 (IMC Chapter 15)

Proponent: Ronald Marts, Telcordia, representing AT&T, Verizon, CenturyLink (rmarts@telcordia.com)

Revise as follows:

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

1. **(IMC [F] 502.4.1)** 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 in accordance with IEEE 1635 / ASHRAE 21,; or
2. (IMC [F] 502.4.2) Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot (1 ft3/min/ft2) [0.0051 m3/s × m2] of floor area of the room.

   Exception: Lithium-ion and lithium metal polymer batteries shall not require ventilation

Add new standard to Chapter 80 (IMC Chapter 15) as follows:

IEEE

IEEE Operations Center
445 Hoes Lane
Piscataway, NJ 08854-4141 USA
Phone: +1 732 981 0060

IEEE-1635/ASHRAE 21-12 *Guide for the Ventilation and Thermal Management of Batteries for Stationary Applications*

Reason: The option to ventilate the space based on the designed hydrogen concentration in option 1 is very beneficial to battery users. This typically provides for a lower ventilation rate than option 2, which saves energy, reduces equipment contamination from outdoor sources, and improves equipment reliability and longevity. As noted in the previous submittal, the IEEE 1635 / ASHRAE 21 Guide to Battery Room Ventilation and Thermal Management provides several useful formulae in determining minimum recommended rates of ventilation so not to exceed the 1.0 percent maximum concentration of hydrogen for the room. For spaces containing batteries, the use of this document provides definitive and accurate calculations to meet the criteria of Section 608.6.1.

As noted above, the new Guide was developed by leaders in both the battery community and the ventilation (ASHRAE) community. IEEE Stationary Battery Committee has published over a dozen standards for battery installation, maintenance, and spill concerns for most existing battery technologies. Including a direct reference to the guide in the standard would facilitate safe and efficient ventilation of the battery spaces.

Cost Impact: None.

Analysis: A review of the standard proposed for inclusion in the code, IEEE-1635/ASHRAE 21-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F86-13

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

608.6.1-F-MARTS

F87 – 13
608.6.3 (IMC [F] 502.5.3)

Proponent: Ronald Marts, Telcordia, representing AT&T, Verizon, CenturyLink (rmarts@telcordia.com)

Delete without substitution:

~~**608.6.3 (IMC [F] 502.5.3) Supervision.** Mechanical ventilation systems where required by Sections 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: This requirement was added to the code to assure that ventilation systems operate so as to prevent the buildup of hydrogen gas in the battery room. Experience has shown that the risk of hydrogen buildup in an indoor battery plant installation is extremely low. In normal use, batteries generate little hydrogen gas, and present a very low hydrogen gas hazard. This is noted in manufacturer documentation, proven via testing, and supported by many years of user experience in thousands of locations.

To further detail expected levels of hydrogen and recommended ventilation rates for battery rooms, ASHRAE and IEEE working groups jointly created a new document: IEEE 1635 / ASHRAE 21 Guide to Battery Room Ventilation and Thermal Management. This document focuses primarily on personnel safety hazards from stationary battery plants that can be mitigated through minimal ventilation and thermal management.

IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. IEEE provides electrical engineering information worldwide via publications, conferences, technology standards, and professional and educational activities.

IEEE has broad industry representation and expertise on stationary battery technologies. IEEE Stationary Battery Committee has published over a dozen standards for battery installation, maintenance, , and spill concerns for most existing battery technologies.

ASHRAE is a building technology society with more than 50,000 members worldwide. The Society and its members focus on building systems, energy efficiency, indoor air quality and sustainability within the industry. Activities include research, standards writing, publishing and continuing education. The mission of ASHRAE is to advance the arts and sciences of heating, ventilating, air conditioning and refrigerating to serve humanity and promote a sustainable world.

Using the formulae in the new guide, it can be shown that it would take months in most normal-sized sealed battery rooms with zero ventilation to reach the lower flammability limit (4% for Hydrogen).

Long before that ever happens, the lack of ventilation would produce a room temperature alarm; thus making the need to independently alarm and monitor the ventilation system unnecessary.

In worst case scenarios, the recommended ventilation levels are very low. The ventilation system does not need to run constantly to achieve the recommended ventilation rate. Excessive ventilation is not desirable as it wastes energy, potentially contributing to global warming and climate change. Alarming an intermittent ventilation system is results in false alarms and c is counterproductive.

Per IEEE 1635 / ASHRAE 21 Guide to Battery Room Ventilation and Thermal Management, remote alarms of mechanical ventilation failure are not required. Furthermore, there is no requirement in the guide for supervision of alarms via a central station. This current Supervision requirement was added to code during the code change hearings in Orlando in the fall of 2006. After lengthy testimony, the committee voted in favor of rejecting the proposed change. The proponent asked for a floor vote, which overturned the committee's rejection by a very small margin. This change was made in response to a widely publicized event that occurred in an unoccupied, non-ventilated installation, where batteries were left on charge for several months after a building was abandoned? The explosion resulted from batteries that were essentially abused and not maintained in accordance with industry practices, and is not reflective of battery safety overall.

Supervision of mechanical ventilation systems for compliance with this requirement is very expensive, complicates installations, and is totally unnecessary given the fire history of stationary battery installations

Cost Impact: This change, if adopted, will save money.

F87-13

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

608.6.3-F-MARTS

F88 – 13
608.7.1

Proponent: Ronald Marts, Telcordia, representing AT&T, Verizon, CenturyLink (rmarts@telcordia.com)

Revise as follows:

608.7.1 Equipment room ~~and building~~ signage. Doors into electrical equipment rooms ~~or buildings~~ containing stationary battery systems shall be provided with *approved* signs. The signs shall state that:

1. The room contains energized battery systems.
2. The room contains energized electrical circuits.
3. The battery electrolyte solutions, where present, are *corrosive* liquids.

Reason: The existing wording is confusing, as it indicates that if signage is on the outside of the building, that the entire building contains energized batteries and electrical systems, and electrolyte.

The signage is meant to identify that room or space within the building where these systems exist.

Cost Impact: None

F88-13

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

608.7.1-F-MARTS

F89 – 13
608.7.2 (New)

Proponent: Ronald Marts, Telcordia, representing AT&T, Verizon, CenturyLink (rmarts@telcordia.com)

Add new text as follows:

608.7.2 Specifications. The sign shall be minimum 1/2" block letters in black on a white background.

(Renumber subsequent sections)

Reason: Need to clarify signage requirements. For the sake of first responders, it is prudent to have consistency in the design of the sign.

Cost Impact: None

F89-13

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

608.7.2 (NEW)-F-MARTS

F90 – 13
609.2

Proponent: Barry Greive, representing Target Corporation (barry.greive@target.com)

Revise as follows:

609.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors.

> **Exception:** A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m^3 or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m^3/s) in accordance with Section 17 of UL 710B

Reason: This proposal is intended to bring consistency between the Fire Code and Mechanical Code provisions.

Section 609.1 of the Fire Code states that "Commercial kitchen exhaust hoods shall comply with the requirements of the International Mechanical Code." This statement lends itself to imply that they should be consistent. There are many situations where the amount of grease is very low to almost non-existent and a type 1 hood is not needed. This exception will bring greater consistency between the codes, better clarity to when a type 1 hood is needed, and a test method that must be followed to show compliance.

Cost Impact: This will not increase the cost of construction.

F90-13

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

609.2-F-GRIEVE

F91 – 13
609.3.3.2, Chapter 80

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

609.3.3.2 Grease accumulation. 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 in accordance with ANSI/IKECA C-10.

Add new standard to Chapter 80 as follows:

IKECA

International Kitchen Exhaust Cleaning Association
100 North 20th, Street, Suite 400
Philadelphia, PA 19103

C10-2011 *Standard for Cleaning of Commercial Kitchen Exhaust Systems…* 609.3.3.2

Reason: Commercial kitchen exhaust systems remove smoke, soot and grease-laden vapor resulting from cooking operations. These systems become contaminated with grease and cooking by-products over time. Accumulations of these combustible contaminants create a fire safety hazard to workers, patrons, other building occupants and property. Mitigation of this hazard requires periodic cleaning of commercial kitchen exhaust systems.

The first edition of ANSI/IKECA C10-2011, *Standard for Cleaning of Commercial Kitchen Exhaust Systems*, was developed by the IKECA Standards Development Committee Consensus Body. It approved the standard on September 1, 2011. It was approved as an American National Standard by the American National Standards Institute (ANSI) on December 9, 2011.

For many years, the commercial kitchen exhaust cleaning industry has relied on certain codes and standards. ANSI/IKECA C10 addresses many of the areas that these other standards and codes do not cover. The other codes include the *International Fire Code*® (Section 609 Commercial Kitchen Hoods; 904 Alternative Automatic Fire-Extinguishing Systems, including: 904.2.1 Hood suppression systems; 904.3.2 Actuation; 904.3.3 System interlocking; 904.3.5 Monitoring; 904.11 Commercial cooking systems; 904.11 thru 904.11.6.5), the *International Mechanical Code*® (Section 202 General Definitions; 506 Commercial Kitchen Grease Ducts and Exhaust Equipment; 507 Commercial Kitchen Hoods; 508 Commercial Kitchen Make Up Air; 509 Fire Suppression Systems; 917 (Solid Fuel) Cooking Appliances), the A*SHRAE® Handbook HVAC Applications* (Chapter 31, Ventilation of the Industrial Environment), and the *NFPA 96®, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*.

ANSI/IKECA C-10 is intended to determine the frequency and necessity for commercial kitchen exhaust system cleaning through inspection procedures, to define acceptable methods for cleaning exhaust systems and components, and to set standards for acceptable post-cleaning cleanliness.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This standard applies to, but is not limited to, Type I exhaust systems. This standard does not apply to residential kitchen exhaust systems, replacement air systems, fire extinguishing systems, heating and air-conditioning systems, dryer exhaust systems, and toilet exhaust systems.

The purpose of this standard is to enhance public safety by reducing the potential fire safety hazards associated with commercial kitchen exhaust systems through the performance of professional cleaning services, irrespective of the type of cooking equipment used and whether used in public or private facilities.

About IKECA: The International Kitchen Exhaust Cleaning Association (IKECA) formed in 1989 and became an ANSI accredited standards developer in 2008. IKECA was founded by a small group of exhaust kitchen exhaust cleaning specialists who were attending the same meeting. They had similar beliefs in the importance of proper and complete exhaust cleaning to the fire protection world. Within two years, these founders had created the first non-profit trade association for the kitchen exhaust cleaning industry.

Today, IKECA members represent some of the best in the industry from around the world. They are proud to have made significant contributions to the decrease in commercial kitchen fires in the U.S. The current membership is approximately 250. Headquartered in Philadelphia, IKECA is a member of the International Code Council. For more information, visit www.ikeca.org.

Additionally this Standard covers the required documentation associated with the cleaning and inspections of kitchen exhaust hoods. Currently there is no Standard recognized by the IFC for this purpose, and adoption of this Standard will enhance code compliance and enforcement.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

Analysis: A review of the standard proposed for inclusion in the code, IKECA C10-2011, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F91-13

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

609.3.3.2-F-ZUBIA-FCAC

F92 – 13
609.3.3.2, 609.3.3.3.1 (New), Chapter 80

Proponent: Robert Marshall, Contra Costa County Fire Protection District representing self (rmars@cccfpd.org)

Revise as follows:

609.3.3.2 Grease accumulation. 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 in accordance with ANSI/IKECA C-10.

609.3.3.3.1 Labels. Where a commercial kitchen hood or ducting system is inspected, a certificate, label or tag containing the service provider name, address, telephone number and date of service shall be affixed to the hood in a conspicuous location. Prior certificates, labels or tags shall be covered or removed.

Add new standard to Chapter 80 as follows:

IKECA
International Kitchen Exhaust Cleaning Association
100 North 2oth Street, Suite 400
Philadelphia, PA 19103

C10-2011 Standard for Cleaning of Commercial Kitchen Exhaust Systems, 2011 609.3.3.2

Reason: The proposed text clarifies necessary marking requirements to visually confirm serviceability of commercial kitchen hood and ducting systems. The text is consistent with the requirements set forth in ANSI/IKECA C-10, which is proposed for adoption by code change (Insert Code Change Number for Proposal that inserts new section 609.3.3.2).

ANSI/IKECA C-10 is an ANSI accredited nationally recognized standard prescribing pre-cleaning inspections, protection of the equipment, control of the waste and the cleaning process. Additionally this Standard covers the required documentation associated with the cleaning and inspections of kitchen exhaust hoods. Currently there is no Standard recognized by the IFC for this purpose, and adoption of this Standard will enhance code compliance and enforcement.

Cost Impact: This proposal will not increase the cost of construction

Analysis: A review of the standard proposed for inclusion in the code, IKECA C10-2011, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F92-13

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

609.3.3.2-F-MARSHALL

F93 – 13
609.3.3.3.1 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

609.3.3.3 Records. 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.

609.3.3.3.1 Tags. Where a commercial kitchen hood or duct system is inspected, a tag containing the service provider name, address, telephone number and date of service shall be provided in a conspicuous location. Prior tags shall be covered or removed.

Reason: The proposed text clarifies necessary marking requirements to visually confirm serviceability of commercial kitchen hood and ducting systems. The text is consistent with the requirements set forth in ANSI/IKECA C-10, which is proposed for adoption by a separate code change proposal submitted by the F-CAC.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F93-13

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

609.3.3.3.1 (NEW)-F-ZUBIA-FCAC

F94 – 13
609.4 (New), Chapter 80

Proponent: James Carver, City of El Segundo Fire Department, representing City of El Segundo (jcarver@elsegundo.org)

Add new text as follows:

609.4 Appliance connection to building piping. Gas-fired commercial cooking appliances installed on casters and appliances that are moved for cleaning and sanitation purposes shall be connected to the piping system with an appliance connector listed as complying with ANSI Z21.69. The commercial cooking appliance connector installation shall be configured in accordance with the manufacturer's installation instructions. Movement of appliances with casters shall be limited by a restraining device installed in accordance with the connector and appliance manufacturer's instructions.

Add new standard to Chapter 80:

ANSI
American National Standards Institute
25 West 43rd Street
Fourth Floor
New York, NY 10036

Z21.69/CSA 616-09 Connectors for Movable Gas Appliances

Reason: The end users of commercial cooking appliances are replacing listed flexible piping with residential flexible piping, causing mechanical damage to the residential flexible piping when the cooking equipment is moved for cleaning, and causing a fire/life safety problem with gas leaks and fires. A similar section exists in the California Plumbing Code, and while it would be followed during initial installation by the plumbing inspector, maintenance of the code section requirements could not be verified by the fire inspector unless it was put into the Fire Code.

Cost Impact: None, the user is complying with existing code requirements.

Analysis: The proposed text is similar to IFGC Section 411.1.1 as revised by code change FG24-12 (AMPC). The standard proposed for inclusion in the code, ANSI Z21.69/CSA 616-09, is currently referenced in the IFGC.

F94-13

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

609.4 (NEW)-F-CARVER

F95 – 13
610.1, 610.2, 610.3 (New), 610.4, 610.5, 610.6 (New), 610.7, 5701.2, Chapter 80

Proponent: Andy Burke, Restaurant Technologies, Inc, representing self (aburke@rti-inc.com)

Revise as follows:

610.1 ~~General~~ Commercial Kitchen Cooking Oil Storage Tank Systems. Storage of cooking oil (grease) in commercial cooking operations utilizing aboveground tanks with a capacity greater than 60 gal (227 L) installed within a building shall comply with ~~Chapter 57~~ Sections 610.2 through 610.7. ~~Systems used to store cooking oils in larger than 60-gallon (227 L) above-ground tanks shall also comply with Sections 610.2 through 610.5~~. For purposes of this section, cooking oil shall be classified as a Class IIIB liquid unless otherwise determined by testing.

610.2 Metallic Storage Tanks. Metallic **c**ooking oil storage tanks shall be listed in accordance with UL 142 or UL 80, and shall be installed in accordance with ~~Section 5704 and~~ the tank manufacturer's instructions.

610.3 Nonmetallic Storage Tanks. Nonmetallic cooking oil storage tanks shall be installed in accordance with the tank manufacturer's instructions and shall also comply with all of the following:

1. Tanks shall be designed in accordance with ASTM D1998 unless otherwise approved.
2. Tank capacity shall not exceed 200 gallons per tank.
3. Tanks shall be suitable for use with cooking oil and the maximum temperature to which the tank will be exposed during use.

~~610.3~~ 610.4 ~~Other Storage Components~~ Cooking Oil Storage System Components. Cooking oil storage system components ~~including~~ shall include but are not limited to piping, connections, fittings, valves, tubing, hose, pumps, vents, and other related components used for the transfer of cooking oil ~~from the cooking appliance to the storage tank, and from the storage tank to the discharge point, shall be installed in accordance with Section 5703.6~~ and are permitted to be of either metallic or non-metallic construction.

610.4.1 Design Standards. The design, fabrication, and assembly of system components shall be suitable for the working pressures and structural stresses to be encountered by the components.

610.4.2 Components in Contact with Heated Oil. Any system component that comes in contact with heated cooking oil shall be rated for the maximum intermittent and continuous operating temperatures expected in the system.

610.4.3 Plenums. Installation of non-metallic cooking oil system components shall be prohibited in concealed interstitial spaces used as return air plenums unless the components are fully enclosed within continuous noncombustible raceways or enclosures, approved gypsum board assemblies, or within materials listed and labeled for installation within a plenum.

~~610.4~~ 610.5 Tank Venting. Normal and emergency venting shall be provided for cooking oil storage tanks ~~shall terminate outside the building as specified in Sections 5704.2.7.3 and 5704.2.7.4~~.

610.5.1 Normal Vents. Normal venting shall be located above the maximum normal liquid line, and shall have a minimum effective area at least as large as the largest filling or withdrawal connection.

610.5.2 Emergency Vents. Emergency relief venting shall be located above the maximum normal liquid line, and shall be in the form of a device or devices that will relieve excessive internal pressure caused by

an exposure fire. For non-metallic tanks, the emergency relief vent shall be allowed to be in the form of construction.

610.6 Heating of Cooking Oil. Electrical equipment used for heating cooking oil in cooking oil storage systems shall be listed to UL 499 and shall comply with NFPA 70. Use of electrical immersion heaters shall be prohibited in non-metallic tanks.

~~**610.5**~~ **610.7 Electrical Equipment.** Electrical equipment used for the operation ~~and heating~~ of ~~the~~ cooking oil storage systems shall ~~be listed and~~ comply with NFPA 70.

Revise as follows:

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1 through 10 *(No change to current text)*

11. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 610.

Add new standards to Chapter 80 as follows:

ASTM

D 1998-06 Standard Specification for Polyethylene Upright Storage Tanks

UL

499-05 Standard for Electrical Heating Appliances

Reason: The section as written presents practical challenges to innovative restaurant technologies, which entirely eliminate manual handling of cooking oil. These systems provide personnel safety and environmental improvements to existing manual or semi-manual oil handling operations. The proposal seeks to address the following issues:

The requirements as currently written (added in 2012 version of the code) are based on used, spent, or inedible cooking oil. For systems which include fresh cooking oil supply, a foodstuff, tanks and components must be food grade. The metallic tank standards currently referenced are based on fuel oil storage tanks and do not meet food grade requirements. The proposal addresses this limitation by adding requirements for non-metallic tanks, with an associated recognized engineering tank standard adapted for use with cooking oil.

Current references to Chapter 57 are more relevant to industrial flammable and combustible liquid tank requirements. High flash point cooking oil in a restaurant back-of-house setting represents a different, and generally lower, hazard than commonly anticipated by Chapter 57. The proposed exemption to Section 5701.2 unifies all pertinent fire safety requirements into Section 610 and the standards referenced therein. This establishes the level of safety applicable to this hazard. This approach is consistent with other exceptions in Chapter 57, in particular the exception for fuel oil tanks connected with oil burning equipment. The proposal takes into consideration comments received from code officials and fire safety professionals.

Note: This proposal applies only to the storage of cooking oil, a Class IIIB liquid with a high flash point (typically above 500°F), which represents a low fire hazard when stored and used per the requirements of the proposal. All other flammable and combustible liquids must comply with Chapter 57.

As written, Section 610.4 requires tank venting to terminate outside of the building, as specified in Sections 5704.2.7.3 and 5704.2.7.4. These referenced sections allow tanks storing Class IIIB liquids to vent inside the building, based on the relatively low fire hazard associated with Class IIIB liquids. The proposal modifies the current requirements for venting to accurately reflect the level of protection for this hazard as established in Chapter 57.

The intent of the requirements as written, as described in the 2012 substantiation, was to add a level of protection to address the use of immersion heaters in storage tanks containing used cooking oil. The proposal addresses these concerns by requiring compliance to UL 499 and NFPA 70, and by restricting the use of immersion heaters to metallic tanks only. Furthermore, the proposal requires all other electrical equipment used with cooking oil storage tank systems to comply with NFPA 70 as well.

The limitations for installing non-metallic tubing or piping are consistent with the International Mechanical Code requirements.

Cost Impact: The code change proposal will not increase the cost of construction. The introduction of Section 610 to the 2012 IFC increased cost of construction by limiting cooking oil storage tanks to metallic construction. The proposal will allow for non-metallic tank construction, allowing costs to remain reasonable for this type of technology and usage. The proposal also provides cost efficiencies for support/compliance of environmental initiatives to limit/prevent the introduction of used cooking oil and used portable containers into liquid and solid waste streams.

Analysis: A review of the standard proposed for inclusion in the code, ASTM D1998-06, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. UL 499-05 is currently referenced in the IMC.

F95-13

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

610.1-F-BURKE

F96 – 13
611 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Add new text as follows:

SECTION 611
HYPERBARIC FACILITIES

611.1 General. Hyperbaric facilities shall be inspected, tested and maintained, in accordance with NFPA 99.

611.2 Records. Records shall be maintained of all testing and repair conducted on the hyperbaric chamber and associated devices and equipment. Records shall be available to the fire code official.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Currently there is no specific requirement for maintaining hyperbaric chambers in the IFC. Adding this section into Chapter 6 will require that all hyperbaric chambers are maintained to the same NFPA standard they were required to meet when they were installed.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

F96-13

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

611 (NEW)-F-WILLIAMS-ADHOC

F97 – 13
Chapter 7, 701.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

CHAPTER 7
~~FIRE-RESISTANCE-RATED CONSTRUCTION~~ FIRE AND SMOKE PROTECTION FEATURES

701.1 Scope. ~~The provisions of this chapter shall specify the requirements for and the maintenance of fire-resistance-rated construction.~~ The provisions of this chapter govern maintenance of the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. New buildings shall comply with the *International Building Code*.

Reason: This proposal will provide correlation of IBC Chapter 7 which addresses construction of assemblies to limit the spread of fire and smoke with IFC Chapter 7 which addresses maintenance of the constructed assemblies designed to limit the spread of fire and smoke.

Chapter 7 in the IBC is titled “Fire and Smoke Protection Features”. Since IFC Chapter 7 is intended to maintain the components which are constructed under IBC Chapter 7, a revision in the title of the IFC Chapter to mirror the IBC is appropriate.

The scope of IBC Chapter 7 reads as follows:

> **701.1 Scope.** The provisions of this chapter shall govern the materials, systems and assemblies used for structural *fire resistance* and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

The proposed scope of IFC Chapter 7 is written to address maintenance of the items covered in the scope of IBC Chapter 7. Therefore, the similarity in the language is appropriate.

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

F97-13

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

CHAPTER 7-F-ZUBIA-FCAC

F98 – 13
703

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

Revise as follows:

SECTION 703
~~FIRE-RESISTANCE-RATED CONSTRUCTION~~ INSPECTION AND MAINTENANCE OF CONSTRUCTION FEATURES

703.1 ~~Maintenance~~ General. ~~The required fire-resistance rating of fire-resistance-rated construction (including walls, firestops, shaft enclosures, partitions, smoke barriers, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems)~~ Construction features intended to limit the spread of fire or smoke shall be maintained.

703.2 Inspection and Maintenance. Construction features intended to limit the spread of fire or smoke ~~Such elements~~ shall be visually inspected by the owner annually and properly repaired, restored or replaced when damaged, altered, breached or penetrated.

Exception: Where construction features are concealed, ~~such elements shall not be required to be visually inspected~~ visual inspection by the owner is not required unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space.

703.2.1 Openings. Openings made ~~therein~~ in smoke-resistant or fire-resistance-rated assemblies for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason shall be protected with approved methods or self- or automatic-closing opening protectives capable of resisting the passage of smoke ~~and~~ or fire, as required to maintain the rating of the assembly. ~~Openings through fire-resistance-rated assemblies shall be protected by self- or automatic-closing doors of approved construction meeting the fire protection requirements for the assembly.~~

~~**703.1.1 Fireblocking and draftstopping.** Required fireblocking and draftstopping in combustible concealed spaces shall be maintained to provide continuity and integrity of the construction.~~

~~**703.1.2**~~ **703.2.1.1 ~~Smoke~~ Openings in smoke barriers and smoke partitions.** ~~Required smoke barriers and smoke partitions shall be maintained to prevent the passage of smoke. All openings~~ 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.~~

~~**703.2**~~ **703.2.1.2 Opening protectives in fire-resistance rated assemblies.** *(No change to current text)*

~~**703.2.1**~~ **703.2.1.2.1 Signs.** *(No change to current text)*

~~**703.2.2**~~ **703.2.1.2.2 Hold-open devices and closers.** *(No change to current text)*

~~**703.2.3**~~ **703.2.1.2.3 Door operation.** *(No change to current text)*

703.3 Ceilings. *(No change to current text)*

703.4 Testing. *(No change to current text)*

Reason: Chapter 7 and Section 703.1 have been expanded to clearly require that construction features intended to limit the spread of smoke must also be maintained.

Predominantly an editorial code change proposal to clarify the intent of the provisions.

Section 703.1 has been revised to provide a broadly-inclusive requirement to maintain any construction feature that was provided to limit the spread of smoke and/or fire. The parenthetical list in this section has been deleted since it was not all-inclusive. These changes improve the usability of the code and address topics that were previously overlooked, such as maintenance of draft stopping in attics.

The existing text in Section 703.1.1 and the first sentence of Sections 703.1.2 and 703.1.3 have been deleted because they are no longer necessary with the revised text of Section 703.1, which will now encompass fire blocking, draftstopping, smoke barriers, smoke partitions, firewalls, fire barriers and fire partitions.

The second sentence of Section 703.1.3 has been deleted because it is redundant. Section 703.2.1 covers maintenance of opening protectives.

NOTE: To assist in following the revisions proposed in this code change, below is a clean version of section 703 without underline and strikeout.

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

F98-13

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

703-F-ZUBIA-FCAC

F99 – 13
803.5.1

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

803.5.1 Textile wall or ceiling coverings. Textile wall or ceiling coverings shall comply with one of the following:

1. The wall or ceiling covering shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723, and be protected by automatic sprinklers installed in accordance with Section 903.3.1.1 or 903.3.1.2;
2. The wall covering shall meet the criteria of Section ~~803.5.1.1 or~~ 803.5.1.2 when tested in the manner intended for use in accordance with NFPA 265 using the product-mounting system, including adhesive, of actual use; or
3. The wall or ceiling covering shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, of actual use.

~~**803.5.1.1 Method A test protocol.** During the Method A protocol, flame shall not spread to the ceiling during the 40-kW exposure. During the 150-kW exposure, the textile wall covering shall comply with all of the following:~~

~~1. Flame shall not spread to the outer extremity of the sample on the 8-foot by 12-foot (203 by 305 mm) wall.~~
~~2. The specimen shall not burn to the outer extremity of the 2-foot-wide (610 mm) samples mounted in the corner of the room.~~
~~3. Burning droplets deemed capable of igniting textile wall coverings or that burn for 30 seconds or more shall not form.~~
~~4. Flashover, as defined in NFPA 265, shall not occur.~~
~~5. The maximum net instantaneous peak heat release rate, determined by subtracting the burner output from the maximum heat release rate, does not exceed 300 kW.~~

Reason: The Method A protocol of NFPA 265 has been deleted from the mandatory portion of the NFPA 265 test. Method A was eliminated from NFPA 265 because it was always considered simply a screening test. Note that NFPA 265 states, in the annex: "Method A test protocol is a screening test method that is useful for testing small amounts of material." Note that NFPA 265 Method A uses small 2 foot samples as opposed to the full 8 foot samples used by the Method B.

Method A of NFPA 265 was retained in the IFC for two more code cycles to accommodate older existing systems but can now be eliminated as no longer needed. The IBC already eliminated Method A 2 cycles ago.

Cost Impact: None

F99-13

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

803.5.1-F-HIRSCHLER

F100 – 13
803.7 (New), Chapter 80

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

803.7 Laminated products factory-produced with a wood substrate. Laminated products factory-produced with a wood substrate shall comply with one of the following:

1. The laminated product shall have a Class A, B, or C flame spread index and smoke developed index, based on the requirements of Table 803, in accordance with ASTM E84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E2579.
2. The laminated product shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system (including adhesive) of actual use.

(Renumber subsequent sections)

Add new standard to Chapter 80 as follows:

ASTM

ASTM E2579-12	Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics	803.7

Reason: Clarification has recently been issued, in the mounting method for wood products in ASTM E84 (namely ASTM E2579), to detail the proper way to test laminated products factory-produced with a wood substrate. They are to be treated the same way as any product but differently from facings or veneers applied "on site" over a wood substrate. A separate proposal addresses veneers applied on site.

The new section in ASTM E2579 reads as follows:

8.6 Laminated products factory-produced with a wood substrate:

8.6.1 If the factory-produced laminated product includes a facing or wood veneer applied over a wood substrate, the specimens shall comply with 8.6.1.1 as well as with 8.6.1.2.

8.6.1.1 The specimens shall consist of the finished product, namely the combination of the facing, panel product or wood veneer, the adhesive used and the specific wood substrate that will be used. Mount the specimens on the ledges of the Test Method E84 furnace without using additional means of support.

8.6.1.2 The adhesive used to attach the facing, panel product, or wood veneer~~, or panel product~~ to the wood substrate shall be that specified by the manufacturer and applied in accordance with manufacturer's application instructions.

8.7 Wood veneers or facings intended to be applied on site over a wood substrate. If the laminated product is not factory-produced but the wood veneer or facing is to be applied on-site over a wood substrate, the specimens shall comply with the requirements of Practice E2404.

Cost Impact: None

F100-12

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

803.7 (NEW) #1-F-HIRSCHLER

F101 – 13
803.7 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

803.7 Facings or wood veneers intended to be applied on-site over a wood substrate. Facings or wood veneers intended to be applied on-site over a wood substrate shall comply with one of the following:

1. The facing or wood veneer shall have a Class A, B, or C flame spread index and smoke developed index, based on the requirements of Table 803, in accordance with ASTM E 84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.
2. The facing or wood veneer shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, described in section 5.8.9 of NFPA 286.

(Renumber subsequent sections)

Reason: Clarification has recently been issued, in the mounting method for wall coverings in ASTM E84 (namely ASTM E2404), to detail the proper way to test facings or wood veneers intended to be applied over a wood substrate. They are to be treated the same way as any other wall or ceiling covering applied "on-site" to a wood substrate but differently from panels where the facing or veneer is applied in the factory over the wood substrate and the entire panel is installed. A separate proposal addresses factory-produced panels.

The new section in ASTM E2404 reads as follows:

8.7 Facings or Wood Veneers Intended to be Applied On-site Over a Wood Substrate:
8.7.1 If the facing or wood veneer is intended to be applied on-site over a wood substrate, the specimens shall comply with
8.7.1.1 as well as with 8.1.
8.7.1.1 The specimens shall consist of the facing or wood veneer mounted on the "A" face of nominal 15⁄32 in. untreated plywood with a face veneer of Douglas fir. The plywood shall comply with NIST Voluntary Product Standard PS 1-07. The plywood shall carry the grade stamp of either APA-The Engineered Wood Association or TECO, indicating that the plywood has been graded PS 1-07 A-C and is for exterior exposure. Alternatively, the plywood shall be permitted to be stamped as conforming to CSA O121 (Standard for Douglas fir plywood). Mount the specimens on the ledges of the Test Method E84 furnace without using additional means of support.
8.8 Laminated Products Factory-produced with a Wood Substrate — If the laminated product is factory-produced the specimens shall comply with the requirements of Practice E2579.
8.1 Whenever a wall or ceiling covering system uses an adhesive to attach a wall or ceiling covering material, the adhesive specified by the manufacturer shall be used for construction of the test specimen in accordance with the wall or ceiling covering manufacturer application instructions.

Section 5.8.9 of NFPA 286 reads as follows:

5.8.9 Wall or Ceiling Coverings Intended to Be Applied over a Wood Substrate. *If the wall or ceiling coverings are intended to be applied over a wood substrate, the specimens shall consist of the wall or ceiling covering mounted on untreated plywood, with a face veneer of Douglas fir. The plywood shall have the same thickness as the wood substrate used in actual installations, and shall comply with NIST Voluntary Product Standard PS 1-07, Structural Plywood. The plywood shall be marked with a grade stamp indicating that the plywood has been graded PS 1-07 A-B and is for exterior exposure. The grade stamp shall be issued by a quality control agency. Alternatively, the plywood shall be permitted to be stamped as conforming to CSA Standard O121, Douglas Fir Plywood.*

Cost Impact: None

Analysis: ASTM E2404 -08 is currently referenced in the IFC. An update in the year edition of that standard will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

F101-12

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

803.7 (NEW) #2-F-HIRSCHLER

F102 – 13
805.1

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

805.1 Group I-1, ~~board and care facilities~~ Condition 2. The requirements in Sections 805.1.1 through 805.1.2 shall apply to ~~board and care~~ facilities ~~classified~~ in Group I-1 Condition 2.

Reason: The term 'board and care facilities' was deleted from the IBC during the last cycle. These provisions are appropriate for Group I-1 Condition 2, assisted living facilities.

This proposal is submitted by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost Impact: None

F102-13

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

805.1-F-BALDASSARRA-CTC

F103 – 13
805.3.2.2, 805.3.2.2.1 (New), 803.5.3.2.2.2 (New), Chapter 80

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

805.3.2 Mattresses. Newly introduced mattresses shall meet the requirements of Sections 805.3.2.1 through 805.3.2.3.

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).

805.3.2.2 Fire performance tests. Newly introduced mattresses shall be tested in accordance with Section 805.3.2.2.1 or 805.3.2.2.2.

805.3.2.2.1 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.
2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.

805.3.2.2.2 Mass Loss Test. Newly introduced mattresses shall have a mass loss not exceeding 15% of the initial mass of the mattress when tested in accordance with the test in Annex A3 of ASTM F1085.

805.3.2.3 Identification.
Mattresses shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.3.2.1 and 805.3.2.2.

Add new standard to Chapter 80 as follows:

ASTM

F1085-10 Standard Specification for Mattress and Box Springs for Use in Berths in Marine Vessels…… 805.3.2.2.2

Reason: The test method in Annex A3 of ASTM F1085 was developed originally for use in detention and correctional occupancies and it is a very severe test that is a reasonable (and less expensive) alternative to ASTM E1590. This test is very simple and can be conducted at any facility and does not require the use of an instrumented fire test lab. The test can be described in a few words: it involves rolling up a mattress, placing it at an angle (for example by holding it with a brick), introducing newspaper into the volume surrounding the rolled up mattress and igniting the newspaper with a match.

One of the advantages of using the ASTM F1085 Annex A3 test is that if the mattress materials melt away from the flame with flaming drips they may "pass" the ASTM E1590 test but melting will not allow a mattress to pass this test. In this test the material that flames on the floor will keep burning the mattress itself.

The following table shows the results using the ASTM F1085 Annex A3 test for a number of mattresses in two studies (one in 1980 and one in 2003) and it also shows whether the mattresses meet the ASTM E1590 requirements in the IFC code. It is clear from the table that mattresses usually burn up almost completely or lose very little mass and that the ASTM F1085 test will not pass mattresses that fail the IFC code requirements.

Mattress	ASTM F1085 Mass Loss %	IFC Code Pass: Yes or No
1 (2003)	1.22	Yes
2 (2003)	9.47	Yes
3 (2003)	3.30	Yes
4 (2003)	100	No
5 (2003)	100	No
1 (1980)	100	No
2 (1980)	100	No

3 (1980)	98.5	No
4 (1980)	91.1	No
5 (1980)	91	No
6 (1980)	83.1	No
7 (1980)	44.7	No
8 (1980)	3.0	Yes

As another example of the usefulness of this test, two mattresses, both of which pass the ASTM E1590 test requirements, were recently tested to the ASTM F1085 Annex A3 test. One of the mattresses gave a mass loss of 1% while the other one melted and burnt virtually completely.

Test/Results	Polychloroprene Mattress	FR Polyester Mattress
ASTM F1085 Annex A3	1% weight loss (pass)	>90% weight loss (fail)
ASTM E1590	Pass (Peak HRR: 25 kW)	Pass

The test method from Annex A3 of ASTM F1085 is also described (albeit without enough details to conduct the test in a standard fashion) in section 10.2 of ASTM F1870 (Standard Guide for Selection of Fire Test Methods for the Assessment of Upholstered Furnishings in Detention and Correctional Facilities) as a test method "Designed for Detention and Correction Facilities".
Relevant parts of the text of Annex A3 of ASTM F1085 follows:

A3.1 Background

A3.1.1 This optional test method provides a means for evaluating mattresses, and mattress inserts, for the weight loss, and fire behavior they exhibit under specified exposure conditions.

A3.1.2 Results of this test method are likely to be reasonably predictive of the results of the test method in Annex A1, in terms of being able to differentiate between mattresses (or mattress inserts) of various degrees of fire performance.

A3.1.3 This test method is capable of subdividing mattresses (or mattress inserts) into several categories depending on their response to the ignition source applied: some mattresses (or mattress inserts) will burn up completely, while some others will lose small fractions of the initial weight, with a series of intermediate fire-test responses also likely.

A3.2 Test Specimen

A3.2.1 Use as the test specimen an actual manufactured mattress, mattress insert, or prototype thereof, in the configuration of its intended use.

A3.2.2 If an actual manufactured mattress, or mattress insert, is not supplied, the size of the default mattress to be tested has the following dimensions: 0.76 by 1.90 m by at least 76 mm thick (30.0 by 75 in. by at least 3 in. thick). Whenever possible an actual mattress shall be used.

A3.2.3 The test specimen used shall be the size representative of the intended use of the product to be tested. Report the actual dimensions of the test specimen used.

A3.2.4 The test specimen, shall, in all respects, reflect the construction of the actual mattress, or mattress insert, that it is intended to represent.

A3.5 Procedure

A3.5.1 Conduct the tests in a room equipped with appropriate exhausts to ensure that the resulting smoke can be vented. The so-called "ASTM room" (2.4 by 3.7 by 2.4 m high; 8 by 12 by 8 ft high) described in Test Method E1590 is an example of a room deemed satisfactory for this test. Rooms of other dimensions are also suitable.

A3.5.2 Weigh 8 double sheets of black print newspaper (not tabloid size) and record the weight, to an accuracy of no less than 1.0 g.

A3.5.3 Weigh the conditioned mattress, or mattress insert, and record the weight, to an accuracy of no less than 50 g. This shall be considered the initial mattress or mattress insert weight. Test within 30 min of weighing the mattress.

A3.5.4 Use a pipe approximately 0.6-1.0 m (24-39 in.) long and 230-250 mm (9-10 in.) in internal diameter for rolling the mattress, or mattress insert.

A3.5.5 Roll the long dimension of the test specimen (mattress, mattress prototype, mattress insert or mattress cushioning material), completely around the pipe. Retain the test specimen in place by using steel poultry netting or a minimum of three steel wire ties. This configuration creates a "chimney effect." Remove the pipe after the roll containing the test specimen has been secured and has formed a test specimen roll.

A3.5.5.1 If the mattress, or mattress insert, is asymmetrical, inasmuch as the top and bottom surfaces are different, tests shall be conducted on both sides. If results differ depending on the side exposed to the ignition source, the appropriate results are those from the test that is shown to be more severe.

A3.5.6 Position the test specimen roll such that it is both: (1) secure from falling and (2) tilted to one side at an angle of 75-80 degrees to the floor. This is achievable: (a) by propping up the test specimen roll on one side, with two 70-80 mm (3 in.) steel angle irons or two bricks, with 70-100 mm separation between them, and securing the test specimen roll from tipping over during testing by attaching 3 wires to the steel netting, with the wires suspended from up high (for example from the ceiling) or (b) by leaning the mattress against a non combustible support at the required angle. The angled configuration is needed to allow air to enter at the bottom of the chimney formed by the test specimen roll.

A3.5.7 Crumple up the sheets of newspaper, loosely, into individual balls approximately 150 mm (6 in.) in diameter and place them in the inside of the chimney.

A3.5.8 Ignite the crumpled newspaper, from the top, with a single match, ensuring that the newspaper is well lit.

Note: A rather intense fire lasting 90-100 s is likely to result.

A3.5.9 Allow free burning of the test specimen roll until the first of the following conditions is reached: (a) All burning has ceased. (b) Flashover in the test room appears inevitable. In this case, extinguish the test specimen fire manually and report the result as a flashover. Weighing of the test specimen remains is not necessary in this case.

A3.5.10 Conclude the test after visible flames have ceased, unless the mattress, or mattress insert, is still smoldering. At the test conclusion, let the mattress, or mattress insert, cool to room temperature and check to ensure that there is no visible smoke and that the mattress, or mattress insert, is not smoldering.

A3.5.11 If the mattress, or mattress insert, is smoldering when visible flames have ceased, do not conclude the test but continue the test until 60 minutes have elapsed and then terminate the test. Report the time at which visible flames have ceased and the time at which smoldering has ceased, unless smoldering has continued until the test has been externally terminated. Report the method of test termination and check to ensure that there is no more smoldering, no visible smoke and that the mattress is dry (if water was used).

A3.5.12 Upon completion of the test, the mattress, or mattress insert, remains, if any, shall be weighed, after placing them in a pre-weighed non combustible container. The mattress, or mattress insert, remains shall include any portion of the test specimen that has fallen off, during or after the test.

A3.5.14 Conduct the test in duplicate. Conduct each burn on an untested specimen.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, ASTM F1085-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2013.

F103-12

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

805.3.2-F-HIRSCHLER

F104 – 13
806.1.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Add new text as follows:

806.1.1 Restricted occupancies. Natural cut trees shall be prohibited within ambulatory care facilities and Group A, E, I-1, I-2, I-3, I-4, M, R-1, R-2 and R-4 occupancies.

Exceptions:

1. Trees located in areas protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be prohibited in Groups A, E, M, R-1 and R-2.
2. Trees shall be allowed within *dwelling units* in Group R-2 occupancies.

Reason: Ambulatory Care Facilities are being added to the list of prohibited occupancies for natural cut trees at Section 806.1.1. Patients in these facilities are rendered incapable of self-preservation in this occupancy in activities that present the same evacuation challenges presented by Group I-2 occupancies which are already in the list. This section is recommended for modification because of the rapid manner in which a natural cut tree is consumed by fire with the associated release of heat and smoke would present a distinct hazard to occupants. A burning tree could not be approached or passed by thus effectively blocking that portion of an egress path while spreading heat and smoke to additional portions of the means of egress.

Ambulatory Care Facilities are located within Business (Group B) occupancies where natural cut trees are permitted. This added prohibition eliminates a hazard that otherwise would not occur for similar activities conducted in a Group I-2 occupancy and provides an improved level of protection for other occupancies in the mixed use situation.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact: This proposal will not increase the cost of construction.

F104-13

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

806.1.1-F-WILLIAMS-ADHOC

F105 – 13
806.2

Proponent: Amy Carpenter, AIA, Pioneer Network Long Term Care Code Task Force

Revise as follows:

806.2 Artificial vegetation. Artificial decorative vegetation shall ~~meet the flame propagation performance criteria of NFPA 701. Meeting the flame propagation performance criteria of NFPA 701 shall be documented and certified by the manufacturer in an *approved* manner. Alternatively, the artificial decorative vegetation item shall~~ be tested in accordance ith NFPA 289, using the 20 kW ignition source, and shall have a maximum heat release rate of 100 kW.

> **Exception:** In Groups R-2, I-1 and I-2, artificial vegetation shall be permitted in limited quantities such that a hazard of fire development or spread is not present.

Reason: The text stricken from section 806.2 is proposed because it is not a correct reference and should not be included. NFPA 701 is the standard for "flame propagation of Textiles and Films". The scope description, in the standard, is clear that it is for materials that will be used as curtains, drapes and window treatments, therefore it is not the correct reference standard, nor the correct test method, for artificial decorative vegetation that may be used in buildings.

In Groups R-2, I-1 and I-2 Condition 1, residents often seek to create a home-like environment and display decorative items, like a seasonal wreath at their unit entries. It is not always possible, or practical to determine compliance with NFPA 289, especially for items procured by individual residents. The language of this exception is similar to the permissions for decorative materials, in these use groups, under Section 807. Further, as all of these Occupancies are required to have sprinkler coverage, there is a reduced risk for detrimental effects of limited quantities of artificial vegetation.

Cost Impact: No cost impact

F105-13

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

806.2-F-CARPENTER

F106 – 13

806.2, 807.1(IBC [F] 806.1), 807.1.2 (IBC [F] 806.1.2), 807.2 (IBC [F] 806.2), 807.4.2.2, 2603.5, 3104.2, 3105.4

Proponent: Timothy T. Earl, GBH International (tearl@gbhinternational.com)

Revise as follows:

806.2 Artificial vegetation. Artificial decorative vegetation shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701. Meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall be documented and certified by the manufacturer in an *approved* manner. Alternatively, the artificial decorative vegetation item shall be tested in accordance with NFPA 289, using the 20 kW ignition source, and shall have a maximum heat release rate of 100 kW.

807.1 (IBC [F] 806.1) General requirements. In occupancies in Groups A, E, I and R-1, and dormitories in Group R-2, curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 in accordance with Section 807.2 or be noncombustible.

Exceptions:

1. Curtains, draperies, hangings and other decorative materials suspended from walls of *sleeping units* and *dwelling units* in dormitories in Group R-2 protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls.
2. Decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are of limited quantities such that a hazard of fire development or spread is not present.

In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited.

Fixed or movable walls and partitions, paneling, wall pads and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings.

In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet the flame propagation performance criteria in accordance with Section 807.2 and Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall be noncombustible.

807.1.2 (IBC [F] 806.1.2) Combustible decorative materials. The permissible amount of decorative materials meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not exceed 10 percent of the specific wall or ceiling area to which it is attached.

Exceptions:

1. In auditoriums in Group A, the permissible amount of decorative material meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not exceed 75 percent of the aggregate wall area where the building is equipped

throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.11 of the *International Building Code.*

2. The amount of fabric partitions suspended from the ceiling and not supported by the floor in Group B and M occupancies shall not be limited.

807.2 (IBC [F] 806.2) Acceptance criteria and reports. Where required to be flame resistant, decorative materials shall be tested by an *approved* agency and meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701, or such materials shall be noncombustible.

Reports of test results shall be prepared in accordance with Test Method 1 or Test Method 2, as appropriate, of NFPA 701 and furnished to the *fire code official* upon request.

807.4.2.2 Motion picture screens. The screens upon which motion pictures are projected in new and existing buildings of Group A shall either meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall comply with the requirements for a Class B interior finish in accordance with Section 803 of the *International Building Code.*

Revise as follows:

2603.5 Sealing of buildings, structures and spaces. Paper and other similar materials that do not meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not be used to wrap or cover a building, structure or space in excess of that required for the sealing of cracks, casements and similar openings.

Revise as follows:

3104.2 Flame propagation performance treatment. Before a permit is granted, the *owner* or agent shall file with the *fire code official* a certificate executed by an *approved* testing laboratory certifying that the tents and membrane structures and their appurtenances; sidewalls, drops and tarpaulins; floor coverings, bunting and combustible decorative materials and effects, including sawdust when used on floors or passageways, are composed of material meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall be treated with a flame retardant in an *approved* manner and meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701, and that such flame propagation performance criteria are effective for the period specified by the permit.

IBC [F] 801.4 Decorative materials and trim. *Decorative materials* and *trim* shall be restricted by combustibility, fire performance, or ~~and the~~ flame propagation performance ~~criteria of NFPA 701,~~ in accordance with Section 806.

Reason: In 1989 the NFPA Technical Committee on Fire Tests eliminated the so-called “small-scale test” from NFPA 701 because the results had been shown not to represent a fire performance that corresponded to what happened in real scale. Instead of the “small-scale test” NFPA 701 now (and for over 20 years) contains two tests (Test 1 and Test 2), which apply to materials as indicated by the text of NFPA 701 (2010) that is shown at the bottom of this proposal.

However, a large number of manufacturers continue stating that the materials or products that they sell have been tested to NFPA 701, when they really mean the pre-1989 small-scale test in NFPA 701. That test no longer exists and materials or products meeting that test do not exhibit acceptable fire performance.

The change above was already done in the IBC.

Text of NFPA 701 (2010):

1.1.1.1 Test Method 1 shall apply to fabrics or other materials used in curtains, draperies, or other window treatments. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.2 Test Method 1 shall apply to single-layer fabrics and to multilayer curtain and drapery assemblies in which the layers are fastened together by sewing or other means. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.3 Test Method 1 shall apply to specimens having an areal density less than or equal to 700 g/m^2 (21 oz/yd^2), except where Test Method 2 is required to be used by 1.1.2.
1.1.2.1 Test Method 2 (flat specimen configuration) shall be used for fabrics, including multilayered fabrics, films, and plastic blinds, with or without reinforcement or backing, with areal densities greater than 700 g/m^2 (21 oz/yd^2).
1.1.2.2 Test Method 2 shall be used for testing vinyl-coated fabric blackout linings and lined draperies using a vinyl-coated fabric blackout lining.
1.1.2.3 Test Method 2 shall be used for testing plastic films, with or without reinforcement or backing, when used for decorative or other purposes inside a building or as temporary or permanent enclosures for buildings under construction.
1.1.2.4 Test Method 2 shall apply to fabrics used in the assembly of awnings, tents, tarps, and similar architectural fabric structures and banners.

Note also the following from the text of NFPA 701 (2010):

1.2* Purpose.
1.2.1 The purpose of Test Methods 1 and 2 shall be to assess the propagation of flame beyond the area exposed to the ignition source.

A.1.1 A small-scale test method appeared in NFPA 701 until the 1989 edition. It was eliminated from the test method because it has been shown that materials that “pass” the test do not necessarily exhibit a fire performance that is acceptable. The test was not reproducible for many types of fabrics and could not predict actual full-scale performance. It should not, therefore, be used.
A.1.1.1 For the purposes of Test Method 1, the terms curtains, draperies, or other types of window treatments, where used, should include, but not be limited to, the following items:

(1) Window curtains
(2) Stage or theater curtains
(3) Vertical folding shades
(4) Roll-type window shades
(5) Hospital privacy curtains
(6) Window draperies
(7) Fabric shades or blinds
(8) Polyvinyl chloride blinds
(9) Horizontal folding shades
(10) Swags

Examples of textile items other than window treatments to which Test Method 1 applies include:

(1) Table skirts
(2) Table linens
(3) Display booth separators
(4) Textile wall hangings
(5) Decorative event tent linings not used in the assembly of a tent

Cost Impact: Minimal

F106-13

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

806.2-F-EARL

F107 – 13
806.3

Proponent: Amy Carpenter, AIA, Pioneer Network Long Term Care Code Task Force

Revise as follows:

806.3 Obstruction of means of egress. ~~The required width of any portion of a *means of egress* shall not be obstructed by decorative vegetation~~. Decorative vegetation shall not protrude more than 6 inches into the means of egress pathway and shall not obstruct any life safety equipment or controls.

Reason: Section 806.3 seeks to clarify a common enforcement mis-conception that decorative vegetation cannot protrude at all into the corridor. Often, calculated egress loads will set a required width of a corridor much lower than the actual provided corridor width. The current language would actually allow items to protrude into the corridor to any distance, as long as the vegetation doesn't encroach more than the required calculated width. This new language restricts the total projection to 6 inches, which is consistent with items such as hand sanitizers.

Cost Impact: No cost impact

F107-13

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

806.3-F-CARPENTER

F108 – 13
806.3

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (rjd@davidsoncodeconcepts.com)

Revise as follows:

806.3 Obstruction of means of egress. The required width of any portion of a *means of egress* shall not be obstructed by decorative vegetation. Natural cut trees shall not be located within an exit, corridor, or a lobby or vestibule.

Reason: Section 806.3 "Obstruction of the means of egress" is recommended for modification because the rapid manner in which a natural cut tree is consumed by fire with the associated release of heat and smoke would present a distinct hazard to egress regardless of whether it impinged on the required width of the means of egress. A burning tree could not be approached or passed by thus effectively blocking that portion of an egress path while spreading heat and smoke to additional portions of the means of egress. A significant impact would be a natural cut tree located within a lobby that has the allowed 50% of all egress capacity passing through the same lobby.

Cost impact: This proposal will not increase the cost of construction.

F108-13

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

806.3-F-DAVIDSON

F109 – 13
807 (IBC [F] 806)

Proponent: Amy Carpenter, representing Pioneer Network Long Term Care Code Task Force (acarpenter@lenhardtrodgers.net) and Wayne Jewell Township of Green Oak, MI representing self

Revise as follows:

SECTION 807
DECORATIVE MATERIALS OTHER THAN DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

807.1 (IBC [F]806.1) General. Combustible decorative materials, other than decorative vegetation, shall comply with Section 807.2 through 807.5.

~~**807.1 (IBC [F]806.1) General requirements**. In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains draperies, hangings and other *decorative materials* suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with section 807.2 or be noncombustible.~~

~~**Exceptions:**~~

1. ~~Curtains, draperies, hangings and other decorative materials suspended from walls of *sleeping units* and *dwelling units* in dormitories in Group R-2 protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls.~~ *(relocated to Section 807.3 exception 2)*
2. ~~Decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are of limited quantities such that a hazard of fire development or spread is not present.~~ *(relocated to Section 807.5.5)*

~~In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited.~~ *(relocated to Section 807.5.6 and 807.5.7)*

~~Fixed or movable walls and partitions, paneling, wall pads and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings.~~ *(relocated to Section 807.3)*

~~In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet Sections 807.2 and 807.3 the flame propagation performance criteria in accordance with Section 807.2 and NFPA 701 or shall be noncombustible.~~

~~**807.1.1(IBC [F]806.1.1)**~~ **807.2 (IBC [F] 806.2) Noncombustible materials.** The permissible amount of noncombustible decorative material shall not be limited.

~~**807.1.2 (IBC [F]806.1.1)**~~ **807.3 (IBC [F] 806.3) Combustible decorative materials.** In other than Group I-3, ~~The permissible amount of~~ curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall be flame resistant ~~meeting the flame propagation performance criteria of NFPA 701~~ in accordance with Section 807.4 and shall not exceed 10 percent of the specific wall or ceiling area to which it is attached.

Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered *interior finish* if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered *decorative materials* or furnishings. *(relocated from Section 807.1)*

Exceptions:

1. In auditoriums in Group A, the permissible amount of curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings ~~meeting the flame propagation performance criteria of NFPA 701~~ shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.11 of the *International Building Code.*
2. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings and other similar decorative materials suspended from walls or ceiling shall not exceed 50 percent of the aggregate wall areas where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1. *(relocated and revised from Section 807.1, exception 1)*

3.~~2.~~ In Group B and M occupancies, the amount of fabric partitions suspended from the ceiling and not supported by the floor ~~in Group B and M occupancies~~ shall not be limited.

~~**807.2(IBC [F] 806.2)**~~ **807.4 (IBC [F] 806.4) Acceptance criteria and reports.** Where required to be flame resistant, curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall be tested by an *approved* agency and meet the flame propagation performance criteria of NFPA 701~~, or such materials shall be noncombustible~~. Reports of test results shall be prepared in accordance with NFPA 701 and furnished to the *fire code official* upon request.

~~**807.4**~~ **807.5 Occupancy-based requirements.** In occupancies specified ~~in Group A, E and I-4 day care facilities~~, combustible decorative materials not complying with Section 807.3 ~~other than decorative vegetation~~ shall comply with Sections 807.5.1 ~~807.4.1~~ through ~~807.4.4.2~~ 807.5.7.

IFC 807.5.1 ~~**807.4.1**~~ **General.** ~~All of~~ The following requirements shall apply to all occupancies: ~~to all Group A and E occupancies and Group I-4 day care facilities regulated by Sections 807.4.2 through 807.4.4~~:

1. ~~Explosive or highly flammable materials:~~ Furnishings or decorative materials of an explosive or highly flammable character shall not be used.
2. ~~Fire-retardant coatings:~~ Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.
3. ~~Obstructions:~~ Furnishings or other objects shall not be placed to obstruct *exits,* access thereto, egress there from or visibility thereof.

807.5.2 ~~**807.4.2**~~ **Group A.** In Group A occupancies, the requirements in Sections ~~807.4.2.1~~ 807.5.2.1 through ~~807.4.2.3~~ 807.5.2.4 shall apply ~~to occupancies in Group A~~.

807.5.2.1 ~~**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 kW when tested in accordance with UL 1975, or when tested in accordance with NFPA 289 using the 20 kW ignition source.

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.

807.5.2.2 ~~807.4.2.2~~ Motion Picture Screens. The screens upon which motion pictures are projected in new and existing buildings shall either ~~meet the flame propagation performance criteria of NFPA 701~~ comply with Section 807.4 or shall comply with the requirements for a Class B interior finish in accordance with Section 803 of the *International Building Code*.

807.5.2.3 ~~807.4.2.3~~ Wood use in ~~Group A-3~~ places of religious worship. In places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall ~~be allowed~~ not be limited.

807.5.2.4 ~~807.3 (IBC [F] 806.4)~~ Pyroxylin plastic. Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base shall not be used ~~in Group A occupancies~~.

807.5.3 ~~807.4.3~~ Group E. Group E occupancies, shall comply with Sections ~~the requirements in Sections 807.4.3.1~~ 807.5.3.1 through ~~and 807.4.3.2~~ 807.5.3.3 ~~shall apply to occupancies in Group E~~.

807.5.3.1 ~~807.4.3.1~~ Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved* ~~smoke detection~~ fire alarm system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.5.3.2 ~~807.4.3.2~~ Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

807.5.3.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.5.4 ~~807.4.4~~ Group I-4~~, day care facilities~~. Group I-4 occupancies shall comply with, the requirements in Section~~s 807.4.4.1~~ 807.5.4.1 through ~~and 807.4.4.2~~ 807.5.4.2 ~~shall apply to day care facilities classified in Group I-4~~.

807.5.4.1 ~~807.4.4.1~~ Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved* ~~smoke detection~~ fire alarm system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.5.4.2 ~~807.4.4.2~~ Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

807.5.4.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.5.5 Dormitories in Group R-2. In Group R-2 dormitories, within sleeping units and dwelling units, the combustible decorative materials, shall be of limited quantities such that a hazard of fire development or spread is not present. *(relocated and revised from Section 807.1, exception 2)*

807.5.6 Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible *decorative materials* shall be of such limited quantities that a hazard of fire development or spread is not present.*(relocated from Section 807.1)*

IFC 807.5.7 Group I-3. In Group I-3, combustible *decorative materials* are prohibited. *(relocated from Section 807.1)*

Reason: The proposed revision is intended to be a clarification of the combustible materials permitted within a space. Specifically, to understand the different requirements for fabric-type decorative materials and paper-type decorative materials and what quantities of each are permitted in various use groups.

Currently, photographs and paintings, in some use groups, are required to be tested and certified to NFPA 701. The scope of this standard does not address paper items such as artwork and photographs and therefore was impossible to comply with.

The scope of NFPA 701 is as follows:
"*1.1.1* Test Method 1*
1.1.1.1 Test Method 1 shall apply to fabrics or other materials used in curtains, draperies, or other window treatments. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.2 Test Method 1 shall apply to single-layer fabrics and to multi-layer curtain drapery assemblies in which the layers are fastened together by sewing or other means. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.3 Test Method 1 shall apply to specimens having an areal density less than or equal to 700 g/m2 (21 oz/yd2), except where Test Method 2 is required to be used by 1.1.2."

Most revisions are editorial and serve to provide better clarity and to group requirements by use group.

807.1 – A general statement was needed so that the requirements match the Section title
The former text in 807.1 was re-organized and is now in Section 807.3 and 807.5 for better clarity.

807.2 – re-number only

807.3 - Since Group I-3 are limited to only non-combustible, the limitation is added to the front of the combustible materials.

The remainder of the sentence is revised for coordination with the next section on acceptance criteria and eliminating redundant reference to NFPA 701. That section starts out with "where required to be flame resistant". The limitation to "curtains, draperies, hangings and other decorative materials suspended from walls or ceilings" is in the first paragraph in Section 807.1. The addition of the words "fabric" hangings and other "similar" combustible decorative materials is to differentiate between fabrics and films that are covered under NFPA Standard 701 and other materials used for decorative effect, that are discussed in 807.5 for each use group.

Exception 1 is specific to Group A for percentage of materials complying with 701.

Exception 2, curtains for dormitories is relocated from 807.1. It was reformatted to be consistent with the exception for auditoriums. Revised language shown below:

> 2. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings and other similar decorative materials suspended from walls or ceiling ~~of *sleeping units* and *dwelling units* in dormitories in Group R-2~~ shall not exceed 50 percent of the aggregate wall areas where the building is equipped throughout with ~~protected by~~ an *approved automatic sprinkler system* installed in accordance with Section 903.3.1 ~~and such materials are limited to not more than 50 percent of the aggregate area of walls~~.

Exception 3, reformatted to put groups first.

807.4 – Deleted text is not needed as this is addressed in 807.2. Added text is intended to specifically reference decorative items that are covered under the NFPA Standard.

807.5 – This proposed revision places requirements for multiple use groups in this section so the listing of groups was deleted. In addition, new section 807.1 already states this section is not applicable to decorative vegetation, so this language was deleted.

807.5.1 – these requirements should apply to all occupancies in this section.
Titles at the beginning of each sentence were redundant and not proper code language.

807.5.2 – text re-organized for consistency. The intent is to clarify the following conditions are applicable to Group A

807.5.2.1 – Re-number only

807.5.2.2 - Re-number. This is a subsection of Group A criteria, so group not needed. Consistency between subsections.

807.5.2.3 – Re-number. This is a subsection of Group A criteria, so group not needed. Plus, only in the title, not the text. Consistency between subsections.

807.5.2.4 - Relocated to group with Group A requirements. This is a subsection of Group A criteria, so group not needed. Consistency between subsections.

807.5.3 - text re-organized for consistency. The intent is to clarify the following conditions are applicable to Group E

807.5.3.1 – Re-number. Change in Exception 2 is for consistency in language with Section 907.

807.5.3.2 – Re title and re-number only.

807.5.3.3 - This provide guidance within the classroom as to how much art work is permitted.

807.5.4 - The intent of the first sentence is to clarify that the general provisions are applicable for Group I-4. The phrase "day care facilities" is redundant.

807.5.4.1 – Re-number. Change in Exception 2 is for consistency in language with Section 907.

807.5.4.2 – Re-title and re-number only.

807.5.4.3 – This provide guidance within the classroom as to how much art work is permitted.

807.5.5 - Relocate existing exception 2 in 807.1 related to Group R-2 dormitories. Language is similar to paper in school corridors. NFPA 701 does not apply to Photos or paintings. All Group R are now required to be sprinklered, so the threat of flame spread is reduced. Revised language shown below:

> **807.5.5 (IBC [F] 806.5.5) Dormitories in Group R-2.** In Group R-2 dormitories, within sleeping units and dwelling units, the combustible decorative materials, ~~including, but not limited to, photographs and paintings in dormitories in Group R-2~~ ~~where such materials~~ ~~are~~ shall be of limited quantities such that a hazard of fire development or spread is not present.

807.5.6 - Relocate existing Group I-1 and I-2 from 2nd paragraph of 807.1. New 807.3 would apply to curtains in all occupancies, including Group I-1 and I-2. This allowance is just for the paper permitted in the facilities. Revised language shown below:

> **IFC 807.5.6 Groups I-1 and I-2.** In Groups I-1 and I-2, combustible *decorative materials* shall ~~meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are~~ be of such limited quantities that a hazard of fire development or spread is not present.

807.5.7 – Re-located from 2nd paragraph of 807.1. Also scoped in 807.3

Cost Impact: None

F109-13

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

807.1-F-CARPENTER.doc

F110 – 13
807.1 (IBC [F] 806.1), 807.2 (IBC [F] 806.2), 807.3 (IBC [F] 806.4), 807.4

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

807.1 (IBC [F] 806.1) General requirements. In ~~occupancies in~~ Groups A, E, I-4 and R-1 occupancies, and dormitories in Group R-2, ~~curtains, draperies, hangings and other~~ decorative materials suspended from walls or ceilings shall comply with 807.1.1, 807.1.2 or 807.1.3 ~~meet the flame propagation performance criteria of NFPA 701 in accordance with Section 807.2 or be noncombustible~~.

807.1.1 (IBC [F] 806.1.1) The decorative materials shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 in accordance with Section 807.2.

807.1.2 (IBC [F] 806.1.2) The decorative materials shall exhibit a maximum rate of heat release of 100 kW when tested in accordance with NFPA 289, using the 20 kW ignition source.

807.1.3 (IBC [F] 806.1.3) The decorative materials shall be noncombustible.

Exceptions:

1. ~~Curtains, draperies, hangings and other decorative~~ Decorative materials suspended from walls of *sleeping units* and *dwelling units* in dormitories in Group R-2 protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1 do not need to comply with the requirements of 807.1.1 through 807.1.3 provided ~~and~~ such materials are limited to not more than 50 percent of the area of the specific wall or ceiling to which they are attached ~~aggregate area of walls~~.
2. Decorative materials~~, including, but not limited to, photographs and paintings~~ in dormitories in Group R-2 do not need to comply with the requirements of 807.1.1 through 807.1.3 where such materials are of limited quantities such that a hazard of fire development or spread is not present.

~~In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited.~~

~~Fixed or movable walls and partitions, paneling, wall pads and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings.~~

~~In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall~~
~~meet the flame propagation performance criteria in accordance with Section 807.2 and NFPA 701 or shall be noncombustible.~~

807.1.4 (IBC 806.1.4) Wall and ceiling coverings. Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered interior wall or ceiling finish and shall comply with the requirements for interior finish in Section 803 or shall be noncombustible.

Exception: Existing fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes that cover

less than 10 percent of the wall or ceiling area to which they are attached do not need to comply with the requirements of 807.1.4.

807.1.5 (IBC 806.1.5) Fabric partitions. Fabric partitions that are suspended from the ceiling in Group B and M occupancies and not supported by the floor shall comply with the requirements of 807.1.1, 807.1.2 or 807.1.3. The amount of such fabric partitions shall not be limited.

~~**807.1.1**~~ **807.1.6 (IBC 806.1.6) Noncombustible materials.** The permissible amount of noncombustible decorative material shall not be limited.

~~**807.1.2**~~ **807.1.7 (IBC 806.1.7) Combustible decorative materials.** The permissible amount of decorative materials meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not exceed 10 percent of the specific wall or ceiling area to which they are ~~it is~~ attached.

Exception~~s~~:

1. ~~1.~~ In auditoriums in Group A, the permissible amount of decorative material meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.11 of the *International Building Code.*
2. ~~The amount of fabric partitions suspended from the ceiling and not supported by the floor in roup B and M occupancies shall not be limited.~~

807.2 (IBC [F] 806.2) Acceptance criteria and reports. Where required to be flame resistant, decorative materials shall be tested by an *approved* agency and meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701, or such materials shall be noncombustible. Reports of test results shall be prepared in accordance with NFPA 701 and furnished to the *fire code official* upon request.

807.3 (IBC [F] 806.4) Pyroxylin plastic. Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base shall not be used in Group A occupancies.

807.4 Occupancy-based requirements. In occupancies in Group A, E and I ~~I-4 day care~~ facilities, decorative materials other than decorative vegetation shall comply with Sections 807.4.1 through 807.4.6.2 ~~807.4.4.2~~.

807.4.1 General. All of the following requirements shall apply to all Groups A, ~~and~~ E and I occupancies ~~and Group I-4 day care facilities~~ regulated by Sections 807.4.2 through 807.4.4:

1. Explosive or highly flammable materials. Furnishings or decorative materials of an explosive or highly flammable character shall not be used.
2. Fire-retardant coatings. Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.
3. Obstructions. Furnishings or other objects shall not be placed to obstruct *exits,* access thereto, egress therefrom or visibility thereof.

807.4.2 Group A. The requirements in Sections 807.4.2.1 through 807.4.2.3 shall apply to occupancies in Group A.

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 kW when tested in accordance with UL 1975, or when tested in accordance with NFPA 289 using the 20 kW ignition source.

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 do not need to comply with the requirements of 807.4.2.1.
2. Cellular or foam plastic shall be allowed for trim in accordance with Section 804.2.

807.4.2.2 Motion picture screens. The screens upon which motion pictures are projected in new and existing buildings of Group A shall either meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall comply with the requirements for a Class B interior finish in accordance with Section 803 of the *International Building Code.*

807.4.2.3 Wood use in Group A-3 places of religious worship. In places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be allowed.

807.4.3 Group E. The requirements in Sections 807.4.3.1 and 807.4.3.2 shall apply to occupancies in Group E.

807.4.3.1 Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved* smoke detection system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.4.3.2 Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the specific wall area to which they are attached.

807.4.3.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.4.4 Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible decorative materials shall comply with the requirements of 807.1.1, 807.1.2 or 807.1.3.

Exceptions:

1. Combustible decorative materials including bulletin boards, artwork, photographs, paintings and similar personal items do not need to comply with the requirements of 807.1.1 through 807.1.3 provided such materials do not exceed 20 percent of the specific wall area to which they are attached.
2. In Group I-2 Condition 1 occupancies and Group I-1 occupancies, combustible decorative materials, including bulletin boards, artwork, photographs, paintings and similar personal items do not need to comply with the requirements of 807.1.1 through 807.1.3 provided such materials do not exceed 50 percent of the specific wall area to which they are attached where located within sleeping units and dwelling units
3. .

807.4.5 Group I-3. Combustible decorative materials are prohibited in Group I-3 occupancies.

~~**807.4.4**~~ **807.4.6 Group I-4, day care facilities.** The requirements in Sections 807.4.6.1 and 807.4.6.2 ~~807.4.4.1 and 807.4.4.2~~ shall apply to day care facilities classified in Group I-4.

~~**807.4.4.1**~~ **807.4.6.1 Storage in corridors and lobbies.** Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved* smoke detection system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

~~807.4.4.2~~ 807.4.6.2 Artwork in corridors. Artwork and teaching materials shall be limited on walls of *corridors and classrooms* to not more than 20 percent of the ~~specific~~ wall area to which they are attached.

807.4.6.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

Reason: This is primarily a reorganization of section 807 without changes, done for clarification. However, some changes were made as shown below.

1. Areas in healthcare occupancies used for long term patients often exhibit patient-prepared art and seasonal decorations, which help to define a friendlier environment. The 2012 IFC limits the decorative materials present to those materials meeting NFPA 701. These requirements are included independently of automatic sprinkler protection but automatic sprinklers are required in Group I-1 & I-2 facilities. Automatic suppression will limit the fire propagation to the area of origin. Small amounts of decorative finishes will not adversely affect the automatic sprinkler performance for typical materials of paper, cloth, textiles, and plastic films in quantities limited to less than 20% of the wall area. Proposed Section 807.4.4, exception 1, will allow up to 20% of the wall area to be decorative material without NFPA 701 documentation. This allowable area is in response to the users' needs to display artwork for the comfort of the patient/client.
2. The original requirements for Group I-1 & I-2 occupancies allow photos and paintings but only in such limited quantities that a hazard of fire development or spread is not present. Materials meeting NFPA 701 flame propagation requirements are in the 2012 IFC for other decorative materials. Burning characteristics vary widely based on the material used. Quick response sprinklers are required by NFPA 13 for hospital room and sleeping room areas. Group I-1 & I-2 corridor and circulation spaces are considered light hazard area for automatic sprinkler protection. These quick response sprinklers will respond 3 to 5 times faster than standard response sprinklers. This faster response will start suppression when the fire is smaller with less heat and products of combustion generation. Proposed Section 807.4.4, exception 2, will allow in Group I-2 nursing homes and in Group I-1 up to 50% of the wall area of sleeping units or dwelling units to be decorative material without NFPA 701 documentation. Again, this allowable area is in response to the users' needs to display artwork for the comfort of the patient/client.
3. The 2012 IFC Section 807.4.3.2 and 807.4.4.2 for Group E and I-4 occupancies allows art work and teaching materials on the corridor walls not to exceed 20% of the wall area. There is trained staff in the facility at all times it is occupied by students, children or clients. Group I-1 and I-2 occupancies have trained staff present 24 hours a day. Similar safe guards are present in these 3 types of occupancies. I-1 and I-2 also have smoke zoning and special protection of hazard requirements to control exposure to the products of combustion.
4. Flame spread on the decorative wall covering will be primarily in the vertical direction. Horizontal propagation will occur at a considerably slower rate than the vertical in typical corridor configurations. This slower horizontal propagation can be retarded or controlled by the quick response sprinklers. 20% of the wall area was selected as a reasonable limit, allowing the facility flexibility in using decorative wall materials.
5. Other issues covered in the re-write follow.
6. Wall coverings and ceiling coverings cannot be tested to NFPA 701. Thus, surface coverings should be deleted from the definition of decorative materials and wall coverings and ceiling coverings added. This was done in a separate proposal, because it is not dependent on this change.
7. If a partition is attached to the wall it is a wall covering system. Such partitions usually are fabric covering foam plastic and they should not be exempt from testing because they can result in having very high heat release.
8. Chapter 8 of the IBC treats wall coverings and ceiling coverings differently because textile ceiling coverings and expanded ceiling coverings cannot be tested to NFPA 265 and therefore the section (now 807.1.4) should address wall and ceiling coverings.
9. If a "partition" is attached to a wall it is not a partition but either a wall covering or a curtain/drape and it is covered by the general requirements for wall coverings in 807.1.4.
10. Once a partition is supported from the floor it becomes more structural and it cannot be tested to NFPA 701.
11. Fabric partitions are covered by 807.1.5, which addresses how they should be tested and there is no need for an exception to 807.1.7.
12. The IFC now includes NFPA 289 as a test and it offers a better option for testing than NFPA 701 so it should be added as an option. It would be an intermediate option between NFPA 701 and noncombustible.
13. NFPA 701 has two tests: test 1 and test 2 (with the weight per unit area of the decoration being what determines which one is used). Many manufacturers advertise fabrics that "meet NFPA 701" and sometime they add that the fabric meets the "small scale test in NFPA 701". The problem is that the "small scale test" was eliminated from NFPA 701 in 1989

(because it does not provide adequate safety) and is now no longer an acceptable test anywhere. This is covered by a separate proposal submitted by Tim Earl, because it is independent of the action here. That has already been done in the IBC.

14. The IFC 2012 code is silent about fixed or movable walls, etc. that cover less than 10% of a wall or ceiling area. To avoid problems the proposal recommends that we grandfather in existing systems.

Cost Impact: Minimal

F110-12

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

807.1-F-HIRSCHLER

F111 – 13
(IBC [F] 202); 807.1 (IBC [F] 806.1), 807.4, 807.4.1, 807.4.3.1, 807.4.4, 807.4.4.1, 807.4.5(New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

DECORATIVE MATERIALS. All materials applied over the building *interior finish* for decorative, acoustical or other effect (~~such as~~ including but not limited to curtains, draperies, fabrics, streamers and surface coverings), and all other materials utilized for decorative effect (~~such as~~ including but not limited to, photographs, paintings, bulletin boards, artwork, posters, batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include floor coverings, ordinary window shades, *interior finish* and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

SECTION 807
DECORATIVE MATERIALS OTHER THAN DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

IFC 807.1 (IBC [F] 806.1) General requirements. In occupancies in Groups A, E, ~~I~~ I-4 and R-1 and dormitories in Group R-2, curtains draperies, hangings and other combustible *decorative materials* suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with section 807.2 or be noncombustible.

Exceptions:

1. Curtains, draperies, hangings and other combustible decorative materials suspended from walls of *sleeping units* and *dwelling units* in dormitories in Group R-2 ~~protected~~ equipped by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls.
2. Decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are of limited quantities such that a hazard of fire development or spread is not present.

In Groups I-1 and I-2, curtains, draperies, hangings and other combustible *decorative materials* suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 or be noncombustible ~~unless the *decorative materials*, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present~~.

In Group I-3, combustible decorative materials are prohibited.

Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered *interior finish* if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered *decorative materials* or furnishings.

In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet the flame propagation performance criteria in accordance with Section 806.2 and NFPA 701 or shall be noncombustible.

IFC 807.4 Occupancy-based requirements. In occupancies specified ~~in Group A, E and I-4 day care facilities~~, combustible decorative materials ~~other than decorative vegetation~~ shall comply with Sections 807.4.1 through ~~807.4.4.2~~ 807.4.5.4.

IFC 807.4.1 General. All of the following requirements shall apply to all Group A~~,~~ ~~and~~ E ~~occupancies~~ and Group I-4 ~~day care facilities~~ occupancies ~~regulated by Sections 807.4.2 through 807.4.4~~:

1. ~~Explosive or highly flammable materials:~~ Furnishings or decorative materials of an explosive or highly flammable character shall not be used.
2. ~~Fire-retardant coatings:~~ Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.
3. ~~Obstructions:~~ Furnishings or other objects shall not be placed to obstruct *exits,* access thereto, egress there from or visibility thereof.

807.4.2 Group A. *(No change)*

807.4.2.1 Foam plastics. *(No change)*

807.4.2.2 Motion picture screens. *(No change)*

807.4.2.3 Wood use in Group A-3 places of religious worship. *(No change)*

807.4.3 Group E. *(No change)*

807.4.3.1 Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved* smoke detection system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.4.3.2 Artwork. *(No change to current text)*

807.4.4 Group I-4~~, day care facilities~~. Group I-4 occupancies shall comply with, the requirements in Section~~s~~ 807.4.4.1 and 807.4.4.2 ~~shall apply to day care facilities classified in Group I-4~~.

807.4.4.1 Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

Exceptions:

1. *Corridors* protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.
2. *Corridors* protected by an *approved* smoke detection system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.4.4.2 Artwork. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

IFC 807.4.5 Groups I-1 and I-2. In Groups I-1 and I-2 occupancies, combustible *decorative materials* shall comply with Sections 807.4.5.1 through 807.4.5.4

IFC 807.4.5.1 Group I-1 and Group I-2 Condition 1 within units. In Group I-1 and Group I-2 Condition 1 occupancies, equipped throughout by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1, within sleeping units and dwelling units, combustible decorative materials are limited to not more than 50 percent of the aggregate wall area.

IFC 807.4.5.2 In Group I-1 and Group I-2 Condition 1 for areas other than within units. In Group I-1 and Group I-2 Condition 1 occupancies, equipped throughout by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1, combustible decorative materials in areas other than within dwelling and sleeping units are limited to not more than 30 percent of the aggregate wall area.

IFC 807.4.5.3 In Group I-2 Condition 2. In Group I-2 Condition 2 occupancies, equipped throughout by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1, the combustible decorative materials are limited to not more than 30 percent of the aggregate wall area.

IFC 807.4.5.4 Other areas in Groups I-1 and I-2. In Group I-1 and I-2 occupancies, in areas not equipped throughout by an *approved automatic sprinkler system*, the combustible decorative materials, shall be of such limited quantities that a hazard of fire development or spread is not present.

Reason: The intent of this proposal is to create consistent language for the Group I-1, I-2, and I-4 language for flame resistant curtains complying with NFPA 701 and the appropriate amount of paper permitted in these environments. The format for Group I-2 is consistent with how education and day care are currently addressed.
807.1 –The change from Group I-1 to I-4 in the first line is because I-1, I-2 and I-3 are addressed later in the section. For Group I-1 and I-2, the language is revised so it is clear what materials must comply with NFPA 701. Allowances for other decorative materials in Group I-1 and I-2 will be addressed in a new Section 807.4.5.
In the remainder of revised sections, the changes are editorial clean ups for consistent use of language and current terminology.

- 807.4 is revised to include the provisions added for Group I-1 and I-2.
- 807.4.1 is revised to remove redundant language.
- 807.4.3.1 is revised for consistent language with the referenced Section 907
- 807.4.4 is revised to remove redundant language.
- 807.4.4.1 is revised for consistent language with the referenced Section 907

807.4.5 is new text to address Group I-1 and I-2 facilities.-

Residents/patients in health care facilities increasingly seek to make their stay be comfortable and maintain connections with family and community. Part of this process may include decorating their bedrooms with personal décor from their homes, pictures drawn by their grandchildren, get well cards and other such items. The code currently calls for any combustible decorations to meet the flame spread requirements of NFPA 701, and a report must be provided to the code official. However, it is not practical nor routinely possible for every construction paper drawing or greeting card to be tested to NFPA 701 or to be treated with a flame retardant coating.

However, Section 407.2.1 of the code allows waiting or similar areas to be open to corridors. These types of spaces typically have magazines, bulletin boards with paper notices tacked to them, and other combustible items, not treated with flame retardants nor tested to NFPA 701. We submit that by allowing a specified percentage of un-treated, combustible decorative materials, in fully sprinkled Group I-1 and I-2 buildings, we do not exceed the “ordinary occupancy” classification outlined in NFPA 13, nor to do we increase the fire loading above what is currently permitted. What this proposal does do, though, is provide consistent language to aid enforcement, and provides a guide to providers to determine compliance within their facilities. This should eliminate the haphazard and inconsistent application of these provisions in facilities nationwide. A brief outline of the new provisions are as follows:

Section 807.4.5.1 - Group I-1 and I-2 Condition 1 buildings, that are protected throughout with an automatic sprinkler system, would be allowed to have combustible decorative materials that cover up to 50% of the aggregate area of walls inside of resident rooms. This is consistent with the requirements within sprinklered dwelling units in Group R-2 dormitories.

Section 807.4.5.2 - In I-1 and I-2 Condition 1 buildings, that are protected throughout with an automatic sprinkler system, spaces other than resident rooms would be limited to 30% coverage of walls by combustible decorative materials. This would include common spaces and corridors.

Section 807.4.5.3 - For Group I-2 Condition 2 buildings, protected throughout with an automatic sprinkler system, all spaces would be limited to 30% coverage of walls. The need for this allowance is for such items as pictures, bulletin boards, safety bulletins, educational materials, patient bills or rights, allowing longer term patients to put up cards, and limited holiday decorations.

Section 807.4.5.4 - For existing Group I-1 and I-2 non-sprinkled buildings, and for Group I-2 buildings that have not yet retroactively provide complete automatic sprinkler protection, Section 807.4.5.4 shall apply. This text is current language relocated from Section 807.1.

Please note, that this proposed language change would also include combustible decorations that are tested to NFPA 701 or have been treated with an approved fire retardant coating within these limits. This change would also allow decorations to be placed on doorways, as long as they are either less than 50% coverage inside a Group I-1 or I-2 Condition 1 resident or 30% in other areas, and do not obstruct the use of the door, nor block vision panels.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F111-13

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

807.1-F-BALDASSARRA.DOC

F112 – 13
808.1, 808.2, 5003.8.7.1, 5003.9.10, 5005.1.10, 5704.3.2.1.1, 5705.2.4, Chapter 80

Proponent: Glen Carter, Justrite Manufacturing Company LLC

Revise as follows:

808.1 Wastebaskets and linen containers in Group I-1, I-2 and I-3 occupancies. Wastebaskets, linen containers and other waste containers, including their lids, located in Group I-1, I-2 and I-3 occupancies shall be constructed of noncombustible materials or of materials that meet a peak rate of heat release not exceeding 300 kW/m2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation. Metal wastebaskets and other metal waste containers with a capacity of 20 gallons (75.7 L) or more shall be listed in accordance with UL 1315 or approved in accordance with FM 6921 and shall be provided with a noncombustible lid. Portable containers exceeding 32 gallons (121 L) shall be stored in an area classified as a waste and linen collection room and constructed in accordance with Table 509 of the International Building Code.

808.2 Waste containers with a capacity of 20 gallons or more in Group R-2 college and university dormitories. Waste containers, including their lids, located in Group R-2 college and university dormitories, and with a capacity of 20 gallons (75.7 L) or more, shall be constructed of noncombustible materials or of materials that meet a peak rate of heat release not exceeding 300 kW/m2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation. Metal wastebaskets and other metal waste containers with a capacity of 20 gallons (75.7 L) or more shall be listed in accordance with UL 1315 or approved in accordance with FM 6921 and shall be provided with a noncombustible lid. Portable containers exceeding 32 gallons (121 L) shall be stored in an area classified as a waste and linen collection room constructed in accordance

5003.8.7.1 Construction. The interior of cabinets shall be treated, coated or constructed of materials that are nonreactive with the hazardous material stored. Such treatment, coating or construction shall include the entire interior of the cabinet. Cabinets shall either be listed in accordance with UL 1275 or approved in accordance to FM 6050 as suitable for the intended storage or constructed in accordance with the following: with Table 509 of the International Building Code.

5003.9.10 Safety cans. Safety cans shall be listed in accordance with UL 30, UL 1313, or approved in accordance with FM 6051 and FM 6052 when used to increase the maximum allowable quantities per control area of flammable or combustible liquids in accordance with Table 5003.1.1(1). ~~Safety cans listed in accordance with UL 1313 are allowed for flammable and combustible liquids when not used to increase the maximum allowable quantities per control area and for other hazardous material liquids in accordance with the listing.~~

5005.1.10 Liquid transfer. Liquids having a hazard ranking of 3 or 4 in accordance with NFPA 704 shall be transferred by one of the following methods:

1. From safety cans complying with UL 30, UL 1313 or with FM 6051 and FM 6052.

2 through 5 *(No change to current text)*

5704.3.2.1.1 Materials. Cabinets shall be listed in accordance with UL 1275, or approved in accordance to FM 6050, or constructed of approved wood or metal in accordance with the following:

5705.2.4 Class I, II and III liquids. Class I liquids or when heated to or above their flash points, Class II and Class III liquids shall be transferred by one of the following methods:

1. From safety cans complying with UL 30, UL 1313 or with FM 6051 and FM 6052

2 through 5 *(No change to current text)*

Add standards to Chapter 80 as follows:

FM

6050-96	Approval Standard for Storage Cabinets (Flammable and Combustible Liquids
6051 and 6052-76	Approval Standard for Safety Containers and Filling, Supply and Disposal Containers
6921-04	Approval Standard for Cabinets for Combustible Waste

Reason:

1) For those proposals adding the appropriate FM Approval standard: FM Approvals is a nationally and globally recognized laboratory who just like UL has construction specifications these safety products have to be built to, performance specification these safety products are tested to before an approval is issued.

FM Approvals publish an approval guide that lists all the products they have approved. And FM Approvals conducts periodic quality assurance audits to assure the approved products are manufactured to the same standards as those products and designs that were submitted for evaluation. All design changes are submitted to FM Approvals for their approval prior to those changes being allowed. The fire tests conducted by both organizations (UL & FM) on these products are to the same time temperature curve.

It is in this spirit that FM Approvals should be included in the IFC as a nationally & globally recognized approval laboratory.

2) For those proposals 5003.9.10, 5005.1.10, and 5705.2.4 I am proposing adding UL 1313 for Non-metallic Safety Cans. Non-metallic safety cans are tested the same way as metallic safety cans and are as safe or safer than the metallic safety cans. If you had ever seen a non-metallic safety can in a fire test you would no longer be a skeptical.

   a) Intuitively, it is hard to imagine a safety san made of polyethylene surviving a fire test. I was curious about this concept until I witnessed our non-metallic safety can in a fire test conducted at UL. In the fire test, the safety can performed very admirably in the way the design met its goals, in not contributing to the spread of fire. Our non-metallic safety can vented on cue. As the vented vapors were being consumed by fire, the level of the liquid fuel lowered in the can. In turn the polyethylene started to melt but, only in the void above the fluid level. The liquid fuel level was protecting the can from melting further by absorbing the heat. As the fluid level went down the safety can's walls melted inward and further down the height of the can above the fuel level. This continued until all the fuel inside the safety can had been consumed while contained within the safety can's walls. There was no spew of fuel; no rupture of the safety can spreading fuel all over the area. That is exactly the intended result of a well-designed safety can. I believe once anyone has witnessed this test and understood the consequences they would be compelled to agree too.
   b) There are numerous flammable and combustible liquids that are incompatible with metallic safety cans. As an example, isopropyl alcohol will begin to pit a metallic safety can until micro leaks begin to occur. The only safe and compatible solution for storage of this liquid and others is a non-metallic safety can.
   c) A non-metallic safety can is definitely more robust during a drop test; our non-metallic safety can designs will rebound undamaged because of its superior thick wall strength. The metallic safety can in a drop test will result in a dented and crumpled shell. Both meet the criteria of a safety can but you cannot top the strength and resilience of the poly can.
   d) Metallic and non-metallic safety cans both benefit work place safety and each are recognized by many local, state, and federal laws. Non-metallic safety cans would be a loss to the safety community if it is not recognized. It is hard to picture what legal & safe alternative will be available to those whose processes that currently requiring non-metallic safety cans. Non-metallic safety cans have long provided a safe solution over makeshift consumer gasoline cans or glass/plastic carboys etc...

Note: The FM 6051 and 6052 are a combined specification covering metallic and non-metallic safety cans.

3) I am proposing the deletion illustrated in section 5003.9.10 to allow non-metallic safety cans to be used to allow the increase of MAQs in a control area for those reasons described in 2 a), b), c), & d) above.

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

Analysis: A review of the standards proposed for inclusion in the code, FM 6050-96, FM 6051 and 6052-76 and FM 6921-04 , with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. The standard UL 1313 is currently referenced within the IFC.

F112-13

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

XXX

F113 – 13
901.4.1

Proponent: Edwin M. Berkel, CFI, Fire Marshal, Mehlville Fire Protection District, St, Louis, MO (EBerkel@mehlvillefire.com)

Revise as follows:

901.4.1 Required fire protection systems. Fire protection systems required by this code or the *International Building Code* shall be installed, repaired, operated, tested and maintained in accordance with this code. Any *fire protection system* for which a design option, exception or reduction to the provisions of this code or the *International Building Code* has been granted shall be considered to be a required system.

Reason: The new text proposed for this section parallels the second paragraph of Section 901.2 of the IBC and will improve the correlation between the IBC and the IFC. While the code may not require a fire protection system for a specific building or portion thereof due to its occupancy, the fire protection system would still be considered a required system if some other code trade-off, exception, reduction or design option was taken based on the installation of the fire protection system. As a typical example, a small office building would not require an automatic sprinkler system solely due to its Group B occupancy classification; however, if an exit access corridor fire-resistance-rating reduction is taken in accordance with Table 1018.1 for buildings equipped throughout with an NFPA 13 sprinkler system, that sprinkler system would then be considered a required system. Code trade-offs, exceptions, reductions or other design options are not unique to the IBC but also occur frequently in the IFC. The following 62 IFC sections, among others, illustrate this fact and validate the need for the added text:

Chapter 3:	5 Sections: 304.3.3, 304.3.4, 308.1.4, 313.1, 318.1)
Chapter 4:	Section 403.3
Chapter 5:	2 Sections (503.1.1, 507.5.1)
Chapter 6:	Section 603.3.2.1
Chapter 8: 1	3 sections (Table 803.3, 803.5.1, 804.3.3.2, 805.1.1.2, 805.1.2.2, 805.2.1.2, 805.2.2.2, 805.4.1.2, 805.4.2.2, 806.1.1, 807.1, 807.4.3.1, 807.4.4.1)
Chapter 10:	16 sections (1005.3.1, 1005.3.2, 1007.2.1, 1007.3, 1007.4, 1008.1.9.4. 1009.3, Table 1014.3, 1015.1, 1015.2, Table 1016.2, Table 1018.1, 1018.4, Table 1021.2(1), Table 1021.2(2), 1022.1, 1026.6)
Chapter 11:	11 sections (1103.4.2, 1103.4.4, 1103.4.5, 1103.4.6, 1103.7.5.1, 1103.7.6, 1104.16.2, 1104.17, 1104.17.1, Table 1104.17.2, 1104.21)
Chapter 28:	Section 2804.2.1
Chapter 32:	Section 3204.2
Chapter 50:	3 Tables: 5003.1.1(1), 5003.1.1(2) and 5003.11.1
Chapter 57:	3 Sections: 5704.29.2.3., 5704.3.6.2, Tables 5704.3.6.3(1), (2) and (3)
Chapter 60:	Section 6002.3.5
Appendix Sections:	B105.1, B105.2; D106.1, D107.1

Cost impact: This proposal will not increase the cost of construction.

F113-13

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

901.4.1-F-BERKEL

F114 – 13
901.4.3.1 (New)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Add new text as follows:

901.4.3.1 Speculative buildings. In new buildings or existing buildings undergoing interior demolition, that create vacant *fire areas* in size that exceed the established limits but have a future intent to divide *fire areas* so as not to exceed the limits established for requiring a *fire protection system*, such areas shall install preliminary *fire area* separations as described in Section 901.4.3 until such tenant insertions occur and such separations can be relocated to meeting tenant locations.

Reason: There are some developments that intend on sprinklering but desire to wait until the first tenant is installed, postponing the costs until rent can be collected. And there are some that desire to do such sprinklering with each tenant installation; thus, not achieving a fully sprinklered building until fully occupied. Such buildings are not addressed in this provision but are left to local discretion.

This provision is for buildings that are identified as being non-sprinklered such as retail strip centers. As with sprinklers, an intent is sometimes expressed to install the separations as tenant finish out occurs, avoiding the cost until a renter is installed. In this case, at a bare minimum, the floor/ceiling of a two-story building should have a 1-hour rating installed up front. Of course, an upgrade to 2-hour might be required sporadically in the future.

Having to install such horizontal assembly at a later date, from structural to structural, including the columns to foundation may prove difficult. And, it is possible that such horizontal assemblies are not installed at all due to the difficulty of crossing existing tenants.

Also, it is not uncommon for developers to flip such projects, leaving the new owner and future architects clueless of the requirement. It also requires that the jurisdiction keep up with such buildings so as to tag them with each finish out permit.

Installation up front will comply with code and provide a reminder that such separations are continually required.

Opposition to this code change might express the idea:

1. that a hazard does not exist until occupancy occurs;
2. that this requires double costs for such separation construction; or,
3. such vacant spaces are often not closed in across the front subjecting such protection to the elements.

As such, it should encourage more sprinklering to avoid this issue.

Costs: in jurisdiction where this is not enforced now, this will increase the cost of construction.

F114-13

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

901.4.3.1 (NEW)-F-GODWIN

F115 – 13
901.4.6 (IBC [F] 901.8)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

901.4.6 Pump and riser room size. Where provided fire pump rooms and automatic sprinkler system riser rooms shall be designed with adequate space for all equipment necessary for the installation, as defined by the manufacturer, with sufficient working room around the stationary equipment. Clearances around equipment to elements of permanent construction, including other installed equipment and appliances, shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly. Fire pump and automatic sprinkler system riser rooms shall be provided with a door(s) and unobstructed passageway large enough to allow removal of the largest piece of equipment.

Reason: A fire pump room, an automatic sprinkler riser room, or the combination is not required by this section. This section can be interpreted to require rooms around fire sprinkler risers. The Fire Code committee and proponent verbally clarified this intent during 09/10 cycle. The proponent's intent is to clarify these rooms are not required. When one is provided, it is required to meet Section 901.8.

Cost Impact: This code change will increase the cost of construction

F115-13

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

901.4.6-F-ZUBIA-FCAC

F116 – 13
901.7, 311.2.2

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

901.7 Systems out of service. In other than one- and two-family dwellings and Group R-3 occupancies, where a ~~required~~ fire protection system is out of service, the fire department and the fire code official shall be notified immediately. In other than one- and two-family dwellings and Group R-3 occupancies, where a required fire protection system is out of service and~~,~~ where required by the fire code official, the building shall either be evacuated or an approved fire watch shall be provided for all occupants left unprotected by the shutdown until the fire protection system has been returned to service. Vacant premises shall comply with Section 311.2.2.

Where utilized, fire watches shall be provided with at least one approved means for notification of the fire department and their only duty shall be to perform constant patrols of the protected premises and keep watch for fires.

Revise as follows:

311.2.2 Fire protection. Fire alarm, sprinkler and stand-pipe systems shall be maintained in an operable condition at all times. Before a vacant premises is permitted to be reoccupied, the fire code official shall have the authority to require inspection and testing of any fire protection system that has been out of service for 30 days or greater.

Exceptions:

1. When the premises have been cleared of all combustible materials and debris and, in the opinion of the fire code official, the type of construction, fire separation distance and security of the premises do not create a fire hazard.
2. Where approved by the fire chief, buildings that will not be heated and where fire protection systems will be exposed to freezing temperatures, fire alarm and sprinkler systems are permitted to be placed out of service and standpipes are permitted to be maintained as dry systems (without an automatic water supply), provided the building has no contents or storage, and windows, doors and other openings are secured to prohibit entry by unauthorized persons.

Reason: Section 901.7 is revised because it is imperative that the fire department and the fire code official must be notified when **any** fire protection system is taken out of service, not just required systems. Dwellings are eliminated from this requirement since the dwelling fire sprinkler system is designed for provide life safety and only operate for 10 minutes. Arriving firefighters expect the systems they encounter to be operational in commercial facilities, and many times will make decisions based on the operating fire sprinkler system. The second sentence and the remainder of the section are appropriate to apply only to required systems, so the reference to required fire sprinkler systems is added back in at this point.

Additionally, there should also be a reference directing the code user to Section 311.2.2 for the requirements for fire protection systems in vacant buildings.

Section 311.2.2 is revised because when a fire protection system that has been out of service for 30 days or more in a vacant building could have been subject to corrosion or vandalism and needs to be inspected and tested to ensure that it working properly before allowing the building to be reoccupied.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F116-13

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

901.7-F-ZUBIA-FCAC

F117 – 13
903.2.1 (IBC [F] 903.2.1)

Proponent: Barry Gupton, PE, NC Department of Insurance, Office of State Fire Marshal, Engineering Division (barry.gupton@ncdoi.gov)

Revise as follows:

903.2.1 (IBC [F] 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~~ containing a Group A-1, A-2, A-3 or A-4 occupancy ~~is located~~, and in all floors from the Group A occupancy to, and including, the nearest *level of exit discharge* serving the Group A occupancy. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in spaces indicated in Section 903.2.1.5.

Reason The term "floor area" is confusing. “Floor area” infers that only the actual space where the Group A-1, A-2, A-3 or A-4 occupancies are located require sprinklers on that floor. The intent of the code is to provide sprinklers for the entire story where the Group A occupancy is located as well as the stories between that story and the level of exit discharge. The changed wording is to help clarify the intent of the code.

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

F117-13

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

903.2.1 #1-FS-GUPTON

F118 – 13
903.2.1 (IBC [F] 903.2.1)

Proponent: Barry Gupton, PE, NC Department of Insurance, Office of State Fire Marshal, Engineering Division (barry.gupton@ncdoi.gov)

Revise as follows:

903.2.1 (IBC [F] 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 from the Group A occupancy to, and including, the ~~nearest *level*~~ *levels of exit discharge* serving the Group A occupancy. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in spaces indicated in Section 903.2.1.5.

Reason This change insures that floors adjacent to all exit discharges serving the assembly occupancy are protected with sprinklers to provide the additional time required to egress the higher occupant load. The previous language of "nearest level of exit discharge" may only protect one exit when exit discharge is on more than one level.

Cost Impact: The code change proposal will increase the cost of construction for buildings with more than one level of exit discharge that would not otherwise require sprinklers.

F118-13

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

903.2.1 #2-FS-GUPTON

F119 – 13
903.2.1

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

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 from the Group A occupancy to, and including, the 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.

903.2.1.1 Group A-1. An *automatic sprinkler system* shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m^2).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. ~~The *fire area* contains a multitheater complex.~~ When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

903.2.1.2 Group A-2. An *automatic sprinkler system* shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 5,000 square feet (464 m^2).
2. The *fire area* has an *occupant load* of 100 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

903.2.1.3 Group A-3. An *automatic sprinkler system* shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m^2).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

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

1. The *fire area* exceeds 12,000 square feet (1115 m^2).
2. The *fire area* has an *occupant load* of 300 or more.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.
4. When separate fire areas share exit or exit access components that have a cumulative occupant load of 300 or more.

Reason: Under the current provisions for sprinkler protection is assembly occupancies, the option of a fire area allows for compartmentation to be utilized in place of installing a sprinkler system. The issue with this arrangement is that multiple small assembly occupancies can be placed in a single story building and not trigger a sprinkler system because of the installation of a rated corridor and separation wall.

This proposal adds the requirement that sprinkler systems shall be added when the convergence of more than 300 persons shares an exit. This is consistent with the intent of autoamtic sprinkler systems being required for life safety and to maintain tenable

exiting in a fire event. A fire event that is near an exit is the same whether there are 300 occupants in one room or three rooms with 100 occupants each sharing an exit. This is also consistent with the requirement in the current IFC for A-1 occupancies in 'multitheater complex", which is a requirement for anytime two or more theaters are in the same tenancy and does not consider occupant load as a trigger.

This proposal still provides options for those single story buildings with mutliple tenancies that have separate exits and utilize the fire area separation concept; such as buildings with multiple restaurants with separate entrances and strip-style mall buildings.

The State of New York has had experience in both fire losses and new building construction with this topic. FIrst, the Stouffer's Inn and conference center in 1981 killed 23 top-level executives when a fire in a common hallway trapped occupants in several small (50-100 person) conference rooms. Second, the fire area method of separating A-3 occupancies has provided a way to not sprinkler college and university lecture room buildings by separating the spaces but having room occupant loads approaching 1,000 people in the common hallway.

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: For buildings that have previously utilized the passive method of separating assembly occupancies when exiting is shared, this will increase the cost of construction due to the additional sprinkler requirement.

F119-13

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

903.2.1-F-NICHOLS

F120 – 13
903.2.1

Proponent: Carl D. Wren, P.E., Austin Fire Department, representing self (carl.wren@austintexas.gov)

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 fire area containing the Group A-1, A-2, A-3 or A-4 occupancy is located, and ~~in~~ throughout all floors of the building ~~from~~ above or below the Group A occupancy to, and including, the 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.

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided for fire areas containing Group A-1 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m2).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multitheater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for fire areas containing Group A-2 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464 m2).
2. The fire area has an occupant load of 100 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for fire areas containing Group A-3 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

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

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for fire areas containing Group A-4 occupancies and intervening floors of the building that impact the egress pathways where one of the following conditions exists:

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

903.2.1.5 Group A-5. An automatic sprinkler system shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m2).

Reason: The current code language can be somewhat confusing since the charging language in 903.2.1 deals with the occupancy and certain building areas outside the occupancy but the language in subsections 903.2.1.1, 903.2.1.2, 903.2.1.3 and 903.2.1.4 require the "occupancy" to be protected by fire sprinklers while it addresses the thresholds in terms of the size of the "fire area". It is not the intent of this proposal to change the requirements of this section, only to clarify them.

Cost Impact: This code change is being proposed as an effort to clarify potentially confusing language and will not increase the cost of construction.

F120-13

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

903.2.1F-WREN

F121 – 13
903.2, 102.3, 1106 (New)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Revise as follows:

903.2.1 Group A. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided throughout buildings and portions thereof used as Group A occupancies when any one of the following conditions exists ~~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 from the Group A occupancy to, and including, the 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.~~

903.2.1.6 Location. When required by Sections 903.2.1.1 through 903.2.1.5, sprinkler installation shall be as follows:

1. 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 from the Group A occupancy to, and including, the nearest *level of exit discharge* serving the Group A occupancy.
2. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in the spaces indicated in Section 903.2.1.5.
3. For a Change of Occupancy, Partial Change of Occupancy or Change of Character, compliance shall be as specified in Section 1106.

903.2.2 Ambulatory care facilities. An *automatic sprinkler system* shall be installed ~~throughout the entire floor containing~~ in ~~a~~n ambulatory care facility where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation, whether rendered incapable by staff or staff has accepted responsibility for care recipients already incapable.
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

903.2.2.1 Location. Where required by Section 903.2.2, sprinkler installation shall be as follows:

1. Throughout the entire floor containing an ambulatory care facility.
2. In buildings where ambulatory care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* shall be installed throughout the entire floor where such care is provided as well as all floors below, and all floors between the level of ambulatory care and the nearest *level of exit discharge*, including the *level of exit discharge*.
3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in Section 1106.

903.2.3 Group E. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided for Group E occupancies where either of the following conditions exist ~~as follows~~:

~~1. Throughout all~~ The Group E *fire area~~s~~* exceeds ~~greater than~~ 12,000 square feet (1115 m^2) in area.
~~2. Throughout every~~ Where portion~~s~~ of educational buildings are below the *lowest level of exit discharge* serving that portion of the building.

903.2.3.1 Location. Where required by Section 903.2.3, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout the portion of educational buildings that are below the *lowest level of exit discharge* serving that portion of the building.

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

3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.4 Group F-1. An *automatic sprinkler system* in accordance with Section 903.1.1 shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group F-1 *fire area* is located more than three stories above grade plane.
3. The combined area of all Group F-1 *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).

903.2.4.1 Woodworking operations. An *automatic sprinkler system* in accordance with Section 903.1.1 shall be provided throughout all Group F-1 occupancy *fire areas* that contain woodworking operations in excess of 2,500 square feet in area (232 m^2) which generate finely divided combustible waste or which use finely divided combustible materials.

903.2.4.2 Location. Where required by Sections 903.2.4 or 903.2.4.1, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout Group F-1 occupancies used for the manufacture of upholstered furniture or mattresses in excess of 2,500 square feet (232 m^2).
3. For a Change of Occupancy, Partial Change of Occupancy or Change of Character, compliance shall be as specified in Section 1106.

903.2.5 Group H. *Automatic sprinkler systems* in accordance with Section 903.3.1.1 shall be provided in high-hazard occupancies as required in Sections 903.2.5.1 through 903.2.5.~~3~~ 4.

903.2.5.1 General. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed in Group H occupancies.

903.2.5.2 Group H-5 occupancies. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed (*remainder unchanged*).

903.2.5.3 Pyroxylin plastics. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be provided (*remainder unchanged*).

903.2.5.4 Location. Where required by Sections 903.2.5, 903.2.5.1, 903.2.5.2 or 903.2.5.3, sprinkler installation shall be as follows:

1. Throughout the area containing a Group H occupancy.
2. Throughout the floor area where cellulose nitrate film or pyroxylin plastics are manufactured,

stored or handled in quantities exceeding 100 pounds (45 kg).

3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.6 Group I. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided throughout all buildings with a Group I *fire area*.

Exceptions:

1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 facilities.
2. An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be allowed in Group I-1 facilities when in compliance with all of the following:
   2.1 A hydraulic design information sign is located on the system riser;
   2.2 Exception 1 of Section 903.4 is not applied; and
   2.3 Systems shall be maintained in accordance with the requirements of Section 903.3.1.2.
3. ~~An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior *exit* door.~~
4. ~~In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the *level of exit discharge*, all floors below the *level of exit discharge*, other than areas classified as an open parking garage.~~

903.2.6.1 Location. Where required by Section 903.2.6, sprinkler installation shall be throughout the entire building when containing a Group I occupancy.

Exceptions:

1. An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior *exit* door.
2. In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the *level of exit discharge*, all floors below the *level of exit discharge*, other than areas classified as an open parking garage.
3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.7 Group M. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group M *fire area* is located more than three stories above grade plane.
3. The combined area of all Group M *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m^2).

903.2.7.1 High-piled storage. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided as required in Chapter 32 in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

903.2.7.2 Location. Where required by Sections 903.2.7 or 903.2.7.1, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout Group M occupancies used for the display and sale of upholstered furniture or mattresses in excess of 5,000 square feet (464 m^2).
3. As applicable in Chapter 32 for high-piled storage.
4. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.8 Group R. An *automatic sprinkler system* installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

903.2.8.1 Group R-3 or R-4 congregate residences. An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 or R-4 congregate living facilities with 16 or fewer residents.

903.2.8.2 Care facilities. An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single-family dwelling.

903.2.8.3 Location. Where required by Section 903.2.8, sprinkler installation shall be throughout the entire building when containing a Group R occupancy.

Exception: For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.9 Group S-1. An *automatic sprinkler system* shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group S-1 *fire area* is located more than three stories above grade plane.
3. The combined area of all Group S-1 *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).

903.2.9.1 Repair garages. An *automatic sprinkler system* shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the *International Building Code*, where one of the following conditions exists ~~as shown~~:

1. Buildings having two or more stories above grade plane, including *basements*, with a *fire area* containing a repair garage exceeding 10,000 square feet (929 m^2)
2. Buildings no more than one story above grade plane, with a *fire area* containing a repair garage exceeding 12,000 square feet (1115 m^2).
3. Buildings with repair garages servicing vehicles parked in *basements*.
4. A Group S-1 *fire area* used for the repair of commercial trucks or buses where the *fire area* exceeds 5,000 square feet (464 m^2).

903.2.9.2 Bulk storage of tires. Throughout all ~~B~~buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m^3) shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

903.2.9.3 Location. Where required by Sections 903.2.9, 903.2.9.1 or 903.2.9.2, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout Group S-1 occupancies used for the storage of upholstered furniture or mattresses in excess of 2,500 square feet (232 m^2).
3. Throughout the entire building when any of the conditions of Sections 903.2.9.1 and 903.2.9.2

exists.

4. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.10 Group S-2 enclosed parking garages. An *automatic sprinkler system* shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 of the *International Building Code* where one of the following conditions exists ~~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.~~

903.2.10.1 Commercial parking garages. An *automatic sprinkler system* shall be provided throughout buildings used storage of commercial trucks or buses where the *fire area* exceeds 5,000 square feet (464 m 2).

903.2.10.2 Location. Where required by Sections 903.2.10 or 903.2.10.1, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout the area of all floors below other groups used as an enclosed parking garage.

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

3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

Delete and substitute as follows:

~~**[A] 102.3 Change of use or occupancy.** No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the *International Building Code*. Subject to the approval of the *fire code official*, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code and the *International Building Code* for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.~~

[A] 102.3 Change of use or occupancy, partial change of occupancy and change of character. No change in use or occupancy, partial change of occupancy or change of character shall be made to any structure without compliance with Section 1106.

Add new text as follows:

SECTION 1106
CHANGE OF OCCUPANCY, PARTIAL CHANGE OF OCCUPANCY, CHANGE OF CHARACTER

1106.1 General. Buildings or portions thereof undergoing a change of occupancy, partial change of occupancy or change of character, shall comply with the provisions of Sections 1106.1.1 through 1106.4

1106.1.1 Special use. Any change of Occupancy, Partial Change of Occupancy or Change of Character that results in the creation of one of the following special use or occupancy shall comply with all of the applicable requirements of this code and the *International Building Code*.

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Ambulatory care facilities.

1106.1.2. Underground buildings. An underground building in which there is a change of occupancy, partial change of occupancy or change of character shall comply with the requirements of this code and the *International Building Code* applicable to underground buildings.

1106.2 Change of use or occupancy. No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the *International Building Code*. Subject to the approval of the *fire code official*, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be changed and is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code and the *International Building Code* for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

1106.3 Partial change of occupancy classification, In other than special uses as specified in Section 1106.1.1, where a portion of an existing building is changed to a new occupancy classification, Sections 1106.3.1 and 1106.3.2 shall apply.

1106.3.1 Fire sprinkler system. Automatic sprinkler system provisions of Section 903.2.1 through 903.2.10.1 shall only be applicable to the *fire area* of concern where separated from other *fire areas* as required by Section 707.3.10 of the *International Building Code* except as specifically required by Sections 1106.3.1.1 through 1106.1.8.

1106.3.1.1 Ambulatory care facilities. For ambulatory care facilities, the automatic sprinkler system provisions of Section 903.2.2 shall only be applicable to the floor where the ambulatory care facility is located where the *fire area* of the floor is separated from other floors in accordance with Section 707.3.10 of the *International Building Code*.

1106.3.1.2 Group E occupancies. Group E occupancies created over portions of educational buildings that are below the *lowest level of exit discharge*, an *automatic sprinkler system* is not required in any area below the *lowest level of exit discharge* serving that area where:

1 The new Group E *fire area* has at least one exterior *exit* door at ground level; or,

2 All existing and new Group E *fire area*s above are separated from the level below in accordance with Section 707.3.10 of the *International Building Code*.

1106.3.1.3 Group F-1 occupancies. For Group F-1occupancies as provided for in Sections 903.2.4 and 902.4.1, automatic sprinkler system installation shall be as required ~~specified~~ in Section 903.2.4.2.

1106.3.1.4 Group H occupancies. For Group H occupancies as provided for in Sections 903.2.5, 903.2.5.1, 903.2.5.2 and 903.2.5.3, automatic sprinkler system installation shall be as specified in Section 903.2.5.4.

1106.3.1.5 Group I occupancies. For Group I occupancies as provided for in Sections 903.2.6, automatic sprinkler system installation shall be in accordance with one of the following:

1 Throughout the building containing a Group I occupancy.

2 An *automatic sprinkler system* is not required where Group I-4 day care facilities are at the *level*

of exit discharge and where every room where care is provided has at least one exterior *exit* door; or,

3 In buildings where a Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall only be required to be installed on the floor where the Group I-4 day care is located and where the floor is separated from other floors in accordance with Section 707.3.10 of the *International Building Code*.

1106.3.1.6 Group M occupancies. For Group M as provided for in Sections 903.2.7 and 903.2.7.1, automatic sprinkler system installation shall be as specified in Section 903.2.7.2.

1106.3.1.7 Group S-1 occupancies. For Group S-1 as provided for in Sections 903.2.9, 903.2.9.1 and 903.2.9.2, automatic sprinkler system installation shall be as specified in Section 903.2.9.3.

1106.3.1.8 Group S-2 occupancies. For Group S-2 enclosed parking garages as provided for in Sections 903.2.10 and 903.2.10.1, automatic sprinkler system installation shall be as specified in Section 903.2.10.2.

106.3.2 Fire alarm and detection system. Fire alarm and detection systems of Section 907.2 shall be provided throughout the area where the partial *change of occupancy* occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the partial *change of occupancy* occurs and shall be automatically activated.

1106.4 Change of character. A change in occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, without approval of the *fire code official*. Compliance shall be only as necessary to meet the specified provisions and is not intended to require the entire building be brought into compliance.

Reason: This bold code change is an attempt to accomplish the following:

1. Attempt to explain what areas must be sprinklered under Section 903.2. Some provisions make reference to “throughout buildings”, “throughout all buildings” or “in the occupancy.” Group R occupancies, Repair garages and bulk storage of tires makes it clear that it is throughout all buildings. The Commentary implies that Group I is the entire building, but it is not clear about other occupancies. Is it the building or just the fire area.

   And, the provisions for upholstered furniture and Group H do not use the term fire area. Therefore, the changes to 903.2 is to start discussions about clarification.

   Code change E116-12, which was approved As Modified, identifies that Group H occupancies might be sprinklered but in a non-sprinklered building as follows:

E116– 12
Table 1016.2 (IFC [B] Table 1016.2)

Proponent: Patrick A. McLaughlin, McLaughlin & Associates, representing Compressed Gas Association (pmclaugma@aol.com)

Revise as follows:

TABLE 1016.2 (IFC [B] TABLE 1016.2)
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250[b]
I-1	Not Permitted	250[b]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[c]
H-2	Not Permitted	100[c,d]
H-3	Not Permitted	150[c,d]
H-4	Not Permitted	175[c,d]
H-5	Not Permitted	200[c,d]

For SI: 1 foot = 304.8 mm.

a. *(no change)*

b. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.

c. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

d. Occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.1.

Reason: H-1 thru H-4 occupancies are required to be sprinklered, however, if the H occupancy is located within another occupancy, that occupancy may or may not be sprinklered because the sprinkler system is not required throughout. As written, the travel distance allowance would not apply and there is no guidance on what the travel distance should be. Furthermore, the current footnote has led to erroneous interpretation of the code requiring the building to be sprinklered throughout. In our opinion this was never the intent of this table. H occupancies cannot exit through a more hazardous occupancy, therefore the travel distances allowed within the H occupancy seem reasonable when exiting through another occupancy of lesser hazard.

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

E116-12

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

T1016.2-E-MCLAUGHLIN

2. Attempt to bring the IFC in line with IEBC Section 1012.2 Fire Protection systems. I don't agree with the blanket provisions provided there and believe that more detail info is needed. 2012 IEBC Section 1012.2 is as follows:

1012.2 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 1012.2.1 and 1012.2.2.

1012.2.1 Fire sprinkler system. Where a change in occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code, such system shall be provided throughout the area where the change of occupancy occurs.

1012.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the *International Building Code*, such system shall be provided throughout the area where the partial *change of occupancy* occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the partial *change of occupancy* occurs and shall be automatically activated.

3. Match the IFC with the IEBC Sections 1001, 1002 and 1012 provided below.

SECTION 1001
GENERAL

1001.1 Scope. The provisions of this chapter shall apply where a *change of occupancy* occurs, as defined in Section 202, including:

1. Where the occupancy classification is not changed; or
2. Where there is a change in occupancy classification or the occupancy group designation changes.

1001.2 Change in occupancy with no change of occupancy classification. A change in occupancy, as defined in Section 202, with no *change of occupancy* classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, including the provisions of Sections 1002 through 1011, without the approval of the *code official*. A certificate of occupancy shall be issued where it has been determined that the requirements for the change in occupancy have been met.

1001.2.1 Repair and alteration with no change of occupancy classification. Any *repair* or *alteration* work undertaken in connection with a *change of occupancy* that does not involve a *change of occupancy* classification shall conform to the applicable requirements for the work as classified in Chapter 4 and to the requirements of Sections 1002 through 1011.

Exception: As modified in Section 1205 for *historic buildings*.

1001.3 Change of occupancy classification. Where the occupancy classification of a building changes, the provisions of Sections 1002 through 1012 shall apply. This includes a *change of occupancy* classification within a group as well as a *change of occupancy* classification from one group to a different group.

1001.3.1 Partial change of occupancy classification. Where a portion of an *existing building* is changed to a new occupancy classification, Section 1012 shall apply.

1001.4 Certificate of occupancy required. A certificate of occupancy shall be issued where a *change of occupancy* occurs that results in a different occupancy classification as determined by the *International Building Code*.

SECTION 1002
SPECIAL USE AND OCCUPANCY

1002.1 Compliance with the building code. Where the character or use of an *existing building* or part of an *existing building* is changed to one of the following special use or occupancy categories as defined in the *International Building Code*, the building shall comply with all of the applicable requirements of the *International Building Code*:

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Ambulatory care facilities.

1002.2 Underground buildings. An underground building in which there is a change of use shall comply with the requirements of the *International Building Code* applicable to underground structures.

SECTION 1012
CHANGE OF OCCUPANCY CLASSIFICATION

1012.1 General. The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group. Such buildings shall also comply with Sections 1002 through 1011. The application of requirements for the change of occupancy shall be as set forth in Sections 1012.1.1 through 1012.1.4. A *change of occupancy*, as defined in Section 202, without a corresponding change of occupancy classification shall comply with Section 1001.2.

1012.1.1 Compliance with Chapter 9. The requirements of Chapter 9 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 1012.1.1.1 and 1012.1.1.2.

1012.1.1.1 Change of occupancy classification without separation. Where a portion of an *existing building* is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the *International Building Code* for the separate occupancy, the entire building shall comply with all of the requirements of Chapter 9 applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this chapter.

1012.1.1.2 Change of occupancy classification with separation. Where a portion of an *existing building* that is changed to a new occupancy classification and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the *International Building Code* for the separate occupancy, that portion shall comply with all of the requirements of Chapter 9 for the new occupancy classification and with the requirements of this chapter.

1012.1.2 Fire protection and interior finish. The provisions of Sections 1012.2 and 1012.3 for fire protection and interior finish, respectively, shall apply to all buildings undergoing a change of occupancy classification.

1012.1.3 Change of occupancy classification based on hazard category. The relative degree of hazard between different occupancy classifications shall be determined in accordance with the categories specified in Tables 1012.4, 1012.5 and 1012.6. Such a determination shall be the basis for the application of Sections 1012.4 through 1012.7.

1012.1.4 Accessibility. All buildings undergoing a change of occupancy classification shall comply with Section 1012.8.

1012.2 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 1012.2.1 and 1012.2.2.

1012.2.1 Fire sprinkler system. Where a change in occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the *International Building Code*, such system shall be provided throughout the area where the *change of occupancy* occurs.

1012.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the *International Building Code*, such system shall be provided throughout the area where the *change of occupancy* occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the *change of occupancy* occurs and shall be automatically activated.

4. This is also intended to coordinate with code change G231-12 which was approved as Submitted at the Final Action hearing.

G231-12
202, 3408.1.1 (New) [IEBC [B] 202, 407.1.1 (New)]

Proposed Change as Submitted

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Add new text as follow:

3408.1.1 (IEBC [B] 407.1.1) Change of Character. A change in occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, without approval of the *building official*. Compliance shall be only as necessary to meet the specific provisions and is not intended to require the entire building be brought into compliance.

Add new definition as follows:

CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

Reason: In the last code cycle, Code Change EB27-09/10 added "10. Ambulatory health care facilities" to IEBC Section 902.1 (now 1002.1) under the classification of "change of character. This section in the IEBC, along with The IEBC definition of Change of Use, in general verbiage, recognizes that there are changes of use that do not involve changing occupancy groups.

IEBC Section 1001.2 states:

> "**1001.2 Change in occupancy with no change in occupancy classification.** A change in occupancy, as defined in Section 202, with no *change of occupancy* classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, including the provisions of Section 1002 through 1011, without the approval of the code official."

This proposal is to bring those provisions from IEBC Section 1001.2 over into Chapter 34 of the IBC.

As noted in the IEBC, it is possible to change a use without changing the occupancy classification. Some examples are as follows:

1. Group A-2 bar with an occupant load of 275 to a Group A-2 bar with an occupant load of 350. Increasing occupant loads is permitted under Section 1004.2.
2. Group B office to Group B Ambulatory Health Care
3. Group B office to Group B café
4. Group F-1 factory to a Group F-1 woodworking shop.
5. Group H-3 Oxidizing gases to Group H-3 Flammable solids
6. Group M retail to Group M retail of upholstered furniture
7. Group S-1 warehouse to Group S-1 tire warehouse over 20,000 cubic feet
8. Group S-1 warehouse to Group S-1 motor vehicle repair garage
9. Group R-2 apartment to Group R-2 Live/Work unit.

Each of these classifications has particular code provisions that would apply if the occupancy had been originally identified. Some items might be fire protection, alarms, fresh air, restroom facilities, accessibility, smoke barriers, etc. The IBC currently does not specifically address these changes since they do not change Groups or change Divisions within Groups.

When making a change of character, it is not necessary to totally re-evaluate the building. Only the new applicable provisions should be addressed.

For example:

Group A-2 bar with an occupant load of 275 to a Group A-2 bar with an occupant load of 350.

Items that might require review:

Means of egress – 1004.2, to the public way
Sprinklers – 903.2.1.2, only in this space
Alarms – 907.2.1, only in this space
Restrooms – Chapter 29
Fresh air – IMC

Accessibility – see Section 3411
If food – upgrade of interceptor provisions of the IPC

Items that might not require a new review:

Height and area
Exterior walls and openings

As this is a confusing issue, the code official will need to define what items of correction are appropriate. While the wording may be new, code officials have performed this service for years. This proposal just puts it in the code.

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

3408.1.1 (NEW)-G-GODWIN

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposed language needs to be revised with terminology such as "change in the character of use." There was some discussion that the definition proposed could be beneficial in the IBC. Some committee members felt that this language was unnecessary.

Assembly Action: **None**

Individual Consideration Agenda

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

Public Comment:

Al Godwin, CBO, CPM, Aon Fire Protection Engineering Corporation, requests Approval as Submitted.

Commenter Reason: The Committee made the comment that the wording should be changed to "change in the character of use." Therefore the title of Section 3408.1.1 has been amended to reflect the new provision. This provision already exists in IEBC Section 1001.2. However, according to IEBC Section 301.1 compliance can be achieved by one of the three methods. The provision for Change of Character only exists in the Work Area Method of Section 301.1.2. Change of Character should also occur under the Prescriptive Compliance Method of Chapter 4 which is IBC Section 3408.1.1.

Therefore, this provision is a good change. It merely duplicates an existing IEBC provision and copies it in IEBC 407.1.1, which is also IBC 3408.1.1.

G231-12
Final Action: AS AM AMPC____ D

5. The design of this code change proposal would allow the adoption of Part I and disapproval of the remainder. As such, all references to "For a Change of Occupancy, Partial Change of Occupancy or Change of Character, compliance shall be as specified in Section 1106" would editorially drop out since that section would not exist.

Cost Impact: This should be considered as a clarification and coordination. While some provisions of Section 1106 are more intensive than currently written in the IEBC, they may be less intensive that what is currently enforced under the IFC. As such, it should be a merge of the potential costs under the IFC and the IEBC.

F121-13

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

903.2.1-F-GODWIN

F122 – 13
903.2.1.2 (IBC [F] 903.2.1.2), 903.2.1.6 (New) [IBC [F] 903.2.1.6 (New)]

Proponent: Robert Trotter, MCP., Tennessee Code Development Committee (bobtrotter1023@aol.com)

Revise as follows:

903.2.1.2 (IBC [F] 903.2.1.2) Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (465 m^2);
2. The fire area has an occupant load of 100 or more;

or

3. The ~~fire area~~ Group A-2occupancy is located on a floor other than the level of exit discharge.

903.2.1.6 (IBC [F] 903.2.1.6) Group A-2 on Roof. Where a Group A-2 occupancy is located on the roof, the building shall be equipped throughout with an automatic sprinkler system.

Reason: Activities involving A-2 occupancies located above or below the level of exit discharge and on the roof of buildings could be unaware of life threatening fire conditions above or below their location. The means of egress can become impassable and untenable conditions can be present regardless of the size of the area or occupant load.

Cost Impact: The code change proposal will increase the cost of construction. However, this proposal only clarifies the requirement and is not expected to increase the cost of construction beyond previously applied provisions.

F122-13

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

903.2.1.2-F-TROTTER

F123 – 13
903.2.1.3 (IBC [F] 903.2.1.3), 903.2.1.4 (IBC [F] 903.2.1.4)

Proponent: Joseph E. Moore, representing The City of Maryland Heights

Revise as follows:

903.2.1.3 (IBC [F] 903.2.1.3) Group A-3. An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

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

Exception: Areas used exclusively as participant sports areas.

903.2.1.4 (IBC [F] 903.2.1.4) Group A-4. An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

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

Exception: Areas used exclusively as participant sports areas.

Reason: These sections of the code were un-necessarily modified by code change F132-07/08. The supporting statement for the change in 07/08 was that the spaces were becoming multi-use facilities that presented higher occupant loads and fuel loading concerns. The previous code language and the revised exception proposed herein, already addresses this concern…Areas used exclusively as participant sports areas. If a gymnasium is to be used for parties, assemblies, meetings, etc. the gym floor would not comply with the exclusive use requirement in the exception. It is the code official's responsibility to make a determination of use prior to issuing the permit for construction.

In 2011 a new aquatic center addition for a public high school was submitted for plan review. The owner was required to install an automatic sprinkler system above the surface of the water in an indoor swimming pool building. There was seating for observing events in the pool area located in a mezzanine which was also suppressed. There is no retractable floor to cover the water surface. The pool itself cannot be used for any purpose except indoor water sports, but due to the lack of the exception it was required that an automatic fire suppression system be installed above a body of water. There are clearly circumstances where the omission of automatic sprinklers above participant sports areas should be permitted.

The persuasive testimony given in the previous hearing stated that during the refinishing of hardwood floors or painting of a pool large quantities of Volatile Organic Compounds could be released creating a highly combustible/explosive environment. It is important to remember that during these operations the building will only be occupied by a few individuals performing these tasks. These individuals are fully trained and familiar with the hazardous nature of the work involved. Furthermore, an automatic fire suppression system in this type of building would not be designed to suppress an explosion or flash fire.

Cost Impact: This represents a significant cost reduction in an indoor swimming pool for example. Simply accessing the area above the water to install the sprinkler system requires a large knuckle boom or bridge scaffold. Maintaining the system in a high humidity environment with corrosive chemicals in the water vapor also requires specialized equipment that must now fit through the doors and corridors in the building.

F123-13

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

903.2.1.3-F-MOORE

F124 – 13
903.2.1.6 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

903.2.1.6 (IBC [F] 903.2.1.6) Assembly use on roofs. Where an occupied roof has an assembly use with an occupant load exceeding 100, all floors between the occupied roof and the level of exit discharge shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Reason: Currently the code states that if you have a fire area containing an A-2 Assembly on a floor other than the floor of exit discharge, that floor level and all floors to the level of exit discharge must be sprinklered. Frequently, roof tops are being used and occupied as assemblies. Building owners will provide an open air roof-top bar or lounge, or other use similar to a Group A-2 occupancy on the roof of a building.

The roof of the building does not meet the definition of a fire area. So protection of the occupants can be less than what would otherwise be required if the occupancy was on a floor rather than on the roof.

The current fire sprinkler threshold for Group A-2 is an occupant load of 100. It is appropriate to apply this same threshold to the occupant load on the roof.

This proposal will require that when a roof top is occupied for an assembly use AND the occupant load exceeds 100, then the building must be protected with sprinklers. This proposal does not require that the roof top itself is sprinklered, but provides sprinkler protection on all floors to the level of exit discharge.

The reference to Section 903.3.1.2 is added, since this use can occur on the roof of multi-family housing facilities.

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

F124-13

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

903.2.1.6 (NEW)-F-ZUBIA-FCAC

F125 – 13
903.2.2 (New)

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Add new text as follows:

903.2.2 Group B. An *automatic sprinkler system* shall be provided throughout all buildings containing a Group B occupancy where a Group B *fire area* is located more than three stories above grade plane.

~~903.2.2~~ 903.2.2.1 Ambulatory Care Facilities. (No Changes)

Reason: This proposal is to set a requirement for automatic sprinkler systems to be installed in mid-rise business occupancies. Currently, the only requirement for automatic sprinkler protection in Group B occupancies is when the building meets one of the specific hazard requirements in IFC 903.2.11, generally the occupied floor (30 people) over 55 feet in height requirement.

The State of New York has required the installation of automatic sprinkler systems in all buildings over 30 feet in height for the past 10 years. A majority of that reasoning is to require business and educational occupancies to have an automatic sprinkler system for buildings over 3 stories. The reasoning for this lower height for sprinkler protection is due to the following:

1. Firefighting operations on higher levels is increasing challenging. The IFC already implicitly recognizes the extra challenges by requiring standpipe systems at the 30 feet or more height measurement as well as aerial apparatus access roads (in Appendix D). With the excellent performance of automatic sprinkler systems, the hazards to firefighters is greatly reduced.
2. Group B occupancies create a fire control problem by a majority of floor spaces being open. With the change of the materials used to construct furnishings, smoke produces a greater obscuration of the environment and makes finding the source of the fire more difficult. Other open space floor plan occupancies, such as Group M and F-1 occupancies, already have sprinkler thresholds for buildings above three stories.
3. Group B occupancies are not required to have any automatic fire alarm or detection requirements. The requirement for automatic sprinkler systems to be monitored provides a system to give accelerated warning of a fire within the building , evacuates the area and starts first responders to the scene.
4. In 2011, a Fire Captain in Asheville, North Carolina died while operating on an upper floor of a mid-rise office building that was not sprinkler protected. Several crew members, including the deceased, ran out of breathing air which was attributed to the need for utilizing air during the stair ascent. An automatic sprinkler systems would have allowed firefighters, at a minimum, to not encounter such heavy smoke conditions on lower floors during entry and allow for their air supply to be more adequate for fire attack operations. Information on this fire an recommendations for the installation of fire suppression systems in these occupancies is found in the NIOSH firefighter fatality report # F2011-18.

Over the past 10 years, the State of New York has not been petitioned to omit the sprinkler system on the new construction of mid-rise office buildings (3-7 stories). Many find that the sprinkler system allows for the use of a Class 1 standpipe system. NFPA 14, the referenced standard for standpipe system installation, permits Class 1 standpipes to be of manual wet design. This allows a building with a marginal water supply to use either street pressure or a smaller fire pump to run the sprinkler system and allow the FD to pump the pressures required to the standpipe. Without the sprinkler system, the building is responsible for providing at least 100 psi for at least 750 GPM of flow (2 stairways minimum).

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: This proposal will add costs to the construction of 4 to 6 story buildings that are not already using sprinklers for a 'tradeoff' of other code requirements. Cost savings may be achieved by not requiring an automatic Class III standpipe, but a manual Class I standpipe.

F125-13

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

903.2.2 (NEW)-F-NICHOLS

F126 – 13
903.2.4, 903.2.7, 903.2.9

Proponent: Steve Thomas, Colorado Code Consulting, LLC representing self (sthomas@coloradocode.net)

Revise as follows:

903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 12,000 square feet (1115 m^2).
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. ~~A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).~~

903.2.7 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet (1115 m2).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. ~~A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m^2).~~

903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m^2).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m^2).
5. ~~A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).~~

Reason: The original proponent offered no technical justification in the original proposal. The fire event that was used to support the original emotional proposal was located in a building that was 59,000 square feet in area. It was not provided with fire sprinklers. The code currently requires that this size building be provided with fire sprinklers. Previous legacy codes have also required fire sprinklers in this size building. This requirement is over-restrictive and should be removed from the code.

When the provisions were revised in the 2012 IFC, the revision was not tied to FIRE AREA, but instead was based on some area of the upholstered furniture and mattresses. It is not clear how the areas are measured. Is it the area of the space, display or building that requires the fire sprinklers? This vague language makes enforcement more difficult.

The second issue is that the provisions in these sections conflicts with provision in Section 3206.2 for high piled combustible storage (HPCS). It creates a loophole because the IFC high piled combustible storage provisions set an area threshold of 500 square feet when the height of mattress storage is > 6 feet in a public-accessible area. The provision for Group M occupancies for upholstered mattresses and furniture sets an occupancy area threshold of 5,000 square feet. The committee wasn't thinking about HPCS when they considered the proposal and it was further amended on the floor.

Finally, loss history has never been presented substantiating why upholstered furniture and mattresses warrant a different threshold for sprinkler protection.

Cost Impact: This will reduce the cost of construction.

F126-13

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

903.2.4-F-THOMAS

F127 – 13

903.2.5.2 (New) [IBC [F] 903.2.5.2] (New) 903.2.5.2.1 (New) [IBC [F] 903.2.5.2.1 (New)] 903.2.5.2.2 (New) [IBC [F] 903.2.5.2.2 (New)]

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Add new text as follows:

903.2.5.2 (IBC [F] 903.2.5.2) Group H-3 Bulk storage of distilled spirits. Automatic Sprinkler system requirements for bulk storage of distilled spirits in wooden barrels and casks shall be in accordance with Sections 903.2.5.2.1 and 903.2.5.2.2.

903.2.5.2.1 (IBC [F] 903.2.5.2.1) Ceiling sprinklers. Distilled spirits stored in wooden barrels and casks in H-3 fire areas shall be protected with ceiling sprinklers in accordance with the requirements for relieving-style metal containers in NFPA 30 for the following storage configurations

1. Double-row racks with a load depth of no more than 3 barrels per row on each rack and 10 feet or less in height, or
2. Single-row racks with no more than 4 barrels per row, and 10 feet or less in height

903.2.5.2.2 (IBC [F] 903.2.5.2.2) Engineered systems. An approved engineered automatic sprinkler system design is required for bulk storage of distilled spirits stored in wooden barrels and casks in Group H-3 fire areas for any of the following storage configurations.

1. Storage in multi-row racks with three or more rows of racks
2. The number of barrels or casks per row exceeds that specified in Section 903.2.5.2.1.
3. Storage height Greater than 10 feet.

(Renumber subsequent sections)

Reason: There is confusion about the applicability of flammable liquid (Chapter 57) and hazardous materials (Chapter 50) provisions to distilled spirits because of the exceptions for distilled spirits and wines stored in wooden barrels and casks in IFC Chapters 50 and 57 (and NFPA 30). The issue arises because of the growing popularity of "boutique" or "craft" distillers locating their operations in urban areas. The proposed language clarifies bulk storage provisions for distilled spirits but does not alter the intent. The proposed language does not affect provisions applicable to use, nor those applicable to liquor storage in retail or wholesale establishments.

First, note distilled spirits are Class 1C and Class 1B flammable liquids. They are primarily comprised of ethyl alcohol (ethanol) and water with concentrations ranging from approximately 19% to 99%. The boiling point of pure ethanol is approximately 178ºF so an ethanol mixture with water will boil between 178ºF and 212ºF. The closed cup flash point for a 19% concentration of ethanol in water is 100ºF and for a 58% concentration is 73ºF making the mixtures in this range Class 1C flammable liquids (these values are not adjusted for altitude). Ethanol concentrations in water between 58% and 99% are Class 1B flammable liquids.

Second, the Building Code establishes occupancy. If a quantity of a Class 1B or Class 1C flammable liquid exceeding the maximum allowable quantity (MAQ), the room in which it is located is an H3 Occupancy. Please remember this applies to bulk storage (casks, barrels, metal containers, etc. exceeding 1.3 gallon capacities) and not liquor stores and wholesale distributors for which there are several exceptions.

Third, H occupancies have to be sprinklered. The sprinklering requirements for flammable and combustible liquids are outside the scope of NFPA 13. NFPA 13 points to NFPA 30 (Flammable and Combustible Liquids Code) for detailed requirements. Ethanol stored in any container larger than those excepted for retail – other than wood – is addressed there.

This is not because wood is inherently safer than metal, plastic or glass – it is not. It was probably inserted in the legacy code(s) back when casks were stored in liquid storage warehouses separated by hundreds of feet from one another and urban distilleries weren't contemplated. It was probably held over today because there is not yet an established sprinkler criteria for the storage of Class 1C flammable liquids in wooden barrels and casks. THIS HOWEVER DOES NOT MEAN THESE ROOMS SHOULD BE EXEMPT FROM SPRINKLERING REQUIREMENTS!

Fourth, there is no established sprinkler criteria for flammable and combustible liquids stored in wood casks. The modification proposed to Section 903.2.5.2 provides a baseline sprinkler criteria for distilled spirit storage quantities over the Class 1C flammable liquid MAQ, up to 10 feet in height, 2 racks (flu space) with 3 barrels per row in each rack, or single rack with 4 barrels per row. An engineered sprinkler design is required for quantities over the MAQ stored in a manner that exceeds any of these parameters. The language allows the fire code official the latitude to accept published recommended industry practices in lieu of an engineered design or test.

Relieving-style containers are identified because the wooden barrels and casks will release their contents when exposed to fire as the metal bands expand and the staves separate. Metal is identified because plastic and glass are much more vulnerable than wood. Ten foot height is identified as this envelopes the maximum storage heights of wooden barrels and casks typically seen in craft distilleries and is well below the 25 foot storage height permitted in NFPA 30 for relieving-style metal containers.

Last, please note that except for establishing a baseline sprinkler design criteria, the applicable code requirements have not been changed.

Cost Impact: This change will not affect the cost of construction.

F127-13

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

903.2.5.2-F-EMERICK

F128 – 13

903.2.9 (IBC [F] 903.2.9), 903.2.9.1 (IBC [F] 903.2.9.1), 903.2.10.1 (IBC [F] 903.2.10.1), 202

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

903.2.9 (IBC [F] 903.2.9) Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m^2).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. A Group S-1 fire area used for the storage of ~~commercial trucks or buses~~ commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m^2).
5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).

903.2.9.1 (IBC [F] 903.2.9.1) Repair garages. An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the International Building Code, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m^2).
2. Buildings no more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m^2).
3. Buildings with repair garages servicing vehicles parked in basements.
4. A Group S-1 fire area used for the repair of ~~commercial trucks or buses~~ commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m^2).

903.2.10.1 (IBC [F] 903.2.10.1) Commercial parking garages. An automatic sprinkler system shall be provided throughout buildings used for storage of ~~commercial trucks or buses~~ commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m^2).

Add new definition as follows:

SECTION 202
GENERAL DEFINITIONS

COMMERCIAL MOTOR VEHICLE. A motor vehicle used to transport passengers or property where the motor vehicle:

1. Has a gross vehicle weight rating of 10,000 pounds or more; or
2. Is designed to transport 16 or more passengers, including the driver.

Reason: The current text is not clear on what constitutes a “commercial” truck or bus. The intent of this proposal is that sprinklers should be installed based on the size of the vehicle. A definition of a commercial motor vehicle is needed. These criteria are from the DOT regulations 49CFR390.5, and correlate with IBC Section 1607.7. (See S70-09/10, AMPC1.)

The fuel load is significantly increased with these larger vehicles. Large commercial vehicles typically have an increased quantity of fuel in the vehicle fuel tanks. The vehicles may have larger amounts of upholstered interior furnishings. Large commercial vehicles may be storing or transporting additional combustibles on-board which also increases the fuel load and fire duration.

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

F128-13

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

903.2.9-F-ZUBIA-FCAC

F129 – 13
903.2.11.1 (IBC [F] 903.2.11.1)

Proponent: Paul Armstrong, P.E., CBO, City of El Monte representing the ICC Orange Empire Chapter Code Committee (paul@jaspacific.com)

Revise as follows:

903.2.11.1 (IBC [F] 903.2.11.1) Stories without openings. An automatic sprinkler system shall be installed throughout all stories, including basements, 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~~ Each opening shall be at least 20 square feet in area and 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 (15 240 mm).
2. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m2) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). The height of the bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.

Reason: Item 1 does not have a minimum area requirement for openings in exterior walls to allow for an exemption from the installation of a sprinkler system. These openings are intended to be used by Fire Department personnel during emergency response operations. This revision uses the area requirement found in Item 2 and is consistent with the IBC commentary on this topic.

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

F129-13

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

903.2.11.1-F-ARMSTRONG

F130 – 13
903.2.11.1.3 (IBC [F] 903.2.11.1.3)

Proponent: Joanne T. McCaughan, Code Specialist, Washington State Building Code Council, representing Washington State (joanne.mccaughan@des.wa.gov)

Revise as follows:

903.2.11.1.3 (IBC [F] 903.2.11.1.3) Basements. Where any portion of a basement is located more than 75 feet (22 860 mm) from openings required by Section 903.2.11.1, or where new walls, partitions or other similar obstructions are installed that ~~restrict the application of water from hose streams~~ increase the exit access travel distance to more than 75 feet, the basement shall be equipped throughout with an approved automatic sprinkler system.

Reason: The enforcement of determining obstructions that can restrict the application of water from hose streams leaves too much room for judgment and will result in inconsistent application of this provision; this concern was echoed in the ICC manual, Significant Changes to the IFC/2012 Edition (p.65).

This proposal provides code language and distances that are consistent with this provision of the code by utilizing the exit access travel distance to establish the threshold that would trigger the requirement for fire sprinklers in a basement. This provision works for both new construction and tenant improvements to an existing basement.

The life safety concern is that a basement could be initially constructed with no walls or partitions, which would make the exit distance easy to obtain. As new walls or partitions are constructed, the exit distance is reviewed again to ensure that it does not trigger fire sprinklers.

This approach removes the judgment of the current wording and provides a more reasonable and enforceable provision. Washington State is adopting this language as a statewide amendment to the 2012 IFC.

Cost Impact: The code change proposal will not increase the cost of construction. For initial construction, the cost of construction will not be affected. However, if revisions to floor plans result in exit access travel distances that exceed 75 feet in an existing basement, costs could potentially increase.

F130-13

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

903.2.11.1.3-F-MCCAUGHAN

F131 – 13
903.2.11.3 (IBC [F] 903.2.11.3)

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Revise as follows:

903.2.11.3 (IBC [F] 903.2.11.3) Buildings 55 feet or more in height. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be installed throughout buildings with a floor level having an occupant load of 30 or more that is located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

1. Airport control towers.
2. Open parking structures.
3. Occupancies in Group F-2.

Reason: This proposal revises the language to specify a NFPA 13 sprinkler system is required in buildings meeting the height criteria. The proposed change only affects residential buildings on sloping sites where the lowest level of fire department vehicle access is significantly below grade plane. It has no other effect on sprinkler requirements related to the height of a building, namely IBC Section 540.2 which permits NFPA 13R sprinkler systems in residential buildings up to 60 feet in height – measured to the roof from grade plane (vs. lowest level of FD vehicle access).

If the lowest level of fire department vehicle access is at grade plane or on the high-elevation side of a sloping site, and the building height with respect to grade plane is 60 feet, then the highest occupied floor will be 10+ feet below this at a height of 50 feet or less – but below "55 feet to the highest occupied floor" in either case. Per IBC Section 540.2, a 13R sprinkler system is still permitted.

On a sloping site, where the lowest level of fire department vehicle access is on the low-elevation side of the site, firefighters are presented a building face taller in stories and feet than the nominal height of the building. If this face is tall enough that the highest occupied floor is 55 feet above them, the additional protection afforded by an NFPA 13 sprinkler system- especially with combustible construction – is warranted.

Cost Impact: This change will not affect the cost of construction.

F131-13

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

903.2.11.3-F-EMERICK

F132 – 13
903.2.11.3 (IBC [F] 903.2.11.3)

Proponent: Eric R. Rosenbaum, Hughes Associates, Inc. representing the Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com)

Revise as follows:

903.2.11.3 (IBC [F] 903.2.11.3) Buildings 55 feet or more in height. An *automatic sprinkler system* shall be installed throughout buildings with a floor level having an *occupant load* of 30 or more that is located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

~~1. Airport control towers.~~
~~2.~~1. Open parking structures.
~~3.~~2. Occupancies in Group F-2.

Reason: The proposed change reflects changes accepted in Section 412.3 of the IBC regarding air traffic control towers. The accepted change in the IBC requires an automatic sprinkler system in all air traffic control towers with an occupiable floor 35 ft or more above the lowest level of fire department vehicle access. This accepted change is more restrictive than current IFC requirements and could cause confusion if left in the IFC. A copy of the accepted change is as follows:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.11 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.2.

TABLE 412.3.2
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS

TYPE OF CONSTRUCTION	HEIGHT[a] (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic controls towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m^2).

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building
2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

412.3.5 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

412.3.7 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

412.3.9 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

Cost Impact: This code change will increase the cost of construction from the current code requirements in some instances; however, reflects current building practices of the FAA.

F132-13

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

903.2.11.3-F-ROSENBAUM

F133 – 13
903.3.1.1 (IBC [F] 903.3.1.1), 903.3.1.1.2 (New) [IBC [F] 903.3.1.1.2]

Proponent: Marshall Klein, International Code Consultants, representing Multi Housing Council

Revise as follows:

903.3.1.1 (IBC [F] 903.3.1.1) NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Sections 903.3.1.1.1 and 903.3.1.1.2.

903.3.1.1.2 (IBC [F] 903.3.1.1.2) Bathrooms. In Group R occupancies, other than Group R residential care facilities, sprinklers shall not be required in bathrooms that do not exceed 55 square feet in area and are located within individual dwelling units or sleeping units, provided that walls and ceilings, including the walls and ceilings behind any shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

Reason: This change is necessary to reinstate an exception that has been in existence since 1976 but was nevertheless deleted from the 2013 edition of NFPA 13 with no technical justification. Because the 2015 I-codes will reference the 2013 edition of NFPA 13, it is necessary and appropriate for the IBC and IFC to reverse NFPA's unsupported action on this issue.

Although reinstating the small bathroom exception will have a limited impact on new construction because many bathrooms exceed the 55 sq. ft. area limit in the exception to accommodate wheelchair access, the more important consequence will be removing an unnecessary cost increase for building owners who choose to retrofit existing properties with small bathrooms that were built before it was common to provide wheelchair access. Codes and standards should not erect any unnecessary barriers to retrofitting sprinklers into existing properties, such as existing high-rise buildings.

Background: In the 1976 edition of the Life Safety Code, to encourage cost effective fire protection systems for apartment buildings, NFPA 101 Section 11-3.8.3.4.1 provided an exception to permit bathrooms that did not exceed 55 sq. ft within individual dwelling units to omit sprinklers when the apartment building was sprinklered in accordance with NFPA 13. The basis of the 55 sq. ft. area is that this area accommodates a "typical" small bathroom that contains a standard tub, a toilet and a sink…nothing more. This exception was later duplicated from NFPA 101 into the 1991 edition of NFPA 13 with the understanding that the next edition of NFPA 101 (1994) could delete the exception since NFPA 13 would have it covered. NFPA 101-1994 then, as planned, deleted the exception.

The situation remained "status quo" until the cycle that produced the 2010 edition of NFPA 13. A proposal to delete the bathroom exception for apartments was initially rejected by the NFPA 13 Committee during the ROP process (Code Proposal 13-202 Log #79) with the Committee Statement for rejection as "No technical data was provided supporting this change". During the ROC process, a public comment (Comment 13-141 Log #235) was submitted by the National Fire Sprinkler Association (NFSA), and the NFPA 13 Committee reversed itself by accepting the Comment, even though no new technical information had been provided. Nevertheless, the NFPA membership rejected this revision at NFPA's annual conference, and the 2010 edition of NFPA 13 retained the exception.

During the 2013 edition cycle for NFPA 13, the issue was raised again, and this time, still with no technical justification, NFPA accepted the change. As a result, NFPA 13-2013 (Section 8.15.8.1.1) only allows omission of sprinklers from in bathrooms in hotels and motels, not apartments.

The history of apartment unit bathroom fires is statistically minimal. According to the recent NFPA Home Structure Fire Report, January 2009, Table 9B, "Reported Apartment Structure Fires by Area of Origin 2003-2006 Annual Averages", out of 113,000 fires/year, only 1600 (1%) are in bathrooms. Given that we have more than 35 years of experience with the bathroom sprinkler exception being in place (since it was put into NFPA 101 in 1976), one would certainly expect anecdotal or statistical experience to indicate the existence of a problem, if there were one. On the contrary, apartments have consistently rank at the top of the list with respect to sprinkler reliability and performance statistics, and no statistical (or other) evidence was presented to or by the NFPA 13 committee to justify deletion of the bathroom sprinkler exception for apartments.

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

F133-13

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

903.3.1.1-F-KLEIN

F134 – 13
903.3.1.2 (IBC [F] 903.3.1.2)

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Add new text as follows:

903.3.1.2 (IBC [F] 903.3.1.2) NFPA 13R sprinkler systems. *Automatic sprinkler systems* in Group R occupancies up to and including four stories and 60 feet in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

Reason: There has been confusion as to where you measure the four story limitation for NFPA 13R sprinkler systems. This proposal clarifies the intent of NFPA 13R limitations by using the correct language for building height and correlating with the NFPA 13R committee.

There is a breakpoint in the codes for building heights between 30 feet above the lowest level of fire department access and four stories. This is the point where stair enclosures have to be 2-hour rated, where at least one stair is required to extend to the roof, when standpipes are required, where emergency escape and rescue windows are no longer required, etc. This height correlates with the upper limit at which fire departments can conduct operations using ground ladders. Hand-carried ladders can typically only reach 30 to 40 feet above the grade from where they're set. A higher degree of safety has historically been required in buildings taller than this because an offensive attack will include – maybe exclusively – internal operations.

In residential buildings, this is also the threshold where sprinkler systems are required to be more robust; i.e., where NFPA 13 systems are required.

With the relaxation in requirements for residential pedestal buildings leading to the consolidation of combustible framing (and the contents) in the highest stories, it makes no sense to also relax the sprinklering requirements for that portion of the building. More stories means more time required for search and rescue. Combustible construction – especially if the attics and interstitial floor/ceiling spaces are not protected, means less time is provided.

Cost Impact: This change will not affect the cost of construction.

F134-13

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

903.3.1.2-F-EMERICK

F135 – 13
903.3.1.2 (IBC [F] 903.3.1.2)

Proponent: Tim Pate, City and County of Broomfield, CO, representing Colorado Chapter Code Change Committee

Revise as follows:

903.3.1.2 (IBC [F] 903.3.1.2) NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies up to and including four stories ~~in height~~ above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

> **Exception:** The number of stories of Group R occupancies constructed in accordance with Section 510.2 and 510.4 of the International Building Code shall be measured from the horizontal assembly creating separate buildings.

Reason: There has been confusion as to where you measure the four story limitation for NFPA 13R sprinkler systems. This proposal clarifies the intent of NFPA 13R limitations by using the correct language for building height and addressing the use of these systems in podium buildings.

Cost Impact: This change will not affect the cost of construction.

F135-13

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

903.3.1.2-F-PATE

F136 – 13
903.3.1.2.1 (IBC [F] 903.3.1.2.1)

Proponent: Jeffrey M. Hugo, CBO, representing the National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

903.3.1.2.1 (IBC [F] 903.3.1.2.1) Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of *dwelling units* and *sleeping 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: According to the current text, a balcony or deck from a sleeping unit would be exempt from fire sprinklers. Sleeping units are common for dormitories, hotel rooms, assisted living, etc. and we do not believe this is the intent of the code to forego protection of these balconies and decks because they lack sanitation or cooking facilities.

> **DWELLING UNIT.** A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.
>
> **SLEEPING UNIT.** A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

Cost Impact: Will not increase the cost of construction

F136-13

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

903.3.1.2.1-FS-HUGO

F137 – 13
202, 903.3.1.2.2 (New) [IBC [F] 903.3.1.2.2 (New)], 1104.21

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Add new text as follows:

SECTION 202
GENERAL DEFINITIONS

OPEN-ENDED CORRIDOR. An interior corridor that is open on each end, and connects to an exterior *stairway* or *ramp* at each end with no intervening doors or separation from the corridor.

Revise as follows:

903.3.1.2.2 (IBC [F] 903.3.1.2.2) Open-ended Corridors. Sprinkler protection shall be provided in *open-ended corridors* and associated *exterior stairways* and *ramps* as specified in Section 1026.6, exception 4.

1104.21 Exterior stairway protection. Exterior *exit stairs* shall be separated from the interior of the building as required in Section 1026. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1 through 3 *(No change to current text)*

4. Separation from the ~~interior~~ *open-ended corridor* of the building is not required for *exterior stairways* ~~connected to open-ended *corridors*~~, provided that:
   - ~~4.1 The building, including *corridors*, and stairs, is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.~~
   - ~~4.2~~ 4.1 The *open-ended corridors* comply with Section 1018.
   - ~~4.3~~ 4.2 The *open-ended corridors* are connected on each end to an *exterior exit stairway* complying with Section 1026.
   - ~~4.4~~ 4.3 At any location in an *open-ended corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m^2) or an *exterior stairway* or *ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

Reason: This is a correlation with code change E153-12 which was approved last cycle. New Section 903.3.1.2.2 is to clarify that when using a 13R system for this provision, extra heads are required in the breezeway.

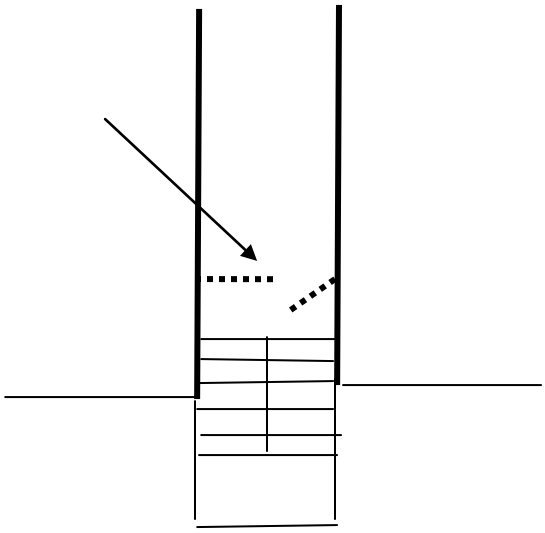
The Reason statement for E153-12 is as follows:

Reason: Breezeway stairs is what this section is talking about. Whether straight through the building with a stair on each side, or taking a turn somewhere during its path through the building with a stair on either end, it is still a breezeway with exterior stairs. This point is not clear in the current language.

There is this opinion that an open breezeway stairs are allowed by basic code. They are not. 2012 IBC Section 1026.6 states that exterior stairs must be separated from the interior of the building. The breezeway (interior corridor) is part of the interior of the building. I have conferred with the original proponent of this code change many times and confirmed that the intent was to allow the removal of the wall and door that separates the stair from the corridor, creating a breezeway.

Many designers and jurisdictions assume that breezeway stairs are allowed by right. However, in order to not have to build the wall and fire door separating the exterior stair from the interior corridor, exception 4 must be complied with, which includes sprinklers in this breezeway.

The following is a representation of the intent of Exception 4, allowing the removal of the separation wall and door:



We are all familiar with the required protection on each side of the exterior stair as represented in this clip from the 2000 International Building Code Commentary.

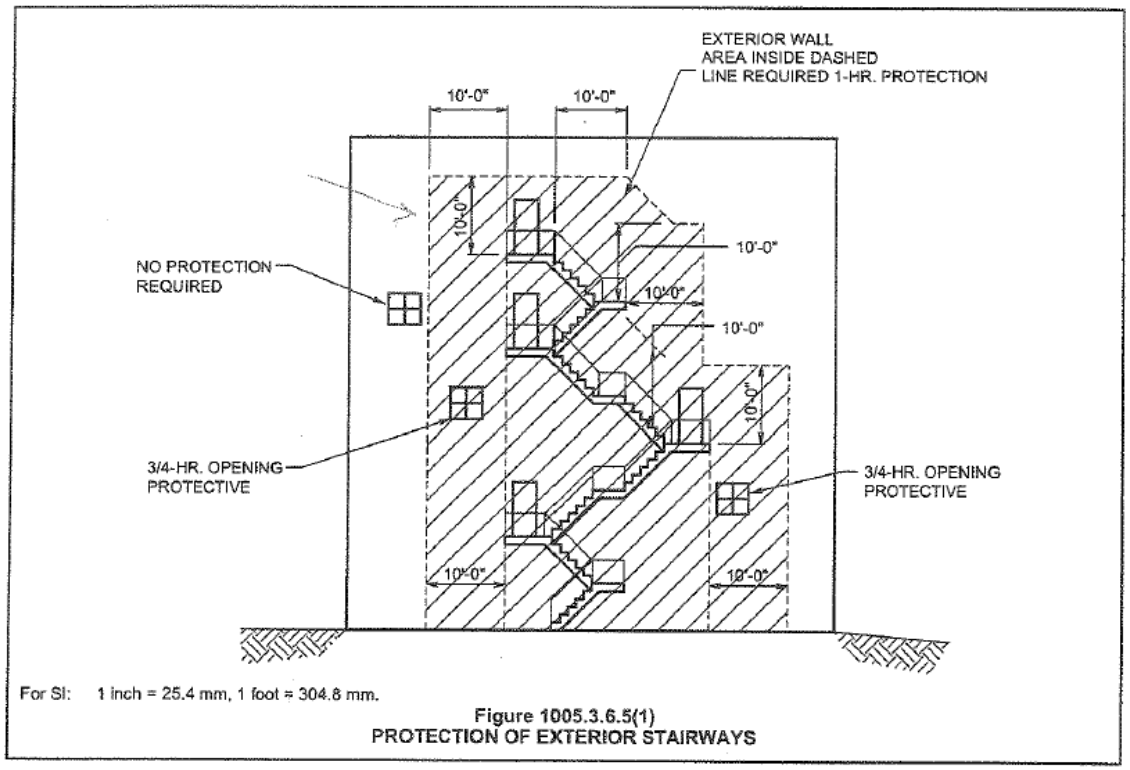
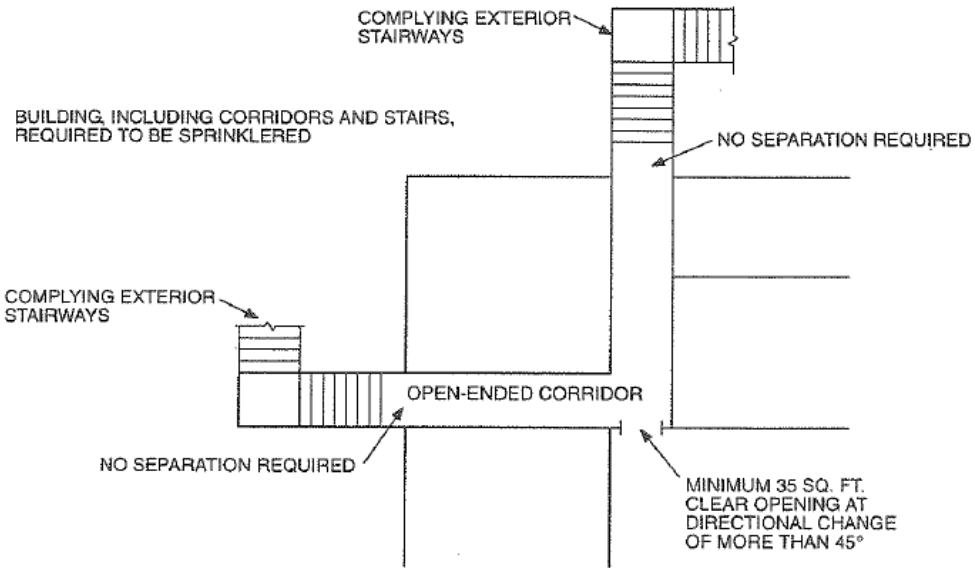


Figure 1005.3.6.5(1)
PROTECTION OF EXTERIOR STAIRWAYS

So, if the walls on each side of the stair have to be protected, how can a large opening where the door occurs be removed and have an unprotected connection to the interior corridor.

The 2000 IBC Handbook, provided an accurate depiction of what this code change applied to as follows:



OPEN-ENDED CORRIDOR

FIGURE 1005-10

Here is the original code change that inserted the provision. Notice the statement "The purpose of this analysis was to determine if an equivalent level of life safety could be achieved by the design of an open breezeway in comparison to an enclosed corridor or balcony for these multifamily buildings."

technical change.

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

1008.7-2

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

1. Revise as follows:

1008.7 Exterior exit stairways. Exterior exit stairways that conform to the requirements for interior exit stairways except for the enclosure requirements, are permitted as an element of a required means of egress for buildings not exceeding six stories or 75 feet (22.9 m) in height for occupancies other than Group I-2.

An exterior exit stairway that serves as an exit component shall be open to the outside on at least one side except for required structural columns beams, ~~and open-type~~ handrails and guards. A minimum of 35 square feet (3.22 m^2) of aggregate open area shall be provided within the horizontal projection of each floor to ceiling level at each exterior stair or within the horizontal projection of the floor to ceiling level of the stairway landing that is located no more than 1/2 level above the corridor floor.

The adjoining open areas shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building. Any stairway not meeting the definition of an exterior stairway shall comply with the requirements for interior stairways.

Exterior stairways shall be located in accordance with Section 1009.1.

2. Revise the definition of Stairway, Exterior as follows:

SECTION 1002
DEFINITIONS

STAIRWAY, EXTERIOR A stairway that is open on at least one side, except for required structural columns, beams, ~~and open-type~~ handrails, and guards. The adjoining open areas shall be either yards, courts or public ways; the other sides of the exterior stairway need not be open.

Reason: To establish minimum requirements for open area on exterior exit stairways and permit the use of enclosed guards and handrail systems.

The 35 sq. ft. of open area is based on computer fire studies of six multifamily projects in Virginia containing more than 2000 individual dwelling units. The analysis was completed by the Sullivan Code Group using HAZARD I, a fire hazard assessment method developed by the United States National Institute of Standards and Technology. The procedures used by the Sullivan Code Group were reviewed by Professor Jonathan Barnett, Ph.D., Associate Professor, Center for Firesafety Studies, Worcester Polytechnic Institute who checked for conformity with the fire modeling expectations and limitations.

The findings, which are based on the provisions in the 1996 BOCA National Building Code, apply equally to the provisions in the IBC. The results, summarized by the Sullivan Code Group in the following Executive Summary, for the six buildings included in the studies were very similar. The buildings studied were multifamily apartments with various configurations of corridors connected to exterior open stairs.

EXECUTIVE SUMMARY

The purpose of this analysis was to determine if an equivalent level of life safety could be achieved by the design of an open breezeway in comparison to an enclosed corridor or a balcony for these multifamily buildings.

The multifamily buildings were analyzed using engineering judgement, referenced literature, the suite of computer programs called FASTlite, and CFAST and, computer-based fire models developed by the United States National Institute of Standards and Technology, Building and Fire Research Laboratory.

The reasonable worst case fire scenario modeled was an arson fire on the breezeway. By assuming that the design fire is a fast growing arson fire, this analysis goes beyond the requirements of the Building Code which does not consider arson fire situations in determining building fire safety regulations. Therefore, this analysis is evaluating the building under more adverse conditions than are addressed in the Building Code. The results of the analysis are:

1. For the life safety of the building occupants on the floor of fire origin, the open breezeway configuration is superior to the enclosed corridor configuration.
2. For the life safety of the building occupants on floors other than the floor of fire origin, the open breezeway configuration meets the intent of the egress provisions in the BOCA Code. With the open breezeway configuration, at least one stairwell should maintain tenable egress conditions depending on the wind direction. In all cases analyzed, one stairwell was capable of handling the occupant load. Therefore, the intent of the code is met.
3. Smoke conditions on floors other than the floor of fire origin will remain safe for a suitable period of time to allow occupant egress with the open breezeway configuration, even without sprinklers. If there is a wind, the tenability in the open breezeways is improved.
4. With the enclosed corridor configuration, sprinkler activation is predicted to occur after the time at which the upper smoke layer reaches a level that could impede egress. With the open breezeway configuration, sprinkler activation is predicted to occur prior to the time at which the upper smoke layer reaches a level that could impede egress.
5. The results of this analysis have demonstrated that an open breezeway protected by quick response automatic sprinklers provides occupant egress conditions which are better than code-complying balcony designs. Therefore an open breezeway protected by quick response sprinklers, as designed for this project, should be regulated by the same requirements as the open balcony which does not require a fire resistance rated floor when standard response automatic sprinklers are present. The design of the open breezeway provides a level of life safety equivalent or superior to that required by the BOCA Code Sections 106.2 and 106.4.

Copies of the Fire Studies are submitted for reference (see NMHC/NAA proposal for Section 1004.7). Additional copies are available from the proponent.

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

In the 09/10 cycle, code change E134-09/10 made it clear that this exception only applied to the wall and door that would normally separate an exterior stair from the interior corridor. This exception does not apply to other separation requirements on the sides of the stairs.

The specific section reasoning for this code change is as follows:

Section 202, provide a definition of an open-corridor. Hopefully this will expand on code change E134-09/10 to clarify that this provision is only to eliminate the separation required between the stair and the interior corridor. Not the units on either side.

Section 1026.6, expanding the same concept, adding clarity.

Section 903.3.1.2.2, providing an explicit requirement that sprinkler protection must be provided in this open-ended corridor when using a residential system. As with Section 903.3.1.2.1, this protection is above the requirements of a standard 13R system. If not checked in the design, these heads will not be installed. As such, the open-ended corridor will not be in compliance with code.

Section 1104.21, deletes the sprinkler protection requirement for existing buildings. Once understood that in order to have breezeway stairs, the building, the breezeway and associated stairs must be sprinklered, this provision is actually a retroactive sprinkler provision for all existing buildings with breezeway stairs.

If not sprinklered, in order to keep the breezeway stairs, the building and corridor must be sprinklered. If already sprinklered with a 13R, retrofit sprinklers in the corridor must be installed.

Cost Impact: Since this is correlation between the IFC and IBC, no extra construction cost is expected. And, removing the retroactive implication to existing non-sprinklered breezeways, or 13R sprinklered breezeways without breezeway sprinklers, will reduce costs.

F137-13

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

903.3.1.2.2-F-GODWIN

F138 – 13

903.3, 903.3.8 (New), 903.4 (IBC [F] 903.4), 903.3.5.1 (IBC [F] 903.3.5.1), 903.3.5.2 (IBC [F] 903.3.5.2)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

903.3 Installation requirements. *Automatic sprinkler systems* shall be designed and installed in accordance with Sections 903.3.1 through 903.3.8~~7~~.

~~**903.3.5.1.1 Limited area sprinkler systems.**~~
~~Limited area sprinkler systems serving fewer than 20 sprinklers on any single connection are permitted to be connected to the domestic service where a wet automatic standpipe is not available. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:~~

~~1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.~~

~~**Exception:** An *approved* indicating control valve supervised in the open position in accordance with Section 903.4.~~

~~2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13D or NFPA 13R.~~

~~**903.3.5.1**~~ **903.3.5.2 (IBC [F]** ~~**903.3.5.1**~~ **903.3.5.2) Residential combination services.** A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

903.3.8 (IBC [F] 903.3.8) Limited area sprinkler systems. Limited area sprinkler systems shall be in accordance with the standards listed in Section 903.3.1 except as provided in Sections 903.3.8.1 through 903.3.8.5.

903.3.8.1 Number of sprinklers. Limited area sprinkler systems shall not exceed 6 sprinklers in any single fire area.

903.3.8.2 Occupancy hazard classification. Only areas classified by NFPA 13 as Light Hazard or Ordinary Hazard Group 1 shall be permitted to be protected by limited area sprinkler systems.

903.3.8.3 Piping arrangement. Where a limited area sprinkler system is installed in a building with an automatic-wet standpipe system, sprinklers shall be supplied by the standpipe system. Where a limited area sprinkler system is installed in a building without a wet-pipe automatic standpipe system, water shall be permitted to be supplied by the plumbing system provided that the plumbing system is capable of simultaneously supplying domestic and sprinkler demands.

903.3.8.4 Supervision. Control valves shall not be installed between the water supply and sprinklers unless the valves are of an approved indicating type that are supervised or secured in the open position.

903.3.8.5 Calculations. Hydraulic calculations in accordance with NFPA 13 shall be provided to demonstrate that the available water flow and pressure are adequate to supply all sprinklers installed in any single fire area with discharge densities corresponding to the hazard classification.

~~903.3.5.2~~ 903.3.5.3 **(IBC [F] ~~903.3.5.2~~ 903.3.5.3) Secondary water supply.** An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings in Seismic Design Category C, D, E or F as determined by the *International Building Code*. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the *automatic sprinkler system*. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.

Exception: Existing buildings.

903.4 (IBC [F] 903.4) Sprinkler system monitoring 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.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area systems ~~serving fewer than 20 sprinklers~~ in accordance with Section 903.3.8..
3. through 7. (*No change to current text)*

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This code section as it exists allows the protection of large areas by a system of automatic sprinklers that is not afforded the same level of protection required by NFPA standards 13, 13R and 25. Some of these include waterflow alarms, components listed for fire protection systems, fire department connections, testing and maintenance.

This code change would reduce the number of sprinklers that may be supplied from a building plumbing system to six in a single fire area to eliminate the potential for multiple limited area sprinkler systems and combined water supply demands necessary to control a single fire event.

It also limits the six sprinklers to a discharge density of Light Hazard or Ordinary Hazard Group I. The basis for these values provides coordination with longstanding requirements in NFPA 101, Life Safety Code, Section 9.7.1.2, which limits the number and discharge density of automatic sprinklers supplied from a plumbing system. Such a limit is reasonable in that it can allow for a pipe schedule design if the plumbing system is capable of satisfying the NFPA 13 pipe diameter requirements.

Cost Impact: This code change would increase the cost of construction

F138-13

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

903.3-F-ZUBIA-FCAC

F139 – 13
903.3.5.2 (IBC [F] 903.3.5.2); IBC [F] 403.3

Proponent: Jeffrey M. Hugo, CBO, representing the National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

IBC [F] 403.3 Automatic sprinkler system. Buildings and structures shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and a secondary water supply where required by Section ~~903.3.5.2~~ 403.3.3.

~~**903.3.5.2 (IBC [F] 903.3.5.2)**~~ **IBC [F]403.3.3 Secondary water supply.** An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings assigned to Seismic Design Category C, D, E or F as determined by the International Building Code. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system. The secondary water supply shall have a duration of not less than 30 minutes

IBC [F] ~~403.3.3~~ 403.3.4 Fire pump room. Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

Reason: Secondary water supply for high rises is in Chapter 9, whereas the requirements for high rises are in Section 403 of the *International Building Code*. Since this secondary water supply requirement only applies to high rises it is more appropriate for designers and users in Section 403.3.3 of the *International Building Code*.

Cost Impact: Will not increase the cost of construction

F139-13

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

903.3.5.2-FS-HUGO

F140 – 13
903.3.7

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Revise text as follows:

903.3.7 Fire department connections. ~~The location of f~~Fire department connections shall be ~~approved by the fire code official~~ installed in accordance with Section 912.

Reason: Section 912 provides the more comprehensive set of requirements for FDCs and except for "fire code official" vs. "fire chief", Section 903.3.7 is redundant with Section 912.2. Pointing to the comprehensive scope contained in Section 912 reduces the opportunity for any of its requirements to be overlooked.

Cost Impact: This change will not affect the cost of construction.

F140-13

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

903.3.7-F-EMERICK

F141 – 13

903.3.7, 905.1 (IBC [F] 905.1), 905.2 (IBC [F] 905.2), 912.1, 912.3 (IBC [F] 912.3); IBC [F] 903.3.7 (New), IBC [F] 912.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

903.3.7 Fire department connections. ~~The location of fire~~ Fire department connections for automatic fire sprinkler systems shall be ~~approved by the fire code official~~ in accordance with Section 912.

905.1 (IBC [F] 905.1) General. Standpipe systems shall be provided in new buildings and structures in accordance with ~~this section~~ Sections 905.2 through 905.10. ~~Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads. The location of fire department hose connections shall be approved.~~ In buildings used for high-piled combustible storage, fire protection shall be in accordance with Chapter 32.

905.2 (IBC [F] 905.2) Installation standard. Standpipe systems shall be installed in accordance with this section and NFPA 14. Fire department connections for standpipe systems shall be in accordance with Section 912.

912.1 Installation. Fire department connections shall be installed in accordance with the NFPA standard applicable to the system design and shall comply with Sections 912.2 through ~~912.6~~ 912.7.

912.3 (IBC [F] 912.3) Fire hose threads. Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads.

IBC [F] 903.3.7 Fire department connections. Fire department connections for automatic fire sprinkler systems shall be in accordance with Section 912.

IBC [F] 912.1 Installation. Fire department connections shall be installed in accordance with the NFPA standard applicable to the system design and shall comply with Sections 912.2 through ~~912.5~~ 912.6.

(Renumber subsequent sections)

Reason: Currently, there are several sections in the code which contain requirements for fire department connections. This proposal will correlate those requirements and place them into Section 912 where the bulk of the requirements exist. This proposal then either deletes the requirements found elsewhere, as in Section 905.1; or it makes reference to the requirements in Section 912.

Section 903.3.7 is shown as an addition to the IBC, since the section is in the IFC but it is not currently in the IBC. There is no change in the requirements currently found in the code.

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

F141-13

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

903.3.7-F-ZUBIA-FCAC

F142 – 13
903.4.2 (IBC [F] 903.4.2)

Proponent: Robert Marshall, Contra Costa County Fire Protection District representing self (rmars@cccfpd.org)

Revise as follows:

903.4.2 (IBC [F] 903.4.2) Alarms. An approved audible and visual notification device, located on the exterior of the building at the front of the building or in another ~~an~~ *approved* location, shall be connected to each *automatic sprinkler system*. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the *automatic sprinkler system* shall actuate the building fire alarm system.

Exceptions:

1. Existing Systems
2. Sprinkler systems utilizing a "Water Motor Gong" device shall not be required to provide visual notification.

Reason: Because of extensive fire department public education efforts, the sound of a fire alarm is recognizable, and distinguishable in nearly all circumstances. When people hear these signals, they instinctively know what to do. In the case of fire sprinkler systems however, flow alarms are typically bells, and do not command the same kind of attention as what is typically called a horn/strobe device. Typically, these appliances are located away from roads, or normal paths of travel, and are often located near burglar alarm devices, making it difficult to distinguish between the fire alarm, and burglar alarm devices. Changing the type of tone pattern does not help, because the public no longer recognizes the sound of a bell as a fire alarm.
Bells are also subject to maintenance problems, such as bird nests, and wasp nests built up on the bell itself, rendering the bell useless.

Add to this that fire responders often wear hearing protection to scenes, and it becomes difficult to tell where the alarm is, and what the alarm is. By providing an audible/ visual means of notification in a readily visible location, you combat all of these problems. The audible portion notifies people of a fire event, and the visual portion alerts as to exactly which building has the problem from a distance, which is great for responders.

It also has the added benefit of reducing the long term cost of maintenance of a bell.

This code change is to combat the problems detailed above.

The removal of the reference to 907 is due to the contents of this code change. No changes to 907 need to be made to accommodate this proposal.

The code change also moves the device to a place where it is most likely to be seen or heard. The original idea of bell placement goes back to when water motor gongs were prevalent in systems. Because of this, the bells were usually placed at the riser location due to the physical need to move the water through the device. This is a practice that has continued. Because most systems are monitored, placement of an audible/visual notification device is not dependent on the riser location. While it is best for visibility for it to be on the front of the building, it may still be better to put the device on a different side that is perhaps more visible. In any case, the Fire Code Official still has final say under this proposal.
The first exception is made as to not retroactively require installation of devices, as there may be significant practical difficulties in doing this. The second exception is placed because water motor gongs are still sometimes used in locations without electricity. These are usually in limited area sprinkler systems of less than 20 heads that do not require sprinkler monitoring anyway. This practice should be allowed to continue, and this exception would allow this.

Cost Impact: This proposal will not increase the cost of construction

F142-13

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

903.4.2-F-MARSHALL

F143 – 13

Proponent: Jesse J. Beitel, Hughes Associates, Inc, representing United Technologies Corporation (jbeitel@haifire.com)

Revise as follows:

904.2 (IBC [F] 904.2) Where required. Automatic fire-extinguishing systems installed as an alternative to the required automatic sprinkler systems of Section 903 shall be approved by the fire code official. Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed by other requirements of this code.

> **Exception:** Automatic water mist systems in accordance with 904.12, where listed for the application and where water supply duration requirements are in accordance with Section 903.3.5 and the listing.

Reason: This proposed change adds the concept of using an automatic water mist system for protection of structures only when the water mist systems are used within the systems' listed applications. The proposed exception recognizes that based on performance, listings and field experience water mist is a viable alternative to the protection provided by automatic sprinklers. As a listed alternative to sprinkler protection for specific classifications such as Light Hazard and Ordinary Hazard, for example, the proposed change allows the proposed exceptions and reductions in the occupancies only where the listings identify the protection as appropriate. No new exceptions and reductions are requested. Water-mist systems are tested in environments identical to automatic sprinkler testing and have been found to achieve at least equal performance using less water than conventional sprinklers. It is intended that the water supply durations be consistent with their listing requirements and to that of sprinklers as noted in NFPA 13 §11.2.3.1.2 (2013) to address sufficient water supplies based on the occupancy protected.

Automatic water mist systems are similar to sprinkler systems in that both are "an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply. The portion of the system above the ground is a network of specially sized or hydraulically designed piping installed in a structure or area, generally overhead, and to which automatic sprinklers are connected in a systematic pattern. The system is usually activated by heat from a fire and discharges water over the fire area" [IFC 2012 Automatic Sprinkler System Definition]. Water mist systems use nozzles, operate at various pressures and are fed from a potable water supply or pressurized bottles.

Water mist systems have been approved by FM Approvals for occupancies similar to light hazard as defined by NFPA 13. The test criteria for these listings are found in FM 5560. Water mist systems have been listed by UL for Ordinary Hazard, Group I occupancies as defined by NFPA 13 (UL ZDPA.EX15843). These listings would permit water mist to be installed as the primary suppression system in a variety of Occupancy Classifications.

Automatic water mists systems provide a water efficient alternative to sprinkler systems. Water mist systems reduce the water supply demand which can be of significance in areas where municipal water supplies may be marginal or inadequate for conventional sprinklers. Reducing the water demand for automatic fire protection systems that are tested in the same manner by recognized laboratories to conventional sprinklers, will encourage the installation of fire protection systems in cities and towns where water shortages due to drought may be a problem. Furthermore, the reduced discharge from water mist systems, compared to conventional sprinklers, in turn reduces the potential water damage.

Water mist systems are listed for several occupancies based on the hazard definitions and have been used for years in buildings and on passenger ships specifically as a "sprinkler equivalent system" per Resolution A.800(19), November 1995 (IMO A800). A.800 details the testing criteria to establish water mist sprinkler equivalency for passenger ships. These passenger ships are similar to small cities in terms of the occupancies located on board, including assembly, business, mercantile, residential, and storage. The wide variety of occupancies located on passenger ships and history of use provides strong support for the equivalency of water mist systems to sprinkler systems. Water mist systems have been used in lieu of automatic sprinklers in buildings and on passenger ships for years due to water efficient design. The listings of the systems have been used as design guidance in buildings.

The acceptance of protecting buildings entirely by water-mist is appropriate and is being done today. Water mist works to extinguish, suppress or control fires in fully open compartments. The performance of these systems depends on pre-wetting of combustibles and cooling of hot gases, the same as conventional sprinklers, and they do not require sealed enclosures. Water-mist systems are tested in environments identical to automatic sprinkler testing and have been found to achieve at least equal performance using less water than conventional sprinklers.

Cost Impact: Water mist systems on original installation can be lower cost than traditional sprinkler system. For example, automatic water mist systems in locations with marginal water supplies would potentially provide cost savings as water tanks would not be required. Obviously, if the tank occupies rentable space, the lifetime costs of the water mist system become even more compelling.

F143-13

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

904.2-F-BEITEL

F144 – 13

904.2 (IBC [F] 904.2), 904.2.1 (New) [IBC [F] 904.2.1 (New)], 904.12 (New) [IBC [F] 904.12 (New)], 202 (IBC 202), 902.1 (IBC [F] 902.1), Chapter 80 (IBC Chapter 35)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

904.2 (IBC [F] 904.2) Where ~~required~~ permitted. Automatic fire-extinguishing systems installed as an alternative to the required *automatic sprinkler systems* of Section 903 shall be *approved* by the fire code official. ~~Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed by other requirements of this code.~~

904.2.1 (IBC [F] 904.2.1) Restriction on using automatic sprinkler system exceptions or reductions. Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed for *automatic sprinkler systems* or by other requirements of this code.

~~904.2.1~~ 904.2.2 (~~IBC [F] 904.2.1~~ 904.2.2) Commercial hoods and duct systems. *(no change)*

904.12 (IBC [F] 904.12) Automatic Water Mist Systems. *Automatic water mist systems* shall be permitted in applications that are consistent with the applicable listing or approvals and shall comply with Sections 904.12.1 through 904.12.3.

904.12.1 (IBC [F] 904.12.1) Design and Installation Requirements. *Automatic water mist systems* shall be designed and installed in accordance with Sections 904.12.1.1 through 904.12.1.4.

904.12.1.1 (IBC [F] 904.12.1.1) General. *Automatic water mist systems* shall be designed and installed in accordance with NFPA 750 and the manufacturer's instructions.

904.12.1.2 (IBC [F] 904.12.1.2) Actuation. *Automatic water mist systems* shall be automatically actuated.

904.12.1.3 (IBC [F] 904.12.1.3) Water supplies. Connections to a potable water supply shall be protected against backflow in accordance with the International Plumbing Code.

904.12.1.4 (IBC [F] 904.12.1.4) Secondary water supply. Where a secondary water supply is required for an *automatic sprinkler system*, an *automatic water mist system* shall be provided with an approved secondary water supply.

904.12.2 (IBC [F] 904.12.2) Water mist system supervision and alarms. Supervision and alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.

904.12.2.1(IBC [F] 904.12.2.1) Monitoring. Monitoring shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.1.

904.12.2.2 (IBC [F] 904.12.2.2) Alarms. Alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.2.

904.12.2.3 (IBC [F] 904.12.2.3) Floor control valves. Floor control valves shall be provided as required for *automatic sprinkler systems* in accordance with 903.4.3.

904.12.3 (IBC [F] 904.12.3) Testing and maintenance. *Automatic water mist systems* shall be tested and maintained in accordance with the International Fire Code.

Add new definition as follows:

SECTION 202
GENERAL DEFINITIONS

AUTOMATIC WATER MIST SYSTEM. A system consisting of a water supply, a pressure source, and a distribution piping system with attached nozzles, which, at or above a minimum operating pressure, defined by its listing, discharges water in fine droplets meeting the requirements of NFPA 750 for the purpose of the control, suppression or extinguishment of a fire. Such systems include wet-pipe, dry-pipe and pre-action types. The systems are designed as engineered, pre-engineered, local-application or total flooding systems.

902.1 Definitions. The following terms are defined in Chapter 2:

AUTOMATIC WATER MIST SYSTEM

Add new standard to Chapter 80 as follows:

NFPA

750-14 Standard on Water Mist Fire Protection Systems

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal recognizes water mist as an alternative, in some applications, to automatic fire sprinkler systems. However, no exceptions, reductions, or "trade-offs" for water mist systems are granted or permitted by this proposal, as automatic water mist systems are not considered equivalent to automatic sprinkler systems. Automatic water mist systems have been approved by FM Global for occupancies similar to Light Hazard (as defined by NFPA 13) and by UL for occupancies similar to Ordinary Hazard Group I (as defined by NFPA 13). These listings permit automatic water mist systems to be installed as the primary suppression system in a variety of occupancy classifications.

In addition to the above text in Section 904, a definition and the installation standard NFPA 750 *Standard on Water Mist Fire Protection Systems* is added as a referenced standard.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 750-14, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F144-13

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

904.2-F-ZUBIA-FCAC

F145 – 13
904.11.5 (New) [IBC [F] 904.11.5], Chapter 80

Proponent: Bob Eugene, representing UL LLC (Robert.Eugene@ul.com)

Add new text as follows:

904.11.5 (IBC [F] 904.11.5) Residential range top extinguisher units. Where residential range top cooking appliances are permitted to be used in occupancies regulated by this Code, and an automatic fire-extinguisher unit is required to protect the cooking surface, it shall be listed and labeled in accordance with UL 300A. The extinguisher unit shall be installed in accordance with its listing and the manufacturer's installation instructions.

Add new standard to Chapter 80 as follows:

300A – 06	Outline of Investigation for Extinguishing System Units for Residential Range Top Cooking Surfaces …….904.11.5	

Reason: The UL 300A Outline of Investigation includes requirements for conducting fire testing with extinguisher units intended to extinguish fires occurring on residential range top cooking surfaces. To date two manufacturers have several automatic extinguisher units that are listed and comply with UL 300A, that include both wet and dry chemical extinguishing agents.

It is recognized that code officials allow residential range tops to be installed in a variety of situations in addition to dwelling units. This includes office break rooms, churches, and similar venues. It is not the intent of the proposal to require all of these installations to be protected by UL 300A extinguisher units. The proposal clearly indicates that these units are only to be provided when required.

One application where UL 300A extinguisher units will be required is for residential range tops installed in Group I-2, Condition 1 occupancies. This was recently required as a result of the public comment to proposal G65-12 that was passed at the Final Action Hearing in Portland.

Cost Impact: None

F145-13

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

904.11.5 (NEW)-F-EUGENE

F146 – 13

904.12 (IBC [F] 904.12) (New), 904.12.1 (IBC [F] 904.12.1 (New)), 904.12.2 (IBC [F] 904.12.2 (New)), Table 906.1 (IBC [F] Table 906.1), Chapter 80 (IBC Chapter 35)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

904.12 (IBC [F] 904.12) Domestic cooking system in Group I-2 Condition 1. In Group I-2 Condition 1 occupancies where cooking facilities are installed in accordance with Section 407.2.5 of the *International Building Code*, the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Pre-engineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions.

904.12.1 (IBC [F] 904.12.1) Manual system operation and interconnection. A manual actuation device for the hood suppression system shall be installed in accordance with Section 904.11.1 and 904.11.2

904.12.2 (IBC [F] 904.12.2) Portable fire extinguishers for domestic cooking equipment in Group I-2 Condition 1. A portable fire extinguisher complying with Section 906 shall be installed within 30 feet (9144 mm) travel distance of domestic cooking appliances.

TABLE 906.1 (IBC [F] TABLE 906.1)
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS

Section	Subject
904.12.2 (IBC 407.2.5)	Domestic cooking hoods in Group I-2 Condition 1 occupancies

(Portions of table not shown remain unchanged)

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

UL

300A-2006	Outline of Investigation for Extinguishing System Units for Residential Range Top Cooking Surfaces

Reason: M76 clarified requirements for domestic appliance located in facilities such as nursing homes and assisted living where they are only used for domestic (not commercial) cooking. G65 requires a range hood with a UL300A protection system in a Group I-2 Condition 1 (nursing home). The purpose of this change is for the standard to be required in the Fire Code. The requirements follow what passed in G65 in Items 6, 7 and 9.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

Analysis: The standard proposed for inclusion in the code, UL 300A, was accepted as a referenced standard in the IBC by approval of Group A code change G65-12 (AMPC).

F146-13

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

F147 – 13

904.12 (New) [IBC [F] 904.12 (New)], 202 (IBC 202), 902.1 (IBC [F]902.1), Chapter 80 (IBC Chapter 35)

Proponent: Jesse J. Beitel, Hughes Associates, Inc, representing United Technologies Corporation (jbeitel@haifire.com)

Revise as follows:

904.12 (IBC [F] 904.12) Automatic Water Mist Systems. *Automatic water mist systems* shall be permitted in applications that are consistent with the applicable listing or approvals and shall comply with Sections 904.12.1 through 904.12.3.

904.12.1 (IBC [F] 904.12.1) Design and Installation Requirements. *Automatic water mist systems* shall be designed and installed in accordance with Sections 904.12.1.1 through 904.12.1.4.

904.12.1.1 (IBC [F] 904.12.1.1) General. *Automatic water mist systems* shall be designed and installed in accordance with NFPA 750 and the manufacturer's instructions.

904.12.1.2 (IBC [F] 904.12.1.2) Actuation. *Automatic water mist systems* shall be automatically actuated.

904.12.1.3 (IBC [F] 904.12.1.3) Water supplies. Connections to a potable water supply shall be protected against backflow in accordance with the International Plumbing Code.

904.12.1.4 (IBC [F] 904.12.1.4) Secondary water supply. Where a secondary water supply is required for an *automatic sprinkler system*, an *automatic water mist system* shall be provided with an approved secondary water supply.

904.12.2 (IBC [F] 904.12.2) Water mist system supervision and alarms. Supervision and alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.

904.12.2.1(IBC [F] 904.12.2.1) Monitoring. Monitoring shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.1.

904.12.2.2 (IBC [F] 904.12.2.2) Alarms. Alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.2.

904.12.2.3 (IBC [F] 904.12.2.3) Floor control valves. Floor control valves shall be provided as required for *automatic sprinkler systems* in accordance with 903.4.3.

904.12.3 (IBC [F] 904.12.3) Testing and maintenance. *Automatic water mist systems* shall be tested and maintained in accordance with the International Fire Code.

Add new definition as follows:

SECTION 202 (IBC 202)
GENERAL DEFINITIONS

AUTOMATIC WATER MIST SYSTEM. A system consisting of a water supply, a pressure source, and a distribution piping system with attached nozzles, which, at or above a minimum operating pressure, defined by its listing, discharges water in fine droplets meeting the requirements of NFPA 750 for the purpose of the control, suppression or extinguishment of a fire. Such systems include wet-pipe, dry-pipe and pre-action types. The systems are designed as engineered, pre-engineered, local-application or total flooding systems.

902.1 Definitions. The following terms are defined in Chapter 2:

AUTOMATIC WATER MIST SYSTEM

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

NFPA

750-14 Standard on Water Mist Fire Protection Systems

Reason: This proposed change adds the concept of using an automatic water mist system for protection of structures only when the water mist systems are used within the systems' listed applications. As a listed alternative to sprinkler protection for specific classifications such as Light Hazard and Ordinary Hazard, for example, the proposed change allows water mist in the occupancies only where the listings identify the protection as appropriate. The proposal recognizes that based on performance, listings and field experience water mist is a viable alternative to the protection provided by automatic sprinklers. No new exceptions and reductions are requested. Water-mist systems are tested in environments identical to automatic sprinkler testing and have been found to achieve at least equal performance using less water than conventional sprinklers.

Automatic water mist systems are similar to sprinkler systems in that both are "an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply. The portion of the system above the ground is a network of specially sized or hydraulically designed piping installed in a structure or area, generally overhead, and to which automatic sprinklers are connected in a systematic pattern. The system is usually activated by heat from a fire and discharges water over the fire area" [IFC 2012 Automatic Sprinkler System Definition]. Water mist systems use nozzles, operate at various pressures and are fed from a potable water supply or pressurized bottles.

Water mist systems have been approved by FM Approvals for occupancies similar to light hazard as defined by NFPA 13. The test criteria for these listings are found in FM 5560. Water mist systems have been listed by UL for Ordinary Hazard, Group I occupancies as defined by NFPA 13 (UL ZDPA.EX15843). These listings would permit water mist to be installed as the primary suppression system in a variety of Occupancy Classifications.

Automatic water mist systems provide a water efficient alternative to sprinkler systems. Water mist systems reduce the water supply demand which can be of significance in areas where municipal water supplies may be marginal or inadequate for conventional sprinklers. Reducing the water demand for automatic fire protection systems that are tested in the same manner by recognized laboratories to conventional sprinklers, will encourage the installation of fire protection systems in cities and towns where water shortages due to drought may be a problem. Furthermore, the reduced discharge from water mist systems, compared to conventional sprinklers, in turn reduces the potential water damage.

Water mist systems are listed for several occupancies based on the hazard definitions and have been used for years in buildings and on passenger ships specifically as a "sprinkler equivalent system" per Resolution A.800(19), November 1995 (IMO A800). A.800 details the testing criteria to establish water mist sprinkler equivalency for passenger ships. These passenger ships are similar to small cities in terms of the occupancies located on board, including assembly, business, mercantile, residential, and storage. The wide variety of occupancies located on passenger ships and history of use provides strong support for the equivalency of water mist systems to sprinkler systems. Water mist systems have been used in lieu of automatic sprinklers in buildings and on passenger ships for years due to water efficient design. The listings of the systems have been used as design guidance in buildings.

The acceptance of protecting buildings entirely by water-mist is appropriate and is being done today. Water mist works to extinguish, suppress or control fires in fully open compartments. The performance of these systems depends on pre-wetting of combustibles and cooling of hot gases, the same as conventional sprinklers, and they do not require sealed enclosures. Water-mist systems are tested in environments identical to automatic sprinkler testing and have been found to achieve at least equal performance using less water than conventional sprinklers.

Cost Impact: Water mist systems on original installation can be lower cost than traditional sprinkler system. For example, automatic water mist systems in locations with marginal water supplies would potentially provide cost savings as water tanks would not be required. Obviously, if the tank occupies rentable space, the lifetime costs of the water mist system become even more compelling.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 750-14, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F147-13

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

904.12 (NEW)-F-BEITEL

F148 – 13
905.4

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Revise as follows:

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior *exit stairway*, a hose connection shall be provided for each floor level above, ~~and~~ below and at grade. Hose connections shall be located at an intermediate floor level landing between floors, unless otherwise approved by the fire code official.

2 through 6 *(No change to current text)*

Reason: Since hose connections are placed at intermediate landings between floors, it is not clear as to which floor the hose connection serves. However, by not listing "at grade" the provision could be read that one is not required to serve the floor at grade, whichever intermediate landing that might be, leading to some challenges of its meaning. Hopefully, this provides clarification.

Cost Impact: This appears to be a correction. As such, it is not an increase in cost over what the original intent of the code provision should require.

F148-13

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

905.4-F-GODWIN

F149 – 13
905.9 (IBC [F] 905.9)

Proponent: Bob D. Morgan, P.E., Fort Worth, TX Fire Department representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

905.9 (IBC [F] 905.9) Supervision. Supervision of standpipes shall be in accordance with Sections 905.9.1 and 905.9.2.

905.9.1 (IBC [F] 905.9.1) Valve Supervision. (*unchanged*)

905.9.2 (IBC [F] 905.9.2) Manual dry standpipes. Manual dry standpipe systems shall be supervised with a minimum of 10 psig and a maximum of 40 psig air pressure and monitored by a low air pressure alarm.

Reason: Improves the integrity of such systems for utilization in a fire event, which could otherwise have all hose valves opened or develop multiple leaks without anyone knowing until such system is charged with water.

Cost Impact: The code change proposal will increase the cost of construction of such systems to install an air compressor and low air pressure alarm.

F149-13

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

905.2-F-MORGAN

F150 – 13
901.8.2 (New)

Proponent: William Freer, New York State Office of Fire Prevention and Control (WFreer@DHSES.ny.gov)

Add new text as follows:

901.8.2 Removal of occupant use hose. Removal of the occupant use hose line attached to a Class II standpipe system or a Class III standpipe system shall be permitted where either of the following conditions exist:

1. The building is equipped with a Class I standpipe system.
2. The building is not required to be equipped with a Class I standpipe system and the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Reason: The current code does not require occupant use hoses in as many locations as were required in previous codes. There has been a shift in the philosophy of whether or not occupants should be asked to attempt to extinguish the fire or evacuate the structure. Most of the population is now being taught to evacuate the building, not fight the fire. This shift is mainly due to the safety risk of having a non-trained person attempting to fight a fire with more than a fire extinguisher.
Many jurisdictions have already enacted local legislation or code changes to address this issue.

The City of Philadelphia has added the following:

F-905.11 Existing buildings. Existing structures with occupied floors located more than 50 feet (15,240 mm) above or below the lowest level of fire department *vehicle* access shall be equipped with standpipes installed in accordance with Section F-905. The standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department *vehicle* access. **[**The fire code official is authorized to approve the installation of manual standpipe systems to achieve compliance with this section where the responding fire department is capable of providing the required fire flow at the highest standpipe outlet.**]** *These requirements shall also apply to buildings that were granted variances prior to January 1, 2004 to omit standpipes from the required exit stairways. Buildings or structures that are not in compliance with Section F-905 on the effective date of this code, shall, with written request to and upon written approval from the Fire Department, be granted three years from the effective date of this code to comply.*

Exceptions:

1. *In existing buildings having the highest occupied floors located not more than 75 feet above the lowest level of fire department vehicle access, Class I standpipe systems are permitted to be manual wet systems.*
2. *Standpipe systems installed prior to January 1, 1995 that provide a residual pressure of 65 psi (448 kPa) or greater at the highest hose outlet are exempt from the requirement to provide a residual pressure of 100 psi (690 kPa) at the highest hose outlet.*
3. *Standpipe systems with a residual pressure of less than 100 psi (690 kPa) at the topmost hose outlet are permitted where:*
   - *3.1 The building existing prior to the effective date of this code;*
   - *3.2 The building is equipped throughout with an automatic sprinkler system; and*
   - *3.3 The highest floor level is not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access,*

F-905.11.1 Removal of occupant use hoseline or Class II standpipe systems. *Removal of the hoseline attached to a Class II standpipe system or a Class III standpipe system that is not required by this code, or removal of an entire Class II standpipe system is permitted where the following conditions are met:*

1. *Removal of hoseline only: The building is equipped with a Class I standpipe system or the building is not required to have a Class I system.*
2. *Removal of the Class II standpipe system is permitted where one of the following exists:*
   - *2.1 The building is equipped throughout with an automatic fire-extinguishing system and has more than one Class I standpipe hose outlet riser in a multi-exit building or at least one riser in a single exit building;*
   - *2.2 The building is in the process of being equipped throughout with an automatic fire-extinguishing system and there is more than one standpipe hose outlet riser in a multi-exit building or there is at least one riser in a single exit building. When the sprinklers on a floor have been placed in service, the Class II standpipe hose stations on that floor are permitted to be removed; or*
   - *2.3 The building is not equipped throughout with an automatic fire-extinguishing system, there is more than one automatic wet Class I standpipe hose outlet riser in a multi-exit building and there is at least one*

automatic wet riser in a single exit building.

The City of San Francisco added:

4.09 Removal of Class II Standpipe Hose Cabinets in Sprinkler Retrofitted Buildings (PDF)

Reference: 2010 S.F.F.C. 901.8

Section 901.8 of the 2010 SFFC requires written approval from the fire code official in order to remove existing fire appliances. In order to speed the permit process, buildings subject to the San Francisco High-rise Sprinkler Ordinance will be permitted to remove Class II Standpipe hose cabinets on individual floors after they have been fully sprinklered. The applicant shall state his or her intention to remove the hose cabinets on the approved sprinkler plans.

Buildings not subject to the ordinance will continue to require written approval from the fire code official in order to remove any fire appliance. These written requests will be considered on a case-by-case basis.

Canada also allows the removal of occupant hoses but requires more signage in places where it is done.

It should also be noted that occupant use hoses are not required by NFPA 14 as follows:

1. NFPA 14--2007, Standard for the Installation of Standpipe and Hose Systems details the design and installation of standpipe systems.

   7.3.4 Class III Systems. Class III systems shall be provided with hose connections as required for both Class I and Class II systems.

   7.3.4.1 Where the building is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, and NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height, Class II hose stations for use by trained personnel shall not be required, subject to the approval of the local fire department, provided that each Class I hose connection is 2 1/2 in. and is equipped with a 2 1/2 in. × 1 1/2 in. reducer and a cap attached with a chain.

This code change would not increase the cost of construction but would decrease the cost of maintenance and upkeep.

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

F150-13

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

905.11 (NEW)-F-FREER

F151 – 13
906.1 (IBC [F] 906.1)

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

906.1 (IBC [F] 906.1) Where required. Portable fire extinguishers shall be installed in the following locations.

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

   ~~**Exception**~~ **Exceptions:**

   1. In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each *dwelling unit* is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C.
   2. In new and existing Group B occupancies equipped throughout with quick- response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

2. Within 30 feet (9144 mm) of commercial cooking equipment.
3. In areas where flammable or *combustible liquids* a restored, used or dispensed.
4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3315.1.
5. Where required by the sections indicated in Table 906.1.
6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the *fire code official*.

Reason: The intent of this code change is to re-introduce an IFC code requirement that was in the past editions of the IFC (i.e., editions 2000 to 2009). However, in the 2012 edition of the IFC, the subject exception was removed from the IFC without any technical substantiation.

Exception #2 acknowledges the reliable advantages of an automatic sprinkler system designed to comply with NFPA 13. Group B occupancies are considered light hazard occupancies and must be protected by quick response sprinklers (see Section 903.3.2). The faster acting sprinklers and the lower fuel load associated with Group B occupancies alleviate the need for portable fire extinguishers to be installed throughout non-hazardous areas within this occupancy. In addition, the evacuation strategy for this occupancy is for occupants to evacuate building or relocate to a safe area within the building in lieu of delaying evacuation/relocation and having occupants attempt to utilize a portable fire extinguisher to try to extinguish a fire.

It should be noted that building occupants in Group B occupancies are not required to be trained in the use of portable fire extinguishers since training building occupants in the use of portable fire extinguishers is not addressed within the IFC nor is there a requirement in the IFC stating that portable fire extinguishers have been installed for occupant use. In addition, fire department personnel typically will also not use the portable fire extinguishers which have been installed within a building due to the uncertainty they have regarding the subject extinguisher operating when needed. Therefore, the installation of this type of manual extinguishing equipment throughout a Group B occupancy equipped with an operational sprinkler system utilizing quick-response sprinklers is questionable and not warranted or cost effective (e.g., installation costs, maintenance costs, etc.) over the life of a building.

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

F151-13

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

906.1-F-FRABLE

F152 – 13
907.1.2 (IBC [F] 907.1.2)

Proponent: Thomas P. Hammerberg, representing Automatic Fire Alarm Association (TomHammerberg@afaa.org)

Revise as follows:

907.1.2 (IBC [F] 907.1.2) Fire alarm shop drawings. Shop drawings for fire alarm systems shall be submitted for review and approval prior to system installation, and shall include, but not be limited to, all of the following where applicable to the system being installed:

1. A floor plan that indicates the use of all rooms.
2. Locations of alarm-initiating devices.
3. Locations of alarm notification appliances, including candela ratings for visible alarm notification appliances.
4. Design minimum audibility level for occupant notification.
~~4~~5. Location of fire alarm control unit, transponders and notification power supplies.
~~5~~6. Annunciators.
~~6~~7. Power connection.
~~7~~8. Battery calculations.
~~8~~9. Conductor type and sizes.
~~9~~10. Voltage drop calculations.
~~10~~11. Manufacturers' data sheets indicating model numbers and listing information for equipment, devices and materials.
~~11~~12. Details of ceiling height and construction.
~~12~~13. The interface of fire safety control functions.
~~13~~14. Classification of the supervising station.

Reason: The "where applicable" addition is necessary to clarify that only those items applicable to the system being installed are required to be submitted. For example, if the system is only to monitor a sprinkler system and no fire alarm notification appliances are required, there is no need to provide voltage drop calculations or minimum audibility levels that the system will be designed to meet.

The other change is necessary to assist fire alarm designers, installers and authorities having jurisdiction with meeting minimum audibility requirements per NFPA 72. This change will decrease the amount of interpretation issues that usually arise at the final acceptance test and will result in better designed and installed systems.

Cost Impact: none

F152-13

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

907.1.2-F-HAMMERBERG

F153 – 13
907.2 (IBC [F] 907.2)

Proponent: Gregory Nicholls, AIA, City of Mason, Ohio, representing the City of Mason

Revise as follows:

907.2 (IBC [F] 907.2) Where required~~—new buildings and structures~~. An *approved* fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in ~~new~~ buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

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 water-flow 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.

Exceptions:

1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the *fire code official* to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.

Reason: In the 2009 IBC and IFC, this section was added based on Fire Code scoping that covered requirements for new buildings in Section 907.2 and existing buildings in Section 907.3. The IBC just had the language copied verbatim for 907.2 only, even though the "new buildings" part is not relevant. All requirements in the IBC, chapters 2-33 are about new construction, and their application is then modified by Chapters 1 and 34 for existing buildings.

In the 2012 IFC, the requirements for existing buildings moved to Chapter 11, thereby making the "new building" designation irrelevant in the Fire Code as well.

The current wording has caused mis-interpretation on the part of some owners and designers, as they have taken this to mean that change of occupancy projects, for example, do not need to comply with Section 907.2, as they are existing buildings and specifically are exempt. Deletion of references to "new" will provide clarity and remove irrelevant language for both the IFC and IBC, and make the text consistent with the rest of these documents.

Cost Impact: The code change proposal will not increase the cost of construction, as this only a matter of clarification for existing requirements.

F153-13

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

907.2-F-NICHOLLS

F154 – 13
907.2.1 (IBC [F] 907.2.1)

Proponent: Timothy W. Fisher, State of Alaska, Department of Public Safety, Division of Fire and Life Safety, representing Alaska State Fire Marshal's Office & ICC Alaska Central Chapter

Revise as follows:

907.2.1 (IBC [F] 907.2.1) Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies ~~where the occupant load due to the assembly occupancy is 300 or more~~ where a required automatic sprinkler system is installed, the automatic sprinkler system shall be connected to the building fire alarm system. ~~Group A occupancies not separated from one another in accordance with Section 707.3.9 of the International Building Code shall be considered as a single occupancy for the purposes of applying this section.~~ 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 when 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 waterflow.

Reason: In the 2006 International Code Adoption, the requirement for a Fire Sprinkler System in an A-2 occupancy was reduced to an occupant load of 100 from 300. Currently, a Fire Alarm System is required in an A occupancy when the occupant load is greater than 300. This has left a void of 100 to 300 occupants.

Previously, the Fire Alarm System requirements mirrored the Fire Sprinkler System requirements at 300 occupants; it seemed prudent to also require a fire alarm system at 100 occupants in an A-2 occupancy, same as the sprinkler requirement.

The intent of the revision is to remove a set number of (300) for occupant loading from the Fire Alarm System requirements for Assembly (A) Occupancy, then requiring a Fire Alarm System based on the requirements in the Fire Sprinkler System section. Then it would render the Sentence with Section 707.3.9 "Fire Areas" obsolete as it would be based on the Fire Sprinkler System fire area requirements.

The Station Night Club incident didn't have sprinklers, causing a change in the sprinkler requirements where as the Fire Alarm System requirements were not adjusted for A-2 occupancies in the event of an emergency. This change would require notification appliances that would ensure occupants are alerted within an A-2 occupancy during a sprinkler activation or a kitchen hood and duct suppression system activation.

Revising this code section will realign the fire systems according to the historical requirements; provide an acceptable level of fire and public safety as well as providing notification appliances throughout the facility to notify occupants that there is an emergency in the facility and to promptly evacuate, saving lives.

Cost Impact: Cost varies on location, size, and company for the installation of Fire Alarm System (Notification Appliances Only)

F154-13

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

907.2.1-F-FISHER

F155 – 13
907.2.1 (IBC [F] 907.2.1)

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

907.2.1 (IBC [F] 907.2.1) Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more. Group A occupancies that share portions of the exit or exit access or are not separated from one another in accordance with Section 707.3.9 of the *International Building Code* shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Reason: This code change proposal is to require a fire alarm system when the exits or exit access of a building is used to serve a combined occupant load of all assembly occupancies within a building above the theshold amount.

The State of New York has had experience in both fire losses and new building construction with this topic. FIrst, the Stouffer's Inn and conference center in 1981 killed 23 top-level executives when a fire in a common hallway trapped occupants in several small (50-100 person) conference rooms. Second, the fire area method of separating A-3 occupancies has provided a way to not protect college and university lecture room buildings by separating the spaces but having room occupant loads approaching 1,000 people in the common hallway.

Cost Impact: This proposal will raise the cost of construction when combined paths of exiting are utilized.

F155-13

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

907.2.1-F-NICHOLS

F156 – 13
907.2.1.1 (IBC [F] 907.2.1.1), 907.5.2.2.3 (New) (IBC [F] 907.5.2.2.3 (New))

Proponent: Vince Baclawski, representing National Electrical Manufactures Association (NEMA) (vin_baclawski@nema.org)

Revise as follows:

907.2.1.1 (IBC [F] 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 Section 907.5.2.2.

~~**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 a*pproved*, *constantly attended location*.~~

907.5.2.2.3 (IBC [F] 907.5.2.2.3) Resumption of Pre-recorded Voice Messages. Where approved, the pre-recorded voice announcement shall be manually deactivated for a period of time for the sole purpose of allowing a live voice announcement from an approved, constantly attended location. A risk analysis in accordance with NFPA 72 shall be used to determine the resumption of the pre-recorded voice announcement.

(Renumber subsequent sections)

Reason: The intent of this proposal is to:

1. Relocate the resumption of pre-recorded voice message requirement from a section covering assembly occupancies only to section dealing with emergency voice alarm communication systems.
2. Leaves the decision for the length of the live voice message and automatic resumption of pre-recorded voice message up to the stakeholders after completion of the rick analysis.

This proposal relocates the resumption of pre-recorded voice message requirement so it will be applied to all occupancies requiring emergency voice alarm communication systems not just assembly occupancies.

The mandatory 3 minute time limit for live voice announcements has the potential of interrupting critical life safety instructions to the building occupants. These live instructions could exceed 3 minutes because they are usually very specific and have the potential for changing rapidly.

Every facility is unique and has specific risks. The stakeholders must clearly define the potential risks to their facility and design a system that accounts for them. The requirement for the automatic resumption of the pre-recorded announcement instructions may jeopardize the life safety of the building occupants because pre-recorded instructions could be different and in direct conflict with the live instructions by the emergency responders. The key to defining these risks is to perform a risk analysis before designing and installing an emergency voice/alarm communication system.

Cost Impact: None

F156-13

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

907.2.1.1-F-BACLAWSKI

F157 – 13
907.2.3 (IBC [F] 907.2.3)

Proponent: Frank G. Castelvecchi, III, PE, representing County of Henrico, Virginia (cas13@co.henrico.va.us)

Revise as follows:

907.2.3 (IBC [F] 907.2.3) Group E. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed 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 ~~30~~ 50 or less.
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.
   2.2. Auditoriums, cafeterias, gymnasiums and 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.
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 emergency voice/alarm communication system will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

Reason: Changing the threshold from 50 to 30 imposed this requirement on most school trailers and small daycare centers by moving the classroom size from 1000 sq ft to 600 sq ft. Requiring an expensive voice alarm system in a school trailer or small storefront daycare center is a ludicrous imposition of significant costs to schools and small businesses. In these small buildings any emergency situation would be readily apparent to all occupants—if you cannot see the flames, smell the smoke or feel the heat in a one room schoolhouse-- a synthesized voice is not going to do any good and may well interfere with the children understanding the teachers instructions.

There is no record of fire deaths and injuries in these occupancies to justify these added expenses. The children in these occupancies are required to be under competent adult supervision.

Cost Impact: This will reduce the cost of construction

F157-13

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

907.2.3 #1-F-CASTELVECCHI

F158 – 13
907.2.3 (IBC [F] 907.2.3)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.2.3 (IBC [F] 907.2.3) Group E. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed 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 ~~30~~ 50 or less.
2. Emergency voice/ alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an approved occupant notification signal in accordance with Section 907.5.

~~2~~3. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
   ~~2.1~~ 31. Interior corridors are protected by smoke detectors.
   ~~2.2~~ 3.2. Auditoriums, cafeterias, gymnasiums and similar areas are protected by heat detectors or other approved detection devices.
   ~~2.3~~ 33. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.

~~3~~4. 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 emergency voice/alarm communication system will activate on sprinkler water flow and manual activation.

Reason: Many small schools or day cares consist of one or two rooms. For such small buildings, there is no need to install a notification system to warn occupants of fires or other emergencies, as occupants are typically in close visual or audible contact with all occupied spaces and with each other. This arrangement provides for adequate means to notify all occupants of the building of potential hazardous conditions to initiate emergency actions, including evacuation.

The threshold in Exception 1 has been reduced from 50 to 30 with no apparent loss history. The testimony presented by the proponent of Code Change F107-09/10 was that the number was modified to correlate the occupant load trigger for 1-HR rated corridors. It is common that individual classrooms contain an occupant load of 30 students. It seems that a more appropriate occupant load trigger is the egress provision which requires a second exit at an occupant load of 50, not 30.

An alarm system in a single classroom, or set of small classrooms, does not appear justified. It appears that the appropriate 'occupant load trigger' is 50 since that is when a fire alarm system has been required for many years without any major incidents. Therefore, this proposal will move the trigger to an occupant load of 50 to determine when a manual fire alarm system is required.

Exception 2 is proposed to be added. This exception would require the emergency voice communication system when the occupant load exceeds 100, as buildings with larger numbers of occupants may necessitate detailed instructions regarding evacuation, relocation, or other actions to ensure safety of building occupants. Often, these buildings include multiple floors, fire areas, and egress paths, and occupants may require notification of more detailed or modified instructions on alternate courses action other than those stated in a standard evacuation plan.

The result of this proposal is that when the occupant load is:

50 or less – fire alarm system is not required
51 to 100 – manual fire alarm system is required
101 or more – manual fire alarm system with emergency voice/alarm communication system

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

F158-13

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

907.2.3-F-ZUBIA-FCAC

F159 – 13
907.2.3 (IBC [F] 907.2.3)

Proponent: Frank G. Castelvecchi, III, PE, representing County of Henrico, Virginia (cas13@co.henrico.va.us)

Revise as follows:

907.2.3 (IBC [F] 907.2.3) Group E. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed 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 30 or less.
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.
   2.2. Auditoriums, cafeterias, gymnasiums and 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.
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 emergency voice/alarm communication system will activate on sprinkler water flow and manual activation is provided from a normally occupied location.
4. An occupant notification system meeting the requirements of Section 907.5.2 without emergency voice/alarm communication system features is permitted where the occupant load is 1000 or less.

Reason: Requiring a voice alarm system for educational uses imposes significant unnecessary costs on daycares and school systems that are already short of funds. Most schools already have public address systems that can be used for emergency notification. The 1000 occupant threshold proposed here is the same as that for assembly buildings with occupants that are less familiar with the building, often do not have public address systems and may involve the consumption of alcoholic beverages. Requiring an expensive voice alarm system in a small storefront daycare center, a small school, or a school trailer is a ludicrous imposition of significant costs on schools and small businesses.

The fire record these occupancies does not justify these added expenses. The children in these occupancies are required to be under competent adult supervision.

Cost Impact: This will reduce the cost of construction

F159-13

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

907.2.3 #2-F-CASTELVECCHI

F160 – 13
907.2.6 (IBC [F] 907.2.6), 907.5.2.1 (IBC [F] 907.5.2.1), 907.5.2.3 (IBC [F] 907.5.2.3)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

907.2.6 (IBC [F] 907.2.6) Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2 and 907.2.6.3.3.

Exceptions:

1. Manual fire alarm boxes in sleeping units of Group I-1 and I-2 occupancies shall not be required at exits if located at all care providers' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.4.2.1 are not exceeded.
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is approved by the fire code official and staff evacuation responsibilities are included in the fire safety and evacuation plan required by Section 404.

907.5.2.1 (IBC [F] 907.5.2.1) Audible alarms. Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm.

Exceptions:

1. ~~Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care areas of Group I-2 occupancies~~. Audible alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.
2. A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2 Condition 2 suite shall be an acceptable alternative to the installation of audible alarm notification appliances throughout the suite in Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.

~~2~~ 3. Where provided, audible notification appliances located in each occupant evacuation elevator lobby in accordance with Section 3008.10.1 of the *International Building Code* shall be connected to a separate notification zone for manual paging only.

907.5.2.3 (IBC [F] 907.5.2.3) Visible alarms. Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.4.

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.
3. Visible alarm notification appliances shall not be required in elevator cars.
4. Visual alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 100 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

The proposed changes are a clarification of the application of 'private mode' signaling as allowed by NFPA 72 and provide linkage to the emergency action plan necessary for 'private mode' to be safely implemented. A section-by-section summary follows:

Section 907.2.6: The change to Exception 2 links the use of "private mode" signaling under NFPA 72 to the emergency action plan portion of the code. The use of private mode appliances relies on a trained staff to respond and provide for occupant evacuation/defend in place actions.

Section 907.5.2.1: Exception 1 is proposed for modification to eliminate the requirement for the visible signal and the audible signal in Group I-2 hospital critical care areas, operating rooms for example. In private mode, as permitted by Section 907.2.6, Exception 1, there is still a requirement for an audible alarm notification from appliances, though at a much lower decibel level meant to alert staff of the alarm activation. The current language at Section 907.5.2.1, Exception 1 allows that audible alarm to be eliminated from critical care areas (operating rooms) in exchange for a visual notification device. However, the visual signal device also creates a distraction in critical care areas that may not be able to immediately stop a patient procedure and this proposal is to eliminate the visual alarm notification and to link the exception back to the primary allowance for private mode where we have provided for a link to the emergency action plan. The emergency action plan would include provisions for alerting of critical area staff and the actions to be taken.

A new second exception is added to this section to allow for an alarm indicator in a control area of a hospital suite in lieu of audible devices throughout the suite. In a suite arrangement the "control area" is the centrally manned location for staff monitoring patients in the separate rooms. An alarm indicator at this location will alert staff for response in a more effective and efficient manner.

Section 907.5.2.3: A fourth exception is added here to correlate the allowance for eliminating the audible and visual alarm devices from the critical care areas and to link the exception back to the primary allowance for private mode where we have provided for a link to the emergency action plan.

The emergency plan should reflect the response to the private mode alarm signals including the response necessary in critical care areas and who is responsible for alerting critical care area staff.

Cost Impact: This proposal will not increase the cost of construction.

F160-13

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

907.2.6-F-WILLIAMS-ADHOC

F161 – 13
907.2.9.3 (IBC [F] 907.2.9.3)

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

907.2.9.3 (IBC [F] 907.2.9.3) Group R-2 college and university buildings. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-2 occupancies operated by a college ~~and~~ or university for student or staff housing ~~buildings~~ in the following locations:

1. Common spaces outside of *dwelling units* and *sleeping units*.
2. Laundry rooms, mechanical equipment rooms, and storage rooms.
3. All interior corridors serving *sleeping units* or *dwelling units*.

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

Required smoke alarms in *dwelling units* and *sleeping units* in Group R-2 occupancies operated by a college ~~and~~ or university for student or staff housing ~~buildings~~ shall be interconnected with the fire alarm system in accordance with NFPA 72.

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

Reason: This proposal intends to better define what constitutes "college and university buildings." As proposed, such buildings would include those that are operated by a college or university for student or staff housing (regardless of whether the college or university actually owns the building). The difficulty with the current text is determining how it applies to off-campus housing that is open to the general public. Most apartment complexes near a university will probably contain some percentage of student tenants, and for that matter, complexes many miles away from a campus may have student tenants as well. The current code text provides no guidance in determining a threshold at which a "normal" apartment building becomes subject to the provisions of this section.

Based on a discussion last cycle with the proponents of this section, when it was added to the code, it is our understanding that the intent was to address "dormitory style" student housing that is operated by a college or university, and the proposed text intends to clarify that point so that the intended application of the code will be clearly conveyed.

In addition, the existing exception has been relocated in the section so that it is properly placed with respect to the paragraph that it applies to. No change has been made to the exception text.

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

F161-13

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

907.2.9.3-F-SHAPIRO

F162 – 13

IFC: 907.2.11 (IBC [F] 907.2.11), 907.10 (New) (IBC [F] 907.10 (New)); IPMC: [F] 704.5

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.2.11 Single- and multiple-station smoke alarms. *Listed* single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with Sections 907.2.11.1 through 907.2.11.4 and NFPA 72. Single- and multiple-station smoke alarms shall be maintained in accordance with Section 907.10.

907.10 Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function shall be replaced. Smoke alarms installed in one- and two-family dwellings shall be replaced not more than 10 years from the date of manufacture marked on the unit, or if the date of manufacture cannot be determined.

Add new text as follows:

IPMC [F] 704.5 Maintenance. Smoke alarms shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function shall be replaced. Smoke alarms installed in Group R or I-1 occupancies shall be replaced not more than 10 years from the date of manufacture marked on the unit, or if the date of manufacture cannot be determined.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal supplements the requirements in Section 901.4 for testing and maintaining smoke alarms, and specifies when the devices need to be replaced. The proposed requirements are consistent with NFPA 72 provisions. In particular NFPA 72 requires smoke alarms installed in one- and two-family dwellings to not remain in service longer than 10 years from the date of manufacture, and UL 217 requires the date of manufacture to be marked on the smoke alarms.

It is recognized that it may not always be practical for the code official to enforce the requirements for testing, maintenance and replacement of smoke alarms in residential dwelling units. However realtors and landlords often have checklists that verify that these dwellings comply with codes and other requirements, and they may be in a position to verify compliance with the proposed provisions when the units are sold or leased.

UL 217 has required the month and date of manufacture be marked on smoke alarms for more than 10 years.

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

F162-13

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

907.2.11-F-ZUBIA-FCAC

F163 – 13
907.2.11.2 (IBC [F] 907.2.11.2), 907.2.11.5 (New) (IBC [F] 907.2.11.5 (New))

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.2.11.2 (IBC [F] 907.2.11.2) 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.~~

907.2.11.5 (IBC [F] 907.2.11.5) Smoke detection system. Smoke detectors listed in accordance with UL 268 and provided as part of the building's fire alarm system shall be an acceptable alternative to single and multiple-station smoke alarms and shall comply with the following:

1. The fire alarm system shall comply with all applicable requirements in Section 907.
2. Activation of a smoke detector in a dwelling unit or sleeping unit shall initiate alarm notification in the dwelling unit or sleeping unit in accordance with Section 907.5.2.
3. Activation of a smoke detector in a dwelling unit or sleeping unit shall not be required to activate alarm notification appliances outside of the dwelling unit or sleeping unit, provided that a supervisory signal is generated and monitored in accordance with Section 907.6.5.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal allow smoke detectors, provided as part of the buildings fire alarm system, to be used as an alternative to single and multiple-station smoke alarms in dwelling units or sleeping units. When a smoke detector activates, the system is required to generate an alarm signal in the dwelling unit or sleeping unit, which can easily be accomplished with an addressable fire alarm system.

There are some jurisdictions that currently allow smoke detectors to be installed in dwelling units and sleeping units under the alternate materials and methods provisions of the code. These systems may only generate alarm signals in the dwelling unit or sleeping unit, or may activate alarm notification appliances throughout the building. Both options are allowed in this proposal.

Item (3) requires smoke detection systems that only generate alarm notification in the dwelling unit or sleeping unit to transmit a supervisory alarm to an approved supervising station as required by Section 907.6.5. This monitoring is already required for fire alarm system if it also provides protection for the common areas of the building.

There are advantages if the smoke detection system option provides protection in these facilities. These include being able to automatically test smoke detector sensitivity, receive and act on trouble signals, and not have to provide both a fire alarm system and interconnected smoke alarms in the building. However, the code proposal does not prevent the smoke alarm option from being provided.

The proposal also deletes the exception to Section 907.2.11.2 that already allows these systems to be used in Group I-1 occupancies. The addition of Section 907.2.11.5 makes this exception unnecessary.

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

F163-13

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

907.2.11.5 (NEW)-F-ZUBIA-FCAC

F164 – 13
907.2.11.5 (New) (IBC [F] 907.2.11.5 (New))

Proponent: Thomas P. Hammerberg, representing Automatic Fire Alarm Association (TomHammerberg@afaa.org)

Revise as follows:

907.2.11.5 (IBC [F] 907.2.11.5) Automatic sprinkler system waterflow. Where an automatic sprinkler system installed in accordance with Section 903.3.1.2 or 903.3.1.3 is provided a sprinkler waterflow alarm-initiating device shall be connected to the multiple-station alarm or household fire alarm system to activate an alarm signal.

Reason: This language is currently used in NFPA-72-2013, 29.7.7.7.3. The purpose is to provide notification to occupants of waterflow activation. If a sprinkler activates in another part of the dwelling unit, this provides earlier warning of the fire situation and will allow additional time to leave the premises. Since the time to escape has reduced significantly in recent years, this will improve fire safety for the occupants.

Cost Impact: minimal

F164-13

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

907.2.11.5 (NEW)-F-HAMMERBERG

F165 – 12

907.2.12 (New) (IBC [F] 907.2.12 (New)), 907.12.1 (New) (IBC [F] 907.12.1 (New)), 907.12.2 (New) (IBC [F] 907.12.2 (New), 1103.9 (New), 1103.9.1 (New), 1103.9.2 (New), 1103.9.3 (New); IRC R314.5 (new), R314.5.1 (New), R314.5.2 (New), R314.5.3 (New)

Proponent: David Frederick Scarelli representing DBA-Sentry Signal Company

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IFC COMMITTEE. PART 2 OF THIS PROPOSAL WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IFC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES.

Part I - IFC

907.2.12 (IBC [F] 907.2.12) Line type heat detection. A line type heat detection system that activates at 475°F (246°C shall be installed in Group R Occupancies in accordance with Sections 907.2.12.1 through 907.2.12.2, NFPA 72, NFPA 70 and manufacturer's instructions.

907.2.12.1 (IBC [F] 907.2.12.1) Location. Line type heat detection shall be installed in the following locations:

1. Above all NM-B Cable
2. Above all electrical boxes
3. Above or near all raceways.

(Renumber subsequent sections)

907.2.12.2 (IBC [F] 907.2.12.2) Interconnection. The line type heat detection system shall be interconnected with the smoke alarms required by Section 907.2.11 in such a manner that when the line type heat detection activates such detection shall activate the smoke alarms in all sleeping units and dwelling units.

Add new text as follows:

1103.9 Line type heat detection. A line type heat detection system that activates at 475° F (246° C) shall be installed in existing Group R Occupancies in accordance with Sections 1103.9.1 through 1103.9.3, NFPA 72, NFPA 70 and manufacturer's instructions.

1103.9.1 Location. Line type heat detection shall be installed in the following locations:

1. Above all exposed NM-B Cable
2. Above all electrical boxes
3. Above or near all raceways.

1103.9.2 Interconnection. The line type heat detection system shall be interconnected with the smoke alarms required by Section 907.2.11 in such a manner that when the line type heat detection activates such detection shall activate the smoke alarms in all sleeping and dwelling units.

1103.9.3 Power source. In existing construction required line type heat detection shall receive primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup.

Exception: Line type heat detection is not required to be equipped with battery backup where connected to an emergency electrical system.

PART II – IRC

Add new text as follows:

R314.5 Line type heat detection. Line type heat detection that activates at 475^{0}F (246^{0}C) shall be installed in accordance with Sections 314.5.1 through 314.5.3, NFPA 72, NFPA 70 and manufacturer's instructions.

R314.5.1 Location. Line type heat detection shall be installed in the following locations:

1. Above all NM-B Cable
2. Above all electrical boxes
3. Above or near all raceways

R314.5.2 Interconnection. The line type heat detection shall be interconnected with the smoke alarms in such a manner that when the line type heat detection activates such detection shall activate all of the alarms in the dwelling unit. Where there are two dwelling units the line type heat detection shall be interconnected with the smoke alarms in both dwelling units.

R314.5.3 Power source. Line type heat detection shall receive primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup.

Exception: Line type heat detection is not required to be equipped with battery backup where connected to an emergency electrical system.

(Renumber subsequent sections)

Reason:
Part I According to death certificate data, 25% of fire and flame deaths in 2002 were due to smoke inhalation alone, 26% due to burns and 21% to a combination of burns and smoke inhalation. There were 517,000 structural, 3,140 civilian deaths and 17,730 civilian injuries. *(page 37).

ESCAPING – all seemed savable….; SLEEPING – 1/3 estimated as savable; RESCUING OR FIREFIGHTING – ¾ estimated savable…**

Deterioration of electrical wiring caused by time or the environment is a predominant cause of ignition. *(page 24).

Fires in electrical distribution systems contribute significantly to the U.S. fire problem, accounting for a consistent portion of the problem year after year. *(page 69).

In 2006 an estimated 71,360 injuries involving electrical distribution or lighting equipment began with the ignition of products and materials often found in structural areas, including wire or cable insulation (30%), structural members or framing (12%), insulation within the structural area (5%). *(page 6).

Three-fourths (75%) of deaths in 2002-2005 home fires involving electriacal distribution or lighting equipment involved victims who were outside the area of origin when the fire began. (page 6).

Branch circuit wiring (51%) accounted for half of the 2005-2005 non-confined home structure fires involving wiring. *(page 54).

Half (52%) of 2002-2005 non-confined home structure fires involving wiring began in fire areas of origin that are all concealed or exterior spaces. *(page 55).

The majority (57%) of 2002-2005 non-confined home structure fires involving overcurrent protection devices began with ignition wire or cable insulation. *(page 89).

INTENT: THE LINE TYPE HEAT DETECTION SWITCH WILL SOUND THE ALARM AT THE ORIGIN OF FIRE IGNITION WITHIN THE HOME STRUCTURE YILDING THE MAXIMUM TIME THAT MAY BE NECESSARY TO VACATE THE HOME THEREBY MINIMIZING THE INCIDENTS OF CIVILIAN AND FIREFIGHTER INJURIES AND DEATHSP and LOSS OF PROPERTY.

Part II . According to death certificate data, 25% of fire and flame deaths in 2002 were due to smoke inhalation alone, 26% due to burns and 21% to a combination of burns and smoke inhalation. There were 517,000 structural, 3,140 civilian deaths and 17,730 civilian injuries.

ESPCAPING – all seemed savable…; SLEEPING – 1/3 estimated as savable; RESCUING OR FIREFIGHTING - ¾ estimated savable….** Reanalysis of who can be saved.

Deterioration of electrical wiring caused by time or the environment is a predominant cause of ignition.
Fires in electrical distribution systems contribute significantly to the U.S. fire problem, accounting for a consistent portion of the problem year after year.

In 2006 an estimated 71,360 injuries involving electrical distribution or lighting equipment were reported to hospital emergency rooms.

Electrical distributions and lighting equipment dwelling fires are the only type of home fires that have been shown to increase in frequency with increasing dwelling age.

The majority of 2002-2005 non-confined home structure fires involving electrical distribution or lighting equipment began with the ignition of products and materials often found in structural areas, including wire or cable insulation (30%), structural members or framing (12%), and insulation within the structural area (5%).

Three-fourths (75%) of deaths in 2002-2005 home fires involving electrical distribution or lighting equipment involved victims who were outside the area of origin when the fire began.

Branch circuit wiring (51%) accounted for half of the 2002-2005 non-confined home structure fires involving wiring.

Half (52%) of 2002-2005 non-confined home structure fires involving wiring began in fire areas of origin that are all concealed or exterior spaces.

The majority (57%) of 2002-2005 non-confined home structure fires involving overcurrent protection devices began with ignition wire or cable insulation.

SUMMARY: Electrical distribution equipment is a highly significant contributor to the high number of civilian deaths and civilian injuries resulting year after year in home fires. Many lives can be saved and injuries prevented if earlier warning can be sounded.

CONCLUSION: The line type open switch activated by heat and/or fire is designed by earliest warning to prevent death by asphyxiation and burning.

Circuitry short circuits and overloads trip the circuit breakers when the breaker rating is reached. Lower leakage causes hot spots along the line and eventually causes fires that could be detected long before they could become autocatalytic. The line type open switch is designed to detect this hazard long before life is endangered.

Bibliography:

- Characteristics of Home Fire Victims, NFPA, Fire analysis and Research Division. July 2005. Pg 59, John R., Hall Jr.
- “How Many People Can be Saved From Home Fires If Given More Time to Escape? Fire Technology”, 40. Pgs 117-126, 2004; John R Hall Jr. Fire Analysis and Research Division, NFPA
- “Statistics from National Electronic Injury Surveillance System (NEISS)”. data obtained from the U.S. Consumer Product Safety Commission (CPSC) website, www.cpsc.gov
- Linda E. Smith and Dennis McCoskrie, “What Causes Wiring Fires in Residences?” Fire Journal, Jan/Feb 1990. Volume 84, Number 1
- “Home Structure Fires Involving Electrical Distribution and Lighting Equipment,” John R. Hall, Jr., Fire Analysis and Research Division, NFPA, March 2008.

INTENT: The line type heat detection switch will sound the alarm at the origin of fire ignition within the home structure yielding the maximum time that may be necessary to vacate the home thereby minimizing the incidents of civilian and firefighter injuries and deaths; and loss of property.

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

F165-13

PART I – IFC

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

PART II – IRC BUILDING

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

907.2.12 (NEW)-F-SCARELLI

F166 – 13
907.2.13.1.1 (IBC [F] 907.2.13.1.1)

Proponent: Thomas P. Hammerberg, representing Automatic Fire Alarm Association (TomHammerberg@afaa.org)

Revise as follows:

907.2.13.1.1 (IBC [F] 907.2.13.1.1) Area smoke detection. Area 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 activate the emergency voice/alarm communication system in accordance with Section 907.5.2.2. In addition to smoke detectors required by Sections 907.2.1 through 907.2.10, 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.
2. In each elevator machine room and in elevator lobbies
3. In each electrical transformer room

Reason: This code change proposal will provide the minimum level of fire and life safety in high rise electrical transformer rooms. 11% of High Rise fires start in the electrical distribution or lighting equipment (Source NFPA Dr. Hall-High Rise Building Fires, Dec 2011)

Electrical fires often start as smoldering fires generating smoke and toxic gases. Many of these fires can be too small to activate fire sprinklers, but can cause serious damage to building electrical equipment and hazards to first responders. There are studies to support the facts on “fires too small to activate fire sprinklers”, but activate smoke detectors. In Healthcare facilities research shows that 65.4% of fires where too small to activate sprinklers. (Source Dr. Milke-Univ of Maryland, 5.14.2006)

Early warning smoke detection will bring attention to these isolated rooms for action by first responders and building engineers. Concerns about unwanted alarms is minimized the fact that these rooms are generally kept very clean and do not have sources of deceptive phenomena (cooking etc)

Key Propositions

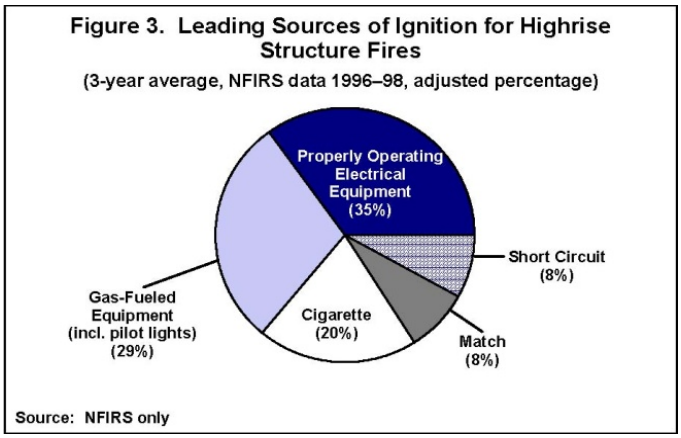
- Fires do occur in electrical transformer rooms
- Fires often develop smoke and toxic gases
- Fires can be too small for fire sprinkler activation, but need attention
- Smoke detection is shown as effective means of detecting fires in an early stage in electrical fires

Please support this code change for the value of first responder safety, building occupant safety and protection of building system integrity. The following research sources are for your review.

Research Source 1
FM Global Standard Loss Prevention Data Sheet 5-19 (Jan 2006)
2.2.2 Provide photoelectric or combination photoelectric and ionization smoke detectors in electrical rooms to sound an alarm at a constantly attended location, regardless of any automatic sprinkler protection or heat detection that may exist. Ensure response includes notification of personnel capable of de-energizing the electrical equipment. The presence or absence of smoke detectors does not change the need for sprinklers. Ensure smoke detector spacing is in accordance with Data Sheet 5-48, *Automatic Fire Detectors.*

Research Source 2
U.S. Fire Administration TOPICAL FIRE RESEARCH SERIES, Volume 2, Issue 18 January 2002
Reports show that electrical fires are an issue in high rise buildings. This will provide for both early warning detection and fire sprinklers in the key hazard areas of electrical transformer. Many fires in these areas can be smoldering and slow developing in nature, smoke detection is of great value in these cases, when the fire develops the level of heat and flame the fire sprinklers will control the situation.

Early notification to the fire service and building occupants of these developing fires is very important.



Source: U.S. Fire Administration TOPICAL FIRE RESEARCH SERIES
Volume 2, Issue 18 January 2002

Research Source 3 Specific Examples (5) of Fires in Electrical Rooms

Example A
Electrical room fire evacuates condos in Bethany Beach
No serious injuries reported at the Sea Colony
June 24, 2010|By Jessica Anderson, the Baltimore Sun
An electrical fire forced an evacuation of the Sea Colony high-rise complex in Bethany Beach Thursday.
A power surge caused a small fire inside an electrical room in one of the buildings, causing the evacuation at about 4 p.m., said Joe Hopple, spokesman with Bethany Beach Fire Company. He said the surge was caused by a downed wire.

Example B
Friday, March 6, 2009 08:48 The Norristown Fire Department responded to Building 14 of the Norristown State Hospital for a fire in the electrical room. It took firefighters over two hours to extinguish the fire due to the energized equipment and the difficulty of reaching the fire inside the electrical equipment. Firefighters from Center Square, East Norriton, Plymouth and Swedeland assisted at the scene.

Example C

Wednesday, November 12, 2008 This morning Monroeville FD was called to one of the Office Buildings in the Oxford development for a fire alarm. Crews arrived on scene and found a small fire in the electrical room were the motors for the elevators are located. Crews extinguished and contained the fire with dry chem. Fire was caused by a cardboard box left near the motor. Crews remained on scene for minor ventilation.**ALL PICTURES COURTESY OF MONROEVILLE TV-15** Command: C-55 (R. Douthit) Units: E-12,E-31,E-42,T-5

Example D

Electrical Room Sparks Fire in Parking Garage

August 7, 2012 ·

BOCA RATON– Boca Raton Fire Rescue Services responded to a report of an electrical room fire in the parking garage at 301 E. Yamato Road just after 11:30 a.m. Friday, Aug. 3, said fire officials.

Firefighters discovered that the electrical transformer had malfunctioned and caused the burning of some of the attached wiring. The fire was extinguished within minutes after the arrival of firefighters, preventing further damage to the electrical room of the 5-story parking garage.

No injuries were reported. Boca Raton Fire Rescue Services investigators determined that the cause was an apparent electrical malfunction

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Example E

Minneapolis fire started in apartment building's electrical room

By Brady Gervais
bgervais@pioneerpress.com
Posted: 03/12/2012 12:01:00 AM CDT
Updated: 03/12/2012 10:19:03 AM CDT

Fire investigators say a three-alarm fire at a Minneapolis apartment building Friday started in an electrical room.

The fire's cause remains undetermined, Assistant Minneapolis Fire Chief Cherie Penn said in a written statement. The probable cause is an "unspecified electrical malfunction" in the electrical room.

Fire crews were called around 2 a.m. Friday to a fire that started in the basement of the building at 137 17th St. E. The fire went to a second alarm shortly before 3 a.m. and then to a third alarm because of the size of the building and the spread of the fire. One firefighter suffered a minor injury but continued working.

Cost Impact: Estimated 250.00 per detector installed, minimal cost impact to overall construction cost.

F166-13

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

907.2.13.1.1-F-HAMMERBERG

F167 – 13
907.2.14 (IBC [F] 907.2.14)

Proponent: Gene Boecker, AIA, Code Consultants, Inc. representing Code Consultants, Inc.

Revise as follows:

907.2.14 (IBC [F] 907.2.14) Atriums Connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium connecting more than two stories, with smoke detection installed ~~throughout the atrium~~ in locations required by a rational analysis in Section 909.4 and in accordance with the system operation requirements in Section 909.17. The system ~~must~~ shall be activated in accordance with Section 907.5. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication systems complying with the requirements of Section 907.5.2.2.

Reason: The purpose of this code change proposal is to correct a substantial change to the requirements for smoke detection in atriums that was made with the intent of only clarifying the existing requirements.

In the 2003 and 2006 editions, the code required smoke detection in atriums only where required by a rational analysis in accordance with Section 909. Section 909.12.3 of the 2012 edition still indicates that automatic activation of a smoke control system is required to be by, "any smoke detection required by engineering analysis." However, modifications made to Section 907.2.13 in the 2009 edition (now Section 907.2.14 in the 2012 edition), that were intended only to clarify existing requirements, appear to require smoke detection in atriums regardless of the need for smoke detection as determined by a rational analysis.

When Section 907 was modified in the 2009 edition by code change proposal F163-07/08, the intent of the code change was to correlate the organization of Section 907 with Section 903. The main purpose of the code change was to correlate the terms "automatic smoke detection systems" and "manual fire alarm system". During the course of the code change process Section 907.2.13 was modified to require both a fire alarm system and a smoke detection system in atriums, although a smoke detection system had not been required in atriums by Section 907 of the prior edition. This is clear because code change proposal F58-01 that removed the requirement for smoke detection in atriums stated in its justification, "[t]he engineering analysis would determine if (or if not) smoke detectors would be required to maintain a tenable environment for the evacuation or relocation for the occupants of the building."

The modification in this code change proposal maintains the appropriate terminology, but returns the requirements to their original intent: that the requirements for smoke detection in atriums are unique to each atrium and should be determined by the required rational analysis.

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

F167-13

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

907.2.14-F-BOECKER

F168 – 13

907.2.22 (IBC [F] 907.2.22), 907.2.22.1 (New) [IBC [F] 907.2.22.1(New)], 907.2.22.2 (New) [IBC [F] 907.2.22.2(New)]

Proponent: Eric R. Rosenbaum, Hughes Associates, Inc. representing the Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com+

Revise as follows:

907.2.22 (IBC [F] 907.2.22) Airport traffic control towers. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in airport traffic control towers in ~~all occupiable and equipment spaces~~ accordance with Sections 907.2.22.1 and 907.2.22.2.

Exception: Audible appliances shall not be installed within the control tower cab.

907.2.22.1 (IBC [F] 907.2.22.1) Airport traffic control towers with multiple exits and automatic sprinklers. Airport traffic control towers with multiple exits and equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3, shall be provided with smoke detectors in the following locations.

1. Airport traffic control cab
2. Electrical and mechanical equipment rooms
3. Airport terminal radar and electronics rooms
4. Outside each opening into exit enclosures
5. Along the single means of egress permitted from observation levels
6. Outside each opening into the single means of egress permitted from observation levels.

907.2.22.2 (IBC [F] 907.2.22.2) Other airport traffic control towers. ~~-~~Airport traffic control towers with a single exit or where sprinklers are not equipped throughout, shall be provided with smoke detectors in the following locations.

1. Airport traffic control cab
2. Electrical and mechanical equipment rooms
3. Airport terminal radar and electronics rooms
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.
6. Means of egress
7. Accessible utility shafts

Reason: The proposed change is the recommendation of the Air Traffic Control Tower Fire/Life Safety Task Group, and reflects the current approach to fire protection and life safety in airport traffic control towers and the provisions of the Life Safety Code. It is suggested that the proposed revisions provide the proper level of protection for facilities with single exits and multiple exits where delayed evacuation of the cab may be required. The change reduces the amount of detection required in multiple exit ATCT with automatic sprinkler protection based on the accepted revision to Section 412.3 of the IBC to require automatic sprinkler protection in towers where an occupied floor is located 35 ft or greater from the lowest level of fire department vehicle access. Automatic sprinklers are provided for detection and control of the fire. Smoke detection is specified as required to also detect a fire that may affect the means of egress for the tower. The changes also are intended to clarify the required locations of smoke detection in single exit ATCT based on the allowed uses in an airport traffic control tower in Section 412.3. The following is the accepted proposal to Section 412.3:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.~~5~~11 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.2.

TABLE 412.3.2
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS

TYPE OF CONSTRUCTION	HEIGHT[a] (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic controls towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m^2).

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building
2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

412.3.5 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

412.3.7 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

412.3.9 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

Cost Impact: This code change will increase the cost of construction from the current code requirements in some instances; however, reflects current building practices of the FAA. Cost will be reduced in instances where detection is not required.

F168-13

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

907.2.22-F-ROSENBAUM

F169 – 13
907.3.1 (IBC [F] 907.3.1)

Proponent: Barry Greive, representing Target Corporation (barry.greive@target.com)

Revise as follows:

907.3.1 (IBC [F] 907.3.1) Duct smoke detectors. Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. 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. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function in accordance with this code and the International Mechanical Code. Duct smoke detectors shall report as a supervisory signal not a fire alarm, and they 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.

Reason: Duct detectors are widely known to be a cause of false alarms which is a safety concern for first responders. Duct detectors need to report as a supervisory signal to indicate that there is an issue and need to be repaired or replaced but should not report as a fire alarm like a water flow device. This adds clarity to a section that is not enforced uniformly and will add to fire fighter safety by lessening the amount of potential false alarms.

Cost Impact: This will not increase the cost of construction

F169-13

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

907.3.1-F-GRIEVE

F170 – 13
907.4.2.1 (IBC [F] 907.4.2.1)

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

907.4.2.1 (IBC [F] 907.4.2.1) Location. Manual fire alarm boxes shall be located not more than 5 feet (1524 mm) from the entrance to each exit. In buildings not protected by an automatic sprinkler system in accordance with 903.3.1.1 or 903.3.1.2, additional manual fire alarm boxes shall be located so that the exit access travel distance to the nearest box does not exceed 200 feet (60 960 mm).

Reason: This code change proposal both addresses the current situation of manual pull boxes being seldom used to report fires and coordinates with Table 1016.2 on exit access travel distance.

With the exception of F-2, S-2, and U. Travel distance in unsprinklered buildings is a maximum of 200 feet (when such occupancy is permitted not to be sprinklered. Exit access travel distance is permitted to be increased by 50 feet (to 250 feet) for sprinkler installation in A, E, F-1, M, R, S-1 and 100 feet (to 300 feet) for Group B. What this proposal does is it permits the increased travel distance allowed by the sprinkler system to not then require an additional manual pull box.

The second part of the change is to coordinate with the defined term 'exit access' travel distance for the requirements for which measurements should be taken. The first part of 907.4.2.1 states the measurement is taken from each 'exit', which is the end of 'exit access'.

Cost Impact: This proposal will not affect the cost of construction.

F170-13

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

907.4.2.1-F-NICHOLS

F171 – 13
202, 907.5.2.3.1 (IBC [F] 907.5.2.3.1). 907.5.2.3.2 (IBC [F] 907.5.2.3.2)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

IFC 907.5.2.3.1 (IBC [F] 907.5.2.3.1) *Public use areas* and *common use* areas. Visible alarm notification appliances shall be provided in *public use areas* and *common use* areas.

~~**IFC 907.5.2.3.2 (IBC [F [F] 907.5.2.3.2) Employee work areas.**~~ **Exception:** 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).

Add new definitions as follows:

SECTION 202
GENERAL DEFINITIONS

[B] COMMON USE. Interior or exterior *circulation paths*, rooms, spaces or elements that are not for public use and are made available for the shared use of two or more people.

[B] PUBLIC-USE AREAS. Interior or exterior rooms or spaces that are made available to the general public.

[B] EMPLOYEE WORK AREA. All or any portion of a space used only by employees and only for work. *Corridors*, toilet rooms, kitchenettes and break rooms are not employee work areas.

Reason: The intent of this proposal is to use defined terms for public use and common use to avoid confusion for where visible alarms are required. The definitions are copied from IBC. This requirement would be consistent with ADA 215.2.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None – This will be required by the 2010 ADA Standard for Accessible Design.

F171-13

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

907.5.2.3.1-F-BALDASSARRA-CTC

F172 – 13
907.5.2.3.3 (IBC [F] 907.5.2.3.3)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

907.5.2.3.3 (IBC [F] 907.5.2.3.3) Groups I-1 and R-1. Group I-1 and R-1 *dwelling units* or *sleeping units* in accordance with Table 907.5.2.3.3 shall be provided with ~~a~~ visible alarm notification ~~appliance~~ throughout the unit, activated by both the in-room smoke alarm and the building fire alarm system.

Reason: The revised language will clarify that within hotel rooms and assisted living units that visible alarms must provide full coverage.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F172-13

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

907.5.2.3.3-F-BALDASSARRA-CTC

F173 – 13
907.6 (IBC [F] 907.6)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.6 (IBC [F] 907.6) Installation <u>and monitoring</u>. A fire alarm system shall be installed <u>and monitored</u> in accordance with Sections 907.6.1 through 907.6.5.2 and NFPA 72.

Reason: This section addresses installation and monitoring. The proposal simply clarifies that monitoring is part of the installation. This proposal does not change or alter the exceptions to Section 907.6.5.

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

F173-13

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

907.6-F-ZUBIA-FCAC

F174 – 13
907.6.3 (New) (IBC [F] 907.6.3), 907.6.3.1 (New) (IBC [F] 907.6.3.1)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

907.6.3 (IBC [F] 907.6.3) Initiating device identification. The fire alarm system shall identify the specific initiating device address, location, device type, floor level where applicable and status including indication of normal, alarm, trouble and supervisory status, as appropriate.

Exception:

1. Fire alarm systems in single story buildings less than 22,500 square feet (2090 m^2) in area
2. Fire alarm systems that only include manual fire alarm boxes, water flow initiating devices, and not more than 10 additional alarm initiating devices.
3. Special initiating devices that do not support individual device identification.
4. Fire alarm systems or devices that are replacing existing equipment.

907.6.3.1 (IBC [F] 907.6.3.1) Annunciation. The initiating device status shall be annunciated at an approved on-site location.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal improves the ability of emergency responders to identify the status of initiating devices at the time of an emergency. This proposal will help identify problematic initiating devices and thus reduce nuisance alarms. It also eliminates the requirements for providing zone indication of system status. This is considered particularly important in high-rise buildings, where the number of initiating devices and the geometry of the building warrant a need for point monitoring of individual devices, which is not currently accommodated by single floor zones.

This proposal would allow the fire code official the flexibility to not require individual detection device identification in smaller buildings, where the source of alarm and trouble signals can be more easily determined.

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

F174-13

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

907.6.3 (NEW)-F-ZUBIA-FCAC

F175 – 13
907.6.5.3 (New) (IBC [F] 907.6.5.3 (New)), 907.6 (IBC [F] 907.6)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

907.6.5.3 (IBC [F] 907.6.5.3) Alarm Signal Verification. Where required by the Fire Chief, alarm signal verification shall be provided in accordance with NFPA 72.

907.6 (IBC [F] 907.6) Installation. A fire alarm system shall be installed in accordance with Sections 907.6.1 through ~~907.6.5.2~~ 907.6.5.3 and NFPA 72.

Reason: NFPA 72 was revised in the last cycle to provide specific provisions for fire departments to require Alarm Signal Verification procedures by the supervision station prior to dispatch. This code change proposal provides a pointer to NFPA 72 so that the user is aware that this type of activity is specifically allowed under the code. This code change also ensures that both the IFC and NFPA 72 match in their provisions for Alarm Signal Verification. Ensuring that the documents are consistent in their provisions is important in eliminating confusion regarding the appropriate actions and compliance expectations for the installer, supervising station, owner and fire code official.

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

F175-13

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

907.6.5.3 (NEW)-F-APFELBECK

F176 – 13
907.6.5.3 (New) (IBC [F] 907.6.5.3 (New)), 401.3.2

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

907.6.5.3 Alarm Signal Verification. Where permitted by the *Fire Chief*, an *approved* supervising station shall be allowed to verify an alarm signal prior to reporting it to the public safety communications center. The verification process shall be in compliance with NFPA 72.

401.3 Emergency 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.

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

Exception: Alarm signal verification permitted by section 907.6.5.3.

401.3.3 Delayed notification. A person shall not, by verbal or written directive, require any delay in the reporting of a fire to the fire department.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

The intent is to allow fire departments to require verification on both commercial and residential alarm signals in order to assist in effective dispatching of resources and/or reducing the impact of nuisance alarms. Currently NFPA 72 allows verification on residential systems (but gives choice of using it to the monitoring company). This would give discretion to the fire chief, and expand use to include commercial alarms which accounts for the majority of false alarms in the U.S.

These provisions allow fire departments to require that alarm monitoring centers attempt to verify an alarm signal before reporting to the 9-1-1 center. Having better information about the cause of alarm activation is critical as many departments have much smaller responses for an automatic alarm signal than for a working structure fire. Additionally, verification has been proven effective in reducing unwanted nuisance alarms. Alarm Verification is already performed extensively on residential fire alarms; this would allow it to be mandated on some or all systems, including commercial occupancies, when required by the Chief.

The revision to Section 401.3 will clarify the intent of the code and alleviate potential interpretation and enforcement conflicts with proposed new section - Section 907.6.5.3 Alarm Signal Verification

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

F176-13

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

907.6.5.3 (NEW)-F-ZUBIA-FCAC

F177 – 13
907.8.5.1 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Add new text as follows:

907.8.5.1 Fire alarm systems that cannot be repaired or serviced to eliminate reoccurring nuisance alarms or system impairments shall be replaced.

Reason: Fire Code Officials are frequently confronted with fire alarm systems that have are the end of their serviceable life and should be replaced in order to maintain system reliability. The need for system replacement is typically recommended by the fire alarm service company but, on some occasions, the owner refuses to upgrade/replace the system. Other than the maintenance requirements of NFPA 72, there is no language in the code that would allow the Fire Code Official to enforce the recommendation of the fire alarm service company to replace the system. The failure to replace an end of life fire alarm system can be a significant factor in generating nuisance alarms.

Cost Impact: This proposal will increase the cost of construction.

F177-13

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

907.8.5.1 (NEW)-F-APFELBECK

F178 – 13
907.8.6 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

907.8.6 Problematic systems. Where required by the fire code official, fire alarm systems that produce chronic, unwanted or nuisance alarms shall be monitored with central station service in accordance with NFPA 72 requirements. A copy of the certificate, placard or other documentation issued by the organization that listed the central station, or the prime fire alarm system contractor, shall be provided to the fire code official.

Reason: This section is intended to address the situation where a fire alarm system has not been repaired to make it fully functional or eliminate chronic unwanted or nuisance alarms. The determination of what constitutes chronic unwanted or nuisance alarms is up to the fire code official to decide based on local policies and practices. By requiring central station service it is understood that the system at the protected premise is now covered by an audit program administered by the company that listed the central station. These audit programs have shown significant success in reducing nuisance and unwanted alarms.

Cost Impact: This proposal will increase the cost of construction.

F178-13

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

907.8.6 (NEW)-F-ZUBIA-FCAC

F179 – 13
105.7.5 (New), 908 (IBC[F] 908)

Proponent: Daniel P Finnegan, representing Siemens Industry (daniel.finnegan@siemens.com)

Add new text as follows:

105.7.5 Emergency alarm systems. A construction permit is required for installation of or modification to emergency alarm systems. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

Revise as follows:

SECTION 908
EMERGENCY ALARM SYSTEMS

908.1 (IBC [F] 908.1) General. This section covers the application, installation, performance and maintenance of emergency alarm systems..

908.2 (IBC [F] 908.2) Construction documents. The *fire code official* shall have the authority to require *construction documents* and calculations for all *emergency alarm systems* and to require permits be issued for the installation, rehabilitation or modification of any *emergency alarm system*. *Construction documents* for *emergency alarm systems* shall be submitted for review and approval prior to system installation.

908.3 (IBC [F] 908.3) Permits. Permits shall be required as set forth in Section 105.7.

908.4 (IBC [F] 908.4) Equipment. *Emergency alarm system* control units and components shall be *listed* or *approved* for the purpose for which they are installed.

908.5 (IBC [F] 908.5) Acceptance tests and completion. Upon completion of the installation, the *emergency alarm system* shall be tested in accordance with the manufacturer's instructions and as required by the *fire code official* to verify it provides the required protection.

908.6 (IBC [F] 908.6) Where required. An *approved emergency alarm system* installed in accordance with the provisions of this code shall be provided in accordance with Sections 908.6.1 through 908.6.6.

~~**908.1**~~ **908.6.1(IBC [F] 908.6.1) Group H occupancies.** Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as required in Chapter 50.

~~**908.2**~~ **908.6.2 (IBC [F] 908.6.2) Group H-5 occupancy.** Emergency alarms for notification of an emergency condition in an HPM facility shall be provided as required in Section 2703.12. A continuous gas detection system shall be provided for HPM gases in accordance with Section 2703.13.

~~**908.3**~~ **908.6.3 (IBC [F] 908.6.3) Highly toxic and toxic materials.** Where required by Section 6004.2.2.10, a gas detection system shall be provided for indoor storage and use of highly toxic and toxic *compressed gases*.

~~**908.4**~~ **908.6.4 (IBC [F] 908.6.4) Ozone gas-generator rooms.** A gas detection system shall be provided in ozone gas-generator rooms in accordance with Section 6005.3.2.

~~**908.5**~~ **908.6.5 (IBC [F] 908.6.5) Repair garages.** A flammable-gas detection system shall be provided in repair garages for vehicles fueled by nonodorized gases in accordance with Section 2311.7.2.

~~908.6~~ 908.6.6 (IBC [F] 908.6.6) **Refrigeration systems.** Refrigeration system machinery rooms shall be provided with a refrigerant detector in accordance with Section 606.8.

908.7 (IBC [F] 908.7) Maintenance. *Emergency alarm systems* shall be maintained in accordance with the original installation standards for that system. Required systems shall be extended, altered or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. *Alterations* to *emergency alarm systems* shall be done in accordance with applicable standards.

908.8 (IBC [F] 908.8) Responsibility and records. The building *owner* shall be responsible to maintain *emergency alarm systems* in an operable condition at all times. A written record of the maintenance inspection and testing shall be maintained and shall be made available to the *fire code official*.

SECTION 915
CARBON MONOXIDE ALARMS

~~908.7 (IBC [F] 908.7) Carbon monoxide alarms.~~ **915.1 (IBC [F] 915.1) General.** Group I or R occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2 of the *International Building Code,* or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be considered an attached garage.

Exception: *Sleeping units* or *dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The *sleeping unit* or *dwelling unit* is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;
2. The *sleeping unit* or *dwelling unit* is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
3. The building is equipped with a common area carbon monoxide alarm system.

~~908.7.1~~ **915.1.1 (IBC [F] 915.1.1) Carbon monoxide detection systems.** Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be *listed* as complying with UL 2075.

Reason: As written the emergency alarm system section has no specific requirements for the basic installation, testing and maintenance of these systems, and by definition these systems are not considered to be fire protection systems and are not subject to the general requirements in Section 901.

The proposal makes no changes to where emergency alarm systems are required, which are retained verbatim in Sections 908.6.1 through 908.6.6. It does include basic system requirements as noted below:

Sections 908.2, 908.3 and 908.7 are based on similar requirements in section 901.1. These sections are required in Section 908 since the Section 901 requirements only apply to fire protection systems.

Section 908.4 is based on Section 907.1.3. However, instead of requiring emergency alarm system equipment to be listed and approved, it recognizes that listed equipment is not always available for the systems covered by these requirements. Accordingly this section allows this equipment to be listed or approved.

Sections 908.5 and 908.8 include requirements similar to those in Sections 907.7 and 907.8.5.

Sections 908.6.1 through 908.6.6 are taken verbatim from Section 908.

Additionally, this proposal simply relocates CO alarm system requirements from Section 908.7 to a new Section 915, with no technical changes whatsoever. This is being done for the following reasons:

1. By definition emergency alarm systems provide indication and warning of emergency situations involving hazardous materials, which relates more closely to warning systems required by the hazardous materials chapters of this code (e.g. Chapter 50 to 67). Carbon monoxide that is generated by motor vehicle exhaust and damaged fuel burning appliances is not regulated by those chapters.

2. As currently written the CO alarm requirements in Section 908.7 stand alone, and do not relate in any way to the emergency alarm requirements in Sections 908.1 through 908.6. Thus there is no advantage to having both emergency alarm and carbon monoxide alarm requirements in the same Section.
3. This proposal relocates the carbon monoxide alarm requirements to a new Section 915, which was done so the current Sections 909 through 914 don't need to be renumbered.
4. It is recognized that there is at least one other proposal to revise the Section 908.7 CO alarm requirements. If that proposal succeeds, approval of this proposal is intended to retain the changes from the other proposal, and relocate the revised provisions into Section 915.
5. This is consistent with a similar proposal submitted by the FCAC

Cost Impact: Clarifies what should be done already-minimal cost impact

F179-13

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

908 (NEW)-F-FINNEGAN

F180 – 13
915 (New) [IBC [F] 915 (New)], 908.7(IBC [F] 908.7), 908.7.1 (IBC [F] 908.7.1)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

Revise as follows:

SECTION 915
CARBON MONOXIDE DETECTION

~~**908.7(IBC [F] 908.7)**~~ **915.1 (IBC [F] 915.1) Carbon monoxide alarms.** Group I or R occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2 of the *International Building Code*, or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be considered an attached garage.

Exception: *Sleeping units* or *dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The *sleeping unit* or *dwelling unit* is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;
2. The *sleeping unit* or *dwelling unit* is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
3. The building is equipped with a common area carbon monoxide alarm system.

~~**908.7.1 (IBC [F] 908.7.1)**~~ **915.2 (IBC [F] 915.2) Carbon monoxide detection systems.** Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be *listed* as complying with UL 2075.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal simply relocates CO alarm system requirements from Section 908.7 to a new Section 915, with no technical changes whatsoever. This is being done for the following reasons:

1. By definition emergency alarm systems provide indication and warning of emergency situations involving hazardous materials, which relates more closely to warning systems required by the hazardous materials chapters of this code (e.g. Chapter 50 to 67). Carbon monoxide that is generated by motor vehicle exhaust and damaged fuel burning appliances is not regulated by those chapters.
2. As currently written the CO alarm requirements in Section 908.7 stand alone, and do not relate in any way to the emergency alarm requirements in Sections 908.1 through 908.6. Thus there is no advantage to having both emergency alarm and carbon monoxide alarm requirements in the same Section.
3. This proposal relocates the carbon monoxide alarm requirements to a new Section 915, which was done so the current Sections 909 through 914 don't need to be renumbered.
4. It is recognized that there is at least one other proposal to revise the Section 908.7 CO alarm requirements. If that proposal succeeds, approval of this proposal is intended to retain the changes from the other proposal, and relocate the revised provisions into Section 915.

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

F180-13

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

915 (NEW)-F-ZUBIA-FCAC

F181 – 13
908.7 (IBC [F] 908.7); 1103.9

Proponent: Thomas G. Daly, The Hospitality Security Consulting Group, LLC, representing Hilton Worldwide, Inc.

Delete and substitute as follows:

~~**908.7 (IBC [F] 908.7) Carbon monoxide alarms**. Group I or R occupancies located in a building containing a fuel-burning appliance, or a building which has an attached garage shall be equipped with single station~~ carbon monoxide ~~alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2, or an enclosed parking garage ventilated in accordance with Section 404 of the International Mechanical Code shall not be considered an attached garage.~~

~~**Exception:** Sleeping units or dwelling units which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:~~

1. ~~The sleeping unit or dwelling unit is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;~~
2. ~~The sleeping unit or dwelling unit is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and~~
3. ~~The building is equipped with a common area carbon monoxide alarm system.~~

908.7 (IBC [F] 908.7)Carbon monoxide alarms detection and warning equipment. Group I or R occupancies located in a building containing a fuel-burning appliance, fireplace or a building which has an attached garage shall be equipped with carbon monoxide detection and warning equipment.

908.7.1 (IBC [F] 908.7.1 Listings and installation. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions.

908.7.2 (IBC [F] 908.7.2) Attached garage. An open parking garage as defined in Chapter 2 or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be deemed to be an attached garage.

908.7.3 (IBC [F] 908.7.3) Locations. A supervised carbon monoxide detector with an integral sounding device shall be installed within 15 feet of each fuel-burning appliance or fireplace and be monitored at a constantly attended location. Connection to an existing fire alarm system to report as a supervisory signal shall be an acceptable alternative to the detector being monitored at a constantly attended location.

908.7.4 (IBC [F] 908.7.4) Sleeping and dwelling units. *Sleeping units* or *dwelling units* which do not themselves contain a fuel-burning appliance, fireplace or have an attached garage, but which are located in a building with a fuel-burning appliance, fireplace or an attached garage,shall be equipped with 120 vac powered single-station carbon monoxide alarms with battery back-up provided that:

1. The sleeping unit or dwelling unit is located directly above, below or immediately adjacent to any room or s0pace containing a fuel-burning appliance, fireplace or an attached garage.
2. The sleeping unit or dwelling unit is connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage.
3. Affected hotel guest suites and multi-room dwelling units shall be equipped with a single station carbon monoxide alarm in each sleeping and living area and such units shall be interconnected.
4. Affected accessible sleeping units and accessible dwelling units single station carbon monoxide alarms shall activate a visual alarm within such units in accordance with NFPA 720.

908.7.5 (IBC [F] 908.7.5) Combination devices. Combination single station carbon monoxide and smoke alarms and combination carbon monoxide and smoke detectors shall be permitted.

~~**908.7.1 (IBC [F] 908.7.1)**~~ **908.7.6 (IBC [F] 908.7.6) Carbon Monoxide detection systems.** (*No change to current text)*

Delete and substitute as follows:

~~**1103.9 Carbon monoxide alarms.** Existing Group I or R occupancies located in a building containing a fuel-burning appliance or a building which has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034, and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in the International Building Code, or an enclosed parking garage ventilated in accordance with Section 404 of the International Mechanical Code shall not be deemed to be an attached garage.~~

> ~~**Exception:** Sleeping units or dwelling units which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:~~
>
> ~~1. The sleeping unit or dwelling unit is located more than one story above or below any story that contains a fuel-burning appliance or an attached garage;~~
> ~~2. The sleeping unit or dwelling unit is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and~~
> ~~3. The building is provided with a common area carbon monoxide alarm system.~~

1103.9 Carbon Monoxide detection and warning equipment. Existing Group I or R occupancies located in a building containing a fuel-burning appliance, fireplace or a building which has an attached garage shall be equipped with carbon monoxide detection and warning equipment.

1103.9.1 Listings and installation. Single station carbon monoxide alarms shall be listed as complying with UL 2034, and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. Carbon monoxide detectors shall be listed as complying with UL 2075 and be installed an maintained in accordance with NFPA 720 and the manufacturer's instructions.

1103.9.2 Attached garage. An open parking garage, as defined in the *International Building Code,* or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be deemed to an attached garage.

1103.9.3 Locations. A supervised carbon monoxide detector with an integral sounding device shall be installed within 15 feet of each fuel burning appliance or fireplace and be monitored at a constantly attended location. Connection to an existing fire alarm system to report as a supervisory signal shall be an acceptable alternative to the detector being monitored at a constantly attended location.

1103.9.4 Sleeping and dwelling units. *Sleeping units* or *dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance, fireplace or an attached garage, shall be equipped with 120 vac powered single-station carbon monoxide alarms with battery back-up provided that:

1. The sleeping unit or dwelling unit is located directly above, below or immediately adjacent to any room or space containing a fuel-burning appliance, fireplace or an attached garage.
2. The sleeping unit or dwelling unit is connected by duct work or ventilation shafts to any room containing a fuel burning appliance or to an attached garage.
3. Affected hotel guest suites and multi-room dwelling units shall be equipped with a single station carbon monoxide alarm in each sleeping and living area and such units shall be interconnected.

4. Affected accessible sleeping units and accessible dwelling units single station carbon monoxide alarms shall activate a visual alarm within such units in accordance with NFPA 720.

1103.9.5 Combination devices. Combination single station carbon monoxide and smoke alarms and combination carbon monoxide and smoke detectors shall be permitted.

Reason – Chapter 9: The requirements are organized in a more reader friendly format.

The proposed changes will provide for earlier detection of potential carbon monoxide (CO) exposure and as a result allow for corrective action before CO can reach occupied areas of Group R & I facilities by placing a su0pervised an monitored CO detector at the source of potential CO. Sleeping and dwelling units in proximity to such sources of CO exposure would also have local CO alarms therein.

The requirements mirror successful CO regulation in Massachusetts, see 527 CMR 31.00 et seq., and New Jersey, see N.J.A.C. 5;23-3.21, which have no records of CO exposure related deaths in such equipped facilities in the 7 years since those regulations similar to this proposal have been in place.

CO detectors would be permitted to be a part of existing fire alarm systems making their installation more efficient and cost effective. Cost of construction would not be increased but would be diminished.

Reliability would be improved as such systems have secondary power requirements ensuring operation of the CO detector in the event of a power failure.

Listing and installation criteria for CO detectors are added.

CO alarm requirements for multi-room sleeping and dwelling units are clarified. In such units, where the means of egress from a sleeping areas is thru the living area, typical of all suite hotels, the current requirement for a CO alarm only within the sleeping area is insufficient to warn the occupant and may result in a CO exposure when attempting to exit. CO alarms would be required in both sleeping and living units and would be interconnected similar to requirements for smoke alarms.

The use of combination CO/smoke alarms and detectors would be specifically allowed. Such units will allow for a more cost effective installation by avoiding new electrical work as those units may be replace existing 120vac smoke alarms and system smoke detectors. Cost of construction would not be increased but would be diminished.

Fireplaces, a potential source of CO exposure, would be added for clarity as this term is defined separately from 'fuel burning appliances' in NFPA 720.

Undefined terms, e.g., 'common areas' are deleted.

Battery backup for CO alarms is specified to ensure operation in the event of power failure.

Reason – Chapter 11: The 2012 IFC language (new) had the unintended consequences of requiring CO alarms in areas of buildings where there is little likelihood and little historical occurrence of CO exposures while at the same time not requiring CO warning equipment in locations where there is a greater likelihood of an adverse CO exposures. The historical record of CO exposures in commercial buildings is so rare that the CPSC which reports on such exposure incidents does not list commercial buildings as an occupancy group. See this link for the latest such report:

Non-Fire Carbon Monoxide Deaths Associated with the Use of Consumer Products: 2008 Annual Estimates (released 01/12) http://www.cpsc.gov/LIBRARY/dataCO.html

The changes proposed would focus the requirement for such warning equipment at the potential source of such exposure and provide a local and remote alarm to building staff to initiate corrective action. Early detection and warning would be provided under this proposal vs. the current delayed warning based on the 2012 IFC language.

Cost Impact – Chapter 9: Cost of construction would not be increased but would be diminished.

Cost Impact – Chapter 11: Compared to the 2012 IFC these changes would reduce compliance costs by 90% for a typical commercial building with a small number of gas fired appliances (e.g., boiler, emergency generator, pool heater, kitchen). The proposal would allow CO detectors to be incorporated into existing fire alarm systems ensuring proper operation, maintenance and inspections per the Fire Code provisions for such systems.

F181-13

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

908.7-F-DALY

F182 – 13

908.7 (IBC[F] 908.7) , 908.7.1 (New) [IBC [F] 908.7.1 (New)], 908.7.1.1 (New) [IBC [F] 908.7.1.1 (New)], 908.7.1.2 (New) [IBC [F] 908.7.1.2 (New)]

Proponent: Roger Evans, Park City Municipal Corporation, representing the Utah Chapter of ICC (revans@parkcity.org)

Revise as follows:

908.7 (IBC[F] 908.7) Carbon monoxide ~~alarms~~ detection. Group I ~~or,~~ R and E occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with ~~single-station~~ carbon monoxide ~~alarms~~ detection. ~~The~~ Group I and R occupancies shall be equipped with single-station carbon monoxide alarms ~~shall be~~ listed as complying with UL 2034 and be installed and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. Group E occupancies shall be equipped with carbon monoxide detection in accordance with 907.1 and 907.2. An open parking garage ventilated in accordance with Section 404 of the International Mechanical Code shall not be considered an attached garage.

Exception: *Sleeping units* or *dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The *sleeping unit* or *dwelling unit* is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;
2. The *sleeping unit* or *dwelling unit* is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
3. The building is equipped with a common area carbon monoxide alarm system.

908.7.1 (IBC[F] 908.7.1) Group E Occupancy Locations. Where required by Section908.7, carbon monoxide detectors in Group E occupancies shall be installed in the locations specified in Sections 908.7.2 through 908.7.2.2.

908.7.1.1(IBC[F] 908.7.1.1) Fuel-burning appliances and fuel burning fireplaces. Carbon monoxide detectors shall be installed on the ceiling of a room containing a fuel-burning appliance or a fuel burning fireplace. The carbon monoxide alarm signal shall be automatically transmitted to a constantly attended on site location.

9**08.7.1.2 (IBC[F] 908.7.1.2) Forced air furnaces.** Carbon monoxide detectors shall be installed on the ceiling of a room containing a fuel-burning forced air furnace or in occupied rooms served by a fuel-burning, forced air furnace. The carbon monoxide alarm signal shall be automatically transmitted to a constantly attended on site location.

~~**908.7.1(IBC[F] 908.7.1)**~~ **908.7.2 (IBC[F] 908.7.2) Carbon monoxide detection systems.** Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075.

Reason: This proposal is intended to protect students and faculty from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of CO detection devices in education occupancies. In the absence of a model code for the installation of CO detection in education occupancies each jurisdiction is developing its own regulations with varying installation requirements. For example, after several CO incidents in Connecticut (Public Act 11-248) and in Maryland (SB 173), the Governors signed bills into law for the installation CO detection in education occupancies and left the location, performance, inspection, testing and maintenance of CO detection and warning equipment up to the Building Commission or the State Fire Marshal. Section 610 of the 2010 Fire Code New York State (FCNYS) requires CO detection in Group E occupancies.

Also a result of the national publicity generated from an incident at an Atlanta school (ABC News) that sent 42 students to hospitals, three states have introduced legislation requiring CO detection in schools.

. Pennsylvania:
http://www.legis.state.pa.us/cfdocs/Legis/CSM/showMemoPublic.cfm?chamber=H&SPick=20130&cosponId=9878
. Florida: http://www.flsenate.gov/Session/Bill/20130116/BillText/Filed/HTML
.Georgia: HB 23

Attached are fifty three (53) reports of CO incidents in schools from 2005 through 2012. Thirty (30) of these incidents were caused by problems with a permanently installed fuel burning appliance.

This proposal models the location requirements for schools after the current requirements in the 2012 edition of the IFC for detection in hotels, dormitories and apartment buildings as a basis.

The efficacy of voluntary national consensus codes, such as the IFC, ensures a collaborative, balanced and consensus-based process.

Cost Impact: Minimal cost as a percentage of the building valuation.

F182-13

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

908.7-F-EVANS

F183 – 13

IFC: 908.7.2 (New) (IBC [F] 908.7.2 (New)), 1103.9 (New); IRC: R315.1.1 (New), R315.3.1 (New)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART 1 WILL BE HEARD BY THE IFC COMMITTEE. PART 2 OF THIS PROPOSAL WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IFC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES.

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

PART I – INTERNATIONAL FIRE CODE

Add new text as follows:

908.7.2 (IBC [F] 908.7.2) Power source. In new construction, required carbon monoxide 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. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exception: Carbon monoxide alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system.

Add new text as follows:

1103.9 Power source. Single-station carbon monoxide 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. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exceptions:

1. Carbon monoxide alarms are not required to be equipped with battery backup where they are connected to an emergency electrical system.
2. Carbon monoxide alarms are permitted to be solely battery operated in existing buildings where no construction is taking place.
3. Carbon monoxide alarms are permitted to be solely battery operated in buildings that are not served from a commercial power source.
4. Carbon monoxide alarms are permitted to be solely battery operated in existing areas of buildings undergoing *alterations* or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or *basement* available which could provide access for building wiring without the removal of interior finishes.

PART II – INTERNATIONAL RESIDENTIAL CODE

Add new text as follows:

R315.1.1 Power source. In new construction, required carbon monoxide 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. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

R315.3.1 Power source. Single-station carbon monoxide 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. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exceptions:

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

Reason: This proposal copies the same installation requirements as specified for smoke alarms. It would seem to be appropriate if these alarms are a life saving device.

Costs: Assuming that the original wording seems to allow carbon monoxide alarms to be only battery powered, even in new construction, this would increase the cost of construction.

F183-13

PART I – INTERNATIONAL FIRE CODE

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

PART II – INTERNATIONAL RESIDENTIAL CODE

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

908.7.2 (NEW)-F-GODWIN

F184 – 13
909.4.6 (IBC [F] 909.4.6, IMC [F] 513.4.6)

Proponent: Dave Frable representing U.S. General Services Administration, Public Buildings Service

Revise as follows:

909.4.6 (IBC [F] 909.4.6, IMC [F] 513.4.6) Duration of operation. All portions of ~~active or passive~~ engineered smoke control systems shall be capable of continued operation after detection of the fire event for a period of not less than either 20 minutes or 1.5 times the calculated egress time, whichever is ~~less~~ greater.

Reason: The intent of this code change is to provide clarification for determining the duration of operation for smoke control systems to ensure a tenable environment for occupants to either evacuate or relocate to a safe location within a building. In addition, the requirement has also been revised to determine the proper duration for the operation of the smoke control system to run during an emergency by correctly stating "whichever is greater" in lieu of "whichever is less". The 20 minute maximum time duration for the operation of the smoke control system is not sufficient for all evacuation situations and by revising the subject text, a more realistic and reasonable time duration for the operation of the smoke control system will be achieved.

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

F184-13

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

909.4.6-F-FRABLE

F185 – 13

909.4 (IBC [F] 909.4, IMC [F] 513.4), 909.4.7 (New) [IBC [F] 909.4.7 (New), IMC [F] 513.4.7 (New)]

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

909.4 (IBC [F] 909.4, IMC [F] 513.4) Analysis. A rational analysis supporting the types of smoke control systems to be employed, their methods of operation, the systems supporting them and the methods of construction to be utilized shall accompany the submitted *construction documents* and shall include, but not be limited to, the items indicated in Sections 909.4.1 through ~~909.4.6~~ 909.4.6.7. [F]

909.4.7 (IBC [F] 909.4.7, IMC [F] 513.4.7) Smoke control system interaction. The design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios.

Reason: The focus of this proposal is related to the interaction of multiple mechanical smoke control systems by asking for a specific analysis of the interaction of such systems similar to that required for the interaction of HVAC systems. The study of hoistway pressurization as an option for compliance with enclosed elevator lobby provisions drives the need to understand these interactions as stair pressurization will almost always be present in these buildings as well.

The CTC studied the need for elevator lobbies for traditional elevators (Section 713.14.1), FSAE (3007) and Occupant Evacuation elevators (3008). The Study Group assigned by the CTC conducted a technical analysis that concluded with several recommendations for the need for such lobbies and in addition provided a recommendation on the need for a closer analysis of buildings with more complexities. From this technical analysis the following excerpt is relative to this proposal.

> *In fact in many cases a traditional enclosed elevator lobby was determined to be unnecessary but for unusual building configurations there was more of a concern for interaction of systems and the negative impact of stack effect based upon the findings of the analysis. For instance, high-rise buildings may contain an atrium and will also use stair pressurization. In some cases hoistway pressurization could also be used as an option for compliance with the enclosed elevator lobby requirements. These are three smoke control systems that when running simultaneously may not work as intended. Below is recommendation 5 from the technical analysis.*
>
> *5. Elevator hoistway pressurization design*
>
> - ***The design of pressurization systems for elevator hoistways shall be based on a rational analysis in accordance with Section 909.4 that utilizes a network model approved by the AHJ and which includes an analysis of possible interactions between building shafts pressurized by different systems, and between pressurized and unpressurized shafts that exceed 420 feet in height.***
>
>   ***Add guidance to commentary for 909.4 that the rational analysis should show that the pressurization design will maintain the estimated Fractional Effective Dose (FED) below 0.5 and the estimated visibility distance above 25 feet within the stairway for 1.5 times the estimated evacuation time for each of the design fires selected.***
>
>   - *Rationale: Taller buildings with more complex flow paths require analysis utilizing a network model that can account for these interacting flow paths. The criteria suggested for commentary represents the standard of practice for a fire hazard analysis performed as the required rational analysis.*

This proposal is one of several proposals submitted by the CTC Elevator lobby SG. The ICC Executive Board directed the Code Technology Committee (CTC) to study the issue of elevator lobby separations in November 2010 due to the number of code change proposals submitted addressing this issue over a number of code change cycles. The Code Technology Committee formed a study group on the elevator lobby separation issue in December 2010. Note that this subject had been previously addressed by CABO/BCMC in 1986 with a similar conclusion. The code change proposals submitted are the result of the CTC's study of the issue. Note that the scope of the activity was as follows:

Scope

- ☐ Review the need for elevator lobbies, with emphasis on building use, building and hoistway height, active and passive fire protection features associated with the aforementioned.
- ☐ Review the differences and specific needs when dealing with elevator lobbies of traditional-use elevators, fire service elevators, and occupant evacuation elevators.
- ☐ Review related code provisions, such as egress from and through elevator lobbies.

- ☐ Review the appropriate use of alternatives including pressurization of hoistways, additional doors, roll-down style barriers, and gasketing systems.
- ☐ Review with members of elevator industry to scope the requirements of applicable elevator reference standards as it deals with elevator lobby design, use and construction.
- ☐ Review design and construction requirements for elevator lobbies, including but not limited to dimensions, location and separation.
- ☐ Review applicable code change history, technical studies and loss statistics as part of this review.

Several proposals were submitted during the Group A Cycle and discussion of the content and outcome of these proposals and the full content of the technical analysis can be found at the following link. http://www.iccsafe.org/cs/CTC/Pages/ElevatorLobbies.aspx

Cost Impact: This proposal will increase the cost of construction where such analysis are not currently undertaken. It can be argued that such an analysis may possibly decrease the cost of construction. Potential delays can be avoided by reducing the need for rework after problems arise during commissioning as result of an upfront analysis. Also the upfront design analysis may eliminate possible excess capacity in the equipment.

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F185-13

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

909.4-F-BALDASSARRA-CTC

F186 – 13

909.5 (IBC [F] 909.5, IMC [F] 513.5), 909.5.1 (IBC [F] 909.5.1, IMC [F] 513.5.1), 909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2),

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.5 (IBC [F] 909.5, IMC [F] 513.5) Smoke barrier construction. *Smoke barriers* required for passive smoke control and a smoke control system using the pressurization method shall comply with Section 709~~, and shall be constructed and sealed to limit leakage areas exclusive of protected openings~~. The maximum allowable leakage area shall be the aggregate area calculated using the following leakage area ratios:

1. Walls: $A/A_w = 0.00100$
2. Interior *exit stairways* and *ramps* and *exit passageways*: $A/A_w = 0.00035$
3. Enclosed *exit access stairways* and *ramps* and all other shafts: $A/A_w = 0.00150$
4. Floors and roofs: $A/A_F = 0.00050$

where:

A = Total leakage area, square feet (m^2).
A_F = Unit floor or roof area of barrier, square feet (m^2).
A_w = Unit wall area of barrier, square feet (m^2).

The leakage area ratios shown do not include openings due to gaps around doors~~,~~ and operable windows. ~~or similar gaps.~~ The total leakage area of the smoke barrier shall be determined in accordance with Section 909.5.1 and tested in accordance with Section 909.5.2.

909.5.1 (IBC [F] 909.5.1, IMC [F] 513.5.1) Total Leakage area. The total leakage area of the barrier is the product of the *smoke barrier* gross area multiplied by the allowable leakage area ratio, plus the area of other openings such as gaps around doors and operable windows.

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2) Testing of leakage area. Compliance with the maximum total leakage area shall be determined by achieving the minimum air pressure difference across the barrier with the system in the smoke control mode for mechanical smoke control systems utilizing the pressurization method. Compliance with the maximum total leakage area of passive smoke control systems shall be verified through methods such ~~tested using other *approved* means such~~ as door fan testing or other methods ~~shall be~~ as *approved* by the fire code official.

Reason: This code change clarifies leakage area calculation and testing, and clarifies requirements for passive smoke control systems.

Cost Impact: The code change may introduce a small to negligible cost impact to smoke control systems.

F186-13

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

909.5-F-TUBBS

F187 – 13

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2), 909.5.2.1 (New) [IBC [F] 909.5.2.1 (New), IMC [F] 513.5.2.1 (New)],

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, representing Aon Fire Protection Engineering Corporation (al.godwin@aon.com)

Revise as follows:

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2) Opening protection. Openings in *smoke barriers* shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by fire door assemblies complying with Section 716.5.3 of the *International Building Code.*

Exceptions:

1. Passive smoke control systems with automatic-closing devices actuated by spot-type smoke detectors *listed* for releasing service installed in accordance with Section 907.3.
2. Fixed openings between smoke zones that are protected utilizing the airflow method.
3. In Group I-1 Condition 2, Group I-2 and ambulatory health care facilities, where ~~such doors are installed across *corridors*~~, a pair of opposite-swinging doors are installed across a corridor in accordance with Section 909.5.2.1, the doors shall not be required to be protected in accordance with Section 716 of the *International Building Code* ~~without a center mullion shall be installed having vision panels with fire protection-rated glazing materials in fire protection-protection rated frames, the area of which shall not exceed that tested~~. The doors shall be close-fitting within operational tolerances and shall not have a center mullion or undercuts in excess of ¾-inch, louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges and ~~shall automatic-closing by smoke detection in accordance with Section 716.5.9.3 of the *International Building Code*~~. Where permitted by the door manufacturer's listing, ~~P~~positive-latching devices are not required.
4. Group I-3.
5. Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.

909.5.2.1 (IBC [F] 909.5.2.1, IMC [F] 513.5.2.1) Group I-1 Condition 2, I-2 and ambulatory care facilities. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where doors are installed across a corridor, the doors shall be automatic closing by smoke detection in accordance with Section 716.5.9.3 of the *International Building Code* and shall have a vision panel with fire-protection rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested.

~~**909.5.2.1 (IBC [F] 909.5.2.1, IMC [F] 513.5.2.1)**~~ **909.5.2.2 (IBC [F] 909.5.2.2, IMC [F] 513.5.2.2) Ducts and air transfer openings.** *(No change to current text)*

Reason: Code changes FS76-07/08, G15-09/10 and FS40-12 have made amendments to IBC Section 709.5, exception 1 that are not reflected in Section 909.5.2. G31-12 added a new requirement for Group I-1 Condition 2 that needs to be picked up in 909.5.2.

Cost Impact: This is just a correlation between the two codes. Thus, there will be no increase in cost not already encountered.

F187-13

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

909.5.2-F-GODWIN

F188 – 13
909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2)

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Revise as follows:

909.5.2 (IBC [F] 909.5.2, IMC [F] 513.5.2) Opening protection. Openings in *smoke barriers* shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by fire door assemblies complying with Section 716.5.3 of the *International Building Code.*

Exceptions:

1. Passive smoke control systems with automatic closing devices actuated by spot-type smoke detectors *listed* for releasing service installed in accordance with Section 907.10.
2. Fixed openings between smoke zones that are protected utilizing the airflow method.
3. In Group I-2 and ambulatory care facilities, where such doors are ~~installed across *corridors,* a~~ pair of opposite-swinging doors installed across a corridor and without a center mullion, ~~shall be installed having vision panels with fire protection-rated glazing materials in fire protection-rated frames, the area of which shall not exceed that tested. T~~the doors shall be close-fitting within operational tolerances and shall not have undercuts in excess of 1 inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges. Vision panels shall have fire-protection rated glazing materials in fire-protection-rated frames. The doors ~~and~~ shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3 of the *International Building Code*. Where permitted by the door manufacturer's listing, ~~P~~positive-latching devices are not required.
4. In Group I-2 and ambulatory care facilities, where such doors are special purpose horizontal sliding, accordion, or folding door assemblies installed in accordance with Section 1008.1.4.3 and are automatic closing by smoke detection in accordance with Section 716.5.9.3 of the *International Building Code*.
~~4~~5. Group I-3.
~~5~~6. Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank-down capacity of greater than 20 minutes as determined by the design fire size.

Reason: IFC Section 909.5.2 (and IBC Section 909.5.2) addresses requirements for opening protection in smoke barriers, as does IBC Section 709.5. This proposal updates IFC Section 909.5.2 (and IBC Section 909.5.2). The charging language, in IFC Section 909.5, requires smoke barriers to comply with the IBC, thus this language provides greater consistency with pertinent IBC requirements.

Also, IBC Section 709.5 includes an exception for doors complying with 1008.1.4.3 of the IBC, and IBC Section 1008.1.4.3 was revised for the 2015 IBC. The proposed language in Exception 4 for special purpose horizontal sliding, accordion, or folding door assemblies is intended to reflect this.

Cost Impact: None

F188-13

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

909.5.2-F-WOESTMAN

F189 – 13
909.6.3 (New) [IBC [F] 909.6.3 (New), IMC [F] 513.6.3 (New)]

Proponent: Bob D. Morgan, P.E., Fort Worth, TX Fire Department representing Fire Advisory Board to North Central Texas Council of Governments

Revise as follows:

909.6.3 (IBC [F] 909.6.3, IMC [F] 513.6.3) Pressurized stairways and elevator hoistways. When stairways or elevator hoistways are pressurized, such pressurization systems shall comply with Section 909 as smoke control systems, in addition to the requirements of the Building Code Sections 909.20 and 909.21.

Reason: Section 909.6.3 specifically requires that stairway pressurization systems must comply as smoke control systems. Currently, Sections 909.20 and 909.21 of the Building Code are not copied into the Fire Code, leading to inconsistency with regards to design and controls for such systems, as well as, uncertainty on the part of designers as to the appropriate authority with regards to such. These are complicated systems and involve coordination between fire alarm systems and mechanical components – such should be a coordinated effort between Building and Fire Code Officials.

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

F189-13

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

909.6.3 (NEW)-F-MORGAN

F190 – 13

909.7 (IBC [F] 909.7, IMC [F] 513.7), 909.7.1 (IBC [F] 909.7.1, IMC [F] 513.7.1), 909.7.2 (IBC [F] 909.7.2, IMC [F] 513.7.2)

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.7 (IBC [F] 909.7, IMC [F] 513.7) Airflow design method. When *approved* by the fire code official, smoke migration through openings fixed in a permanently open position, which are located between smoke control zones by the use of the airflow method, shall be permitted. The design airflow shall be in accordance with this section. Airflow shall be directed to limit smoke migration from the fire zone. The geometry of openings shall be considered to prevent flow reversal from turbulent effects. Smoke control systems using the airflow method shall be designed in accordance with NFPA 92.

~~**909.7.1 (IBC [F] 909.7.1, IMC [F] 513.7.1) Velocity.** The minimum average velocity through a fixed opening shall not be less than:~~

~~$n = 217.2 [h(T_f - T_o)/(T_f + 460)]^{1/2}$ **(Equation 9-2)**~~

~~For SI: $n = 119.9 [h(T_f - T_o)/T_f]^{1/2}$~~

~~where:~~

~~h = Height of opening, feet (m).~~
~~T_f = Temperature of smoke, °F (K).~~
~~T_o = Temperature of ambient air, °F (K).~~
~~n = Air velocity, feet per minute (m/minute).~~

~~**909.7.2(IBC [F] 909.7.2, IMC [F] 513.7.2)**~~ **909.7.1 (IBC [F] 909.7.1, IMC [F] 513.7.1) Prohibited conditions.** This method shall not be employed where either the quantity of air or the velocity of the airflow will adversely affect other portions of the smoke control system, unduly intensify the fire, disrupt plume dynamics or interfere with exiting. In no case shall airflow toward the fire exceed 200 feet per minute (1.02 m/s). Where ~~the formula in Section 909.7.1~~ calculated ~~requires~~ airflow ~~to~~ exceeds this limit, the airflow method shall not be used.

Reason: This code change follows previous changes made to the exhaust method and references NFPA 92 Standard for Smoke Control Systems. NFPA 92 Section 5.10 details the use of the airflow method. Referencing NFPA 92 for the exhaust and airflow method provides a consistent approach for smoke control in atrium and other large volume spaces.

Cost Impact: The code change may introduce a small to negligible cost impact to smoke control systems.

Analysis: ADMIN UPDATE

F190-13

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

909.7-F-TUBBS

F191 – 13
909.10.2 (IBC [F] 909.10.2, IMC [F] 513.10.2)

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.10.2 (IBC [F] 909.10.2, IMC [F] 513.10.2) Ducts. Duct materials and joints shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 909.10.1. Ducts shall be constructed and supported in accordance with the *International Mechanical Code*. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire-resistance-rated structural elements of the building by substantial, noncombustible supports.

~~**Exception:** Flexible connections, (for the purpose of vibration isolation) complying with the *International Mechanical Code*, that are constructed of *approved* fire-resistance-rated materials.~~

Reason: As written, flexible duct work may present a potential failure mode for smoke control systems. Flexible ducts that are part of a required smoke control system should be subject to requirements for rigid duct work.

Cost Impact: The code change may introduce a small to negligible cost impact to smoke control systems.

F191-13

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

909.10.2-F-TUBBS

F192 – 13
909.12.1 (IBC [F] 909.12.1, IMC [F] 513.12.1), 909.20.6 (New)

Proponent: Jeffrey Tubbs, PE, FSFPE, Arup USA, Inc., representing self (jeff.tubbs@arup.com)

Revise as follows:

909.12 (IBC [F] 909.12, IMC [F] 513.12) Detection and control systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and *listed* as smoke control equipment.

909.12.1 (IBC [F] 909.12.1, IMC [F] 513.12.1) Verification. Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override, and the presence of power downstream of all disconnects. A ~~and, through a~~ preprogrammed weekly test sequence shall ~~,~~ report abnormal conditions audibly, visually and by printed report. The preprogrammed weekly test shall operate all devices, equipment, and components.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with normal building operation and produce unwanted effects to normal building operation, such individual components are permitted to be bypassed from the weekly preprogrammed weekly testing, where approved by the code official and in accordance with the following:

1. Power supplies for components that are bypassed from the preprogrammed weekly test, such as power breakers, power disconnects, automatic transfer switches, motor starters, and motor controls, shall be electrically supervised by the listed control unit.
2. Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6.

(Renumber subsequent sections)

909.20.6 Components bypassing weekly test. Where components of the smoke control system are bypassed by the preprogrammed weekly test required by Section 909.12.1 such components shall be tested semi-annually. The system shall also be tested under standby power conditions.

Reason: The current provisions require weekly tests of smoke control systems. For many systems, the weekly test requires the introduction of untreated air into the smoke zone. This can be impractical in areas with cold or hot climates, and for buildings that require close control of temperature and humidity, such as art museums and similar facilities. The introduction of the untreated air can also result in wasting energy to reheat, re-cool, humidify, or dehumidify the smoke control zone.

The intent of the current code provisions is to provide means to verify that the required systems will be available when needed. The code requires and will continue to require control units to comply with UL 864, thus all components of the control system will be supervised. The code change adds requirements for supervision of all power supply components such as power breakers, power disconnects, automatic transfer switches, motor starters, and motor controls. This will provide reasonable assurance that power will be available for all smoke control components, such as fans, dampers, doors, and windows. The code change also adds the semi-annual requirement for a complete system test. This allows the building owner to schedule complete system testing on days that will reduce the impact to the building and energy needs. The combination of additional supervision and additional testing provides a reasonable alternative to weekly testing.

Cost Impact: The code change allows optional additional features that may increase initial costs but reduce long-term operational costs.

F192-13

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

909.12.1 (NEW)-F-TUBBS

F193 – 13
909.18.8.3 (IBC [F] 909.18.8.3)

Proponent: Douglas H. Evans, P.E., Clark County Building, representing Southern Nevada Chapter ICC (DHE@ClarkCountyNV.gov)

Revise as follows:

909.18.8.3 (IBC [F] 909.18.8.3) Reports. A complete report of testing shall be prepared by the special inspector or special inspection agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or mark. The report shall be reviewed by the responsible registered design professional and, when satisfied that the design intent has been achieved, the responsible registered design professional shall seal, sign and date the report with a statement as follows:

I have reviewed this report and by personal knowledge and on-site observation certify that the smoke-control system is in substantial compliance with the design intent, and to the best of my understanding complies with requirements of the code.

909.18.8.3.1 Report filing. A copy of the final report shall be filed with the fire code official and an identical copy shall be maintained in an approved location at the building.

Reason: This revision requires the engineer of record to observe the actual installation to help ensure the smoke control system is in accordance with the design. When physics based smoke-control systems initially appeared in the model code, this was initially required and has been shown to make good engineering sense.

This provision gives code officials an enforcement tool to ensure that the designer of record visits the jobsite to verify the system has been installed in accordance with their design. From a designers' standpoint, it makes sense to ensure that the smoke control system is designed in accordance with the original design intent and construction documents. Engineers are required to take an oath that holds them to a certain ethical standard. By requiring the engineer/registered design professional to sign the report with the above listed statement, it holds that person accountable consistent with the oath previously taken. This specific issue has come up on various projects in Southern Nevada. Without this provision in the code, out of state designers would likely not visit the site. Although local designers may be more apt to visit the jobsite to verify the system has been installed in accordance with the design, without this provision, it's possible that even in-state designers will not visit the site if they get too busy, or have not been contracted to perform this function. This provision serves a necessary and useful purpose.

Cost Impact: Can increase costs over base code.

F193-13

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

909.18.8.3-F-EVANS

F194 – 13
[B] 909.21 (New)

Proponent: Joanne T. McCaughan, Code Specialist, Washington State Building Code Council, representing Washington State (joanne.mccaughan@des.wa.gov)

Add new text as follows:

[B] 909.21 Elevator hoistway pressurization alternative. Where elevator hoistway pressurization is provided in lieu of required enclosed elevator lobbies, the Pressurization system shall comply with Sections 909.21.1 through 909.21.11.

[B] 909.21.1 Pressurization requirements. Elevator hoistways shall be pressurized to maintain a minimum positive pressure of 0.10 inches of water (25 Pa) and a maximum positive pressure of 0.25 inches of water (67 Pa) with respect to adjacent occupied space on all floors. This pressure shall be measured at the midpoint of each hoistway door, with all elevator cars at the floor of recall and all hoistway doors on the floor of recall open and all other hoistway doors closed. The opening and closing of hoistway doors at each level must be demonstrated during this test. The supply air intake shall be from an outside uncontaminated source located a minimum distance of 20 feet (6096 mm) from any air exhaust system or outlet.

[B] 909.21.2 Rational analysis. A rational analysis complying with Section 909.4 shall be submitted with the construction documents.

[B] 909.21.3 Ducts for system. Any duct system that is part of the pressurization system shall be protected with the same fireresistance rating as required for the elevator shaft enclosure.

[B] 909.21.4 Fan system. The fan system provided for the pressurization system shall be as required by Sections 909.21.4.1 through 909.21.4.4.

[B] 909.21.4.1 Fire resistance. When located within the building, the fan system that provides the pressurization shall be protected with the same fire-resistance rating required for the elevator shaft enclosure.

[B] 909.21.4.2 Smoke detection. The fan system shall be equipped with a smoke detector that will automatically shut down the fan system when smoke is detected within the system.

[B] 909.21.4.3 Separate systems. A separate fan system shall be used for each elevator hoistway.

[B] 909.21.4.4 Fan capacity. The supply fan shall either be adjustable with a capacity of at least 1,000 cfm (0.4719 m3/s) per door, or that specified by a registered design professional to meet the requirements of a designed pressurization system.

[B] 909.21.5 Standby power. The pressurization system shall be provided with standby power from the same source as other required emergency systems for the building.

[B] 909.21.6 Activation of pressurization system. The elevator pressurization system shall be activated upon activation of the building fire alarm system or upon activation of the elevator lobby smoke detectors.

Where both a building fire alarm system and elevator lobby smoke detectors are present, each shall be independently capable of activating the pressurization system.

[B] 909.21.7 Special inspection. Special inspection for performance shall be required in accordance with Section 909.18.8. System acceptance shall be in accordance with Section 909.19.

[B] 909.21.8 Marking and identification. Detection and control systems shall be marked in accordance with Section 909.14.

[B] 909.21.9 Control diagrams. Control diagrams shall be provided in accordance with Section 909.15.

[B] 909.21.10 Control panel. A control panel complying with Section 909.16 shall be provided.

[B] 909.21.11 System response time. Hoistway pressurization systems shall comply with the requirements for smoke control system response time in Section 909.17.

Reason: In the 2012 IBC, a new sub-section, 909.21 Elevator hoistway pressurization, was provided in Chapter 9. This same sub-section was not added to the 2012 IFC. For code consistency between these two codes, this sub-section should be located in both codes. Instead of the IBC being the primary code for this section, it should be maintained under the Fire Code. Currently, there is potential conflict between Building and Fire Code enforcement and interpretation of the Codes in relation to these provisions. Adoption of this language into the 2015 IFC would eliminate the potential conflict.

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

F194-13

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

909.21 (NEW)-F-MCCAUGHAN

F195 – 13

910 (IBC [F] 910), Table 901.6.1, Table 3206.2, 3206.7, Chapter 80 (IBC Chapter 35)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 910 (IBC [F] 910)
SMOKE AND HEAT REMOVAL

910.1 (IBC [F] 910.1) General. Where required by this code ~~or otherwise installed~~, smoke and heat vents or mechanical smoke ~~exhaust~~ removal systems ~~and draft curtains~~ shall conform to the requirements of this section.

~~**Exceptions:**~~

~~1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.~~
~~2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, automatic smoke and heat vents shall not be required within these areas.~~

910.2 (IBC [F] 910.2) Where required. Smoke and heat vents or a mechanical smoke removal system shall be installed ~~in the roofs of buildings or portions thereof occupied for the uses set forth in~~ as required by Sections 910.2.1 and 910.2.2. In occupied portions of a building where the upper surface of the story is not a roof assembly, a mechanical smoke removal system in accordance with Section 910.4 shall be installed.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
~~2. In occupied portions of a building where the upper surface of the story is not a roof assembly, mechanical smoke exhaust in accordance with Section 910.4 shall be an acceptable alternative.~~
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, smoke and heat removal shall not be required within these areas.

910.2.1 (IBC [F] 910.2.1) Group F-1 or S-1. Smoke and heat vents installed in accordance with Section 910.3 or a mechanical smoke removal system installed in accordance with Section 910.4 shall be installed in buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m^2) of undivided area.

Exception: Group S-1 aircraft repair hangars.

910.2.2 (IBC [F] 910.2.2) High-piled combustible storage. Smoke and heat removal required by Table 3206.2, for buildings and portions thereof containing high-piled combustible ~~stock or rack~~ storage shall be installed in accordance with Section 910.3 in unsprinklered buildings. In buildings and portions thereof containing high-piled combustible storage equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 ~~in any occupancy group when required by Section 3206.7.~~ a smoke and heat removal system shall be installed in accordance with Section 910.3 or 910.4.

910.3 (IBC [F] 910.3) Smoke and heat vents ~~Design and installation~~. The design and installation of smoke and heat vents ~~and draft curtains~~ shall be ~~as specified~~ in accordance with Sections 910.3.1 through 910.3.3 ~~910.3.5.2 and Table 910.3~~.

~~**TABLE 910.3 (IBC [F] TABLE 910.3)**~~
~~**REQUIREMENTS FOR DRAFT CURTAINS AND SMOKE AND HEAT VENTS**~~

910.3.1 (IBC [F] 910.3.1) ~~**Design**~~ **Listing and labeling.** Smoke and heat vents shall be *listed* and labeled to indicate compliance with UL 793 or FM 4430.

~~**910.3.2 (IBC [F] 910.3.2) Vent operation.** Smoke and heat vents shall be capable of being operated by *approved* automatic and manual means. Automatic operation of smoke and heat vents shall conform to the provisions of Sections 910.3.2.1 through 910.3.2.3.~~

~~**910.3.2.1 (IBC [F] 910.3.2.1) Gravity-operated drop-out vents.** Automatic smoke and heat vents containing heat-sensitive glazing designed to shrink and drop out of the vent opening when exposed to fire shall fully open within 5 minutes after the vent cavity is exposed to a simulated fire, represented by a time-temperature gradient that reaches an air temperature of 500°F (260°C) within 5 minutes.~~

~~**910.3.2.2 (IBC [F] 910.3.2.2) Sprinklered buildings.** Where installed in buildings provided with an *approved automatic sprinkler system*, smoke and heat vents shall be designed to operate automatically.~~

~~**910.3.2.3 (IBC [F] 910.3.2.3) Nonsprinklered buildings.** Where installed in buildings not provided with an *approved automatic sprinkler system*, smoke and heat vents shall operate automatically by actuation of a heat-responsive device rated at between 100°F (38°C) and 220°F (104°C) above ambient.~~

~~**Exception:** Gravity-operated drop-out vents complying with Section 910.3.2.1.~~

~~**910.3.3 (IBC [F] 910.3.3) Vent dimensions.** The effective venting area shall not be less than 16 square feet (1.5 m_2) with no dimension less than 4 feet (1219 mm), excluding ribs or gutters having a total width not exceeding 6 inches (152 mm).~~

910.3.2 (IBC [F] 910.3.2) ~~**910.3.4 (IBC [F] 910.3.4)**~~ **Smoke and heat vent locations.** Smoke and heat vents shall be located 20 feet (6096 mm) or more from adjacent *lot lines* and *fire walls* and 10 feet (3048 mm) or more from *fire barriers.* Vents shall be uniformly located within the roof in the areas of the building where the vents are required to be installed by Section 910.2, with consideration given to roof pitch, ~~draft curtain location,~~ sprinkler location and structural members.

910.3.3 Smoke and heat vents area. The required aggregate area of smoke and heat vents shall be calculated as follows:

For buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1:

$A_{VR} = V/9000$ **(Equation 9-4)**

Where:

A_{VR} = the required aggregate vent area (ft^2)
V = volume (ft^3) of the area that requires smoke removal

For unsprinklered buildings:

$A_{VR} = A_{FA}/50$ **(Equation 9-5)**

Where:

A_{VR} = the required aggregate vent area (ft^2)
A_{FA} = the area of the floor of the area that requires smoke removal.

~~**910.3.5 (IBC [F] 910.3.5) Draft curtains.** Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.~~

~~**Exception:** Where areas of buildings are equipped with ESFR sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers.~~

~~**910.3.5.1 (IBC [F] 910.3.5.1) Construction.** Draft curtains shall be constructed of sheet metal, lath and plaster, gypsum board or other *approved* materials that provide equivalent performance to resist the passage of smoke. Joints and connections shall be smoke tight.~~

~~**910.3.5.2 (IBC [F] 910.3.5.2) Location and depth.** The location and minimum depth of draft curtains shall be in accordance with Table 910.3.~~

910.4 (IBC [F] 910.4) Mechanical smoke removal systems ~~exhaust~~. ~~Where *approved* by the *fire code official,* engineered~~ mechanical smoke removal systems ~~exhaust~~ shall be designed and installed in accordance with Sections 910.4.1 through 910.4.7 ~~an acceptable alternative to smoke and heat vents~~.

910.4.1 Automatic sprinklers required. The building shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

910.4.2 (IBC [F] 910.4.2) Exhaust fan construction. Exhaust fans that are part of a mechanical smoke removal system shall be rated for operation at 105 deg. C. Exhaust fan motors shall be located outside of the exhaust fan air stream.

910.4.3 (IBC [F] 910.4.3) System design criteria. The mechanical smoke removal system shall be sized to exhaust the building at a minimum rate of two air changes per hour based upon the volume of the building or portion thereof without contents. The capacity of each exhaust fan shall not exceed 30,000 cubic feet per minute.

910.4.3.1 Make-up air. Make-up air openings shall be provided within six feet (add metric) of the floor level. Operation of makeup air openings shall be manual or automatic. The minimum gross area of make-up air inlets shall be 8 ft^2 per 1000 cfm of smoke exhaust.

910.4.4 (IBC [F] 910.4.4) Activation. The mechanical smoke removal system shall be activated by manual controls only.

910.4.5 (IBC [F] 910.4.5) Manual control location. Manual controls shall be located so as to be accessible to the fire service from an exterior door of the building and be protected against interior fire exposure by not less than 1-hour fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 712 of the *International Building Code*, or both.

~~**910.4.1 (IBC [F] 910.4.1) Location.** Exhaust fans shall be uniformly spaced within each draft-curtained area and the maximum distance between fans shall not be greater than 100 feet (30 480 mm).~~

~~**910.4.2 (IBC [F] 910.4.2) Size.** Fans shall have a maximum individual capacity of 30,000 cfm (14.2 m_3/s). The aggregate capacity of smoke exhaust fans shall be determined by the equation:~~

~~$C = A \times 300$ **(Equation 9-4)**~~

~~where:~~

~~C = Capacity of mechanical ventilation required, in cubic feet per minute (m_3/s).~~

~~*A* = Area of roof vents provided in square feet (m_2) in accordance with Table 910.3.~~

~~**910.4.3 (IBC [F] 910.4.3) Operation.** Mechanical smoke exhaust fans shall be automatically activated by the *automatic sprinkler system* or by *heat detectors* having operating characteristics equivalent to those described in Section 910.3.2. Individual manual controls for each fan unit shall also be provided.~~

910.4.6 (IBC [F] 910.4.6) ~~**910.4.4 (IBC [F] 910.4.4)**~~ **Control wiring** ~~**and control.**~~ Wiring for operation and control of mechanical smoke removal systems ~~exhaust fans~~ shall be connected ahead of the main disconnect in accordance with Section 701.12E of NFPA 70 and be protected against interior fire exposure to temperatures in excess of 1,000°F (538°C) for a period of not less than 15 minutes. ~~Controls shall be located so as to be immediately accessible to the fire service from the exterior of the building and protected against interior fire exposure by not less than 1-hour *fire barriers* constructed in accordance with Section 707 of the *International Building Code* or *horizontal assemblies* constructed in accordance with Section 711 of the *International Building Code*, or both.~~

~~**910.4.5 (IBC [F] 910.4.5) Supply air.** Supply air for exhaust fans shall be provided at or near the floor level and shall be sized to provide a minimum of 50 percent of required exhaust. Openings for supply air shall be uniformly distributed around the periphery of the area served.~~

910.4.7 (IBC [F] 910.4.7) ~~**910.4.6 (IBC [F] 910.4.6) Interlocks**~~ **Controls.** ~~On combination comfort air-handling/smoke removal systems or independent comfort air-handling systems, fans shall be controlled to shut down in accordance with the *approved* smoke control sequence.~~ Where building air handling and mechanical smoke removal systems are combined or where independent building air-handling systems are provided, fans shall automatically shut down in accordance with the *International Mechanical Code*. The manual controls provided for the smoke removal system shall have the capability to override the automatic shutdown of fans that are part of the smoke removal system.

910.5 Maintenance. Smoke and heat vents and mechanical smoke removal ~~exhaust~~ systems shall be maintained in an operative condition in accordance with Section 910.5.1 or 910.5.2, respectively ~~NFPA 204~~.

910.5.1 Smoke and heat vents. Smoke and heat vents shall be maintained ~~in an operative condition~~ in accordance with NFPA 204 and Section 910.5.1.1

910.5.1.1 Fusible links. Fusible links for smoke and heat vents shall be ~~promptly~~ replaced whenever fused, damaged or painted. ~~Smoke and heat vents and mechanical smoke exhaust systems shall not be modified.~~

910.5.2 Mechanical smoke removal systems. Mechanical smoke removal systems shall be maintained in accordance with the equipment manufacturer's maintenance instructions and Sections 910.5.2.1 through 910.5.2.4.

910.5.2.1 Frequency. Systems shall be operationally tested not less than once per year. Testing shall include the operation of all system components including control elements.

910.5.2.2 Testing. Operational testing of the mechanical smoke removal system shall include all equipment such as fans, controls and make-up air openings.

910.5.2.3 Schedule. A routine maintenance and operational testing program shall be initiated and a written schedule for routine maintenance and operational testing shall be established.

910.5.2.4 Written record. A written record of mechanical smoke exhaust system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

901.6.1 Standards. *Fire protection systems* shall be inspected, tested and maintained in accordance with the referenced standards *listed* in Table 901.6.1.

TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing systems	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
~~Mechanical smoke exhaust systems~~	~~NFPA 204~~
Smoke and heat vents	NFPA 204
Water-mist systems	NFPA 750
Clean-agent extinguishing systems	NFPA 2001

Revise as follows:

TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA[a] (square feet) (see Sections 3206.2 and 3206.4)	ALL STORAGE AREAS (See Sections 3206, 3207 and 3208)[b]					SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3)		
		Automatic fire-extinguishing system (see Section 3206.4)	Fire detection system (see Section 3206.5)	Building access (see Section 3206.6)	Smoke and heat removal (see Section 3206.7)	~~Draft curtains (see Section 3206.7)~~	Maximum pile dimension[c] (feet)	Maximum permissible storage height[d] (feet)	Maximum pile volume (cubic feet)

(Portions of table not shown remain unchanged)

3206.7 Smoke and heat removal. Where smoke and heat removal is ~~are~~ required by Table 3206.2, ~~smoke and heat vents~~ it shall be provided in accordance with Section 910. ~~Where draft curtains are required by Table 3206.2, they shall be provided in accordance with Section 910.3.5.~~

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

FM
4430-12 Approval Standard for Heat and Smoke Vents 910.3.1

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public.

This proposed code change is a result of the CTC's investigation of smoke and heat removal through the Roof Vent Study Group (RVSG), which is part of the area of CTC study entitled "Balanced Fire Protection" the scope of

which is: *"To investigate what constitutes an acceptable balance between active fire protection and passive fire protection measures with respect to meeting the fire and life safety objectives of the IBC."* As part of the CTC's review of the "balanced" fire protection issue, the CTC formed the RVSG to study the issue of smoke and heat vents with specific emphasis on: building area; sprinkler versus non sprinkler operation; impact on fire-fighting operations; relationship to the on-going updating of NFPA 204; the need for smoke and heat vent design requirements, regardless if smoke and heat vents are mandated by the code. The RVSG was formed in October 2006 and has been working on this issue since January 2007 and developed code change proposal F144-09/10 which was disapproved by the ICC membership. This subsequent code change proposal is a result of continued RVSG study on the issue.

The purpose of this code change proposal is to update the provisions which mandate roof smoke and heat removal systems in industrial and storage buildings based upon technical information on the operation of roof vents which has been developed in the United States over the last 20 years. The RVSG has developed its proposed revisions to the roof vent provisions based upon the following:

❖ Research on the interaction of sprinklers, roof vents and draft curtains funded by the National Fire Protection Research Foundation (NFPRF) and conducted at Underwriters Laboratories (UL) in 1997/1998. This research is summarized in a document referred to as National Institute of Science and Technology Interagency Report (NISTIR) 6196-1 dated September,1998.

❖ Provisions for the use of roof vents in sprinklered buildings included in the 2010 and 2013 edition of NFPA 13, including the substantiation statement for the NFPA 13 roof vent provisions.

❖ The capability of standard spray sprinklers to both control and/or extinguish a fire within 30 minutes of sprinkler operation, without supplemental fire department activity has been documented.

❖ Recommendations contained in National Institute for Occupational Safety and Health (NIOSH) 2005-132, *Preventing Injuries and Deaths of Fire Fighters Due to Truss Systems*, and NIOSH 2010-153, *Preventing Deaths and Injuries of Fire Fighters using Risk Management Principles at Structure Fires*.

❖ Recommendations contained in the Initial Report of the Federal Emergency Management Agency (FEMA)/National Fallen Firefighter Foundation (NFFF®) Firefighter Life Safety Summit held on April 14, 2004 in Tampa, Florida.

The RVSG determined that the primary purpose of smoke and heat removal from the perspective of the building code requirement is to assist fire-fighting operations after control of the fire has been achieved by the automatic sprinkler system.. Automatic smoke and heat vents and automatic sprinkler systems were developed independently of one another and their interaction has been a concern for many years. Even today, there is no accepted method of analyzing their interaction and, therefore, the installation standards for each (NFPA 204 and NFPA 13, respectively) give cautions to the designers of buildings having both systems.

The RVSG also determined that a manually-activated mechanical smoke removal system could perform the same function as roof vents. This code change increases the emphasis and acceptability of mechanical smoke removal systems as an acceptable alternative to smoke and heat vents. Mechanical smoke removal systems as prescribed in this code change provide fire-rated, grade-level enclosures for the control of the mechanical smoke removal system. This provides greater control of the system for the fire incident commander and reduces the need to place fire fighters on roofs or in other hazardous situations to operate smoke and heat venting systems. This methodology is consistent with the latest recommendations from NIOSH and NFFF for fire fighter safety, risk management and recommended fire- fighting tactics.

Summary of general provisions of the proposal:

- Either automatic roof vents or a manually-activated mechanical smoke removal system are permitted to be provided in industrial and storage buildings protected by a sprinkler system (in buildings where these provisions are applicable).
- Only roof vents should be permitted to be provided in storage buildings with high-piled storage which are not protected by a sprinkler system (i.e., buildings which contain high-piled storage with an area between 2,500 and 12,000 square feet). The rationale for this provision is that a mechanical smoke removal system capable of handling temperatures between 1,000^{o} F and 2,000^{o} F cannot be practically provided at a reasonable cost.
- Provisions for the design of a manually-activated mechanical smoke removal system have been included. These provisions require that the mechanical smoke removal system be sized to provide a minimum exhaust rate of 2 air changes per hour based upon the enclosed volume of the building space to be exhausted, without any deductions for the space occupied by storage or equipment. An exhaust rate of 2 air changes per hour is based on an analysis assuming a conservative approach using a Factory Mutual Research Corporation (FMRC) Standard Plastic Commodity (polystyrene cups in compartmented cartons). This commodity is recognized to represent a severe fire hazard of high density plastics. In a calculation based on this commodity , a

maximum of 68,960 cfm of smoke was generated by the design fire. Based upon an empty building volume of 2.659 million cubic feet, the exhaust rate required to achieve two air changes per hour is 88,633 cfm. Because no single fan can exceed 30,000 cfm, this building required five fans, each exhausting 25,570 cfm for a total of 127,850 cfm. This exceeds the minimum two air changes per hour by more than 40 percent. Even at the minimum required rate of two air changes per hour, the calculation results show that the mechanical smoke removal system proposed will be capable of removing the smoke from the building faster than it will be generated, ultimately removing smoke from the building once the fire is extinguished. A degree of conservatism is added to this by the calculation using an empty building volume.

- Provisions for the design of roof vents in buildings protected by a sprinkler system have been modified to require that the area of roof vents provide equivalent venting to that required for the mechanical smoke removal system (2 air changes per hour) based upon an assumption that each square foot of vent area will provide 300 cubic feet per minute (cfm) of ventilation. The reason for this requirement is that the roof vents should at least provide venting equivalent to the minimum venting provided by the mechanical smoke removal system. A factor of 300 cfm of venting per square foot of vent area is presently included in the 2012 edition of the *International Building Code*, although the use of this conversion factor is questionable at best. The actual ventilation provided by each square foot of vent area will depend upon the temperature differential between ambient conditions and the smoke layer under the roof deck or the pressure achieved if positive pressure ventilation is utilized. If the prescribed value is not practical for a given building design, designers have the option of demonstrating other values which provide the same performance under the alternate method of design provisions in the code.
- Provisions for the design of roof vents in buildings not protected by a sprinkler system have been revised (simplified) to require that the ratio of the area of the vents to the floor area be a minimum of 1:50. The rationale for this revision is that the case where roof vents will be provided without sprinkler protection will be rare: buildings which contain high-piled storage with an area between 2,500 and 12,000 square feet. Given that this situation will be rare, a complex analysis to determine the required area of roof vents is unnecessary. The ratio of vent area to floor area of 1:50 is conservative based upon the present requirements included in the International Building and Fire Codes.
- Provisions for the mechanical smoke removal system permit the system to be designed to handle air at ambient temperature provided that the fan motors are located outside the air stream. The basis for this provision is the thermocouple temperature data for the large-scale fire tests conducted at UL in 1997/1998, specifically Tests P-1 and P-4. (In Tests P-1 and P-4, no vents opened so the ceiling temperatures recorded would be unaffected by the activation of vents. See Pages 40 and 52 of the NISTIR 6196-1 report dated September 1998 (on the CTC web site) for the thermocouple temperature data recorded as a function of time.)
  - The exposing temperatures and time periods were reviewed and not considered to pose a threat to the building structure, fans or power wiring.
  - The sprinkler activation times and ceiling temperature data for the five large-scale fire tests summarized in NISTIR 6196-1 indicate that the exposure of mechanical exhaust fans and ducts located at the ceiling to high temperatures will be relatively short. Since it is anticipated that the exhaust system will only be activated after the arrival of fire fighters at the scene (estimated to be 7 minutes or longer after ignition), ceiling temperatures should be reduced sufficiently to allow fans rated for only ambient temperatures to be used for the exhaust system.
- The existing provisions for the design of a mechanical exhaust system indicate that the electrical power supply for the system is to be wired ahead of the main building disconnect for increased reliability and to facilitate fire-fighting operations. This existing provision will remain as no adverse experience has been cited.
- The provisions for the design of a mechanical smoke removal system indicate that wiring providing power to exhaust fans located in the interior of the building is to be protected by materials which will provide a 15 minute finish rating protection. The ceiling temperature data collected in the five large-scale fire tests summarized in NISTIR 6196-1 (cited above) show that temperatures at the ceiling will be far less than the exposure temperatures defined by the ASTM E119 time-temperature curve and that the ceiling temperatures will rapidly decrease once sprinklers activate. The ceiling temperature data included in NISTIR 6196-1 indicates that providing 15 minute finish rating protection for the interior electrical power supply is more than adequate to prevent damage to the power supply wiring for the exhaust system.
- The provisions pertaining to draft curtains included in the code have been removed. The rationale for removing the provisions for draft curtains is that research conducted by Factory Mutual Research Corporation (FMRC) in 1994 and the research conducted at UL in 1997/1998 demonstrated that draft curtains affect the sequence of operation of sprinklers and may have an adverse effect on sprinkler operation.

Although the mechanical smoke removal system or roof vent system outlined above are intended to be utilized to assist fire fighters after fire control has been achieved, either one of these systems can be utilized to assist interior manual fire-fighting operations. In order to utilize the roof vent system to assist with manual interior fire-fighting, it will likely be necessary that the vents will have to be opened manually by sending fire fighters to the roof if this is within the responding fire department's operating procedures.

It should be noted that the effectiveness of manually-opened roof vents will be marginal at best once sprinklers have operated and the ceiling temperatures drop to near ambient. Hence, in order for roof vents to be of assistance for interior manual fire-fighting, fire fighters will likely either need to pressurize the building using positive pressure ventilation (PPV) or exhaust the building with supplemental equipment.

It should also be noted that this proposed code change does not make reference to NFPA 204 for the design of

roof vent systems in either buildings protected by a sprinkler system or unsprinklered buildings. The rationale for this is that NFPA 204 does not address the use of roof vents in sprinklered buildings and the design provisions for roof vents presently included in NFPA 204 are too complex for application to relatively small buildings were vents would be permitted without sprinkler protection (i.e., buildings with high-piled storage less than 12,000 square feet in floor area).

The proposed code change developed by the RVSG is intended to incorporate the latest technology and research available on the interaction of sprinklers, roof vents and draft curtains, as well as the evolving thinking on fire fighter safety promoted by NIOSH and the NFFF into the code provisions.

The information on which this code change proposal is based did not exist when the provisions for roof vents were first included in the building and fire codes in the 1970s and 1980s. This proposal is a much needed update in the fire protection provisions for large industrial and storage buildings. A section-by-section summary follows:

910.1: The phrase "…or otherwise installed…" has been removed to clarify that these provisions are specific to required systems. None of the requirements in the section must be mandatory for non-required systems. Terminology was changed from "exhaust" to "removal" for consistency of terminology. This section is a general section but the exceptions are specific to when a smoke and heat removal system is required; therefore, the exceptions have been relocated to Section 910.2.

910.2: Exceptions 1 and 3 in this section have been relocated here from Section 910.1 as they are specific to when a smoke and heat removal system is required. In Exception 2, terminology has been changed from "exhaust" to "removal" for consistency of terminology. Additionally, the use of a mechanical smoke removal system is made mandatory instead of optional since it is the only practical way to provide smoke and heat removal in multi-story buildings.

910.2.1: This section has been editorially reworded into a complete sentence and mechanical smoke removal has been made an option for smoke and heat removal without requiring specific approval. Companion changes to the remainder of Section 910 have been made to move mechanical smoke removal as an option to smoke and heat venting.

910.2.2: This section has had a reference to IFC Table 3206.2 added and the reference to Section 3206.7 removed because Section 3206.2 sends the code user to the table first and then the table sends the user to Section 3206.7. The phrase "…stock or rack…" were removed because high-piled storage is not limited to stock or rack storage. The intent of the overall code change is to require smoke and heat vents as the method for protecting unsprinklered buildings and provide the option of vents or mechanical smoke removal for sprinklered buildings. This section was revised to accomplish that goal by referencing Section 910.3 for design of roof vents in non-sprinklered buildings and either Section 910.3 or 910.4 for sprinklered buildings.

910.3: This section has been revised to remove the reference to draft curtains as explained in the general reason statement. Additionally, the section and table references were updated to address section format changes.

Table 910.3: The table has been deleted and replaced with new Section 910.3.3 for calculation of required roof vent area.

910.3.1: The option to use FM Standard 4430 as an alternative to UL 793 has been added. Some manufacturers of roof vents only maintain an FM approval of their product, not a UL listing. Hence, making the UL standard the sole standard would require vents with only a FM approval to have their products tested by UL. FM 4430 and UL 793 are very similar in content. Permissive language contained in previous FM standards has been replaced with mandatory language in the most recent edition of the FM standard.

Current 910.3.2: Specific requirements for vent operation have been deleted. In (storage) buildings protected by a sprinkler system, the roof vent provisions contained in NFPA 13 dictate the temperature rating of the fusible element. Hence, there is no need to specify the temperature rating of the fusible element of the vent. With respect to the use of vents in unsprinklered high-piled storage areas, the temperature rating of the fusible element is not all that important. A listed fusible link or listed drop-out vent will operate when exposed to temperatures in excess of 1,000 degrees F. This issue is addressed in both the UL and FM standards for roof vents.

Proposed 910.3.2: This section has been relocated as indicated and revised to remove the reference to draft curtains as previously explained in the general reason statement.

Current 910.3.3: This section is to be deleted and replaced with new Section 910.3.3 that provides a simplified calculation for vent area. With respect to the minimum size of the vents, installing vents with dimensions less than 4

feet is not practical or economical. The more holes put in the roof, the more likely there is to be roof leakage problems. Hence, the minimum size of vents is "self-policing" from a practical and economic standpoint.

Proposed 910.3.3: The design of roof vent area has been simplified with two equations, one for sprinklered buildings and one for non-sprinklered buildings. A detailed explanation of the derivation of the equations is provided in the general reason statement.

910.3.5: The section on draft curtains has been removed. As detailed in the general reason statement, draft curtains can interfere with sprinkler operation and the RVSG found no evidence that they provided a valuable enhancement to roof vent performance.

910.4: This section has been revised to remove the qualification that a fire code official must approve the use of mechanical smoke removal systems. This code change changes mechanical smoke removal from an optional method that requires additional approval to an equally recognized, ~~if not superior~~, method of smoke removal that can be chosen without additional approval required. To address the qualifications for mechanical system use, additional prescriptive conditions were added to replace the case-by-case approval method.

910.4.1: This condition of mechanical system use requires that the building be sprinklered to protect the mechanical equipment from excessive heat.

Current 910.4.2: This section is deleted and replaced by new Section 910.4.3.

Proposed 910.4.2: This section requires exhaust fan motors be located out of the exhaust stream to protect the mechanical equipment from excessive heat.

Current 910.4.3: This section was deleted and replaced with **Section 910.4.4** and requires that mechanical systems are to be activated manually so that the fire department is in control of the system. In some situations, automatic operation could cause a fire to grow or spread, opening an excessive number of sprinklers. Automatic operation of the mechanical smoke removal system could be detrimental to the operation of the sprinkler system in a manner similar to draft curtains. The effect of the automatic mechanical smoke removal system on sprinkler operation would depend upon when the system was activated. The sooner the system is automatically activated, the greater the detrimental effect. The fire department will retain the option to shut down the exhaust system, as well.

Proposed 910.4.3. and 910.4.3.1: These sections specify the design requirement for the minimum number of air changes, maximum fan capacity, and requirements for the provision of make-up air. Based on NFPA 92-2012, Annex Section A-4.4.4.1, the maximum air velocity through the make-up air inlet is 1 m/sec or 200 ft/min. The area requirement is then derived as follows:

- Effective Vent Area = (1000 ft^3/min)/(200 ft/min) = 5 ft^2 per 1000 cfm
- Assume an orifice coefficient of 0.6
- Gross Vent Area = 5 ft^2/(0.6) = 8.33 ft^2 per 1000 cfm, which is rounded down due to the conservative nature of the requirement

The reason for this limitation is to prevent significant deflection of the plume, which will cause more air entrainment into the plume and more smoke production. This criteria is conservative as the requirement above assumes an active fire and the design philosophy for this code proposal is to provide post-fire smoke exhaust.

Current 910.4.5: This section has been deleted and replaced with more specific make-up air requirements in Section 910.4.3.

Proposed 910.4.5: This section establishes the required placement, access and protection of the manual controls to ensure the fire fighters will have quick and protected access to the controls.

910.4.6: This current section has been renumbered from 906.4.4 and addresses wiring and control. New Section 910.4.5 addresses the control system so the control provisions were removed from this section. The remaining text is unchanged.

910.4.7: This section has been revised to require that if a mechanical smoke removal system is integrated with a standard HVAC system, then the system must shut down upon detection of smoke as required by the IMC. This is a companion change to the new requirement in proposed Section 910.4.4 that mechanical smoke removal systems shall be manually operated only.

910.5 and Table 901.6.1. The reference to NFPA 204 for the maintenance of smoke and heat vents was retained; however, the reference to NFPA 204 for mechanical systems was removed and replaced with prescriptive testing and maintenance requirements placed in proposed Section 910.5.2. The RVSG determined that the maintenance requirements in NFPA 204 were not specific enough to ensure the necessary maintenance. In Section 910.5.1.1, the statement that vents cannot be modified was removed because it is not a maintenance issue. Modification of vents can be accomplished in a code compliant manner and such modification would require a building permit.

Table 3206.2: As previously noted, draft curtain requirements have been deleted and as a companion change, the column in IFC Table 3206.2 that prescribes draft curtain installation has been deleted.

Cost Impact: This proposal will not increase the cost of constructing industrial and storage buildings, and, in many cases, will reduce the cost of constructing these types of buildings.

Analysis: A review of the standard proposed for inclusion in the code, FM 4430-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F195-13

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

910.1-F-BALDASSARRA-CTC

F196 – 13

910.1 (IBC [F] 910.1), 910.3.5 (IBC [F] 910.3.5), 202, 3202, Table 3206.2

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

910.1 General. Where required by this code or otherwise installed, smoke and heat vents, or mechanical smoke exhaust systems, and draft curtains shall conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) or quick-response storage (QRS) sprinklers, automatic smoke and heat vents shall not be required within these areas.

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.

Exception: Where areas of buildings are equipped with ESFR or QRS sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers, and between QRS and the non-QRS sprinklers.

Add new definition as follows:

SECTION 202
GENERAL DEFINITIONS

QUICK RESPONSE STORAGE (QRS) SPRINKLER. A sprinkler with a response time index of 50 or less that is listed to control a specified fire in stored commodities with 12 or fewer sprinklers.

Revise as follows:

SECTION 3202
DEFINITIONS

QUICK RESPONSE STORAGE (QRS) SPRINKLER.

TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA[a] (square feet) (see Sections 3206.2 and 3206.4)	ALL STORAGE AREAS (See Sections 3206, 3207 and 3208)[b]					SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3)		
		Automatic fire-extinguishing system (see Section 3206.4)	Fire detection system (see Section 3206.5)	Building access (see Section 3206.6)	Smoke and heat removal (see Section 3206.7)	Draft curtains (see Section 3206.7)	Maximum pile dimension[c] (feet)	Maximum permissible storage height[d] (feet)	Maximum pile volume (cubic feet)

(Portions of table not shown remain unchanged)

a through i *(No change to current text*

j. Not required when storage areas are protected by early suppression fast response (ESFR) or quick-response storage (QRS) sprinkler systems installed in accordance with NFPA 13.

Reason: Factory Mutual data sheets no longer reference special sprinkler classifications, such as ESFR. Instead, FM now classifies sprinklers as “storage” and “non-storage” and provides appropriate installation parameters. Storage sprinklers now encompass a new category of quick-response sprinklers that share the key characteristics of ESFR sprinklers, i.e. fast response thermal elements and design areas that involve 12 or fewer sprinklers, but are not designated as ESFR. These quick-response storage sprinklers require similar precautions to ESFR sprinklers with respect to not introducing unknowns that were not represented in full-scale fire tests conducted to determine listing parameters. Thereby, it is important to extend the current provisions in Chapters 9 and 32 that are applicable to ESFR sprinklers to include quick-response storage sprinklers.

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

F196-13

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

910.1-F-SHAPIRO

F197 – 13
910.2.1 (IBC [F] 910.2.1)

Proponent: Randall R. Dahmen, P.E., Wisconsin licensed Commercial Building Inspector, representing self

Revise as follows:

910.2.1 (IBC [F] 910.2.1) Group F-1 or S-1. Buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m^2) ~~in~~ that is undivided ~~area~~ by full height walls having smoke resisting characteristics as required for draft curtains in Section 910.3.5.1.

Reason: The proposed modification of the wording clearly identifies the expectations of the assembly enclosing the Group F-1 or S-1 occupancies.

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

F197-13

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

910.2.1-F-DAHMEN

F198 – 13
910.3.5 (IBC [F] 910.3.5)

Proponent: Stephen DiGiovanni, Clark County, NV Fire Department, representing self

Revise as follows:

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed only in non-sprinklered buildings on the underside of the roof in accordance with this section.

~~Exception:~~ ~~Where areas of the building are equipped with ESFR sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers.~~

Reason: The purpose of this amendment is to not require draft curtains in buildings protected with fire sprinklers. The basis of this amendment is from Section 12.1.1 of NFPA 13. Since NFPA 13 does not provide sprinkler design criteria that encompass the use of draft curtains, then the requirement for draft curtains needs to be exempted for buildings protected in accordance with NFPA 13

Cost Impact: The cost impact for this is actual a savings, by not requiring the installation of draft curtains in sprinklered buildings.

F198-13

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

910.3.5-F-DIGIOVANNI

F199 – 13
IFC Table 911.1; IBC Table [F] 414.5.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

TABLE 911.1
EXPLOSION CONTROL REQUIREMENTS[f]

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	**Explosion (deflagration) venting or explosion (deflagration) prevention systems**
HAZARD CATEGORY			
Combustible dusts[a]	—	Not Required	Required
Cryogenic fluids	Flammable	Not Required	Required
Explosives	Division 1.1 Division 1.2 Division 1.3 Division 1.4 Division 1.5 Division 1.6	Required Required Not Required Not Required Required Required	Not Required Not Required Required Required Not Required Not Required
Flammable gas	Gaseous Liquefied	Not Required Not Required	Required Required
Flammable liquids	IA[b] IB[c]	Not Required Not Required	Required Required
Organic peroxides	Unclassified detonable I	Required Required	Not Permitted Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric	Gases	Not Required	Required
Unstable (reactive)	4 3 Detonable 3 Nondetonable	Required Required Not Required	Not Permitted Not Permitted Required
Water-reactive liquids and solids	3 2[e]	Not Required Not Required	Required Required
SPECIAL USES			
Acetylene generator rooms	—	Not Required	Required
Grain processing	—	Not Required	Required
Liquefied petroleum gas distribution facilities	—	Not Required	Required
Where explosion hazards exist[d]	Detonation Deflagration	Required Not Required	Not Permitted Required

a. Combustible dusts that are generated during manufacturing or processing. See definition of Combustible Dust in Chapter ~~22~~ 2.
b. Storage or use.
c. In open use or dispensing.
d. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.
e. A method of explosion control shall be provided when Class 2 water-reactive materials can form potentially explosive mixtures.
f. Explosion venting is not required for Group H-5 Fabrication Areas complying with Chapter 27 and the International Building Code.

Revise as follows:

[F] TABLE 414.5.1
EXPLOSION CONTROL REQUIREMENTS[a,h]

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems[b]
HAZARD CATEGORY			
Combustible dusts[c]	—	Not Required	Required
Cryogenic flammables	—	Not Required	Required
Explosives	Division 1.1	Required	Not Required
	Division 1.2	Required	Not Required
	Division 1.3	Not Required	Required
	Division 1.4	Not Required	Required
	Division 1.5	Required	Not Required
	Division 1.6	Required	Not Required
Flammable gas	Gaseous	Not Required	Required
	Liquefied	Not Required	Required
Flammable liquid	IA[d]	Not Required	Required
	IB[e]	Not Required	Required
Organic peroxides	U	Required	Not Permitted
	I	Required	Not Permitted
Oxidizer liquids and solids	4	Required	Not Permitted
Pyrophoric gas	—	Not Required	Required
Unstable (reactive)	4	Required	Not Permitted
	3 Detonable	Required	Not Permitted
	3 Nondetonable	Not Required	Required
Water-reactive liquids and solids	3	Not Required	Required
	2[g]	Not Required	Required
SPECIAL USES			
Acetylene generator room	—	Not Required	Required
Grain processing	—	Not Required	Required
Liquefied petroleum gas-distribution facilities	—	Not Required	Required
Where explosion hazards exist[f]	Detonation	Required	Not Permitted
	Deflagration	Not Required	Required

a. See Section 414.1.3.
b. See the International Fire Code.
c. As generated during manufacturing or processing.
d. Storage or use.
e. In open use or dispensing.
f. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.
g. A method of explosion control shall be provided when Class 2 water-reactive materials can form potentially explosive mixtures.
h. Explosion venting is not required for Group H-5 Fabrication Areas complying with Section 415.10.1 and the International Fire Code.

Reason: This proposal is intended to reduce confusion in the application of explosion venting requirements for Group H-5 Occupancies. Currently, IBC and IFC require explosion venting where the MAQs are exceeded per IFC Table 5003.1.1 and IBC Table 307.1. However, fabrication areas of H-5 Occupancies are specifically allowed to exceed these quantities in accordance with IBC 415.10.1.1.1 and IFC 2704.2.2.1 due to the strict controls prescribed for those fabrication areas.

This proposal would clarify that explosion venting is not required in the fabrication areas of H-5 Occupancies. HPM storage rooms and gas rooms are also allowed to exceed the limits of Tables 2704.2.2.1 and IBC 415.10.1.1.1.Explosion venting would still potentially be required in the HPM storage rooms and gas rooms. This is consistent with the current text in IBC 415.10.5.5.

This proposal is consistent with current construction, industry practice and application of explosion venting requirements, as Group H-5 fabrication areas are generally constructed without explosion venting. This proposal simply provides clarification on how the Group H5 requirements correlate with MAQs and explosion venting requirements found elsewhere in code.

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

F199-13

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

911.1T-F-ZUBIA-FCAC

F200 – 13
912.3.1 (IBC [F] 912.3.1)

Proponent: Robert Trotter, MCP., Tennessee Code Development Committee (bobtrotter1023@aol.com)

Revise as follows:

912.3.1 (IBC [F] 912.3.1) Locking fire department connection plugs and caps. ~~The *fire code official* is authorized to require~~ Approved, locking plugs or caps shall be provided on every fire department connections for water-based *fire protection systems.* Swivels shall be protected from unauthorized removal. Prior to installation, ~~where~~ the responding fire department shall have ~~carries~~ appropriate key wrenches for removal.

Reason: While many jurisdictions are taking advantage of the current authorization that entered the Code in the 2003 edition, other jurisdictions are in need of more stringent requirements. By removing the authorization and mandating that every FDC be protected by locking plugs or caps, the Code would contain the necessary force of law to require building owners to comply. Under the current economy, the theft of brass FDC's is becoming an epidemic, a real problem that puts firefighters at risk. This proposal provides for the latest "plug" technology to protect FDC's. The health, safety and welfare of the public require FDC protection.

Here are some quotes from recently published news articles that should shock the conscience and prove there is a problem that this proposal will correct.

http://sacramento.cbslocal.com **Thieves Stripping Parts Out Of Fire Systems**
Metal thieves are stripping small but critical pieces out of fire sprinklers, and fire officials worry the trend could create a bigger fire danger and end up costing lives.

http://www.pnwlocalnews.com **Metal thieves stealing fire connections from area business and apartments**
This type of theft has been rampant throughout the Puget Sound area even though a connection, which costs a business between $400 and $1,500 to replace, only gets thieves $15 to $25 each at a salvage yard. The danger to the public and to a business is during a fire. If the FDC is missing, firefighters will not be able to supplement the sprinkler system or get water to firefighting crews inside the building of multistory businesses. This endangers not only the firefighters, but anyone inside the building. Increased damage to the building itself and higher rebuilding costs are also possible.

http://www.beavertonvalleytimes.com **The dark side of recycling**
…Portland Police Bureau that a band of metal thieves had found a lucrative new target: fire department connections (FDCs), the chunky brass fittings used by firefighters to connect their hoses to the internal sprinkler systems of commercial buildings. Detective Mike Malanaphy of the Portland Police Bureau now believes that Sharrow and Guild were responsible for the disappearance of more than 100 FDCs from buildings across the metro area — including the Oregon Humane Society, Legacy Salmon Creek Hospital, and the SmartPark on Southwest 10th Avenue". "It's difficult to assess the damage caused by the thefts, but Malanaphy reckons that $30,000 would be a lowball estimate — and it doesn't take into account the possibility that a missing FDC could cripple firefighters in the event of a blaze. The pair's profit from reselling the brass? About $3,000.

Cost Impact: The code change proposal will increase the cost of construction. The cost depends on the type of protection but is not expected to exceed $375 per individual FDC.

F200-13

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

912.3.1-F-TROTTER

F201 – 13
912.4 (IBC [F] 912.4)

Proponent: Joshua D Smith, representing NYS Office of Fire Prevention and Control (Joshua.smith@dhses.ny.gov)

Revise as follows:

912.4 (IBC [F] 912.4) Signs. A metal sign with ~~raised~~ letters at least 1 inch (25 mm) in size shall be mounted ~~on~~ at all fire department connections ~~serving automatic sprinklers, standpipes or fire pump connections~~ to indicate the system being supplied. ~~Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES or TEST CONNECTION or a combination thereof as applicable.~~ The signs and the caps of the connections shall be marked as follows:

1. For a connection serving only a standpipe the sign shall read STANDPIPE and the cap shall be colored red.
2. For a connection serving a combination automatic sprinkler and standpipe system the sign shall read COMBINATION STANDPIPE AND SPRINKLER and the cap shall be colored yellow.
3. For a connection serving an automatic sprinkler system only the sign shall read SPRINKLER or AUTOMATIC SPRINKLER and the cap shall be colored green.
4. For a connection serving a non-automatic sprinkler system the sign shall read NON-AUTOMATIC SPRINKLER and the cap shall be colored silver.
5. Test connections shall have signs that read TEST CONNECTION and the caps shall be colored black.

Where the fire department connection does not serve the entire building, a sign shall be provided indicating the portions of the building served.

Reason: There are often signs installed for fire department connections that are often a single color, such as chrome or brass signs, that are not easily read from the point where a fire apparatus will be able to first see the connection. The color coding of the caps will make identifying the function of the fire department connection more easily discernible from a greater distance for fire apparatus fire fighters. The more common use of mutual aid agreements between jurisdictions, and the push to standardize equipment and terminology for NIMS compliance would be of benefit from a standardized color coding system. With this in mind, no matter where a fire department or personnel may be from when they have to respond to a call when covering another jurisdiction's response area the markings of a FDC will all mean the same and the mutual aid departments can still operate efficiently.

Cost Impact:

F201-13

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

912.4-F-SMITH

F202 – 13
912.4 (IBC [F] 912.4)

Proponent: Joshua D Smith, representing NYS Office of Fire Prevention and Control (Joshua.smith@dhses.ny.gov)

Revise as follows:

912.4 (IBC [F] 912.4) Signs. Signs shall be provided for fire department connections in accordance with Sections 912.4.1 through 912.4.3.

912.4.1 (IBC [F] 912.4.1) Fire department Connection Identification. A metal sign with raised letters at least 1 inch (25 mm) in size shall be mounted on all fire department connections serving automatic sprinklers, standpipes or fire pump connections. Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES or TEST CONNECTION or a combination thereof as applicable.

912.4.2 (IBC [F] 912.4.2) Partial coverage signage. Where the fire department connection does not serve the entire building, a sign shall be provided indicating the portions of the building served.

912.4.3 (IBC [F] 912.4.3) Operating pressure. A metal sign with letters at least 1 inch (25 mm) in size shall be mounted above all fire department connections to indicate the pressure needed to supply the system being connected to.

Reason: By having a sign indicating the proper operating pressure for the system being supplied by the FDC the ability for the fire department to operate more efficiently is increased as well as the level of fire fighter safety is also increased. By knowing the proper operating pressures the system will not be under supplied, ensuring proper fire fighting operations, but the system will also not be over pressurized which can cause harm to the fire fighters but can also cause damage to the system.

Cost Impact: This will increase the cost of construction

F202-13

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

912.4.1 (NEW)-F-SMITH

F203 – 13
913.2.2 (New) [IBC [F] 913.2.2 (New)]

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (rjd@davidsoncodeconcepts.com)

Revise as follows:

913.2.2 (IBC [F] 913.2.2) Fuel line piping protection. Fuel lines supplying diesel engine driven fire pumps shall be protected by an approved fuel line protective system with a fire-resistance rating equivalent to the fire resistance rating of the construction enclosing the fire pump room where such piping is located in areas outside the fire pump room.

Reason: When electric powered fire pumps are installed Section [F] 913.2 and the referenced standards, (NFPA 20 and NFPA 70), require protection against exposure from fire for the fire pump, the components and the wiring supplying the electric powered fire pump.

NFPA 20
INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

Chapter 9 Electric Drive for Pumps
9.1.4* All power supplies shall be located and arranged to protect against damage by fire from within the premises and exposing hazards.

NFPA 70
ARTICLE 695
Fire Pumps

(E) Arrangement. All power supplies shall be located and arranged to protect against damage by fire from within the premises and exposing hazards. [20:9.1.4]

Multiple power sources shall be arranged so that a fire at one source does not cause an interruption at the other source.

913.2-F-DAVIDSON

913.2-F-DAVIDSON
Additional NFPA 20 protection language

4.12* Equipment Protection.

4.12.1* General Requirements. The fire pump, driver, controller, water supply, and power supply shall be protected against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism, and other adverse conditions.

4.12.1.1* Indoor Fire Pump Units.

4.12.1.1.1 Fire pump units serving high-rise buildings shall be protected from surrounding occupancies by a minimum of 2-hour fire-rated construction or physically separated from the protected building by a minimum of 50 ft (15.3 m).

4.12.1.1.2 Indoor fire pump rooms in non-high-rise buildings or in separate fire pump buildings shall be physically separated or protected by fire-rated construction in accordance with Table 4.12.1.1.2.

4.12.1.1.3 The location of and access to the fire pump room shall be preplanned with the fire department.

However, the same protection against fire exposure is not provided for fuel lines serving diesel engine powered fire pumps, a component just as important to ensure availability of fire flows as the other fire pump components.

NFPA 20
INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

11.4.4* Fuel Piping.
11.4.4.1 Flame-resistant reinforced flexible hose listed for this service with threaded connections shall be provided at the engine for connection to fuel system piping.
11.4.4.2 Fuel piping shall not be galvanized steel or copper.

11.4.4.3 The fuel return line shall be installed according to the engine manufacturer's recommendation.

11.4.4.4 There shall be no shutoff valve in the fuel return line to the tank.

11.4.4.5* Fuel Line Protection. A guard, pipe protection, or approved double-walled pipe shall be provided for all exposed fuel lines.

11.4.4.6 Fuel Solenoid Valve. Where an electric solenoid valve is used to control the engine fuel supply, it shall be capable of manual mechanical operation or of being manually bypassed in the event of a control circuit failure.

This proposal adds a new Section "913.2.2 / [F] 913.2.3 Fuel line piping protection" that provides for a level of fire resistance protection equal to the fire-resistance rating of the fire pump room enclosing construction for those portions of the fuel oil piping that are installed outside of the fire pump room where they may be exposed to a fire in the occupancy protected.

The IBC language is shown here for visualization of how the added language would appear in that document.

[F] 913.2 Protection against interruption of service.The fire pump, driver and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

913.2.1 Protection of fire pump rooms. Fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

Exceptions:

1. In other than high-rise buildings, separation by 1-hour fire barriers constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both, shall be permitted in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Separation is not required for fire pumps physically separated in accordance with NFPA 20.

[F] 913.2.2 Fuel line piping protection: In addition to complying the requirements of NFPA 20, Fuel lines supplying diesel powered fire pumps shall be protected against fire by an approved fuel line protective system with a fire-resistance rating equivalent to the rating of the construction enclosing the fire pump room where portions of the fuel line piping are located in areas outside the room the fire pump is located in.

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

F203-13

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

913.2-F-DAVIDSON

F204 – 13
913.2.2 (IBC [F] 913.2.2 (New)), Chapter 80 (IBC Chapter 35)

Proponent: Bob Eugene, representing Underwriters Laboratories (Robert.Eugene@ul.com)

Add new text as follows:

913.2.2 (IBC [F] 913.2.2) Circuits supplying fire pumps. Cables used for survivability of circuits supplying fire pumps shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

Add new standard to Chapter 80 (IBC Chapter 35) as follows:

UL

2196-2001 Tests for Fire Resistive Cables, with revisions through December 7, 2003……..913.2.2

Reason: UL 2196 is the ANSI approved standard for tests of fire resistive cables. NFPA 20 (fire pumps) includes selective survivability requirements to assure integrity of certain critical circuits. NFPA 70 does not specify the applicable standard within the mandatory provisions of the code, but recognizes electrical circuit protective systems as an alternate to listed cables. An electrical circuit protective system is a field assembly of components that must be installed according to the listing requirements and manufacturer's instructions in order to maintain the listing for the system. There are more than two dozen electrical circuit protective systems listed in the UL Fire Resistance Directory.

Cost Impact: None.

Analysis: A review of the standard proposed for inclusion in the code, UL 2196-2001, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F204-13

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

913.2.2 (NEW)-F-EUGENE

F205 – 13
913.3 (New) [IBC [F] 913.3(New)]

Proponent: Jeffrey M. Hugo, CBO, representing the National Fire Sprinkler Association (hugo@nfsa.org)

Add new text as follows:

913.3 (IBC [F] 913.3) Fire Pump rooms egress and access. Fire pump rooms located on levels other than the level of exit discharge shall discharge into an exit passageway constructed in accordance with Section 1023 or directly into a interior exit stairway in accordance with Section 1022.

Reason: New sections are necessary as NFPA 20 permits fire pump rooms to be located on floors that are not always on the same floor as the level of exit discharge. While the fire pump is operating, NFPA 20 requires building personnel to be in the room for testing and during a fire event and requires the exit of the fire pump room to go into an exit passageway.

During a fire, the person being sent to the pump room on an upper or lower floor than the level of exit discharge needs to be able to safely get from the stairwell to the pump room without encountering the fire. Therefore, the exit stairwell or an exit passageway needs to lead to the pump room.

Cost Impact: Will not increase the cost of construction

F205-13

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

913.2.1.2 (NEW)-FS-HUGO

F206 – 13
914.8.2 (New)

Proponent: Eric R. Rosenbaum, Hughes Associates, Inc. representing the Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com+

Revise as follows:

914.8.2 Fire suppression for new airport traffic control towers. Where an occupied floor is located more than 35 feet (10668 mm) above the lowest level of fire department vehicle access, new airport traffic control towers shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.

~~**914.8.2**~~ **914.8.3 Fire suppression for aircraft hangars** Aircraft hangars shall be provided with a fire suppression system designed in accordance with NFPA 409, based upon the classification for the hangar given in Table 914.8.2.

> **Exception:** When a fixed base operator has separate repair facilities on site, Group II hangars operated by a fixed base operator used for storage of transient aircraft only shall have a fire suppression system, but the system shall be exempt from foam requirements.

Reason: The proposed change reflects changes accepted in Section 412.3 of the IBC regarding new airport traffic control towers. The accepted change in the IBC requires an automatic sprinkler system in all new air traffic control towers with an occupiable floor 35 ft or more above the lowest level of fire department vehicle access. This change clarifies the application of the criteria in Section 914.8 Aircraft-related occupancies. A copy of the accepted change in the IBC is as follows:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.11 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.2.

TABLE 412.3.2
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS

TYPE OF CONSTRUCTION	HEIGHT[a] (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic controls towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m^2).

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building

2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

412.3.5 Automatic fire detection systems. Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

412.3.7 Standby power. A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

412.3.9 Accessibility. Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11.

Cost Impact: This code change will increase the cost of construction from the current code requirements in some instances; however, reflects current building practices of the FAA.

Analysis: The accepted code change mentioned in the proposal is G86-12 (AMPC).

F206-13

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

914.8.2 (NEW)-F-ROSENBAUM

F207 – 13
IBC 1001.2, IBC [F] 1001.3

Proponent: Robert Rice, Josephine County, OR, representing Oregon Building Officials Association (structdesigner@yahoo.com)

Revise as follows:

IBC 1001.2 ~~Minimum requirements.~~ Alterations to existing *means of egress*. It shall be unlawful to alter a building or structure in a manner that will reduce the number of *exits,* or the capacity of the *means of egress* to less than required by this code. **~~[F] 1001.3 Maintenance.~~** *Means of egress* shall be maintained in accordance with the *International Fire Code* and a permit is required prior to construction, alteration or addition in accordance with Section 105.1.

(Renumber remaining section.)

Reason: This proposal is to rename the title of Section 1001.2. This section states that it is unlawful to alter the means of egress system. The title "Minimum requirements" does not fit with the content of the section. The existing code-designed means of egress may or may not be the minimum requirements but, that's not what this section is addressing. Technically speaking, it could further be argued that this section of code is totally unnecessary and pointless. Any time the structure is altered, including the means of egress, Section 105.1 requires a permit to do the alteration(s) as stated,

[A] 105.1 Required. *Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit.*

Cost Impact: None. This proposal does not add any new requirement or limitation to the code. It is intended to make the section title consistent with the contents of the section.

Analysis: If this code change is approved, the future maintenance scoping of the revised section will be determined by the ICC Code Correlation Committee.

F207-13

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

1001.2-F-RICE

F208 – 13
1030.2.1

Proponents: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com); John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Revise as follows:

1030.2.1 Security devices and egress ~~locks~~. Security devices affecting *means of egress* shall be subject to approval of the *fire code official*. ~~Special~~ Security devices and locking arrangements in the means of egress ~~including, but not limited to access-controlled egress doors, security grills, locks and latches, and delayed egress locks~~ that restrict, control, or delay egress shall be installed and maintained as required by this chapter.

Reason:

Williams/Baldassarra: Revisions approved in the 2012 ICC code development cycle for Chapter 10 of the 2015 IBC, and corresponding sections of Chapter 10 of the 2015 IFC, regarding "shall be permitted" locking systems should be coordinated in this section of the IFC.

The proposed modification deletes the "including, but not limited to" clause and clarifies that any security device or locking arrangement that restricts, controls, or delays egress is to be maintained as required by this chapter of the IFC.
The table below lists the expected titles of these extensively revised sections, and the code change proposals affecting these sections.

2012 IBC and 2012 IFC	2015 IBC and 2015 IFC	Code Change Proposals
1008.1.9.6 Special locking arrangements in Group I-2.	1008.1.9.6 Controlled egress doors in Group I-1 and I-2.	E66-12 AMPC E67-12 AM E69-12 AMPC
1008.1.9.7 Delayed egress locks.	1008.1.9.7 Delayed egress.	E70-12 AM E72-12 AM E74-12 AMPC
1008.1.9.8 Access-controlled egress doors.	1008.1.9.8 Sensor release of electrically locked egress doors.	E77-12 AS E78-12 AM E80-12 AS
1008.1.9.9 Electromagnetically locked egress doors.	1008.1.9.9 Electromagnetically locked egress doors.	E77-12 AS E81-12 AS E82-12 AM

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Woestman: Revisions approved in the 2012 ICC code development cycle for Chapter 10 of the 2015 IBC, and corresponding sections of Chapter 10 of the 2015 IFC, regarding "shall be permitted" locking systems should be coordinated in this section of the IFC.

The proposed modification deletes the "including, but not limited to" clause and clarifies that any security device or locking arrangement that restricts, controls, or delays egress is to be maintained as required by this chapter of the IFC.

The table below lists the expected titles of these extensively revised sections, and the code change proposals affecting these sections.

2012 IBC and 2012 IFC	2015 IBC and 2015 IFC	Code Change Proposals
1008.1.9.6 Special locking arrangements in Group I-2.	**1008.1.9.6 Controlled egress doors in Group I-1 and I-2.**	E66-12 AMPC E67-12 AM E69-12 AMPC
1008.1.9.7 Delayed egress locks.	**1008.1.9.7 Delayed egress.**	E70-12 AM E72-12 AM E74-12 AMPC
1008.1.9.8 Access-controlled egress doors.	**1008.1.9.8 Sensor release of electrically locked egress doors.**	E77-12 AS E78-12 AM E80-12 AS
1008.1.9.9 Electromagnetically locked egress doors.	**1008.1.9.9 Electromagnetically locked egress doors.**	E77-12 AS E81-12 AS E82-12 AM

Cost Impact: None

F208-13

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

1030.2.1-F-WOESTMAN

F209 – 13
1030.3.1 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

1030.3.1 Group I-2. In Group I-2, the required clear width for aisles, corridors and ramps that are part of the required means of egress shall comply with Section 1018.2. The facility shall have a plan to maintain the required clear width during emergency situations.

Exception: In areas required for bed movement, equipment shall be permitted in the required width where all the following provisions are met:

1. The equipment is low hazard and wheeled.
2. The equipment does not reduce the effective clear width for the means of egress to less than 5 feet (1525 mm).
3. The equipment is limited to:
   - 3.1 Equipment and carts in use;
   - 3.2 Medical emergency equipment;
   - 3.3 Infection control carts; and
   - 3.4 Patient lift and transportation equipment.
4. Medical emergency equipment and patient lift and transportation equipment, when not in use, is required to be located on one side of the corridor.
5. The equipment is limited in number to a maximum of one per patient sleeping room or patient care room within each smoke compartment.

Reason: The new language in Section 1030.3.1 is to be placed in the International Fire Code as a procedural requirement. It is recognized that the 8'-0" wide corridor in an Group I-2 occupancy where beds are moved is to remain at 8'-0" in width. The language recognizes and identifies the fact that certain movable pieces of equipment will be present in the corridor during normal operations of the patient care units and seeks to restrict the types and number of such pieces of equipment and the restrictions the equipment may impose on the means of egress.

The language also recognizes that during emergencies facilities must have an emergency management plan that address the steps that must be taken by the facility and responding staff to ensure that the required 8'-0" wide corridor is kept clear of movable obstructions.

The terminology is consistent with NFPA 101.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F209-13

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

1030.3.1 (NEW)-F-BALDASSARRA-WILLIAMS-ADHOC

F210 – 13
1101.3

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1101.3 Permits. Permits for alterations necessary to comply with this section shall be required as set forth in Section~~s 105.6 and 105.7 and the *International Building Code*~~ 105.1 of the *International Existing Building Code*.

Reason: This change will direct the code user to the correct reference section for obtaining a permit to make any alterations necessary to conform to this section of the IFC. Sections 105.6 and 105.7 are for operational permits for various operations or the installation of certain systems, not alterations to an existing building. With the deletion of Chapter 34 from the IBC, the only provisions in the ICC family of codes for permits for existing buildings are found in the IEBC.

Cost Impact: There is no cost impact of this change.

F210-13

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

1101.3 (NEW)-F-COLLINS

F211 – 13
1103.1

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1103.1 Required construction. Existing buildings shall comply with not less than the minimum provisions specified in Table 1103.1 and as further enumerated in Sections 1103.2 through 1103.9.

The provisions of this chapter shall not be construed to allow the elimination of fire protection systems or a reduction in the level of fire safety provided in buildings constructed in accordance with previously adopted codes.

Exceptions:

1. Group U occupancies.
2. Work performed under a permit in accordance with Section 105.1 of the International Existing Building Code.

Reason: The language in this section has been interpreted to mean that once a building is built, none of the features in a fire protection systems may be removed, or the fire safety elements modified based on newer code provisions. Doing so under the system of permits required to modify or remove such a system should be permitted by the code.

Many codes required fire safety features such as rated partitions and opening protection that is not required in modern building codes. If such features or protections are allowed to be removed by the code in effect for such facilities, those changes should be allowed.

Cost Impact: This proposal will not increase the cost of construction.

F211-13

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

1103.1-F-COLLINS

F212 – 13
1103.1, 1104.1; IEBC 804.2.2.2 (NEW)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFC CODE DEVELOPMENT COMMITTEE AND PART II WILL BE HEARD BY THE IEBC CODE DEVELOPMENT COMMITTEE AS SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMMITTEES.

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

PART I – INTERNATIONAL FIRE CODE

.

Revise as follows:

SECTION 1103
FIRE SAFETY REQUIREMENTS FOR EXISTING BUILDING

1103.1 Required construction. Existing buildings shall comply with not less than the minimum provisions specified in Table 1103.1 and as further enumerated in Sections 1103.2 through 1103.9.

The provisions of this chapter shall not be construed to allow the elimination of fire protection systems or a reduction in the level of fire safety provided in buildings constructed in accordance with previously adopted codes.

Exceptions:

1. Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protectives, penetrations and joints are not required in new construction for sprinklered buildings.
2. Group U occupancies.

SECTION 1104
MEANS OF EGRESS FOR EXISTING BUILDINGS

1104.1 General. *Means of egress* in existing buildings shall comply with the minimum egress requirements when specified in Table 1103.1 as further enumerated in Sections 1104.2 through 1104.23, and the building code that applied at the time of construction. Where the provisions of this chapter conflict with the building code that applied at the time of construction, the most restrictive provision shall apply. Existing buildings that were not required to comply with a building code at the time of construction shall comply with the minimum egress requirements when specified in Table 1103.1 as further enumerated in Sections 1104.2 through 1104.24.

Exception: Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protectives, penetrations and joints are not required in new construction for sprinklered buildings.

PART II – INTERNATIONAL EXISTING BUILDING CODE

Add new text as follows:

804.2.2.2 Group I-2. Where approved, in Group I-2 Condition 2 buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the *International Building Code* has been added and the building is now equipped throughout with an automatic sprinkler system, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protectives, penetrations and joints are not required in new construction for buildings equipped throughout with an automatic sprinkler system.

Reason: The changes provide tradeoffs for installation of automatic sprinkler systems consistent with those allowed for new construction and also with those allowed by CMS. In many editions of the legacy codes and the ICC Codes dating from the 1980s and even before, the same or similar tradeoffs were allowed when a facility elected to provide sprinkler protection. The AD Hoc Committee on Health Care is proposing requiring retrofit of sprinklers in Hospitals that we feel provide the best protection available and feel because of this the tradeoffs are justified in existing facilities as has been vetted and justified in new construction for many years. These requirements are part of a package of retrofit requirements that provide a minimum level of safety considered necessary for patients, staff and first responders in an environment in which patients are in many instances not capable of self preservation and must be protected in place. Automatic sprinkler protection is key to any plan for protecting residents in place and for the safety of those responding to emergencies by providing the extra time needed to respond. The requirements are also consistent with current CMS standards that apply to all hospitals nationwide receiving Medicare/Medicaid funding and would not add additional requirements to those facilities beyond current nationwide Federal requirements but would allow the facilities to better meet those requirements without possible costly conflicts in other codes.

If this proposal is successful and the proposal for a new Section 1105 is also approved, the Adhoc Health Care committee will bring forward a corresponding exception to be applicable for the new Section 1105.1 as follows:

SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.1 General. Existing Group I-2 shall meet the following requirements:

1. The minimum fire safety requirements in Section 1103, and
2. The minimum egress requirements in Section 1104, and
3. The additional egress and construction requirements in Sections 1105.2 through 1105.7.5.2.

Where the provisions of this chapter conflict with the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

> **Exception:** Where approved in accordance with Section 102.4, in Group I-2 Condition 2 buildings where a sprinkler system installed in accordance with Section 903.3.1.1 has been added and the building is now sprinklered throughout, the existing fire resistance ratings, opening protectives, penetrations and joints in assemblies are not required to be maintained where such fire resistance ratings, opening protective, penetrations and joints are not required in new construction for sprinklered buildings.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

Cost Impact: None

F212-13
PART I – INTERNATIONAL FIRE CODE

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

PART II – INTERNATIONAL EXISTING BUILDING CODE

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

1103.1-F-WILLIAMS-ADHOC

F213 – 13
1103.1.1 (New), [A] 102.6, Chapter 80

Proponent: Adolf Zubia. Chairman, IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new next as follows:

1103.1.1 Historic Buildings. Facilities designated as *historic buildings* shall develop a fire protection plan in accordance with Chapter 10 and 11 of NFPA 914. The fire protection plans shall comply with the maintenance and availability provisions in Section 404.4 and 404.5.

Revise as follows:

[A] 102.6 Historic buildings. The provisions of this code relating to the construction, *alteration,* repair, enlargement, restoration, relocation or moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the state or local jurisdiction as historic buildings when such buildings or structures do not constitute a distinct hazard to life or property. Fire protection in designated historic buildings ~~and structures~~ shall be provided ~~in accordance~~ with an approved fire protection plan as required in Section 1103.1.1.

Add new standard Chapter 80 as follows:

NFPA

914—2010 Code for Fire Protection of Historic Structures. 1103.1.1

Reason: The intent of this code change is to clarify the requirements in the IFC with respect to the fire protection plan for historic buildings. This proposal does not change the current requirements for fire protection system, but only provides clarity.

IFC Section 102.6 currently requires an "approved fire protection plan." But then the code provides no guidance as to what the plan needs to address, or what needs to be in the "approved fire protection plan." This proposal adds a reference to NFPA 914 in Chapter 11 (new section 1103.1.1) which now establishes specific criteria to evaluate the historic building in accordance with NFPA 914 and requires maintenance and availability of the plan in accordance with current requirements for Fire Safety Plans as per Section 404 . This change will provide more specific guidance to code officials, design professionals and building owners as to the provisions that are applicable to fire protection plans for historic buildings in order to provide a reasonable level of building and life safety provisions.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 914 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2013.

F213-13

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

1103.1.1-F-ZUBIA-FCAC

F214 – 13
1103.3

Proponent: Ron Burton, PTW Advisors, LLC, representing BOMA international (ronburton@ptwadvisors.com)

Revise as follows:

1103.3 Elevator operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Exception: Buildings without occupied floors located more than 75 feet above the lowest level of fire department vehicle access where provided with automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Reason: The purpose of this proposed change is to:

- Clearly identify the fire code as the scoping document for the requirement of retroactive fire safety building features;
- Clarify the intent of the code with respect to which elevators must be retrofitted with Phase I emergency recall operation and

Phase II emergency in-car operation; and,

- Provide the opportunity to substitute fire sprinkler installation for Phase I emergency recall operation and Phase II emergency in-car operation retrofits in low and mid-rise buildings.

These changes are needed because of the exceeding expense of compliance for many of these retrofits. It is not unknown for application of the mandatory Phase I and Phase II retrofits required by the A17.3 Safety Code for Existing Elevators and Escalators to trigger complete replacement of the elevator machinery at costs running into the hundreds of thousands of dollars. What is a relatively inexpensive fire safety feature in a new elevator installation is unreasonably onerous when applied to existing elevators. It's therefore reasonable to codify alternate methods for building owners to meet the intent of the codes.

It's important to note that the 25 foot travel thresh-hold for ASME A17.3 emergency operation retrofit is not mitigated by occupant load; number of stories; elevator use; building fire or smoke compartment conditions; the presence of sprinklers; or any building specific operational firefighting considerations. For elevators installed prior to the adoption of newer elevator emergency operations features, many existing 3 story buildings require retrofit; elevators in non-atmospherically segregated spaces like low-rise atriums require retrofits; vintage freight elevators, regardless of maintenance condition or the ability of building occupants to access them, require retrofits. The problem of inflexible compliance options is magnified by the usual division of professional jurisdictions because elevator authorities typically do not have the expertise to assess fire risk on a total building basis; hence the need for the fire code to scope retroactive fire safety provisions.

By allowing for more affordable or effective alternatives to the Phase I and Phase II retrofits, less opposition should exist to adoption of ASME A17.3 and its other safety requirements such as safety bulkheads for hydraulic elevators and door restrictors, thereby enhancing overall elevator safety.

Status of State Adoptions of ASME A17.3 Phase I and Phase II FF Service Retroactive Requirements	
22	States adopt ASME A17.3
1	State modifies ASME A17.3 to trigger FF service retrofit at 70 feet of travel.
1	State amends away FF service retrofit for existing elevators.
1	State only requires FF service retrofit where triggered by other alterations; no blanket retroactivity.
1	State adopts ASME A17.3 *"for regulatory guidance only for elevators classified as remodeled."*
1	State amends ASME A17.3 to change 25 foot travel trigger to 3 stories.
1	State adopts ASME A17.3 but has a 5 year (until mid-2015) moratorium on required PH II retrofits.
28	States Do Not Adopt ASME A17.3

Intents of the Code

The intents of Phase I emergency recall are to prevent elevator users from being discharged at a floor that is engaged in a fire; from accessing an elevator during a fire; and, in a detected fire condition, to return the elevator car to a designated floor for firefighter access for operations and rescue.

The intent of Phase II emergency in-car operation is to provide firefighters the ability to operate the elevator for firefighting operations and rescue.

The proposed exception recognizes that there is no documentation of civilian or firefighter life loss while in an elevator during a structural fire in a building protected with automatic fire sprinklers. It is reasonable that if an owner has already provided superior fire safety features in an existing building that they not be required to retrofit expensive fire safety features of limited value.

Additionally, the most recent comprehensive professional review of sprinkler system reliability concluded that *"when sprinklers are present in the fire area of a fire large enough to activate sprinklers in a building not under construction, sprinklers operate 91% of the*

time. When they operate, they are effective 96% of the time, resulting in a combined performance of operating effectively in 88% of reported fires where sprinklers were present in the fire area and fire was large enough to activate sprinklers."[1] This is contrasted with an eight-year study of 178 high-rise fires in New York City in which elevators with Phase I and Phase II "firefighter service" were used revealed the following disturbing findings:

- 59 elevators failed either on arrival of the firefighters or during the fire. (33 percent)
- 37 percent of the 59 failures were the result of fire or water damage to the elevator electrical system.[2]

There is no record of elevator occupant fire fatalities in a sprinklered building.

For buildings within the scope of the exception, which are not already sprinklered, the exception provides an incentive to provide fire sprinklers.

The references to Sections 903.3.1.1 and 903.3.1.2 mean that only a fire sprinkler system installed in accordance with the appropriate technical standard will permit relaxation of the Phase I and Phase II emergency operations requirements.

The codification of these substitutions is consistent with Section 1.3, Purpose and Exceptions, of ASME A17.3 which states:

"The purpose of this Code is to provide for the safety of life and limb, and to promote the public welfare.

Where a requirement, because of practical difficulty, cannot be complied with literally or where its literal application would cause undue hardship, the authority having jurisdiction may, upon proper application, grant exceptions, but only when it is clearly evident that reasonable safety is assured.

The authority having jurisdiction may also grant exceptions or permit alternate methods where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety."

No suggestion is being made that new elevator systems should not be required to comply.

Finally, a corresponding request for a revision to ASME A17.3 will be submitted to clarify that the requirement for retrofitting the fire safety features of Phase I emergency recall operation and Phase II emergency in-car operation is triggered by the fire code.

[1] U.S. Experience with Sprinklers, John R. Hall Jr. March 2012
http://www.nfpa.org/assets/files/pdf/os.sprinklers.pdf

[2] Dunn's Dispatch: Deadly Elevators, Fire Engineering, December 2007, Vincent Dunn,
http://www.fireengineering.com/content/fe/en/articles/2007/12/dunns-dispatch-deadly-elevators.html

Cost Impact: The change should reduce the cost of compliance by providing more flexibility for owners to comply.

F214-13

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

1103.3-F-BURTON

F215 – 13
1103.3

Proponent: Greg Johnson, Johnson Consulting Services, representing self (gjohnsonconsulting@gmail.com)

Revise as follows:

1103.3 Elevator operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Exceptions:

1. Buildings without occupied floors located more than 55 feet above the lowest level of fire department vehicle access where protected at the elevator shaft openings with additional fire doors in accordance with Section 716.5 of the *International Building Code* and where all of the following conditions are met:
   - 1.1 The doors shall be provided with vision panels of approved fire-protection-rated glazing so located as to furnish clear vision of the approach to the elevator. Such glazing shall not exceed 100 square inches in area.
   - 1.2 The doors shall be held open but be automatic-closing by activation of a fire alarm initiating device installed in accordance with the requirements of NFPA 72 as for Phase I Emergency Recall Operation, and shall be located at each floor served by the elevator; in the associated elevator machine room, control space, or control room; and in the elevator hoistway, when sprinklers are located in those hoistways.
   - 1.3 The doors, when closed, shall have signs visible from the approach area stating: WHEN THESE DOORS ARE CLOSED OR IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.
2. Buildings without occupied floors located more than 55 feet above the lowest level of fire department vehicle access when provided with automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Freight elevators in buildings provided with both automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2 and at least one ASME 17.3 compliant elevator serving the same floors.

The provisions of this section shall not be construed to allow the elimination of previously installed Phase I emergency recall or Phase II emergency in-car systems.

Reason: Rule 211.3 of ASME A17.3, Firefighters' Service — Automatic Elevators, requires that: "*All automatic (nondesignated attendant) operation elevators having a travel of 25 ft (7.62 m) or more above or below the designated level shall conform to the requirements of this Rule.*"

The purpose of this proposed change is to:

- Clearly identify the fire code as the scoping document for the requirement of retroactive fire safety building features;
- Clarify the intent of the code with respect to which elevators must be retrofitted with Phase I emergency recall operation and Phase II emergency in-car operation;
- Provide the opportunity in existing low-rise buildings to substitute additional opening protectives at elevator shaft openings for Phase I emergency recall operation and Phase II emergency in-car operation retrofits; and,
- Provide the opportunity to substitute fire sprinkler installation for Phase I emergency recall operation and Phase II emergency in-car operation retrofits in low-rise buildings.

These changes are needed because of the exceeding expense of compliance for many of these retrofits. It is not unknown for application of the mandatory Phase I and Phase II retrofits required by the A17.3 Safety Code for Existing Elevators and Escalators to trigger complete replacement of the elevator machinery at costs running into the hundreds of thousands of dollars. What is a relatively inexpensive fire safety feature in a new elevator installation is unreasonably onerous when applied to existing elevators. It's therefore reasonable to codify alternate methods for building owners to meet the intent of the codes.

It's important to note that the 25 foot travel thresh-hold for ASME A17.3 emergency operation retrofit is not mitigated by occupant load; number of stories; elevator use; building fire or smoke compartment conditions; the presence of sprinklers; or any building specific operational firefighting considerations. For elevators installed prior to the adoption of newer elevator emergency operations features, many existing 3 story buildings require retrofit; elevators in non-atmospherically segregated spaces like low-rise atriums require retrofits; vintage freight elevators, regardless of maintenance condition or the ability of building occupants to access them, require retrofits. The problem of inflexible compliance options is magnified by the usual division of professional jurisdictions because elevator authorities typically do not have the expertise to assess fire risk on a total building basis; hence the need for the fire code to scope retroactive fire safety provisions.

By allowing for more affordable or effective alternatives to the Phase I and Phase II retrofits, less opposition should exist to adoption of ASME A17.3 and its other retroactive safety requirements such as safety bulkheads for hydraulic elevators and door restrictors, thereby enhancing overall elevator safety.

Status of State Adoptions of ASME A17.3 Phase I and Phase II FF Service Retroactive Requirements	
22	States adopt ASME A17.3
1	State modifies ASME A17.3 to trigger FF service retrofit at 70 feet of travel.
1	State amends away FF service retrofit for existing elevators.
1	State only requires FF service retrofit where triggered by other alterations; no blanket retroactivity.
1	State adopts ASME A17.3 *"for regulatory guidance only for elevators classified as remodeled."*
1	State amends ASME A17.3 to change 25 foot travel trigger to 3 stories.
1	State adopts ASME A17.3 but has a 5 year (until mid-2015) moratorium on required PH II retrofits.
28	States Do Not Adopt ASME A17.3

Intents of the Code

The intents of Phase I emergency recall are to prevent elevator users from being discharged at a floor that is engaged in a fire; from occupants accessing an elevator during a fire; and, in a detected fire condition, to return the elevator car to a designated floor for firefighter access for operations and rescue.

The intent of Phase II emergency in-car operation is to provide firefighters the ability to operate the elevator for firefighting operations.

Proposed Exception 1 meets the intent of the code by:

- Providing an additional fire door, with a vision panel, between elevator occupants and a fire engaged floor. This protects occupants from car and hoistway doors automatically opening directly to a fire event. The vision panel lets occupants view fire risk and select another floor to travel to for egress. This door provides an additional barrier to smoke and water contamination of the hoistway and improves building compartmentation.
- Providing additional signs on the added door immediately at the elevator opening telling building occupants to not use the elevator when the door is closed. In other words, if you can read the sign you shouldn't use the elevator.
- Recognizing that common firefighting operations policy requires firefighters to use the stairs to address any fire on the 6th floor or lower in a building; meaning that in low rise buildings immediate firefighter access to the elevators is not as critical. The 6th floor of a building typically corresponds to the building and fire codes' definition of a high-rise building as one with *"an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access*." This is broadly recognized as the elevation at which a compromise is achieved between the inherent hazard of using an elevator in a structural fire response and the need to respond in a timely way to the fire.

Exception 1 also tacitly acknowledges that these are not elevators that were ever *"intended to serve the needs of emergency personnel for fire-fighting or rescue purposes"* as the charging section states.

Locations of fire alarm initiating devices used to initiate door closing are identical to those used to initiate Phase I operations via reference to NFPA 72 by ASME A17.3.

Proposed Exception 2 recognizes that there is no documentation of civilian or firefighter life loss while in an elevator during a structural fire in a building protected with automatic fire sprinklers. It is reasonable that if an owner has already provided superior fire safety features in an existing building that they not be required to retrofit expensive fire safety features of limited value.

For buildings within the scope of the exception, which are not already sprinklered, Exception 2 provides an incentive to provide fire sprinklers.

The references to Sections 903.3.1.1 and 903.3.1.2 mean that only a fire sprinkler system installed in accordance with the appropriate technical standard will permit relaxation of the Phase I and Phase II emergency operations requirements.

55 feet was selected as the upper limit for the floor height of buildings within the scope of the proposed change after soliciting the advice of the Fire Code Action Committee at its November 2012 meeting. Committee members suggested a height limit of around four stories would be preferable when considering response factors associated with ascertaining elevator occupant locations and conditions. Since 55 feet is the elevation at which automatic sprinkler protection is triggered, and since it roughly corresponds to 4 stories, it is offered as a suitable threshold.

Proposed Exception 3 recognizes that buildings which already have an elevator equipped with Phase I and Phase II emergency operations already meet the intent of Phase II firefighter operations provisions. The fire sprinkler requirement and the limited passenger use of freight elevators means that the likelihood of life loss in the freight elevator is virtually nil. For buildings without fire sprinklers this provision provides an incentive to install fire sprinkler systems.

The codification of these substitutions is consistent with Section 1.3, Purpose and Exceptions, of ASME A17.3 which states:

"The purpose of this Code is to provide for the safety of life and limb, and to promote the public welfare.

Where a requirement, because of practical difficulty, cannot be complied with literally or where its literal application would cause undue hardship, the authority having jurisdiction may, upon proper application, grant exceptions, but only when it is clearly evident that reasonable safety is assured.

The authority having jurisdiction may also grant exceptions or permit alternate methods where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety."

No suggestion is being made that new elevator systems should not be required to comply.

Finally, a corresponding request for a revision to ASME A17.3 will be submitted to clarify that the requirement for retrofitting the fire safety features of Phase I emergency recall operation and Phase II emergency in-car operation is triggered by the fire code.

Cost Impact: The change should reduce the cost of compliance by providing more flexibility for owners to comply.

F215-13

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

1103.3-F-JOHNSON

F216 – 13
1103.3 (New), 1103.3.1 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

1103.3 Existing elevators. Existing elevators, escalators and moving walks shall comply with the requirements of Sections 1103.3.1 and 1103.3.2.

1103.3.1 Elevators, escalators and moving walks. Existing elevators, escalators and moving walks in Group I-2 Condition 2 occupancies shall comply with ASME A17.3.

~~**1103.3**~~ **1103.3.2 Elevator emergency operation.** Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Reason: The healthcare industry has historically been required to comply with regulations set forth by accreditation and certification agencies, such as The Joint Commission. Because the ICC family of codes does not currently have an existing elevator standard, ASME A17.3 *Safety Code for Existing Elevators and Escalators* is proposed for compliance of existing elevators in Group I-2 Condition 2 occupancies. ASME A17.3 has been referenced by guidelines adopted by The Joint Commission for over a decade and this code change will provide correlation of the IFC with the mandated healthcare industry standard.

Adding a reference to ASME A17.3 will require that existing elevators escalators and moving walks and their related operating equipment in Group I-2 Condition 2 occupancies comply with a minimum level of safety. Because the occupants of these types of facilities are often incapable of self-preservation, it will also provide important features essential for occupant safety including escalator and moving walk emergency stop buttons and automatic skirt obstruction stop features. A new Section 1103.3 is included editorially to conform to established code style for multiple requirement sections.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost Impact: The code change proposal should not increase the cost of construction because compliance with similar requirements is already mandated by facility licensure requirements.

F216-13

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

1103.3 (NEW)-F-WILLIAMS-ADHOC

F217 – 13
1103.4, 1103.4.1, 1103.4.2, 1103.4.3, 1103.4.4, 1103.4.8 (New)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 1103
FIRE SAFETY REQUIREMENTS
FOR EXISTING BUILDINGS

1103.4 Vertical openings. Interior vertical ~~shafts~~ openings, including but not limited to *stairways,* elevator hoistways, service and utility shafts, that connect two or more stories of a building, shall be enclosed or protected as specified in Sections 1103.4.1 through 1103.4.7.

1103.4.1 Group ~~I~~ I-2 and I-3 occupancies. In Group ~~I~~ I-2 and I-3 occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exception: In Group I-3 occupancies, exit stairways or ramps and exit access stairways or ramps constructed in accordance with Section 408 in the *International Building Code*.

1103.4.2 Three to five stories. In other than Group ~~I~~ I-2 and I-3 occupancies, interior vertical openings connecting three to five stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* shall be installed throughout the building in accordance with Section 903.3.1.1 or 903.3.1.2.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Vertical opening protection for escalators shall be in accordance with Section 1103.4.5, 1103.4.6 or 1103.4.7.
4. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.3 More than five stories. In other than Group ~~I~~ I-2 and I-3 occupancies, interior vertical openings connecting more than five stories shall be protected by 1-hour fire-resistance-rated construction.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Vertical opening protection for escalators shall be in accordance with Section 1103.4.5, 1103.4.6 or 1103.4.7.
4. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.4 Atriums and covered malls. In other than Group ~~I~~ I-2 and I-3 occupancies, interior vertical openings in a covered mall building or a building with an atrium shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* shall be installed throughout the building in accordance with Section 903.3.1.1 or 903.3.1.2.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.

3. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.5 Escalators in Group B and M occupancies. Escalators creating vertical openings connecting any number of stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* in accordance with Section 903.3.1.1 installed throughout the building, with a draft curtain and closely spaced sprinklers around the escalator opening.

1103.4.6 Escalators connecting four or fewer stories. In other than Group B and M occupancies, escalators creating vertical openings connecting four or fewer stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 shall be installed throughout the building, and a draft curtain with closely spaced sprinklers shall be installed around the escalator opening.

1103.4.7 Escalators connecting more than four stories. In other than Group B and M occupancies, escalators creating vertical openings connecting five or more stories shall be protected by 1-hour fire-resistance-rated construction.

1103.4.8 Occupancies other than Group I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be protected by 1-hour fire-resistance-rated construction.

1. Exit access stairways and ramps that serve, or atmospherically communicate between, only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.
3. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Groups B and M occupancies, this provision is limited to openings that do not connect more than four stories.
4. Exit access stairways and ramps within an atrium complying with the provisions of Section 404 of the International Building Code.
5. Exit access stairways and ramps in open parking garages that serve only the parking garage.
6. Exit access stairways and ramps serving open-air seating complying with the exit access travel distance requirements of Section 1028.7 of the International Building Code.
7. Exit access stairways and ramps serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.

Reason: The intent of this code change is to resolve conflicts between the means of egress requirements in chapter 10 of both the IBC and IFC, and chapter 11 of the IFC regarding open exit access stairway and ramp construction. There are a number of building code provisions for new construction in current IBC/IFC chapter 10 Means of Egress that permit exit access stair floor openings without a fire rated enclosure. Many of these permitted floor openings are required to be fire rated by IFC chapter 11 Construction Requirements for Existing Buildings. This sets up a direct conflict not just between the IBC and IFC but between two chapters in the IFC. A building constructed under the 2012 IBC/IFC and in full compliance with chapter 10 of both codes is in violation of IFC sections 1103.4 through 1104.3.7 as soon as the certificate of occupancy issued. Cleary it was not the intent of IFC chapter 11 to contradict chapter 10 of the IFC or IBC. This code change takes the conditions that permit exit access stair and ramp floor openings and places them in IFC chapter 11 so that the requirements of IFC chapter 11 are consistent with IFC chapter 10 and IBC chapter 10.

Specific section changes:

Section 1103.4.1 was modified to specifically address groups I-2 and I-3 and 1103.4.2 through 1103.4.4 was modified to include I-1 and I-4 occupancies. This was done because the specific conditions that allow unenclosed exit access stairs in IBC and IFC chapter 10 differ based on that distinction. In addition the group I-3 exception was added to 1103.4.1 to be consistent with the current exception #10 to IFC/IBC section 1009.3 and the current single exception to IFC/IBC section 1022.2.

Sections 1103.4.2 through 1103.4.4 each had an exception added to refer to new section 1103.4.3 for conditions that allow unenclosed exit access stairs.

Section 1103.4.3 was added to provide all of the current conditions that allow an un-enclosed exit access stair or ramp. All of these conditions are existing from IFC/IBC chapter 10 section 1009.3. Note that in the 2015 IBC and IFC these conditions will be in new IFC/IBC section 1018. It is very important to note that this section and these conditions only apply to exit access stairs and ramps. This new section does not apply to exit stairs. Exit stairs are not exempted from enclosure.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F217-13

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

1103.4-F-BALDASSARRA-CTC

F218 – 13
1103.4.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

IFC 1103.4.1 Group I occupancies. In Group I occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exceptions:

1. In Group I-2 Condition 2 equipped throughout with an automatic sprinkler system, vertical opening connecting two or more stories need not be protected with 1-hour fire-resistance-rated construction where both of the following conditions are met:
   1.1. The atrium volume is accounted for in the design of a smoke control system in accordance with Section 909.
   1.2 The floor levels within the vertical opening shall contain only low or ordinary fire hazard uses.
2. In Group I-2 Condition 2, where an automatic sprlnkler system is installed in accordance with Section 404.6 of the *International Building Code,* glass walls shall be considered to be equivalent to 1-hour fire-resistance-rated construction for purposes of this section. Where glass doors are provided in the glass wall, they shall be either self-closing or automatic-closing.
3. In Group I-2 Condition 2, 1-hour fire-resistance-rated construction is not required where a glass-block wall assembly complying with Section 2110 of the *International Building Code* and having a ¾-hour fire protection rating is provided.

Reason: The intent of this code change is to make the IFC consistent with federal standards that are in place for the maintenance of Group I-2 Condition 2 (hospitals) and to clarify the allowable use and construction of atria in hospitals. This adds language to clarify the fire hazard class allowed in the existing atrium (no higher than ordinary), as opposed to only low hazard class in new. A smoke control system is also acknowledged as a factor when it comes to separation of the atrium, and clarifies that the smoke control system's engineering analysis must account for any spaces open to it.

Glass walls points back to the language in IBC Section 404.6 in an attempt to set that as a minimum, retroactive standard. It is far simpler to address a potential deficiency with addition of a smoke control system or properly installed sprinklers at the glass, rather than reconstructing the walls themselves.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact: This proposal would make the IFC consistent with federal standards that are in place for the maintenance of hospitals, and therefore would not represent an increase in cost.

F218-13

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

907.2.6-F-WILLIAMS-ADHOC

F219 – 13
1103.4.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

1103.4.1 Group I-3 **occupancies.** In Group I-3 occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exceptions:

1. In Group I-3 equipped throughout with an automatic sprinkler system, vertical opening connecting two or more stories need not be protected with 1-hour fire-resistance-rated construction where both of the following conditions are met:
   1.1. The atrium and connecting stories are accounted for in the design of a smoke control system in accordance with Section 909.
   1.2. The floor levels within the vertical opening shall contain only low or ordinary fire hazard uses.
2. In Group I-3 where an automatic sprlnkler system is installed throughout the building and in accordance with Section 404.6 of the *International Building Code,* glass walls shall be considered to be equivalent to 1-hour fire-resistance-rated construction for purposes of this section. Where glass doors are provided in the glass wall, they shall be either self-closing or automatic-closing.
3. In Group I-3, 1-hour fire-resistance-rated construction is not required where a glass- block wall assembly complying with Section 2110 of the *International Building Code* and having a ¾-hour fire protection rating is provided.

Reason: The intent of this code change is to clarify the allowable use and construction of atria in jail. This adds language to clarify the fire hazard class allowed in the existing atrium (no higher than ordinary), as opposed to only low hazard class in new. A smoke control system is also acknowledged as a factor when it comes to separation of the atrium, and clarifies that the smoke control systems engineering analysis must account for any spaces open to it.

Glass walls points back to the language in the IBC in an attempt to set that as a minimum, retroactive standard. It is far simpler to address a potential deficiency with addition of a smoke control system or properly installed sprinklers at glass, rather than reconstructing the walls themselves.

This is intended to coordinate with the Group I-2 provisions.

Cost impact:

F219-13

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

1103.4.1-F-DAVIDSON

F220 – 13
1103.4.8 (New), 1103.4.9 (New), 603.8.6 (New), 603.8.7 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

1103.4.8 Waste and linen chutes. In Group I-2 occupancies, existing waste and linen chutes shall comply with Sections 1103.4.8.1 through 1103.4.8.5.

1103.4.8.1 Enclosure. Chutes shall be enclosed with 1-hour fire-resistance-rated construction. Opening protectives shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than1-hour.

1103.4.8.2 Chute intakes. Chute intakes shall comply with Section 1103.4.8.2.1 or 1103.4.8.2.2.

1103.4.8.2.1 Chute intake direct from corridor. Where intake to chutes is direct from a corridor, the intake opening shall be equipped with a chute intake door in accordance with Section 716 of the *International Building Code* and having a fire protection rating of not less than1-hour.

1103.4.8.2.2 Chute intake via a chute intake room. Where the intake to chutes is accessed through a chute intake room, the room shall be enclosed with 1-hour fire-resistance rated construction. Opening protectives for the intake room shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than ¾ hour. Opening protective for the chute enclosure shall be in accordance with Section 1103.4.8.1.

1103.4.8.3 Automatic sprinkler system. Chutes shall be equipped with an *approved automatic sprinkler system* in accordance with Section 903.2.11.2.

1103.4.8.4 Chute discharge rooms. Chutes shall terminate in a dedicated chute discharge room. Such rooms shall be separated from the remainder of the building by a minimum of 1-hour fire-resistance-rated construction. Opening protectives shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than1-hour.

1103.4.8.5 Chute discharge protection. Chute discharges shall be equipped with a self-closing or automatic-closing opening protective in accordance with Section 716 of the *International Building Code* and having a fire protection rating of not less than 1-hour.

1103.4.9 Flue-fed incinerators. Existing flue-fed incinerator rooms and associated flue shafts shall be protected with 1-hour fire-resistance-rated construction and have no other vertical openings connected with the space other than the associated flue. Opening protectives shall be in accordance with Section 716 of the *International Building Code* and have a fire protection rating of not less than1-hour.

Add new text as follows:

603.8.6 Flue-fed incinerators in Group I-2. In Group I-2 occupancies, the continued use of existing flue-fed incinerators is prohibited.

603.8.7 Incinerator inspections in Group I-2. Incinerators in Group I-2 occupancies shall be inspected at least annually in accordance wth the manufacturer's instructions. Inspection records shall be maintained on the premises and made available to the fire code officlal upon request.

Reason: The intent of this code change is to clarify the allowable use and construction of chutes and incinerators in Group I-2 occupancies. These items are still used as an integral part of the operation of a healthcare facility, especially the waste or linen chutes. Some incinerators are still in use, but this proposed requirement seeks to separate them from other vertical openings, especially a trash chute, by requiring a separate discharge room from the incinerator. Although newer incinerators are designed to contemporary codes, standards and regulations, most older incinerators are not in use or are otherwise abandoned in existing facilities because of other regulation from entities such as the EPA, this requirement seeks to separate and protect any potential hazard of inactive incinerator systems from the rest of the building.

Also, in older facilities that pre-date current requirements, there is the occasion that the chute door opens into a corridor. It was not prohibited at the time of construction, so it is not practical to reconstruct the chute to meet modern standards. Therefore, this section aims to directly address that situation by defining requirements for which it should be safely maintained.

This proposal would make the IFC consistent with federal standards that are in place to maintain hospitals, and therefore would not represent an increase in cost.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG’s are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG’s held over 70 conference calls in 2012.

Cost Impact: No increase in the cost of construction is associated with this code change. This change is consistent with existing federal certification requirements.

F220-13

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

1103.4.8 (NEW)-F-BALDASSARRA-WILLIAMS-ADHOC-CTC

F221 – 13
1103.5.3 (New), Table 1103.1

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

1103.5.3 Group A-2. An automatic sprinkler system shall be provided throughout Group A-2 fire areas where the occupant load exceeds 300. The automatic sprinkler system shall be provided throughout the floor where the Group A-2 occupancy is located, and in all floors between the Group A-2 occupancy and the level of exit discharge.

Table 1103.1
OCCUPANCY AND USE REQUIREMENTS

Section	Use			Occupancy Classification																	
				A	B	E	F	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M	R-1	R-2	R-3	R-4	S
1103.5.3	-	-	-	R[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(Portions of table not shown remain unchanged)

a. Only applies to Group A-2 occupancies

Reason: Recommendation #2 of the "Report of the Technical Investigation of the Station Nightclub Fire" recommends that fire sprinklers be provided "for existing nightclubs with an occupancy limit greater than 100." An extract of this recommendation is listed below:

"Recommendation 2

The results of the investigation clearly demonstrated the value of an NFPA 13 compliant automatic fire sprinkler system in extending the time the nightclub remained tenable. Recommendation 2 mirrors the action already taken by NFPA to strengthen the requirement for sprinklers in new and existing nightclubs and festival seating venues.

NIST recommends that model codes require sprinkler systems, and that state and local authorities adopt and aggressively enforce this provision:

a) for all new nightclubs regardless of size, and

b) for existing nightclubs with an occupancy limit greater than 100 people."

As indicated in the NIST report, this recommendation has already been implemented in NFPA 101. However, not all jurisdictions adopt NFPA 101. In many jurisdictions, the IFC is the only adopted document that regulates life safety in existing buildings. Therefore, for existing occupancies in IFC only states, there is no current requirement for fire sprinklers in existing assembly occupancies. The lack of a requirement addressing this issue presents the adopting jurisdiction with a false perception that a reasonable level of life safety protection is provided in existing unsprinklered nightclubs with a high-occupant load. If an adopting jurisdiction chooses to remove this code provision during the adoption process, that is their local prerogative. However, it is the burden of the ICC process to promulgate codes based on technical merit and not a potential political implication at the local level. The NIST report clearly recommends that a reasonable level of life safety is only provided when an existing nightclub is protected by a fire sprinkler system. A copy of the NIST report justifying this code change recommendation is available on-line at: http://www.nist.gov/public_affairs/releases/Vol_I_NCSTAR2.pdf

While the NIST report recommends a 100 person threshold, the committee may not be comfortable with that stringent of a number considering the 100 threshold would apply to all A-2 occupancies. This code change takes into consideration that impact and utilizes a 300 person threshold rather than a 100 person threshold. This threshold will exempt out many existing small restaurants and other A-2 occupancies that outside of the scope anticipated by NIST in the "Report of the Technical investigation of the Station Nightclub Fire."

Cost Impact: This code change will not increase the cost of construction but will have a financial impact on existing A-2 occupancies that are currently not fire sprinkler protected and exceed an occupant load of 300.

F221-13

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

1103.5.3 (NEW) #2-F-APFELBECK

F222 – 13
1103.5.3 (New), Table 1103.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

1103.5.3 Group A-2. An automatic sprinkler system shall be installed in accordance with Section 903.3.1.1 throughout existing buildings or portions thereof used as Group A-2 occupancies with an occupant load of 300 or more.

Table 1103.1
OCCUPANCY AND USE REQUIREMENTS

Section	Use			Occupancy Classification																	
				A	B	E	F	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M	R-1	R-2	R-3	R-4	S
1103.5.3	-	-	-	R[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(Portions of table not shown remain unchanged)

a. Only applies to Group A-2 occupancies

Reason: This requirement implements the Recommendation #1 included in the NIST Report of the Technical Investigation of The Station Nightclub Fire (NIST NCSTAR 2: Vol. I). *Recommendation 1* of the NIST report states:

"Model codes should require sprinkler systems for all new and existing nightclubs regardless of size."

There is a list of fires in Group A-2 occupancies. This list includes the Station Nightclub, Beverly Hill Supper Club, the Coconut Grove and others. Each of these fires have resulted in a significant loss of life.

Group A-2 occupancies involve conditions such as large occupant loads, high occupant density, significant fuel loading and moveable furnishings and decorations. Group A-2 occupancies also include the potential for reduced lighting levels, high noise levels, combustible decorations, strobe and flashing lights, alcohol consumption, and confusing egress paths. Each of these alone can be a significant issue, but when combined they lead to the inability of the occupants to promptly and safely exit the building under fire conditions.

This proposal considers the arrangement of the IBC occupancy classifications and the inclusion of other uses in addition to nightclubs within the Group A-2 classification. Therefore, this proposal does not reach as far as the recommendation from NIST. While the NIST proposal recommends fire sprinklers in ALL facilities, this proposal will require existing Group A-2 occupancies to be retrofit with a fire sprinkler system only if the occupant load exceeds 300. Setting the threshold at 300 occupants will place the requirement where the higher potential for loss of life exists.

The proposed section only requires that the Group A-2 occupancy is provided with a fire sprinkler system. The section does not require the entire fire area to be protected, nor does it require the entire floor to be protected. The fire sprinkler system would be installed in the portion of the building which contains the Group A-2 occupancy.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Cost Impact: The code change will not increase the cost of new construction, but it will create a cost for existing unsprinklered buildings classified as Group A-2.

F222-13

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

1103.5.3 (NEW) #1-F-ZUBIA-FCAC

F223 – 13
1103.5.3 (New), 1103.5.3.1 (New), 1103.5.3.2 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

1103.5.3 High-Rise Buildings. An automatic sprinkler system installed in accordance with Section 903.3.1.1 shall be provided throughout existing high-rise buildings.

Exceptions:

1. Airport traffic control towers.
2. Open parking structures.
3. Group U Occupancies.
4. Occupancies in Group F-2.
5. Buildings with an engineered fire protection plan in accordance with Section 1103.5.3.2

1103.5.3.1 Compliance Schedule. Building owners shall file a compliance schedule with the fire code official no later than 180 days after the first effective date of this code. The compliance schedule shall not exceed 12 years for an automatic sprinkler system retrofit and 5 years for an approved engineered fire protection plan.

1103.5.3.2 Engineered Fire Protection Plan. An approved engineered fire protection plan shall be developed by a design professional with experience in fire protection engineering. The engineered fire protection plan shall address the following fire protection and life safety goals:

1. The building is designed and equipped with safeguards against the spread of fire and products of combustion so that no person not directly adjacent to or involved in the ignition of a fire shall suffer serious injury or death from a fire and;
2. The building is designed and equipped with safeguards against the spread of fire so that the property losses are limited to the compartment of origin and;
3. The building is designed and constructed with fire protection features so that fire fighters can appropriately perform rescue operations, protect property, and utilize fire-fighting equipment and controls without unreasonable risk exposure and;
4. Other fire protection and life safety goals as specified by the fire code official based on the unique occupancy, size, construction and features of the building.

Reason: Modern fire and building codes require complete automatic fire sprinkler protection and a variety of other safety features in new high-rise construction. Many older high-rise buildings lack automatic fire sprinkler protection and other basic fire protection features necessary to protect the occupants, emergency responders, and the structure itself. Without complete automatic fire sprinkler protection, fire departments cannot provide the level of protection that high-rise buildings demand.
Existing high-rise buildings that are not protected with fire sprinklers represent a significant hazard to the occupants and firefighters. Additionally, High-Rise fires can significantly impact a communities' infrastructure and the economic viability.

Between 2003 and 2006, there was an average of 13,400 reported structure fires in high-rise buildings annually. These incidents resulted in 62 civilian deaths, 490 civilian injuries, and $179 million in direct property damage per year. Furthermore, from 1977 to 2009, 25 firefighters died from non-stress related cardiac death during fire suppression operations in high-rise buildings. By their very nature, high-rise fires present unique firefighting challenges that are extremely difficult for firefighters to mitigate without the presence of fire sprinkler systems. Some of these challenges include:

High-rise structure fires require significantly more resources, such as personnel and equipment, to extinguish than do fires in other types of occupancies. This further strains the responding fire department and firefighters.

Due to their height, smoke movement in high-rise structures is very different from that of other structures. Temperature gradients result in varying pressures throughout the structure, which can allow for the rapid, uncontrolled movement of smoke and flame (known as the "stack effect").

By design, exits from high-rise structures are limited. In an emergency, the movement of people out of a building is particularly difficult. A prime example of this hazard is the One Meridian Plaza fire. This fire occurred on the 22nd floor of the 38-story Meridian Bank Building and was reported to the Philadelphia Fire Department on February 23, 1991 at approximately 2040 hours and burned for more than 19 hours. The fire caused three firefighter fatalities and injuries to 24 firefighters. The 12-alarms brought 51 engine

companies, 15 ladder companies, 11 specialized units, and over 300 firefighters to the scene. It was the largest high-rise office building fire in modern American history, completely consuming eight floors of the building, and was only controlled only when it reached a floor that was protected by automatic sprinklers. In 1999 the building was torn down amidst a storm of litigation. The HVAC and other utilities in some high-rises service multiple levels and can facilitate the spread of smoke and flame through a building due to the height of the building, response times for the fire department to reach the actual fire itself are extended, contributing to larger fire growth thereby attributing to extensive smoke spread throughout the building.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Cost Impact: This change will increase the cost of operating an existing High-Rise building.

F223-13

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

1103.5.3 (NEW) #2-F-ZUBIA-FCAC

F224 – 13
1103.5.3 (New), Table 1103.1

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

1103.5.3 High-Rise Buildings. Existing high-rise buildings shall be equipped with either:

1. An automatic sprinkler system installed throughout the building in accordance with Section 903.3.1.1 or;
2. An approved engineered fire protection plan in accordance with Section 1103.5.3.1.

Exception: The provisions of this section shall not apply to the following:

1. Airport traffic control towers.
2. Open parking structures.
3. Group U Occupancies.
4. Occupancies in Group F-2.
5. Open air portions of Group A-5 Occupancies.

1103.5.3.1 Engineered Fire Protection Plan. Where required by Section 1103.5.3, an approved engineered fire protection plan shall be developed by a licensed design professional with experience in fire protection engineering. The fire protection plan shall address the following fire protection and life safety goals:

1. The building shall be designed, equipped and maintained with safeguards against the spread of fire and products of combustion so that no person not directly adjacent to or involved in the ignition of a fire shall suffer serious injury or death from a fire and;
2. The building shall be designed, equipped and maintained with safeguards that restrict the spread of fire through the building and;
3. The building shall be designed, equipped and maintained with fire protection features so that fire fighters can perform rescue operations, protect property, and utilize fire-fighting equipment and controls without being unduly hindered in suppression or rescue operations and;
4. Other fire protection and life safety goals based on the unique occupancy, size, construction and features of the building.

1103.5.3.2 Compliance Schedule. Building owners shall file a compliance schedule with the fire code official no later than 180 days after the first effective date of Section 1103.5.3. The compliance schedule shall not exceed 12 years for an automatic sprinkler system retrofit in accordance with Section 1103.5.1 (1) or 6 years for an engineered fire protection plan in accordance with Section 1103.5.3 (2).

1103.5.3.2.1 Compliance Extensions. The fire code official is authorized to approve up to two one year extensions to the compliance schedule specified in Section 1103.5.3.2 where the building owner has demonstrated to the fire code official that the compliance schedule has been pursued with due diligence.

Table 1103.1
OCCUPANCY AND USE REQUIREMENTS

Section	Use	Occupancy Classification																		
	High rise	A	B	E	F	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M	R-1	R-2	R-3	R-4	S
1103.5.3	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

(Portions of table not shown remain unchanged)

Reason: Existing unsprinklered high-rise buildings continue to be a hazard to occupants, firefighters and their ability to mitigate damage from fires. As an example:

1. 1988 First Interstate Bank: $200 million in direct property damage, 64 fire companies, gutted 12th-16th floor.
2. 1991 One Meridian Plaza: $100 million in direct property damage, 18 hour fire gutting 22 floors.
3. 1996 Rockefeller Center: Fires in 5 separate electrical rooms, 300+ firefighters responded, television broadcasts interrupted.
4. 2003 Cook County Office Building: Six civilian deaths.
5. 2004 Caracas Tower: Fire spread to 26 floor and burned for 17 hours, 40 firefighters injured.
6. 2005 Madrid Windsor: 32 Story totally destroyed by fire.

The concern with existing high-rise buildings is best summed up in the Cook County Administration Fire Report, authored by James Lee Witt Associates, in major finding number 1: “Lack of an automatic fire sprinkler system. The building was not equipped with an automatic fire sprinkler system that would have controlled or extinguished the fire in the incipient stage.” The recommendations in the Cook County Administration Fire Report further state, “The State of Illinois and City of Chicago should amend their codes to include provisions for the mandatory retrofit installation of complete automatic fire sprinkler systems in all existing-high rise structures.” It is important to note that Mr. Witt brings significant credibility to this finding and recommendation as he is also the past CEO of the ICC.

If this finding and recommendation is valid for the City of Chicago and the State of Illinois for the protection of their citizens and firefighters, then this finding and recommendation is also valid as a base level of building and life safety protection within the IFC.

In addition, the NIST Final Report of the Collapse of the World Trade Center Tower states in recommendation 26: “NIST recommends that state and local jurisdictions adopt and aggressively enforce available provisions in building codes to ensure that egress and sprinkler requirements are met by existing buildings.”

The NFPA 101 Life Safety Code requires a similar level of protection as this proposal in requiring existing high-rise buildings to be equipped with fire sprinkler protection or an Engineered Life Safety System. This language has been in place within the Life Safety Code for numerous cycles. It is unclear why NFPA 101 specifies this level of protection but the IFC fails to provide a similar level of protection for the occupants and emergency responders.

This proposal attempts to mitigate some of the obvious economic impact by allowing for the use of a fire protection plan prepared by a design professional. While this fire protection plan will not provide an equivalent level of protection to a complete automatic fire sprinkler system, it will assist in addressing, and mitigating, a significant number of the risk factors to high-rise occupants and fire fighters who must confront these extremely hazardous fire conditions. The broad goals of the fire protection plan contained in 1103.5.2.1 are specifically derived from the goals contained in the ICC Code for Performance Based Design. These broad goals provide the designer with maximum flexibility in developing a reasonable code compliant approach.

Unfortunately, this and other fire sprinkler retrofit issues have been discussed as an issue of politics rather than as a technical code issue in past code change cycles. As an example: “The retroactive requiring of sprinklers in buildings should be left as a local decision due to the economic and political impact of such requirements.” (F116-04/05) By taking this type of response on a code issue, the committee removes itself from the making a technical decision based on the technical merit code change and inserts itself as a local political policy making body. The two roles are distinctly different. It is the responsibility of the code promulgation body to determine if there is sufficient technical justification to warrant the code change and if the code change is within the scope of the document. The scope of the IFC states:

102.1 Construction and design provisions.

The construction and design provisions of this code shall apply to:

1. Structures, facilities and conditions arising after the adoption of this code.
2. Existing structures, facilities and conditions not legally in existence at the time of adoption of this code.
3. Existing structures, facilities and conditions when required in Chapter 11.
4. Existing structures, facilities and conditions which, in the opinion of the fire code official, constitute a distinct hazard to life or property.

This code change, and all retrofit code changes, are clearly within the scope of the IFC. The only question for the committee to answer is:Does an existing unsprinklered high-rise building provide a reasonable level of property protection, civilian life safety protection and firefighter protection? The technical evidence indicates that this is clearly not the case. By ignoring the technical need and deflecting responsibility for retrofit of existing high-rise as a political issue, a message is sent via this code to state and local government, that an unsprinklered existing high-rise building does provide a reasonable level of building and life safety protection. This is clearly not the case.

Cost Impact: This proposal will increase the code of construction. The impact of this change will be on existing high-rise buildings.

F224-13

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

1103.5.3 (NEW) #1-F-APFELBECK

F225 – 13
1103.5.3 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Add new text as follows:

1103.5.3 Group I-2 Condition 2. In addition to the requirements of Section 1103.5.2, existing buildings of Group I-2 Condition 2 occupancy shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. The automatic sprinkler system shall be installed by [DATE TO BE INSERTED BY THE JURISDICTION].

Reason: The intent of this code change is to make mandatory the use of an approved automatic sprinkler system throughout existing hospital (Group I-2 Condition 2) occupancies. The healthcare industry recognizes sprinkler systems are a vital component of the safety of the overall building systems and components. The current mandatory sprinkler retrofit requirement in Section 1103.5.2 first entered the Fire Code in the 2009 version, but does not require sprinklering the entire building throughout. The Ad Hoc for Healthcare, which is made up of representatives from both regulated facilities and enforcement, believe that it is time to take the requirement a step further and require the ENTIRE building to be sprinklered within a reasonable time frame.

To ensure continuous operation in healthcare facilities, the installation of sprinklers systems needs to be carefully planned so as to not adversely affect patient health. Accessing and exposing ceiling spaces can create conditions that will lead to infection and possibility death to patients with compromised or suppressed immune systems. In many situations, hospitals may not be able to appropriately retrofit the installation of a fire suppression system; in those situations, a time frame is needed to replace facilities. . The period for adoption of this proposed requirement has been left to the local authority having jurisdiction. Coordinating the timeframe for adoption with federal requirements is recommended. It is currently anticipated that the Centers for Medicaid and Medicare (the federal authority having jurisdiction) will require retroactive sprinklering of hospitals by the year 2021. However, the exact timeframe is uncertain at the time of development of this change.

Regardless, the federal government is considering the reasons noted above. This is an important next step in ensuring the safety of fragile population, Facilities need some time to accomplish this safety, without adversely affected the health of patients and disrupting patient care. These are the same factors that a jurisdiction should consider when choosing a date for adoption. It should be also clear that this change is a separate measure that must be taken in addition to the current requirement. It is not intended to allow a facility to have a timeframe for installing the current requirement (although jurisdictions may choose to do this). Nor is it intended to imply that the entire building containing a hospital should be sprinklered immediately. At a minimum, a three year timeframe is recommended for implementation of this requirement. This considers the process planning, capital approval, regulatory approval, design and installation of the sprinkler system. The capital planning piece of a large scale initiative, such as a building-wide sprinkler system, normally spans multiple fiscal years, and more can be considered if the regulatory environment allows.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact: This proposal would make the IFC consistent with the direction that federal standards are taking to maintain hospitals and therefore would not represent an increase in cost.

Analysis: The “Group I-2 Condition 2” terminology used in this proposal in lieu of “Group I-2 hospital” is the result of approved Group A code change G257-12.

F225-13

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

1103.5.3 (NEW)-F-WILLIAMS-ADHOC

F226 – 13
1103.5.3 (New)

Proponent: Thomas G. Daly representing The Hospitality Security Consulting Group, LLC

Add new text as follows:

1103.5.3 Group R-1 hotels and motels. An *automatic sprinkler system* shall be provided throughout existing Group R-1 hotels and motels.

> **Exception:** Group R-1 hotels and motels of one story in height where all individual guestrooms and contiguous attic and crawl spaces are separated from each other and public and common areas by at least 1-hour fire partitions and each individual guestroom has an exit directly to a public exit court or yard.

Reason:

A. Background: In the United States civilian fire deaths in Group R-1 hotels and motels over the past two decades have occurred exclusively in non-sprinklered and multi-story low-rise hotels/motels as predicted by the hotel industry. Notable National Fire Protection Association (NFPA) *and/or* media reported multiple loss of life low-rise hotel/motel fires include:
   1. Fontana Hotel - Miami Beach, FL - three stories - 9 civilian fire deaths - *4/6/1990*
   2. Paxton Hotel- Chicago, IL - four stories - 21 civilian fire deaths - *3/23/1993*
   3. Howard Johnson Hotel - Bowling Green, KY - two stories - 4 civilian deaths -*1/6/1996*
   4. Comfort Inn Hotel- Greenville, SC - three stories - 6 civilian deaths - *1/25/2004*
   5. Mason Hotel- San Diego, CA - three stories - 2 civilian deaths - *12/17/2004*
   6. Mitzpah Hotel- Reno, NV - three stories -12 civilian deaths -*10/31/2006*
   7. Zanzibar Motel- Reno, NV - two stories - 2 civilian deaths -*12/10/2007*
   8. Days Inn Hotel- Hoover, AL - two stories - 4 civilian deaths - *1/16/2010*

   Civilian fire deaths in hotels/motels averaged 7.7 per 1000 fires with no automatic suppression system present for the 1994-1998 timeframe. Civilian fire deaths in hotel/motel fires averaged11 each year from 2003-2007"- Civilian fire injuries in hotel/motel fires averaged 151 per year for the period 2003-2007.4

B. Code provisions remain inadequate to address hazard. Despite firesafety improvements for existing buildings mandated by the IFC starting in 20005 those changes have not resulted in a reduction in the annual civilian fire death statistics in nonsprinklered hotels/motels. Comparatively, no fire civilian fire deaths have been reported in sprinklered Group R-1 hotels/motels. After a decade of these codes changes fire deaths and injuries continue to occur in low-rise non-sprinklered Group R-1 hotels/motels. Without further code enhancements for existing hotels/motels, this carnage will continue. As such, a 'distinct hazard' continues to be present to occupants of non-sprinklered Group R-1 hotels and motels with regard to fires therein.

C. Cost/benefits: The U.S. lodging industry has largely completed the mostly voluntary sprinkler retrofitting of existing high-rise hotels, an effort which resulted in zero fire fatalities over the past two decades in such hotels? Leading lodging operators and franchisors including Hilton, Marriott and Starwood have also completed the sprinkler retrofitting of their low-rise hotels, dispelling the myth that such retrofit costs are prohibitive. Those costs are no more expensive than the routinely scheduled replacement of furnishings, fixtures and equipment (FF&E) including mattresses, case goods, carpeting, draperies and wall covering done by the industry. A hotel/motel sprinkler retrofit project is a one-time capital cost whereas the replacement of FF&E is a continuing periodic capital cost which the industry routinely bears. A hotel/motel sprinkler retrofit provides for a reduction in property insurance premiums and reduces the risk to firefighters engaged in fire suppression activities therein. As a result of these sprinkler system retrofits none of those cited hotel chains has experienced a civilian fire fatality in any of their hotels in the last two decades. Nonetheless, some lodging chains and many independent low-rise hotel owners/operators have not taken the same proactive action to protect their guests. The cost of such retrofits for commercial buildings including hotels and motels has been mitigated significantly by the permitted use of NFPA 13R as the installation standard for residential occupancies of 4 stories and less, the use of listed CPVC pipe in lieu of steel pipe or copper tube, the use of extended coverage sprinklers, the lack of the need in most cases for a fire pump in low rise Group R-1 buildings and through tax incentives in the forms of grants, tax credits, tax deductions and/or low interest loans for doing so see, for examples, state statutes in Alaska, South Carolina 10 and California 11 as well as numerous local ordinances.

Summary: Existing IFC provIsions have failed to prevent hotel/motel fire fatalities and thus a 'distinct hazard' to Group R-1 hotel and motel occupants continues to exist. The code change proposed herein, if adopted, will eliminate the 'distinct hazard' to life for such occupants.

Bibliography:

1. Tri-Data Corporation, Arlington, VA*., 'A Review of the Validity of Estimates of Hotel and Motel Fire Deaths – Final Report'*, December 1994, pg. 23.
2. Ahrens, Marty – National Fire Protection Association*, 'U.S. Fires in Selected Occupancies – Hotels and Motels*, March 2006, p. 103.
3. Flynn, Jennifer D. – National Fire Protection Association, *'U.S. Fires in Selected Occupancies – Hotels and Motels*, March 2010, Table 2.
4. Ibid., Table 1

5. See, for example, 2000 IFC Sec. 907.3.1.6 mandating fire alarm systems in existing hotels of more than 20 guestrooms regardless of height or exiting arrangements and multiple provisions of the 2009 IFC Sec. 4603.5 for Group R-1 occupancies.
6. Op cit., Ahrens, Marty NFPA *U.S. Fires in Selected Occupancies – Hotels and Motels 2006*, page 103.
7. NFPA Journal, September-October 2010, p 12.
8. See, for example, 2003 IFC Sec. 903.3.1.2 and 2003 IBC Sec. 903.3.1.2.
9. Alaska Statutes, Article 45.81.200-210.
10. South Carolina Act 357 (2008), R385, H4470 AN ACT TO AMEND THE CODE OFLAWS OFSOUTH CAROLINA, 1976, BY ADDING SECTION 58-5-390 SO AS TO PROVIDE THAT A PUBLIC OR PRIVATE UTILITY MAY NOT IMPOSE A TAP FEE, RECURRING MAINTENANCE FEE, OR OTHER FEE, HOWEVER DESCRIBED FOR THE INSTALLATION AND MAINTENANCE OF A FIRE SPRINKLER SYSTEM THAT EXCEEDS THE ACTUAL COSTS ASSOCIATED WITH THE WATER LINE TO THE SYSTEM AND TO DEFINE ACTUAL COSTS; BY ADDING SECTION 12-6-3622 SO AS TO ALLOW A PROPERTY TAX CREDIT, AT THE OPTION OF THE PROPERTY-TAXING ENTITY FOR TWENTY-FIVE PERCENT OF THE COSTS OF INSTALLING A FIRE SPRINKLER SYSTEM IN A COMMERCIAL OR RESIDENTIAL STRUCTURE WHEN SUCH INSTALLATION IS NOT REQUIRED BY LAW, TO ALLOW AN INCOME TAX CREDIT IN THE AMOUNT OF THE PROPERTY TAX CREDIT, TO PROVIDE THE MANNER IN WHICH THESE CREDITS ARE USED WHEN EARNED BY PASS-THROUGH ENTITIES, AND TO MAKE UNUSED CREDITS TRANSFERABLE BY THE STRUCTURE'S OWNER TO A TENANT; TO AMEND SECTION 12-37-3130, AS AMENDED, RELATING TO DEFINITION S FOR PURPOSES OF THE SOUTH CAROLINA REAL PROPERTY VALUATION REFORM ACT, SO AS TO PROVIDE THAT THE INSTALLATION OF A FIRE SPRINKLER SYSTEM IN A COMMERCIAL OR RESIDENTIAL STRUCTURE WHEN THE INSTALLATION IS NOT REQUIRED BY LAW IS NOT AN ADDITION OR IMPROVEMENT; BY ADDING SECTION 10-1-80 SO AS TO PROHIBIT ENFORCEMENT OF THAT PORTION OF THE INTERNATIONAL FIRE CODE OR NATIONALLY RECOGNIZED FIRE CODE THAT PROHIBITS THE USE OF NATURAL CUT TREES IN CELBRATIONS IN HOUSES OF WORSHIP; AND TO AMEND SECTION 12-37-220, AS AMENDED, RELATING TO PROPERTY TAX EXEMPTIONS, SO AS TO EXEMPT THE VALUE OF FIRE SPRINKLER SYSTEM EQUIPMENT INSTALLED IN A COMMERCIAL OR RESIDENTIAL STRUCTURE WHEN THE INSTALLATION IS NOT REQUIRED BY LAW AND TO PROVIDE THAT THIS EXEMPTION APPLIES UNTIL THE PROPERTY UNDERGOES AN ASSESSABLE TRANSFER OF INTEREST.
11. California Constitution Article 13A Tax Limitation Sec. 2(c)(2) & Taxation & Revenue Code Sec. 74(a)-(e)

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

F226-13

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

1103.5.3 (NEW)-F-DALY

F227 – 13
1103.7.2

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

1103.7.2 Group I-1. An automatic ~~fire alarm~~ smoke detection system shall be installed in existing Group I-1 ~~residential care/assisted living~~ facilities in accordance with Section 907.2.6.1.

Exceptions:

1. Manual fire alarm boxes in resident or patient sleeping areas 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.
2. 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 1019, and the building is not more than three stories in height.

Reason: The deletion after Group I-1 is for consistency with the terminology established in G31-12. The change of terminology is for consistency with Section 907.2.6.1. See below.

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 units* and kitchens. The system shall be activated in accordance with Section 907.5.

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. Smoke detection is not required for exterior balconies.

This will not change the single-station smoke detector requirements in Section 1103.8.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F227-13

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

1103.7.2-F-BALDASSARRA-CTC

F228 – 13
1103.7.6

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

1103.7.6 Group R-2. A 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* 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 1026.6, Exception 4.
4. A fire alarm system is not required in buildings that do not have interior *corridors* serving *dwelling units*, do not exceed 3 stories in height and comply with all of the following:
   - 4.1 Each *dwelling unit* is separated from other contiguous *dwelling units* by *fire barriers* having a *fire-resistance rating* of not less than ¾ hour
   - 4.2 Each *dwelling unit* is provided with interconnected smoke alarms complying with Section 907.2.11 in all sleeping rooms, plus not less than one hardwired smoke alarm in the common area of each floor or mezzanine level. Interconnection shall be permitted to be hardwired or by listed smoke alarms with wireless interconnect capability

Reason: The proposal provides a reasonable alternative to retrofitting a manual fire alarm system in existing Group R-2 occupancy buildings not exceeding three stories in height and having exits that lead directly to the outside. Fire risk in apartments tends to be greatest for occupants inside the dwelling unit where a fire originates, and money spent to retrofit firesafety equipment in apartments is better spent within dwelling units, as opposed to common areas.

Countless existing apartment buildings have only a single smoke alarm in the common area, and the IFC does not require retrofitting of smoke alarms in sleeping rooms when such alarms weren't required at the time of construction. The lack of smoke alarms in bedrooms, and particularly the lack of interconnecting alarm signals, increases the risk of injury or death in a unit of fire origin and other units that experience smoke infiltration. An additional consequence may be delayed recognition of a fire event, which increases the risk of harm to other building occupants and may delay notification of the fire department.

The alternative of a manual fire alarm system is less beneficial from a safety perspective because it requires an occupant to detect a fire event (which may take more time with fewer smoke alarms) and then find and activate a pull stations. Occupants must then respond to the alarm signal, and with the history of false alarms associated with manual fire alarm systems in apartment buildings, a response without other indications of a fire is questionable.

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

F228-13

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

1103.7.6-F-SHAPIRO

F229 – 13
1103.8.1

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1103.8.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11 of the *International Building Code*, except as ~~provided~~ required in Sections 1103.8.2. ~~and~~ or 1103.8.3.

Reason: The provisions of 1103.8.2 and 1103.8.3 aren't exceptions, but additional requirements for interconnection and power source for specific applications. Each of these two sections can be applied independently without connection to one another.

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

F229-13

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

1103.8.1-F-COLLINS-DAVIDSON

F230 – 13
1103.10 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

1103.10 Medical gases. Medical gases stored and transferred in healthcare related facilities shall be in accordance with Chapter 53.

Reason: This proposal adds a retroactive requirement in Chapter 11 that requires compliance with Chapter 53 compressed gases when medical gases are stored and transferred in healthcare related facilities. It was felt necessary to make sure that all existing facilities comply with these requirements to meet CMS guidelines. A general reference was made since it would not simply be compliance with Section 5306 that is necessary but with the compressed gas requirements in general. The medical gas requirements are only one aspect of the regulation of compressed gases.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

F230-13

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

1103.10 (NEW)-F-WILLIAMS-ADHOC

F231 – 13
1104.2

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1104.2 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress.

Exceptions:

1. Elevators used as an accessible means of egress where allowed by Section 1007.4 of the *International Building Code*.
2. Previously approved elevators, escalators and moving walks in existing buildings.

Reason: Chapters 4 and 30 of the IBC include occupant evacuation elevators for use in lieu of a third egress stair from high rise buildings of Group R-2 over 420 feet in height. If such elevators are "previously approved" the IFC should not prohibit their use.

Cost Impact: This will decrease the cost of construction by the elimination of conflicts within code enforcement documents.

F231-13

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

1104.2-F-COLLINS

F232 – 13
1104.5

Proponent: David S. Collins, FAIA, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com); Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

1104.5 Illumination emergency power. Where means of egress illumination is provided, ~~T~~the power supply shall normally be provided by the premises' electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for the following occupancies where such occupancies require two or more means of egress:

Reason: It isn't clear in the current wording when the power must be provided and for what purpose.

Cost Impact: There will be no cost impact with this change.

F232-13

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

1104.5-F-COLLINS

F233 – 13
1104.7

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

1104.7 Size of doors. The minimum width of each door opening shall be sufficient for the *occupant load* thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ In ambulatory care facilities, doors serving as means of egress from patient treatment rooms or patient sleeping rooms shall provide a clear width of not less than 32 inches (813 mm). ~~*Means of egress* doors in an occupancy~~ In Group I-2, doors serving as means of egress and used for the movement of beds shall provide a clear width not less than 41.5 inches (1054 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required *means of egress* in occupancies in Groups R-2 and R-3.
2. Door openings to storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum width.
3. Width of door leafs in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
4. Door openings within a *dwelling unit* shall not be less than 78 inches (1981 mm) in height.
5. Exterior door openings in *dwelling units*, other than the required *exit* door, shall not be less than 76 inches (1930 mm) in height.
6. *Exit access* doors serving a room not larger than 70 square feet (6.5 m^2) shall be not less than 24 inches (610 mm) in door width.
7. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the door.

Reason: Most of this proposal is an editorial coordination with IBC Section 1008.1.1. The addition of the 32" inch clear width for Ambulatory Care Facilities is based on the nature of the activities within the space. This will also coordinate with the federal requirements for accessibility in the 1994 ADAAG and 2010 ADA Standard for Accessible Design for these necessary facilities.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx .

Cost Impact: None

F233-13

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

1104.7-F-WILLIAMS-ADHOC

F234 – 13
1104.8

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

Revise as follows:

1104.8 Opening force for doors. The opening force for interior side-swinging doors without closers shall not exceed a 5 pound (22 N) force. These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position. For other side-swinging, sliding and folding doors, the door latch shall release when subjected to a force of not more than 15 pounds (66 N). The door shall be set in motion when subjected to a force not exceeding 30 pounds (133 N). The door shall swing to a full-open position when subjected to a force of not more than 50 pounds (222 N). Forces shall be applied to the latch side.

Reason: Revisions approved in the 2012 ICC code development cycle for the 2015 IBC should be coordinated in this section of the IFC. The proposed revisions to this section of the IFC is consistent with the revisions to section 1008.1.3 of the 2015 IBC and section 1008.1.3 of the 2015 IFC, resulting from code change proposal E62-12 which was approved "as modified" in 2012.

Cost Impact: None

F234-13

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

1104.8-F-WOESTMAN

F235 – 13
1104.22

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

1104.22 Minimum aisle width. The minimum clear width of *aisles* shall be:

1. Forty-two inches (1067 mm) for stepped aisles ~~*aisle* stairs~~ having seating on each side.

   Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

2. Thirty-six inches (914 mm) for stepped *aisles* having seating on only one side.

   Exceptions:

   1. Thirty inches (760 mm) for catchment areas serving not more than 60 seats.
   2. Twenty-three inches (584 mm) between a stepped aisle *handrail* and seating where an *aisle* does not serve more than five rows on one side.

3. Twenty inches (508 mm) between a stepped *aisle* handrail or guard and seating when the *aisle* is subdivided by the *handrail*.
4. Forty-two inches (1067 mm) for level or ramped *aisles* having seating on both sides.

   Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

5. Thirty-six inches (914 mm) for level or ramped *aisles* having seating on only one side.

   Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

6. ~~Twenty-three inches (584 mm) between a stepped *stair handrail* and seating where an *aisle* does not serve more than five rows on one side.~~

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

The language for aisles has been revised in IFC/IBC Section 1028.9.1 to relocate Item 6 to Exception 2 under Item 2 by E143-09/10. This section should be coordinated. The current section is inconsistent when using the term “stepped aisle” and “aisle stair”. E86-12 has changed the term to “stepped aisles” throughout the IBC. Below is the revised IBC text for clarity:.

1028.9.1 Minimum aisle width. The minimum clear width for *aisles* shall be as shown:

1. Forty-eight inches (1219 mm) for *stepped aisles* having seating on each side.

   Exception: Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.

2. Thirty-six inches (914 mm) for *aisle stairs* having seating on only one side.

   Exception: Twenty-three inches (584 mm) between an *aisle stair handrail* and seating where an *aisle* does not serve more than five rows on one side

   .
3. Twenty-three inches (584 mm) between an *aisle stair handrail* or *guard* and seating where the aisle is subdivided by a handrail.
4. Forty-two inches (1067 mm) for level or ramped *aisles* having seating on both sides.

Exceptions:

1. Thirty-six inches (914 mm) where the *aisle* serves less than 50 seats.
2. Thirty inches (762 mm) where the *aisle* does not serve more than 14 seats.

5. Thirty-six inches (914 mm) for level or ramped *aisles* having seating on only one side.

   Exception: Thirty inches (762 mm) where the *aisle* does not serve more than 14 seats.

Cost Impact: This change will not increase the cost of construction

F235-13

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

1104.22-F-ZUBIA-FCAC

F236 – 13
1105 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

SECTION 1105
INCIDENTAL USES IN EXISTING GROUP I-2

1105.1 General. Incidental uses associated with and located within existing single occupancy or mixed occupancy Group I-2 buildings and that generally pose a greater level of risk to such occupancies shall comply with the provisions of Sections 1105.2 through 1105.4.2.1. Incidental uses in Group I-2 occupancies are limited to those listed in Table 1105.1.

1105.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1 of the *International Building Code*. Incidental uses shall be included in the building occupancies within which they are located.

1105.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

1105.4 Separation and protection. The incidental uses listed in Table 1105.1 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

1105.4.1 Separation. Where Table 1105.1 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the *building* in accordance with Section 509.4.1 of the *International Building Code*.

1105.4.2 Protection. Where Table 1105.1 permits an *automatic sprinkler system* without a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke in accordance with Section 509.4.2 of the *International Building Code*.

1105.4.2.1 Protection limitation. Except as otherwise specified in Table 1105.1 for certain incidental uses, where an *automatic sprinkler system* is provided in accordance with Table 1105.1, only the space occupied by the incidental use need be equipped with such a system.

TABLE 1105.1
INCIDENTAL USES IN EXISTING GROUP I-2 OCCUPANCIES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	2 hours
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops not classified as Group H	2 hours; or 1 hour and provide automatic sprinkler

ROOM OR AREA	SEPARATION AND/OR PROTECTION
	system
Laboratories and vocational shops, not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
Patient rooms equipped with padded surfaces	1 hour or provide automatic sprinkler system
Physical plant maintenance shops.	1 hour or provide automatic sprinkler system
Waste and linen collection rooms with containers with total volume of 10 cubic feet or greater.	1 hour or provide automatic sprinkler system
Storage rooms greater than 100 square feet	1 hour or provide automatic sprinkler system
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	2 hours

For SI: 1 square foot = 0.0929 m^2, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

(Renumber subsequent sections)

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

The provisions of this code change are being proposed for the IFC to establish requirements for the protection of incidental use areas in existing Group I-2 occupancies. Incidental use area provisions are applicable to new construction in Section 509 of the IBC, however similar provisions are needed for existing Group I-2 occupancies since the hazards posed by such rooms or spaces are no different for existing buildings than for new. Proposed Section and Table 1105.1 are very similar to and based upon IBC Section and Table 509, except that references to occupancies other than Group I-2 are not included. The basic requirements proposed for incidental uses in existing healthcare occupancies rely upon the provisions of the IBC for the specifics of construction and protection. Proposed Sections 1105.2 through 1105.4.2.1 are based on IBC Sections 509.2 through 509.4.2.1, editorially corrected for the IFC and for correlation. These proposed provisions will provide correlation with not only the IBC but also with the current operational and CMS program standards for existing Group I-2 occupancies. A section-by-section summary follows:

1105.1: This proposed section establishes the scope of Section 1105 and its applicability to Group I-2 occupancies. Incidental uses are rooms or areas that constitute special hazards or risks to life safety that are not typically addressed by the provisions for the occupancy group in which they occur even though such rooms or areas may functionally be an extension of the primary use. Only those rooms or areas indicated in Table 1105 are to be regulated as incidental uses. Incidental uses can be located within both single-occupancy and mixed-occupancy buildings. The concern is that those areas designated as incidental uses pose a risk to the remainder of the building, and as such, some degree of protection is required. In general, the nature of these incidental uses is such that they are small areas that are not frequented by the building occupants very often in which a fire could get underway and go unnoticed for a longer time than in a part of the building that is constantly occupied.

1105.2: Consistent with the IBC, this proposed section expressly states that incidental uses are not considered as separate and distinct occupancy classifications but, rather, are classified the same as the occupancies in which they are located. As an example, a waste and linen collection room in a hospital would be classified as a portion of the Group I-2 occupancy even though it may present a level of hazard more akin to a Group S-1 occupancy if it were to be classified separately.

1105.3: The proposed floor area limitation of 10 percent for incidental uses emphasizes the ancillary nature of such rooms and areas and correlates with the IBC. Each incidental use would be limited to a maximum floor area of 10 percent of the floor area of the story in which it is located. Where there are two or more tenants located on the same story, the 10 percent limitation is based upon the floor area of each individual tenant space rather than that of the entire story. The application of the limit on a tenant-by-tenant basis is consistent with the concept of incidental uses typically being ancillary only to a portion of the building, i.e., the specific tenant occupancy.

1105.4: In addition to identifying those rooms or areas that warrant regulation as incidental uses, proposed Table 1105.1 will also indicate the required degree of protection or separation. The requirements identified in Table 1105.1 vary depending on the incidental use. In some cases, a specific type of separation and/or protection is required, while in others there is an option.

1105.4.1: Where a fire-resistance rated separation would be required, the incidental use would need to be separated from other portions of the building in accordance with assemblies complying with the IBC.

1105.4.2: In this proposed section, where Table 1105.1 would allow protection by an automatic sprinkler system without a fire-resistance-rated separation, the construction enclosing the incidental use would still need to resist the passage of smoke. Construction details for resisting the passage of smoke are provided in the IBC.

1105.4.2.1: This proposed section makes it clear that the sprinkler systems stipulated in Table 1105 would be required for the incidental use area only.

TABLE 1105.1: Proposed Table 1105.1 identifies the incidental uses and the required separation or other protection that would need to be provided in all Group I-2 occupancies.

Information note: IBC Table 509 was revised by approved Group A code change G130-12, also submitted by the AHC, which is reproduced here below for reference purposes only:

G130 – 12
Table 509

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

TABLE 509
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops~~,~~ not classified as Group H~~, located in Group E or I-2 occupancy~~	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops.	1 hour
In ambulatory care facilities or Group I-2 occupancies , waste and linen collection rooms ~~located in either Group I-2 occupancies or ambulatory care facilities~~ with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	

For SI: 1 square foot = 0.0929 m^2, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Currently, more detail is needed in the Incidental Use table to add spaces currently being maintained in healthcare and ambulatory care occupancies. The above chart makes the noted tables consistent with current operational and programmatic standards in the Group I-2 occupancy.

The current version of the table does not address the occasion when materials in a laboratory increases, most notably in the aggregate of larger histology / cytology laboratories. Materials such as xylene, hydrochloric acid, ethanol and fixatives (among others) are present in these areas. Although they are stored in gallon and liter quantities, and not bulk storage, the quantities add up over the larger lab control areas when they are in use at the benches.

The distinction between smaller stat labs, largely found in ambulatory care facilities, and larger clinical labs, found in hospitals, is being proposed. Ambulatory care facilities has been added to the current laboratory category to address those support spaces such as stat labs that are set up for a specific time-sensitive purpose, such as blood draw and chemotherapy, to save time in the Group B occupancy setting. Larger scale or non-critical lab operations are typically sent out to proprietary labs from ambulatory facilities. When addressing labs crossing the threshold into one hour rated construction, these labs are typically constructed as stand-alone operations and commonly appear in Group B occupancies, and are subject to the current occupancy separation requirements.

Volume thresholds are being considered in waste and linen collection rooms because basic exam spaces contain some level of waste containers and linen hampers without rising to the level of storage. The 10 cubic foot threshold represents essentially two medium sized linen hampers and/or trash receptacles. Larger linen and waste receptacle containers, and not the smaller containers typically found in an exam room or patient sleeping room, are subject to volume rather than square footage of the room because a relatively small space, with the 10 cubic foot threshold crossed in a space well below, for example, 100 square feet.

Group I-2 is also being added to the requirement for one hour rating with rooms equipped with padded surfaces. The instance of these rooms existing in a hospital is rare. It is prudent, however, to add the requirement where there is the occasion that such rooms are used in areas such as emergency departments, inpatient psychiatric units, or similar areas.

Physical plant and maintenance shops are a very specific function in a hospital building, and are being added to the table to ensure protection due to the stored materials related to the physical plant operation.

Addition of storage rooms as an area requiring 1 hour rated protection is a key functional aspect of a Group I-2 healthcare building. Areas that become unused become storage areas very quickly. Specifically calling out storage areas helps define and control the storage of combustibles, and avoid creating random storage in otherwise unmonitored or unprotected areas.

Areas addressed in the past, but are no longer included in the table, are addressed in the International Fire Code (IFC). For example, storage of combustible gases is addressed in IFC Section 5306.2 and has specific references to the Group I-2 occupancy. Gift shops, formerly listed as an incidental area requiring protection, have largely been eliminated from these requirements in the I-Codes and other model codes, and are addressed in the context of being open to the corridor.
In consideration of ambulatory care facilities, where not otherwise specifically called out, categories that are required for both Group B and I occupancies are assumed to cover Group I-2 and ambulatory care facilities. Examples of this interpretation are hydrogen cut-off rooms and stationary battery storage.

Cost Impact: None

Cost Impact: The code change proposal should not increase the cost of construction because compliance with similar requirements is already required by facility licensure requirements.

F236-13

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

1105 (NEW) #2-F-BALDASSARRA-WILLIAMS-ADHOC

F237 – 13

1105 (New), 1105.1 (New), 1105.7 (New), 1105.8 (New); Table 1103.1; 1103.5.2, 1103.7.3

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

IFC 1105.1 General. Existing Group I-2 shall meet the following requirements:

1. The minimum fire safety requirements in Section 1103, and
2. The minimum mean of egress requirements in Section 1104, and
3. The additional egress and construction requirements in Sections 1105.

Where the provisions of this chapter conflict with the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

1105.7 Group I-2 automatic sprinkler system. An *automatic sprinkler system* installed in accordance with Section 903.3.1 shall be provided throughout existing Group I-2 *fire areas.* The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the *level of exit discharge.*

1105.8 Group I-2 automatic fire alarm system. An automatic fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2.

Exception: Manual fire alarm boxes in patient sleeping areas 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 907.5.2.1 are not exceeded.

Revise as follows:

TABLE 1103.1
OCCUPANCY AND USE REQUIREMENTS[a]

Section	Use			Occupancy Classification																		
	High rise	Atrium or covered mall	Underground building	A	B	E	F	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M	R-1	R-2	R-3	R-4	S
1104	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1105	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-

(Portions of table not shown remain unchanged)

R = The building is required to comply.

a. Existing buildings shall comply with the sections identified as "Required" (R) based on occupancy classification or use, or both, whichever is applicable.

1103.5.2 Group I-2. ~~An *automatic sprinkler system* shall be provided throughout existing Group I-2 *fire areas*. The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the *level of exit discharge*.~~ In Group I-2, an automatic sprinkler system shall be provided in accordance with Section 1105.7.

1103.7.3 Group I-2. ~~An automatic fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2.~~ In Group I-2, an automatic fire alarm system shall be installed in accordance with Section 1105.8.

~~**Exception:** Manual fire alarm boxes in resident or patient sleeping areas 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 907.5.2.1 are not exceeded.~~

Reason: This change adds minimum requirements for existing Group I-2 into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

The intent of this proposal is to create a new Section 1105, to have a section for Group I-2 specific and unique requirements. Section 1105.1General, provides a general scoping for this section. Areas in the hospital and nursing homes not in patient care areas will use the general provisions in Section 1103 and 1104. Where there are more restrictive provisions for hospitals or nursing homes, they will be listed in Section 1105.

Current provisions that were relocated to this section (1105.7 – automatic sprinkler system; 1105.8 – automatic fire alarm system) will remain applicable to all Group I-2. Section 1105.7, sprinkler requirements is relocated from 1103.5.2. Section 1105.8, automatic fire alarm system is relocated from 1103.7.3.

There is a package of proposal that are intended to be incorporated into this section. Below is how a new Section 1105 will look if all the proposals are accepted.

IFC SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

IFC 1105.1 General. Existing Group I-2 shall meet the following requirements:

1. The minimum fire safety requirements in Section 1103, and
2. The minimum mean of egress requirements in Section 1104, and
3. The additional egress and construction requirements in Sections 1105.

Where the provisions of this chapter conflict with the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

1105.2 Construction. Group I-2 Condition 2 shall not be located on a floor level higher than the floor level limitation in Table 1105.2 based on the type of construction.

Table 1105.2
FLOOR LEVEL LIMITATIONS FOR GROUP I-2 Condition 2

Construction Type	Automatic Sprinkler System	Allowable Floor Level[a]			
		1	2	3	4 or more
IA	Note b	P	P	P	P
	Note c	P	P	P	P
IB	Note b	P	P	P	P

Construction Type	Automatic Sprinkler System	Allowable Floor Level[a]			
		1	2	3	4 or more
	Note c	P	P	P	P
IIA	Note b	P	P	P	NP
	Note c	P	NP	NP	NP
IIB	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
IIIA	Note b	P	P	NP	NP
	Note c	P	NP	NP	NP
IIIB	Note b	P	NP	NP	NP
	Note c	NP	NP	NP	NP
IV	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
VA	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
VB	Note b	P	NP	NP	NP
	Note c	NP	NP	NP	NP

P = Permitted; NP = Not Permitted

a. Floors level shall be counted based on the number of stories above grade.
b. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
c. The building is equipped with an automatic sprinkler system in accordance with Section 1105.7.

1105.3 Corridor construction. In Group I-2, in areas housing patient sleeping or care rooms, corridor walls and the opening protectives therein shall provide a barrier designed to resist the passage of smoke in accordance with Sections 1105.3.1 through 1105.3.7.

1105.3.1 Materials. The walls shall be of materials permitted by the building type of construction.

1105.3.2 Fire-resistance rating. Unless required elsewhere in the code, corridor walls are not required to have a fire-resistance rating.

1105.3.3 Corridor Walls Continuity. Corridor walls shall extend from the top of the foundation or floor below to one of the following:

1. The underside of the floor or roof sheathing, deck or slab above.
2. The underside of a ceiling above where the ceiling membrane is constructed to limit the passage of smoke.
3. The underside of a lay-in ceiling system where the ceiling tiles weigh at least one pound per square foot of tile.

1105.3.4 Openings in corridor walls. Openings in corridor walls shall provide protection in accordance with 1105.3.4.1 through 1105.3.4.3.

1105.3.4.1 Windows. Windows in corridor walls shall be sealed to limit the passage of smoke, or the window shall be automatic closing upon detection of smoke, or the window opening shall be protected by an automatic closing device that closes upon detection of smoke.

Exception: In smoke compartments not containing patient sleeping rooms, pass-through windows or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2 Doors. Doors in corridor walls shall comply with Sections 1105.3.4.2.1 through 1105.3.4.2.3.

1105.3.4.2.1 Louvers. Doors in corridor walls shall not include louvers, transfer grills or similar openings.

Exception: Doors shall be permitted to have louvers, transfer grills or similar openings at toilet rooms or bathrooms; storage rooms that do not contain storage of flammable or combustible material; and storage rooms that are not required to be separated as incidental uses.

1105.3.4.2.2 Corridor doors. Doors in corridor walls shall limit the transfer of smoke by complying with the following:

1. Doors shall be constructed of not less than 1-3/4 inch (44 mm) thick solid bonded core wood or capable of resisting fire for a minimum of 1/3 hours.

   Exception: Corridor doors in buildings equipped throughout with an automatic sprinkler system.

2. Frames for side hinged swinging doors shall have stops on the sides and top to limit transfer of smoke.
3. Where provided, vision panels in doors shall be a fixed glass window assembly installed to limit the passage of smoke.Existing wired glass panels with steel frames shall be permitted to remain in place.
4. Doors undercuts shall not exceed 1 inch (25 mm).
5. Doors shall be positive latching with devices that resist not less than 5 pounds (22.2 N). Roller latches are prohibited.
6. Mail slots or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2.3 Dutch doors. Where provided, dutch doors shall comply with Section 1105.3.4.2.2. In addition, dutch doors shall be equipped with latching devices on either the top or bottom leaf to allow leaves to latch together. The space between the leaves shall be protected with devices such as astragals to limit the passage of smoke.

1105.3.4.2.4 Self- or automatic-closing doors. Where self- or automatic-closing doors are required, closers shall be maintained in operational condition.

1105.3.4.3 Openings in corridor walls and doors. Mail slots, pass through windows or similar openings shall not be required to be protected where the aggregate area of the openings between the corridor and a room are not greater than 80 square inches (51 613 mm^2) and are located with the top edge of any opening no higher than 48 inches above the floor.

1105.3.5 Penetrations. The space around penetrating items shall be filled with an *approved* material to limit the passage of smoke.

1105.3.6 Joints. Joints shall be filled with an *approved* material to limit the passage of smoke.

1105.3.7 Ducts and air transfer openings. The space around a duct penetrating a smoke partition shall be filled with an *approved* material to limit the passage of smoke. Air transfer openings in smoke partitions shall be provided with a *smoke damper* complying with Section 717.3.2.2 of the International Building Code.

Exception: Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.

1105.4 Means of egress. In addition to the means of egress requirements in Section 1104, Group I-2 facilities shall meet the means of egress requirements in Section 1105.4.1 through 1105.4.7.

1105.4.1 Exit signs and emergency illumination. The power system for exit signs and emergency illumination for the means of egress shall provide power for not less than 90 minutes and consist of storage batteries, unit equipment or an on-site generator.

1105.4.2 Emergency power for operational needs. The essential electrical system shall be capable of supplying services in accordance with NFPA 99.

1105.4.3 Size of Door. Means of egress doors used for the movement of patients in beds shall provide a minimum clear width of 41.5 inches (1054 mm). The height of door opening shall not be less than 80 inches (2032 mm).
Exception: Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

1105.4.4 Ramps. In areas where ramps are used for movement of patients in beds, the clear width of the ramp shall not be less than 48 inches (1219 mm).

1105.4.5 Corridor width. In areas where corridors are used for movement of patients in beds, the clear width of the corridor shall not be less than 48 inches (1219 mm).

1105.4.6 Dead end corridors. In smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall not exceed 30 feet unless approved by the fire official.

1105.4.7 Aisles. In areas where aisles are used for movement of patients in beds, the clear width of the aisle shall not be less than 48 inches (1219 mm*).*

1105.5 Smoke compartments. Smoke compartments shall be provided in existing Group I-2 Condition 2, in accordance with Sections 1105.5.1 through 1105.5.4.

1105.5.1 Design. Smoke barriers shall be provided to subdivide each story used for patients sleeping with an occupant load of more than 30 patients into no fewer than two smoke compartments.

1105.5.1.1Refuge areas. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined

by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments.

The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m^2) for each care recipient confined to bed or stretcher.
2. Not less than 15 square feet (1.4 m^2) for each resident in a Group I-2 using mobility assistance devices.
3. Not less than 6 square feet (0.56 m^2) for each occupant not addressed in Items 1 and 2.

Areas of spaces permitted to be included in the calculation of the refuge area of corridors, sleeping areas, treatment rooms, lounge or dining areas and other low-hazard areas.

1105.5.2 Smoke barriers. Smoke barriers shall be constructed in accordance with Section 709 of the *International Building Code*.

Exceptions:

1. Existing smoke barriers with a minimum of 1/2 –hour fire-resistance rating are permitted to remain.
2. Smoke barriers shall be permitted to terminate at an atrium enclosure in accordance with Section 404.6 of the *International Building Code.*

1105.5.3 Opening protectives. Openings in smoke barriers shall be protected in accordance with Section 716 of the *International Building Code*. Opening protectives shall have a with a minimum fire-protection-rating of 1/3 hours.

Exception: Wired glass vision panels in doors shall be permitted to remain.

1105.5.4 Duct and air transfer openings. Penetrations in a smoke barrier by duct and air transfer openings shall comply with Section 717 of the *International Building Code*.

Exception: Where existing duct and air transfer openings in smoke barriers exist without smoke dampers, they shall be permitted to remain. Any changes to existing smoke dampers shall be submitted for review and approved in accordance with IBC Section 717 of the *International Building Code*.

1105.6 Group I-2 care suites. Care suites in existing Group I-2 Condition 2 occupancies shall comply with Section 407.4.3 through 407.4.3.6.2 of the *International Building Code***.**

1105.7 Group I-2 automatic sprinkler system. An *automatic sprinkler system* installed in accordance with Section 903.3.1 shall be provided throughout existing Group I-2 *fire areas.* The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the *level of exit discharge.*

1105.8 Group I-2 automatic fire alarm system. An automatic fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.2.

Exception: Manual fire alarm boxes in patient sleeping areas 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 907.5.2.1 are not exceeded.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F237-13

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

F238 – 13
1105.2 (New), Table 1105.2 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.2 Construction. Group I-2 Condition 2 shall not be located on a floor level higher than the floor level limitation in Table 1105.2 based on the type of construction.

Table 1105.2
FLOOR LEVEL LIMITATIONS FOR GROUP I-2 Condition 2

Construction Type	Automatic Sprinkler System	Allowable Floor Level[a]			
		1	2	3	4 or more
IA	Note b	P	P	P	P
	Note c	P	P	P	P
IB	Note b	P	P	P	P
	Note c	P	P	P	P
IIA	Note b	P	P	P	NP
	Note c	P	NP	NP	NP
IIB	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
IIIA	Note b	P	P	NP	NP
	Note c	P	NP	NP	NP
IIIB	Note b	P	NP	NP	NP
	Note c	NP	NP	NP	NP
IV	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
VA	Note b	P	P	NP	NP
	Note c	NP	NP	NP	NP
VB	Note b	P	NP	NP	NP
	Note c	NP	NP	NP	NP

P = Permitted; NP = Not Permitted
a. Floors level shall be counted based on the number of stories above grade.
b. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
c. The building is equipped with an automatic sprinkler system in accordance with Section 1105.7.

Reason: This change adds minimum requirements for existing hospitals (Group I-2, Condition 2) into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will

provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

These provisions are written specifically for hospitals (Group I-2, Condition 2). These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities. These inspections are required by federal laws for certification and reimbursement. This requirement considers the minimum previously approved construction methods. This is consistent with the federal requirements that these facilities are currently held too.

The revision to Section 1105.2 is proposed this retroactive limitation requirement for the allowable height based upon construction type because it is a key component of the regulatory approval for a health care facility, and so that surveying and licensing requirements can be documented and provided for in the IFC. Without these limitations provided for in the IFC, to which the healthcare industry is required to comply and support, the implementation and use of the IFC as a compliance document could not be possible. While most if not all existing hospitals were constructed to comply with these minimum construction requirements, many were constructed using methods that pre-dated the current construction type matrix, and were comprised of an "assembly" (i.e. minimum thickness concrete slab with a metal lath and plaster ceiling below) which provided the necessary fire rating. This section will allow all hospitals to be evaluated on an ongoing basis to verify the system/assembly used to obtain the required fire rating will be maintained or replaced with an equivalent system/assembly.

The existing allowance for the occupancies as stipulated in the proposed table, are less than that for new construction and do not increase the cost of construction and operations beyond what is currently mandated for healthcare facilities.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

Cost Impact: None

F238-13

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

1105.2 (NEW)-F-WILLIAMS-ADHOC

F239 – 13
1105.3 (New); 202 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Add new text as follows:

IFC SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.3 Corridor construction. In Group I-2, in areas housing patient sleeping or care rooms, corridor walls and the opening protectives therein shall provide a barrier designed to resist the passage of smoke in accordance with Sections 1105.3.1 through 1105.3.7.

1105.3.1 Materials. The walls shall be of materials permitted by the building type of construction.

1105.3.2 Fire-resistance rating. Unless required elsewhere in the code, corridor walls are not required to have a fire-resistance rating.

1105.3.3 Corridor Walls Continuity. Corridor walls shall extend from the top of the foundation or floor below to one of the following:

1. The underside of the floor or roof sheathing, deck or slab above.
2. The underside of a ceiling above where the ceiling membrane is constructed to limit the passage of smoke.
3. The underside of a lay-in ceiling system where the ceiling tiles weigh at least one pound per square foot of tile.

1105.3.4 Openings in corridor walls. Openings in corridor walls shall provide protection in accordance with 1105.3.4.1 through 1105.3.4.3.

1105.3.4.1 Windows. Windows in corridor walls shall be sealed to limit the passage of smoke, or the window shall be automatic closing upon detection of smoke, or the window opening shall be protected by an automatic closing device that closes upon detection of smoke.

Exception: In smoke compartments not containing patient sleeping rooms, pass-through windows or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2 Doors. Doors in corridor walls shall comply with Sections 1105.3.4.2.1 through 1105.3.4.2.3.

1105.3.4.2.1 Louvers. Doors in corridor walls shall not include louvers, transfer grills or similar openings.
Exception: Doors shall be permitted to have louvers, transfer grills or similar openings at toilet rooms or bathrooms; storage rooms that do not contain storage of flammable or combustible material; and storage rooms that are not required to be separated as incidental uses.

1105.3.4.2.2 Corridor doors. Doors in corridor walls shall limit the transfer of smoke by complying with the following:

1. Doors shall be constructed of not less than 1-3/4 inch (44 mm) thick solid bonded core wood or capable of resisting fire for a minimum of 1/3 hours.

   Exception: Corridor doors in buildings equipped throughout with an automatic sprinkler system.

2. Frames for side hinged swinging doors shall have stops on the sides and top to limit transfer of smoke.
3. Where provided, vision panels in doors shall be a fixed glass window assembly installed to limit the passage of smoke.Existing wired glass panels with steel frames shall be permitted to remain in place.
4. Doors undercuts shall not exceed 1 inch (25 mm).
5. Doors shall be positive latching with devices that resist not less than 5 pounds (22.2 N). Roller latches are prohibited.
6. Mail slots or similar openings shall be permitted in accordance with Section 1105.3.4.3.

1105.3.4.2.3 Dutch doors. Where provided, dutch doors shall comply with Section 1105.3.4.2.2. In addition, dutch doors shall be equipped with latching devices on either the top or bottom leaf to allow leaves to latch together. The space between the leaves shall be protected with devices such as astragals to limit the passage of smoke.

1105.3.4.2.4 Self- or automatic-closing doors. Where self- or automatic-closing doors are required, closers shall be maintained in operational condition.

1105.3.4.3 Openings in corridor walls and doors. Mail slots, pass through windows or similar openings shall not be required to be protected where the aggregate area of the openings between the corridor and a room are not greater than 80 square inches (51 613 mm^2) and are located with the top edge of any opening no higher than 48 inches above the floor.

1105.3.5 Penetrations. The space around penetrating items shall be filled with an *approved* material to limit the passage of smoke.

1105.3.6 Joints. Joints shall be filled with an *approved* material to limit the passage of smoke.

1105.3.7 Ducts and air transfer openings. The space around a duct penetrating a smoke partition shall be filled with an *approved* material to limit the passage of smoke. Air transfer openings in smoke partitions shall be provided with a *smoke damper* complying with Section 717.3.2.2 of the International Building Code.

Exception: Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.

1104.17 Corridors construction. Corridors serving an occupant load greater than 30 and the openings therein shall provide an effective barrier to resist the movement of smoke. Transoms, louvers, doors and other openings shall be kept closed or be self closing. In Group I-2, corridors in areas housing patient sleeping or care rooms shall comply with Section 1105.3.

Exceptions:

1. Corridors in occupancies other than in Group H ~~and I-2,~~ which are equipped throughout with an approved automatic sprinkler system.
2. ~~Patient room doors in corridors in occupancies in Group I-2 where smoke barriers are provided in accordance with the International Building Code.~~
3. 2. Corridors in occupancies in Group E where each room utilized for instruction or assembly has at least one-half of the required means of egress doors opening directly to the exterior of the building at ground level.
4. 3. Corridors that are in accordance with the *International Building Code*.

SECTION 202
GENERAL DEFINITIONS

Dutch door. A door divided horizontally so that the top can be operated independently from the bottom.

Reason: This change adds minimum requirements for existing Group I-2 into Chapter 11 by adding specific retrofit requirements. This change will move the existing retrofit requirements for corridors in I-2 occupancies to proposed new section 1105.3 and add more detailed specific requirements. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities as it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that provide a more uniform level of safety and eliminate many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

These provisions are written specifically for hospitals (Group I-2, Condition 2). These are retrofit requirements that provide a minimum level of safety considered necessary for patients, staff and first responders in an environment in which patients are in many instances not capable of self preservation and must be protected in place. The changes also provide tradeoffs for automatic sprinkler systems consistent with those allowed for new construction and also with those allowed by CMS. In no way does this affect the existing requirement that existing, approved construction must be maintained in the manner that it was approved. It simply provides a tool for evaluating historical construction techniques.

Specific points include:

- Existing corridor construction should primarily be evaluated for it's ability to resist or limit the transfer of smoke, regardless of the code at the time of construction.. Corridor walls, even if they were built 60 years ago, should be regularly assessed confirm that they minimize the transfer of smoke. This section describes some criteria by which this can be assessed.
- The requirements clearly indicate that portions of corridor walls required to have a fire resistance ratings by other code provisions must meet those provisions. This addresses where a corridor wall also happens to be a smoke barrier, incidental use area separation, etc.
- The Ad Hoc Committee added a specific section on dutch doors. Dutch doors have been used in health care facilities for many years for various necessary operational reasons. While existing language in the IBC does not specifically speak of dutch doors, their use is not prohibited but if used must meet the requirements contained in Section 407.3 including positive latching and limiting the transfer of smoke. This change will provide clarity for existing installations by giving specific guidance on the minimum acceptable requirements including positive latching and smoke transfer for their use in corridor walls. A definition is provided for additional clarity.
- The Ad Hoc committee also proposes similar detail for doors, windows, louvers and other potential penetrations or openings in corridor walls in an attempt to add clarity to the intent of the code on limiting the transfer of smoke. These proposals are consistent with current CMS standards.
- There are exceptions that deal with existing mail slot, pass-through and similar openings that are commonly found in hospitals. These are needed for privacy, medication security and other operational needs. Our proposal places restrictions on these existing openings similar to the current federal requirements.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F239-13

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

F240 – 13

1105.4 (New), 1104.5.1, 1104.7, 1104.15, 1104.17.2, Table 1104.17.2, 1104.22

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.4 Means of egress. In addition to the means of egress requirements in Section 1104, Group I-2 facilities shall meet the means of egress requirements in Section 1105.4.1 through 1105.4.7.

1105.4.1 Exit signs and emergency illumination. The power system for exit signs and emergency illumination for the means of egress shall provide power for not less than 90 minutes and consist of storage batteries, unit equipment or an on-site generator.

1105.4.2 Emergency power for operational needs. The essential electrical system shall be capable of supplying services in accordance with NFPA 99.

1105.4.3 Size of Door. Means of egress doors used for the movement of patients in beds shall provide a minimum clear width of 41.5 inches (1054 mm). The height of door opening shall not be less than 80 inches (2032 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

1105.4.4 Ramps. In areas where ramps are used for movement of patients in beds, the clear width of the ramp shall not be less than 48 inches (1219 mm).

1105.4.5 Corridor width. In areas where corridors are used for movement of patients in beds, the clear width of the corridor shall not be less than 48 inches (1219 mm).

1105.4.6 Dead end corridors. In smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall not exceed 30 feet unless approved by the fire official.

1105.4.7 Seperation of exit access doors. Any patient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet shall have at least two exit access doors placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the patient sleeping room or suite to be served, measured in a straight line between exit access doors.

1105.4.8 Aisles. In areas where aisles are used for movement of patients in beds, the clear width of the aisle shall not be less than 48 inches (1219 mm).

1104.5.1 Emergency power duration and installation. In other than Group I-2, systems requiring ~~the~~ emergency power ~~system~~ shall provide power for not less than 60 minutes and consist of storage batteries, unit equipment or an on-site generator. In Group I-2, the ~~emergency power~~ essential electrical systems shall comply with Sections 1105.4.1 and 1105.4.2 ~~provide power for not less than 90 minutes and consist of storage batteries, unit equipment or an on-site generator.~~ The installation of the emergency power system shall be in accordance with Section 604.

1104.7 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a

mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). ~~The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal.~~ In Group I-2, doors serving as means of egress doors ~~in an occupancy in Group I-2~~ and used for the movement of patients in beds shall comply with Section 1105.4.3. ~~provide a clear width not less than 41.5 inches (1054 mm)~~. The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in occupancies in Groups R-2 and R-3.
2. Door openings to storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum width.
3. Width of door leafs in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
4. Door openings within a dwelling unit shall not be less than 78 inches (1981 mm) in height.
5. Exterior door openings in dwelling units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
6. Exit access doors serving a room not larger than 70 square feet (6.5 m^2) shall be not less than 24 inches (610 mm) in door width.
7. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the door.

1104.15 Width of ramps. ~~Existing~~ Ramps are permitted to have a minimum width of 30 inches (762 mm) but not less than the width required for the number of occupants served as determined by Section 1005.1. In Group I-2, ramps serving as a means of egress and used for the movement of patients in beds shall comply with Section 1105.8.

~~1104.17.2~~ 1104.18 Dead ~~ends~~ end corridors. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead ends do not exceed the limits specified in Table 1104.~~17.2~~ 18. In Group I-2, in smoke compartments containing patient sleeping rooms and treatment rooms, dead end corridors shall be comply with Section 1105.7.

Exception: A dead-end passageway or corridor shall not be limited in length where the length of the dead end passageway or corridor is less than 2.5 times the least width of the dead-end passageway or corridor.

TABLE ~~1104.17.2~~ 1104.18
COMMON PATH, DEAD-END AND TRAVEL DISTANCE LIMITS (by occupancy)

OCCUPANCY	COMMON PATH LIMIT		DEAD-END LIMIT		TRAVEL DISTANCE LIMIT	
	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)
Group I-1	75	75	20	50	200	250
Group I-2 ~~(Health care)~~	NR[e]	NR[e]	~~NR~~ Note f	~~NR~~ Note f	150	200[c]
Group I-3 ~~(Detention and correctional — Use Conditions II, III, IV, V)~~	100	100	NR	NR	150[c]	200[c]
Group I-4 ~~(Day Care Centers)~~	NR	NR	20	20	200	250

(Portions of table not shown remain unchanged)

NR = No requirements.
For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.
a. 20 feet for common path serving 50 or more persons; 75 feet for common path serving less than 50 persons.
b. See Section 1028.9.5 for dead-end aisles in Group A occupancies.
c. This dimension is for the total travel distance, assuming incremental portions have fully utilized their allowable maximums. For travel distance within the room, and from the room exit access door to the exit, see the appropriate occupancy chapter.
d. See the *International Building Code* for special requirements on spacing of doors in aircraft hangars.
e. In Group I-2, separation of exit access doors within a ~~Any~~ patient sleeping room, or any suite that includes patient sleeping rooms~~, of more than 1,000 square feet shall have at least two exit access doors placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the patient sleeping room or suite to be served, measured in a straight line between exit access doors~~ shall comply with Section 1105.4.7.
f. In Group I-2, *in smoke compartments containing patient sleeping rooms and treatment rooms,* dead end corridors shall comply with Section 1105.4.6.
g.~~f.~~ Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet.

1104.22 Minimum aisle width. The minimum clear width of aisles shall be:

1. Forty-two inches (1067 mm) for aisle stairs having seating on each side.

   Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.

2. Thirty-six inches (914 mm) for stepped aisles having seating on only one side.

   Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

3. Twenty inches (508 mm) between a stepped aisle handrail or guard and seating when the aisle is subdivided by the handrail.
4. Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.

   Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.

5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.

   Exception: Thirty inches (760 mm) for catchment areas serving not more than 60 seats.

6. Twenty-three inches (584 mm) between a stepped stair handrail and seating where an aisle does not serve more than five rows on one side.
7. In Group I-2, where aisles are used for movement of patients in beds aisles shall comply with 1105.4.8.

Reason: This change adds minimum requirements for existing Group I-2 into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities. These inspections are required by federal laws for certification and reimbursement, and is designed to assist those that are already tasked with performing those inspections. It is not the intention to add responsibility to the fire official to perform additional inspections. Rather, it is the intention to better define the minimum previously approved construction methods as it relates to the healthcare building type, and are consistent with the federal requirements that these facilities are currently held too.

This newly proposed section has been formatted to consolidate requirements, and is mostly just a move of existing fire code provisions. Since the current provisions are applicable to all Group I-2, this section is written addressing all Group I-2 where

applicable. Means of egress in areas where there are movement of patients in stretchers or beds has been reordered to be consistent with IFC 1104. It is noted that many areas of nursing homes do not include movement of patients in beds.

The following is a synopsis of the provisions listed above that have been relocated from other sections:

- 1105.4 Means of egress - Means of egress in areas where there are movement of patients in beds. The order is consistent with IFC 1104.
- 1105.4.1 Exit signs and emergency illumination – existing facilities can continue to use battery packs for exits signs and emergency lighting
- 1105.4.2 Emergency power for operational needs – extending section 1104.5.1 by adding requirements from and references to NFPA 99. Similar to IFC 604.3, requires the facility to analyze the hazards in their particular region and prepare accordingly.
- 1105.4.3 Size of door – Existing language that has been transferred from IFC 1104.7; follows format of IBC 1008.1.1.
- 1105.4.4 Ramps – References from IFC 1104.15 to the healthcare specific requirements.
- 1105.4.5 Corridor width – Follows current federal guidance for existing buildings.
- 1105.4.6 Dead end corridors – References from IFC 1104.15 to the healthcare specific requirements.
- 1105.4.7 Separation of exit access doors – Moved a healthcare specific requirement from footnote e in Table 1014.7.2 into Section 1105.
- 1105.4.8 Aisles – Provides a reference from IFC 1104.22 to more specific healthcare requirements.

Finally, in no way does this change affect the current requirement that existing, approved construction must be maintained in the manner that it was approved. The fire code clearly states that existing, approved safety feature must be maintained to the code at the time of construction. Most hospitals have been around for many decades and have several vintages of construction. This change simply provides a tool for evaluating historical conditions.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F240-13

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

1105.4 (NEW)-F-BALDASSARRA-WILLIAMS-ADHOC

F241 – 13
1105.5 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Add new text as follows:

SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.5 Smoke compartments. Smoke compartments shall be provided in existing Group I-2 Condition 2, in accordance with Sections 1105.5.1 through 1105.5.4.

1105.5.1 Design. Smoke barriers shall be provided to subdivide each story used for patients sleeping with an occupant load of more than 30 patients into no fewer than two smoke compartments.

1105.5.1.1 Refuge areas. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments.

The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m^2) for each care recipient confined to bed or stretcher.
2. Not less than 15 square feet (1.4 m^2) for each resident in a Group I-2 using mobility assistance devices.
3. Not less than 6 square feet (0.56 m^2) for each occupant not addressed in Items 1 and 2.

Areas of spaces permitted to be included in the calculation of the refuge area of corridors, sleeping areas, treatment rooms, lounge or dining areas and other low-hazard areas.

1105.5.2 Smoke barriers. Smoke barriers shall be constructed in accordance with Section 709 of the *International Building Code*.

Exceptions:

1. Existing smoke barriers with a minimum of 1/2 –hour fire-resistance rating are permitted to remain.
2. Smoke barriers shall be permitted to terminate at an atrium enclosure in accordance with Section 404.6 of the *International Building Code.*

1105.5.3 Opening protectives. Openings in smoke barriers shall be protected in accordance with Section 716 of the *International Building Code*. Opening protectives shall have a with a minimum fire-protection-rating of 1/3 hours.

Exception: Wired glass vision panels in doors shall be permitted to remain.

1105.5.4 Duct and air transfer openings. Penetrations in a smoke barrier by duct and air transfer openings shall comply with Section 717 of the *International Building Code*.

Exception: Where existing duct and air transfer openings in smoke barriers exist without smoke dampers, they shall be permitted to remain. Any changes to existing smoke dampers shall be

submitted for review and approved in accordance with IBC Section 717 of the *International Building Code*.

Reason: This change adds minimum requirements for existing hospitals (Group I-2, Condition 2) into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.
We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

This provision is written in regard to the design, construction and application of smoke compartments for Group I-2 hospital facilities. Smoke compartments are a key component of the defend in place strategy, a strategy where victims are protected from fire without relocation, used in healthcare facilities to limit the movement of smoke. These compartments act as safe locations for patients by preventing the spread of smoke. Through compartmentalization, patients may remain safely in their rooms as fire suppression systems and fire responders extinguish the fire. Under severe fire conditions that threaten the immediate compartment area, patients may be evacuated horizontally to the safety of an adjacent compartment on the same floor. Being able to do this is critical since due to the health status of many patients their evacuation from the building might put them in grave danger. The proper design, construction and application of smoke compartments will provide added protection, buy valuable time and save lives of critically ill patients before a total evacuation may become necessary.

These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities. These inspections are required by federal laws for certification and reimbursement. This requirement considers the minimum previously approved construction methods. This is consistent with the federal requirements that these facilities are currently held too. Specific concepts include:

- 1105.5 Smoke compartments – The defend-in-place concept is a basic minimum level of safety for these facilities. Every facility should be equipped at least two smoke compartments for temporary relocation of patients.
- 1105.5.1 Design - This section addresses existing acceptable configuration of smoke barrier walls and smoke barriers for existing hospitals in areas with sleeping rooms.
- 1105.5.1.1 Refuge area – Addresses adequate sizing of refuge areas. IBC 407.5.1 also includes requirements for independent egress and horizontal assemblies.
- 1105.5.2 Smoke barriers – The intent is to bring noncompliant smoke barriers to at least ½ hour fire resistance rating. Previously approved smoke barriers are not intended to be reduced to ½. Chapter 7 of the IFC would require maintenance of approved construction.
- 1105.5.3 Opening protectives - Address doors in smoke barriers in existing Group I-2 occupancies. Reference to 716 is so you that don't loose other requirements.
- 1105.5.4, Guides the inspector of existing facilities on how they would look at opening protectives. Smoke dampers have not always been required in hospitals, and the 2015 IBC would not require them. Therefore, in those hospitals that were originally approved without smoke dampers required, that condition is allowed to remain in place. Any modification of existing smoke dampers would have to go throught he normal process for making an alteration to existing construction.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

Cost Impact: None

F241-13

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

1105.5 (NEW)-F-WILLIAMS-ADHOC

F242 – 13
1105.6 (New), Table 1104.17.2

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

IFC SECTION 1105
CONSTRUCTION REQUIREMENTS FOR EXISTING GROUP I-2

1105.6 Group I-2 care suites. Care suites in existing Group I-2 Condition 2 occupancies shall comply with Section 407.4.3 through 407.4.3.6.2 of the *International Building Code*.

TABLE ~~1104.17.2~~ 1104.18
COMMON PATH, DEAD-END AND TRAVEL DISTANCE LIMITS (by occupancy)

OCCUPANCY	COMMON PATH LIMIT		DEAD-END LIMIT		TRAVEL DISTANCE LIMIT	
	Unsprinkled (feet)	Sprinklered (feet)	Unsprinkled (feet)	Sprinkled (feet)	Unsprinkled (feet)	Sprinkled (feet)
Group I-1	75	75	20	50	200	250
Group I-2 ~~(Health care)~~	~~NR~~ Note e	~~NR~~ Note e	NR	NR	150	200[c]
Group I-3 ~~(Detention and correctional—Use Conditions II, III, IV, V)~~	100	100	NR	NR	150[c]	200[c]
Group I-4 ~~(Day Care Centers)~~	NR	NR	20	20	200	250

(Portions of table not shown remain unchanged)

NR = No requirements.
For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.
a. 20 feet for common path serving 50 or more persons; 75 feet for common path serving less than 50 persons.
b. See Section 1028.9.5 for dead-end aisles in Group A occupancies.
c. This dimension is for the total travel distance, assuming incremental portions have fully utilized their allowable maximums. For travel distance within the room, and from the room exit access door to the exit, see the appropriate occupancy chapter.
d. See the *International Building Code* for special requirements on spacing of doors in aircraft hangars.
e. In Group I-2 Condition 2, ~~Any patient~~ care recipient sleeping room, or any suite that includes patient sleeping rooms~~, of more than 1,000 square feet shall have at least two exit access doors placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the patient sleeping room or suite to be served, measured in a straight line between exit access doors~~ shall comply with Section 1105.6.
f. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet.

Reason: This change adds minimum requirements for existing hospitals (Group I-2, Condition 2) into Chapter 11. The intent is to increase the bare minimum safety requirements due to the fragile and sensitive populations within these facilities. These requirements are meant to be applied retroactively. This is not a new concept for these facilities – it aligns with the current approach by the Center for Medicaid and Medicare Services (CMS), the federal authority having jurisdiction. Hospitals are now required by CMS to have a life safety survey on a regular basis. If the facility does not meet certain life safety minimums, they are required to upgrade their existing facility. This code change will align the Fire Code with those CMS minimum requirements and will hopefully lead to industry consolidation. These retroactive requirements are added to assist code officials and surveyors during the ongoing regular inspection of hospital facilities and are consistent with the inspections required by federal laws for certification and reimbursement. The requirements consider the minimum previously approved construction methods. These requirements will provide jurisdictions the ability to adopt minimum retroactive provisions that have been vetted by the industry as well as code officials and that are consistent with current national standards used by the Federal Government providing a more uniform level of safety and eliminating many of the current code conflicts for existing facilities.

We looked at several sources to determine what the appropriate minimum bar should be, including the current building and fire code, current CMS guidelines, and previous versions of the ICC and model codes. On all issues, enforcement agencies and the regulated facilities weighed in to ensure that these changes are both necessary and achievable.

This proposal defines the requirements for care suites (both sleeping and non-sleeping) which are an integral design concept for many areas within a hospital. Typical uses include ICU's, Operating Rooms, Emergency Departments and Imaging Departments. The suites allow for better and safer care than non-suite options. The new provisions deal with common path of travel, separation of exit access doors, and number of doors passed through (i.e. previously intervening rooms) in suites. This is much more complete than the current text.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

Cost Impact: None

F242-13

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

1105.6-F-WILLIAMS-ADHOC

F243 – 13
1105.9 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Section 1105.9 Essential electrical systems. Essential electrical systems in Group I-2 Condition 2 occupancies shall be in accordance with Sections 1105.9.1 and 1105.9.2.

1105.9.1 Where required. In Group I-2 Condition 2 occupancies where life support is being provided, an essential electrical system shall be provided in accordance with NFPA 99.

1105.9.2 Installation and duration. In Group I-2, Condition 2 Occupancies, the installation and duration of operation of existing essential electrical systems shall be based upon a hazard vulnerability analysis conducted in accordance with NFPA 99.

Reason: This proposal addresses CMS Ktag K146 for existing buildings. The proposal does two things. First, it requires that existing I-2 Condition 2 occupancies provide essential electrical systems where life support is being provided. Second it requires in Group I-2 Condition 2 occupancies that the existing installations and duration of operation of the essential electrical system be assessed based upon a hazard vulnerability analysis in accordance with NFPA 99.

Both of these elements are important. New Section 1105.9.1 requires any buildings that would not be addressed by CMS but have similar risks to provide the necessary power resources. The other requires a reassessment of the essential electrical systems based upon a hazard vulnerability analysis to make sure that the systems meet the needs of the facilities for emergencies.
A specific requirement was not provided for the IEBC with regard to ASCE 24 since the IEBC would require compliance with ASCE 24 anytime there are substantial improvements made to a building. The term Substantial improvement is a specifically defined term as follows as excerpted from the IEBC.

SUBSTANTIAL IMPROVEMENT. For the purpose of determining compliance with the flood provisions of this code, any *repair, alteration, addition,* or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure, before the improvement or *repair* is started. If the structure has sustained *substantial damage,* any repairs are considered *substantial improvement* regardless of the actual *repair* work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the *code official* and that is the minimum necessary to ensure safe living conditions; or
2. Any *alteration* of a historic structure, provided that the *alteration* will not preclude the structure's continued designation as a historic structure.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

F243-13

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

1105.9 (NEW)-F-WILLIAMS-ADHOC

F244 – 13
2004.7 (New), Chapter 80

Proponent: Christopher M Wanka, College Park Volunteer Fire Department, representing self

Add new text as follows:

2004.7 Other Aircraft Maintenance. All maintenance, repairs, modifications, or construction performed upon aircraft not addressed elsewhere in this code shall be conducted in accordance with NFPA 410.

Add new standard to Chapter 80 as follows:

NFPA 410-10 Standard on Aircraft Maintenance……..2004.7

Reason: Aircraft maintenance is often a hazardous procedure due to the inherent hazards of aircraft. NFP 410 is a consensus document created that specifies minimum safety requirements to be performed during specified maintenance operations such as fuel or oxygen system maintenance, cleaning of aircraft, and hazardous operations such as defueling aircraft. It provides additional fire safety requirements to these procedures as well as additional fire protection requirements be in place for other specified procedures.

NFPA 410: Standard for Aircraft Maintenance would be a newly referenced standard in the IFC

Cost Impact: This will not affect any construction cost. It may impact business operation cost due to increased work times due to following additional safety precautions.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 410-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F244-13

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

2004.7-F-WANKA

F245 – 13
2204.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

2204.1 Standards. ~~The *fire code official* is authorized to enforce applicable provisions of the c~~ Codes and standards listed in Table 2204.1 ~~to prevent and control dust explosions~~ shall apply to operations involving combustible dust.

Reason: This change is based on a recommendation from the Chemical Safety Board (CSB) following their investigation of the dust explosions at the Hoeganaes Corporation in Gallatin, Tennessee. The CSB determined that the state of Tennessee considered the language in this code section to be a discretionary (not mandatory) code requirements; the state of Tennessee did not adopt this section of the IFC because it considered the requirement as not mandatory. This code change is intended to clarify the intent of this code section as to when the applicable dust standards must be enforced top prevent dust accumulations that could lead to dust explosions.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

F245-13

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

2204.1-F-ZUBIA-FCAC

F246 – 13
2306.8.1, 2306.8.2 (New), Chapter 80

Proponent: Bob Eugene, representing UL LLC

Revise as follows:

2306.8 Alcohol-blended fuel-dispensing operations. The design, fabrication and installation of alcohol-blended fuel dispensing systems shall also be in accordance with Section 2306.7 and Sections 2306.8.1 through 2306.8.5.

2306.8.1 Listed ~~Approval of~~ equipment. Dispensers shall be listed in accordance with UL 87A. Hoses, nozzles, breakaway fittings, swivels, flexible connectors or dispenser emergency shutoff valves, vapor recovery systems, leak detection devices and pumps used in alcohol-blended fuel-dispensing systems shall be listed ~~or approved~~ for the specific purpose.

2306.8.2 Compatibility. Dispensers shall only be used with the fuels for which they have been listed, which are marked on the product. Field installed components including hose assemblies, breakaway couplings, swivel connectors and hose nozzle valves shall be provided in accordance with the listing and the marking on the unit.

(Renumber subsequent sections)

Add a new standard to Chapter 80 as follows:

UL

87A – 12	Outline of Investigation for Power-Operated Dispensing Devices for Gasoline and Gasoline/ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent	

Reason: In 2007 UL submitted proposal F230 07/08 which added the section on alcohol-blended fuel-dispensing operations. This was done to address the growing number of E-85 installations. Part of that proposal allowed alcohol-blended fuel-dispensers and components to be listed or approved, where normal gasoline dispensers were required to be listed. This was done in recognition that standards and listings for these dispensers did not exist at the time.

The UL 87A Outline of Investigation for Power-Operated Dispensing Devices for Gasoline and Gasoline/ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent was subsequently developed to cover dispensers intended for use with high concentration ethanol blends. Listed dispensers and the related hanging hardware are now listed for high concentration ethanol blends, and are being installed across the U.S. This proposal recognizes the current E-85 dispensing practices and accomplishes the following:

1. Reintroduces the requirements for these dispensers and related hardware to be listed, rather than listed or approved.
2. Includes reference to the UL 87A Outline of Investigation used to investigate these products.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, UL 87A-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F246-13

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

2306.8.1-F-EUGENE

F247 – 13
2306.8.3

Proponent: Bob Eugene, representing UL LLC (Robert.Eugene@ul.com)

Delete without substitution:

~~**2306.8.3 Facility identification.** Facilities dispensing alcohol-blended fuels shall be identified by an *approved* means.~~

Reason: In 2007 UL submitted proposal F230 07/08 which added the section on alcohol-blended fuel-dispensing operations. This was done to address the growing number of E-85 installations across the country. Part of this proposal included requirements for the dispensing facility to be identified by an approved means. This was in addition to the Section 2306.8.4 requirements for the dispensers to be marked to identify the types of alcohol fuel blends to be dispensed. We have been advised by installers and code enforcers that this facility identification is not necessary.

Cost Impact: None

F247-13

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

2306.8.3-F-EUGENE

F248 – 13
2307.2 (IFGC [F] 412.2), 2307.2.2 (IFGC [F] 412.4); 2307.2.3 (IFGC [F] 412.5) (New)

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

2307.2 (IFGC [F] 412.2) Approvals. Storage vessels and equipment used for the storage or dispensing of LP-gas shall be *approved* or *listed* in accordance with Sections 2307.2.1 ~~and 2307.2.2~~ through 2307.2.3.

2307.2.1 (IFGC [F] 412.3) Approved equipment. Containers, pressure relief devices (including pressure relief valves), pressure regulators, and piping for LP-gas shall be *approved*.

2307.2.2 (IFGC [F] 412.4) Listed equipment. Hoses, hose connections, vehicle fuel connections, ~~dispensers~~, LP-gas pumps and electrical equipment used for LP-gas shall be *listed*.

2307.2.3 (IFGC [F] 412.5) LP-Gas dispensers. Where installed at facilities that are not intended for public refueling of vehicles, LP-gas dispensing equipment shall be approved. Where installed at facilities that are intended for public refueling of vehicles, LP-gas dispensers shall be listed.

Reason: The vast majority of LP-gas motor fuel dispensers in use today are not listed units. However, these dispensers are not available to the general public to refuel its vehicles. They are installed at private companies for use with fleet vehicles or for filling portable motor fuel cylinders used with forklift trucks, lawn mowers and other motorized applications. Requiring these dispensers to be "approved" rather than "listed" allows for their continued installation and use. The code official is able to approve the installation whether the "packaged" dispenser system itself is listed or not, using the requirements in Section 2307 and Chapter 61 of the IFC, as well as referenced standard NFPA 58 "LP-Gas Code." These references provide all the necessary requirements for approving the installation of a dispenser. The individuals that use these dispensers are properly trained on the hazards of LP-gas and the safe use of the filling equipment.
Dispensers may also be located at public refueling stations (gasoline stations) along with other fuels. We are proposing in paragraph 2307.2.3 that for these applications, propane dispenser systems must be listed units to make them equivalent to the units that are being installed for self-service gasoline and diesel applications. These units would be factory-assembled with a storage container, pump, meter and dispenser hose and hose end valve on a common base or skid and shipped to the site for installation as a packaged unit. Or, they may be assembled at a factory and fully contained within a cabinet, shipped to the site for installation on an island and served by a remote LP-gas tank, similar to gasoline dispensers,

Cost Impact: This proposal will not increase the cost of construction.

F248-13

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

2307.2.2-F-SWIECICKI

F250 – 13
2307.4 (IFGC [F] 412.6)

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

2307.4 (IFGC [F] 412.6) Location of dispensing operations and equipment. ~~In addition to the requirements of Section 2306.7, the point of transfer for LP-gas dispensing operations shall be 25 feet (7620 mm) or more from buildings having combustible exterior wall surfaces, buildings having noncombustible exterior wall surfaces that are not part of a 1-hour fire-resistance-rated assembly, or buildings having combustible overhangs, *lot lines* of property which could be built on, public streets, or sidewalks and railroads; and at least 10 feet (3048 mm) from driveways and buildings having noncombustible exterior wall surfaces that are part of a fire-resistance-rated assembly having a rating of 1 hour or more.~~ The point of transfer for LP-Gas dispensing operations shall be separated from buildings and other exposures in accordance with the following:

1. Not less than 25 feet from buildings in which the exterior wall is not part of a fire-resistance-rated assembly having a rating of 1 hour or greater.
2. Not less than 25 feet from combustible overhangs on buildings, measured from a vertical line dropped from the face of the overhang at a point nearest the point of transfer.
3. Not less than 25 feet from the lot line of property that can be built upon.
4. Not less than 25 feet from mainline railroad track centers.
5. Not less than 10 feet from public streets, highways, thoroughfares, sidewalks and driveways.
6. Not less than 10 feet from buildings in which the exterior wall is part of a fire resistance rated assembly having a rating of 1 hour or greater.

Exception: The point of transfer for LP-gas dispensing operations need not be separated from canopies that are constructed in accordance with the *International Building Code* and that provide weather protection for the dispensing equipment. LP-gas containers shall be located in accordance with Chapter 61. LP-gas storage and dispensing equipment shall be located outdoors ~~and in accordance with Section 2306.7~~.

Reason: The changes to section 2307.4 are necessary in order to make the paragraph easier to understand and to eliminate reference to Section 2306.7, which addresses dispenser installations for gasoline and diesel fuels, neither of which are similar to LP-gas. Therefore, Section 2306.7 contains many requirements that do not make sense when applied to LP-gas installations. We are therefore proposing a new section (2307.5) that will contain just those requirements from 2306.7 that are applicable to LP-gas dispensers.

Also included in the new formatting are proposed changes that will bring the IFC into agreement with NFPA 58 "LP-Gas Code" with respect to separation distances.

Cost Impact: This proposal will not increase the cost of construction.

F250-13

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

2307.4-F-SWIECICKI

F251 – 13

2307.5 (IFGC [F] 412.7.6) (New), 2307.6 (IFGC [F] 412.7), 2307.6.1 (IFGC [F] 412.7) (New), 2307.6.3 (IFGC [F] 412.7.4) (New)

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

2307.5 (IFGC [F] 412.7.6) Additional Requirements for LP-Gas Dispensers and Equipment. LP-gas dispensers and related equipment shall comply with the following provisions.

1. Pumps shall be fixed and shall be designed to allow control of the flow and to prevent leakage or accidental discharge.
2. Dispensing devices installed within 10 feet of where vehicle traffic occurs, shall be protected against physical damage by mounting on a concrete island 6 inches or more in height, or shall be protected in accordance with Section 312.
3. Dispensing devices shall be securely fastened to their mounting surface in accordance with the dispenser manufacturer's instructions.

~~2307.5~~ **2307.6 (IFGC [F] 412.7) Installation of LP-gas dispensing devices and equipment.** The installation and operation of LP-gas dispensing systems shall be in accordance with Sections ~~2307.5.1~~ 2307.6.1 through ~~2307.5.3~~ 2307.6.4 and Chapter 61. LP-gas dispensers and dispensing stations shall be installed in accordance with the manufacturer's specifications and their listing.

~~**2307.5.1 (IFGC [F] 412.7.1) Valves** A manual shutoff valve and an excess flow-control check valve shall be located in the liquid line between the pump and the dispenser inlet where the dispensing device is installed at a remote location and is not part of a complete storage and dispensing unit mounted on a common base. An excess flow-control check valve or an emergency shutoff valve shall be installed in or on the dispenser at the point at which the dispenser hose is connected to the liquid piping. A differential backpressure valve shall be considered equivalent protection.~~
~~A *listed* shutoff valve shall be located at the discharge end of the transfer hose.~~

2307.6.1 (IFGC [F] 412.7) Product Control Valves. The dispenser system piping shall be protected from uncontrolled discharge in accordance with the following:

1. Where mounted on a concrete base, a means shall be provided and installed within ½-inch of the top of the concrete base that will prevent flow from the supply piping in the event that the dispenser is displaced from its mounting.
2. A manual shutoff valve and an excess flow-control check valve shall be located in the liquid line between the pump and the dispenser inlet where the dispensing device is installed at a remote location and is not part of a complete storage and dispensing unit mounted on a common base.
3. An excess flow-control check valve or an emergency shutoff valve shall be installed in or on the dispenser at the point at which the dispenser hose is connected to the liquid piping.
4. A listed automatic-closing type hose nozzle valve with or without a latch-open device shall be provided on island-type dispensers.

~~2307.5.2~~ **2307.6.2 (IFGC [F] 412.7.2) Hoses.** Hoses and piping for the dispensing of LP-gas shall be provided with hydrostatic relief valves. The hose length shall not exceed 18 feet (5486 mm). An *approved* method shall be provided to protect the hose against mechanical damage.

2307.6.3 (IFGC [F] 412.7.4) Breakaway Protection. Dispenser hoses shall be equipped with a listed emergency breakaway device designed to retain liquid on both sides of the breakaway point. Where hoses are attached to hose-retrieving mechanisms, the emergency breakaway device shall be located such that the breakaway device activates to protect the dispenser from being displaced.

~~2307.5.3 (IFGC [F] 412.7.3)~~ 2307.6.4 (IFGC [F] 412.7.5) Vehicle impact protection. ~~Vehicle impact protection for LP-gas storage containers, pumps and dispensers shall be provided in accordance with Section 2306.4.~~ Where installed within 10 feet of vehicle traffic, LP-gas storage containers, pumps and dispensers shall be protected in accordance with Section 2307.5 (2).

Reason: This proposal is a companion change to revisions proposed to Section 2307.4, which eliminated reference to Section 2306.7. Because Section 2306.7 addresses dispenser installations for gasoline and diesel fuels, neither of which are similar to LP-gas, it therefore contains many requirements that do not make sense when applied to LP-gas installations.

New 2307.5 contains three requirements extracted from current Section 2306.7 that would be applicable to LP-gas dispensers. Proposed #1 is based on current 2306.7.2 and proposed #2 and #3 are based on 2306.7.3.

New 2307.6 has been revised editorially to reflect the changed section numbers.

Paragraph 2307.6.1 has moved the requirements from 2306.7 that are applicable to LP-gas dispensers into the more appropriate location. Requirement #1 is based on current code section 2306.7.4 but since the hardware performance requirements in that section for gasoline and diesel dispensers differ from what is available for LP-gas dispenser systems, the text more closely resembles the requirements currently appearing in NFPA 30A *Motor Fuel Dispensing Facilities and Repair Garages*, with the exception that the inch location for the protective means must be within ½-inches of the top of the concrete, as required in 2306.7.4. Requirement #2 is based on NFPA 58 *LP-Gas Code* and provides protection for the piping system where the storage container is located remotely from the dispenser. Requirements #3 is based on requirements in NFPA 58. Requirement #4 is pulled from current section 2306.7.6.

New Section 2707.6.3 is based on current Section 2306.7.5.1, but provides a performance requirement rather than a specified protection point where a hose retrieval mechanism is installed.

Section 2307.6.4 specifies where protection from vehicle impact is required, which is consistent with what will appear in the 2014 edition of NFPA 58.

Cost Impact: This proposal will not increase the cost of construction.

F251-13

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

2307.5 (NEW)-F-SWIECICKI

F252 – 13
2307.6 (IFGC [F] 412.8), 2307.7

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

2307.6 (IFGC [F] 412.8) ~~Private~~ Public fueling of motor vehicles. ~~Self-service LP-gas dispensing systems, including key, code and card lock dispensing systems, shall not be open to the public and shall be limited to the filling of permanently mounted fuel containers on LP-gas powered vehicles~~ Self-service LP-Gas dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of containers providing fuel to the LP-Gas powered vehicle.

~~In addition to the requirements of Sections 2305 and 2306.7,~~ The requirements for self-service LP-gas dispensing systems shall be in accordance with the following:

1. The arrangement and operation of the transfer of product into a vehicle shall be in accordance with this section and Chapter 61.
2. The system shall be provided with an emergency shutoff switch located within 100 feet (30 480 mm) of, but not less than 20 feet (6096 mm) from, dispensers.
~~2~~3. The *owner* of the LP-gas motor fuel-dispensing facility or the owner's designee shall provide for the safe operation of the system and the training of users.
4. The dispenser and hose-end valve shall release not more than 4cc of liquid to the atmosphere upon breaking the connection with the fill valve on the vehicle.
5. Fire extinguishers shall be provided in accordance with Section 2305.4.
6. Warning signs shall be provided in accordance with Section 2305.6.
7. The area around the dispenser shall be maintained in accordance with Section 2305.7.

2307.7 Overfilling. LP-gas containers shall not be filled with LP-gas in excess of the volume determined using the fixed maximum liquid level gauge installed on the container, the volume determined by the overfilling prevention device installed on the container, ~~outage installed by the manufacturer~~ or the weight determined by the required percentage of the water capacity marked on the container ~~stamped on the tank~~.

Reason: Propane is recognized as an alternative motor vehicle fuel by the U.S. government. In order for the public to take full advantage of the benefits of its reduced emissions and cleaner burning properties, the code must be changed to recognize the technologies that are available to ensure the safe refueling of LP-gas vehicles, which in turn will result in increasing acceptance of this smart alternative fuel.

The current provisions in Section 2307.6, which prohibit public access to self-service equipment, are too restrictive and without any basis in safety or technical experience. There are no reasons to prohibit anyone who has been properly trained to perform the refueling operation from refueling their LP-gas vehicle at a public refueling facility. Propane (LP-Gas) refueling technology provides the following features:

- Liquid product will not flow out of the hose end valve unless the valve is completely connected and securely in place on the fill valve of the vehicle.
- Propane hose end valves will mate with the fill valve on the vehicle and upon disconnect will release no more than 4 cubic centimeters of liquid to the atmosphere.
- The propane refueling system is a closed system, which means that there is no opportunity for air, water or any other contaminant to enter the system.
- Individuals must be trained in order to use the filling equipment. This requirement is ensured by the use of key, code and card lock dispensing systems. Only trained individuals are issued the necessary security devices to enable the refueling of the vehicle.

Regarding the proposed changes to 2307.6, the deletion of references to Sections 2305 and 2306.7 are necessary because those sections are mostly intended to be used for the installation of Class I or Class II liquids. Since propane is a liquefied petroleum gas, many of the provisions in those sections are not applicable to propane installations. The applicable requirements from those two sections have been relocated to 2307.6. In addition, proposed requirement #4 is based on NFPA 30A *Motor Fuel Dispensing Facilities and Repair Garages.*

The proposed change to 2307.7 is necessary in order to incorporate the correct terminology and also recognize that sometimes, the fixed maximum liquid level gauge is installed by a trained service technician. This is especially the case if repairs are being made to the container or the valve. In addition, some vehicles rely upon an overfilling prevention device and the fixed maximum liquid level gauge is not used. Therefore, it is necessary to list that device as an approved means for filling the container.

Cost Impact: This proposal will not increase the cost of construction.

F252-13

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

2307.6-F-SWIECICKI

F253 – 13
2308.4 (IFGC [F] 413.5)

Proponent: James Ranfone, American Gas Association (jranfone@aga.org)

Revise as follows:

2308.4 (IFGC [F] 413.5) Private fueling of motor vehicles. Self-service CNG-dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted fuel containers on CNG-powered vehicles. Self-service CNG-dispensing systems shall be installed in accordance with Section 2304 (IFGC: the *International Fire Code).*

~~In addition to the requirements in Section 2305, the *owner* of a self-service CNG motor fuel-dispensing facility shall ensure the safe operation of the system and the training of users.~~

Reason: The requirement that the owners ensures the safe operation and provide training is unenforceable.

Cost Impact: None.

F253-13

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

2308.4-F-RANFONE

F254 – 13
2309.3.1.1, 2309.3.1.2, Chapter 80

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

2309.3.1.1 Outdoors. Generation, compression, or storage equipment shall be allowed outdoors in accordance with Chapter 58 and NFPA 2.

2309.3.1.2 Indoors. Generation, compression, storage and dispensing equipment shall be located in indoor rooms or areas constructed in accordance with the requirements of the *International Building Code*, the *International Fuel Gas Code* ~~and~~, the *International Mechanical Code* and ~~one of the following:~~ NFPA 2.

1. ~~Inside a building in a hydrogen cutoff room designed and constructed in accordance with Section 421 of the *International Building Code*.~~
2. ~~Inside a building not in a hydrogen cutoff room where the gaseous hydrogen system is listed and labeled for indoor installation and installed in accordance with the manufacturer's installation instructions.~~
3. ~~Inside a building in a dedicated hydrogen fuel-dispensing area having an aggregate hydrogen delivery capacity no greater than 12 standard cubic feet per minute (SCFM) and designed and constructed in accordance with Section 703.1 of the *International Fuel Gas Code*.~~

Add new standard to Chapter 80 as follows:

NFPA

2-11	Hydrogen Technologies Code	2309.3.1.1, 2309.3.1.2

Reason: This proposal adds a reference to NFPA 2 "Hydrogen Technologies Code" in Section 2309.3.1.1 and to Section 2309.3.1.2, along with a deletion of the three methods currently in the code.
NFPA 2 has been formed to provide a source document for the storage, use and handling of hydrogen and much work has gone into refining terms and requirements. For increased safety and consistency in the application of hydrogen technologies, the addition of NFPA 2 as a reference for outdoor installations of motor fueling and for the requirements for indoor fueling in conjunction with the other requirements contained within the relevant I-Codes is an appropriate step to take.
From the 2011 edition of NFPA 2:

> ***Origin and Development of NFPA 2***
> *"With the increased interest in hydrogen being used as a fuel source, the National Fire Protection Association was petitioned to develop an all-encompassing document that establishes the necessary requirements for hydrogen technologies. In 2006, the Technical Committee on Hydrogen Technology was formed and tasked to develop a document that addresses all aspects of hydrogen storage, use, and handling, that draws from existing NFPA codes and standards, and that identifies and fills technical gaps for a complete functional set of requirements for code users and enforcers. This document is also structured so that it works seamlessly with building and fire codes."*

Extensive requirements have been developed and are located within NFPA 2 (see Sections 10.3.2.2 Indoor Public Fueling and 10.3.3.2 Indoor Nonpublic Fueling of that standard), and the practical method to utilize the extensive requirements is through adding references to that document. A review of the requirements identifies that trying to add the actual technical requirements to the IFC would require extensive work and then might not get around copyright issues.

As part of the proposal is to add NFPA 2 to Chapter 80 as a referenced standard.

NFPA 2-2011 can be viewed at this location: http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=2

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F254-13

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

2309.3.1.1-F-DAVIDSON

F255 – 13
2309.4.1

Proponent: Robert Boyd, Boyd Hydrogen, LLC, representing self (Bob@BoydH2.com)

Revise as follows:

2309.4.1 Dispensing Systems. Dispensing systems shall be equipped with an overpressure protection device set at not greater than 140 percent of the service pressure of the fueling nozzle it supplies.

Reason: There is no technical or system safety reason why the overpressure protecting device in a H2 dispenser must be set at 140 percent of the service pressure of the fueling nozzle.

SAE and NFPA-52 and NFPA-2 requirements for the overpressure protection are that the device is to be **set at no greater** than 140 times the service pressure (1.1 x 1.25 x Service pressure).

Some dispenser manufactures may want to provide systems that have a lower set point for the overpressure protection device. For example some dispensers may want to set the maximum fill pressure to 110% of service pressure and set the overpressure device to 125% of service pressure. This would have no impact on the relative safety of the dispensing system and should be allowed.

The proposed revised language will allow for more dispenser options without any additional risks.

Cost Impact: None

F255-13

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

2309.4.1-F-BOYD

F256 – 13
2309.6 (New), 2311.8

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

~~**2311.8**~~ **2309.6 Defueling of hydrogen from ~~motor vehicle~~ fuel storage containers.** The discharge or defueling of hydrogen from ~~motor vehicle~~ fuel storage tanks for the purpose of maintenance, cylinder certification, calibration of dispensers or other activities shall be in accordance with Sections ~~2311.8.1~~ 2309.6.1 through ~~2311.8.1.2.4~~ 2309.6.1.2.4.

~~**2311.8.1**~~ **2309.6.1 Methods of discharge.** The discharge of hydrogen from ~~motor vehicle~~ fuel storage tanks shall be accomplished through a closed transfer system in accordance with Section ~~2311.8.1.1~~ 2309.6.1.1 or an approved method of atmospheric venting in accordance with Section ~~2311.8.1.2~~ 2309.6.1.2.

~~**2311.8.1.1**~~ **2309.6.1.1 Closed transfer system.** *(No change to current text)*

~~**2311.8.1.2**~~ **2309.6.1.2 Atmospheric venting of hydrogen from ~~motor vehicle~~ fuel storage containers.** When atmospheric venting is used for the discharge of hydrogen from ~~motor vehicle~~ fuel storage tanks, such venting shall be in accordance with Sections ~~2311.8.1.2.1~~ 2309.6.1.2.1 through ~~2311.8.1.2.4~~ 2309.6.1.2.1.4.

~~**2311.8.1.2.1**~~ **2309.6.1.2.1 Defueling equipment ~~required at vehicle maintenance and repair facilities~~.** ~~All facilities for repairing hydrogen systems on hydrogen fueled vehicles shall have equipment to defuel vehicle storage tanks.~~ Equipment used for defueling shall be listed and labeled or approved for the intended use.

~~**2311.8.1.2.1.1**~~ **2309.6.1.2.1.1 Manufacturer's equipment required.** Equipment supplied by the ~~vehicle~~ manufacturer shall be used to connect the ~~vehicle~~ storage tanks to be defueled to the vent pipe system.

~~**2311.8.1.2.1.2**~~ **2309.6.1.2.1.2 Vent pipe maximum diameter.** *(No change to current text)*

~~**2311.8.1.2.1.3**~~ **2309.6.1.2.1.3 Maximum flow rate.** *(No change to current text)*

~~**2311.8.1.2.1.4**~~ **2309.6.1.2.1.4 Isolated use.** *(No change to current text)*

~~**2311.8.1.2.2**~~ **2309.6.1.2.2 Construction documents.** *(No change to current text)*

~~**2311.8.1.2.3**~~ **2309.6.1.2.3 Stability of cylinders, containers and tanks.** *(No change to current text)*

~~**2311.8.1.2.4**~~ **2309.6.1.2.4 Grounding and bonding.** *(No change to current text)*

~~**2311.8.2**~~ **2309.6.2 Repair of hydrogen piping.** Piping systems containing hydrogen shall not be opened to the atmosphere for repair without first purging the piping with an inert gas to achieve 1 percent hydrogen or less by volume. Defueling operations and exiting purge flow shall be vented in accordance with Section ~~2311.8.1.2~~ 2309.6.1.2.

~~**2311.8.3**~~ **2309.6.3 Purging.** *(No change to current text)*

~~**2311.8.3.1**~~ **2309.6.3.1 System purge required.** *(No change to current text)*

SECTION 2311
REPAIR GARAGES

2311.5 Preparation of vehicles for repair. For vehicles powered by gaseous fuels, the fuel shutoff valves shall be closed prior to repairing any portion of the vehicle fuel system.

Vehicles powered by gaseous fuels in which the fuel system has been damaged shall be inspected and evaluated for fuel system integrity prior to being brought into the repair garage. The inspection shall include testing of the entire fuel delivery system for leakage.

2311.8 Defueling equipment required at vehicle maintenance and repair facilities. Facilities for repairing hydrogen fuel systems on hydrogen-fueled vehicles shall have equipment to defuel vehicle storage tanks. Where work must be performed on a vehicle's fuel storage tank for the purpose of maintenance, repair or cylinder certification, defueling and purging shall be conducted in accordance with Section 2309.6 .

Reason: The primary reason for moving the language is to eliminate some confusion in applying the code. There are some in the industry and code enforcement world that mistakenly believe defueling is required every time a hydrogen fueled vehicle is repaired. That is not true, see Section 2311.5.

If you view Section 2308.8 for CNG fueling activities you will find similar language directly within the dedicated CNG section of the code, the same concept which is being proposed here for hydrogen with the movement of the language.

An additional benefit is that the ability to defuel hydrogen is needed for repair and servicing of the fixed hydrogen fuel compression, storage and dispensing equipment located at these facilities.

By moving the language to new Section 2909.6 and modifying the language to apply to "fuel storage", instead of "motor vehicle fuel storage", the language is more generic and applicable.

At Section 2311.8.1.2.1, (New 2309.6.1.2.1), the stricken language is left at 2311.8 with a pointer to this location to direct motor vehicle fuel storage cylinder defueling operations to these requirements. In addition, the word "approved" is added for the acceptance of the equipment. as this is still an emerging technology and there needs to be an option for "approved" by the code official.

In Section 2311, New Section 2311.8 is inserted. By taking out the defueling language it eliminates some confusion and by pointing to the relocated the language at Section 2309.6 we make sure it is applied only in those cases where defueling of the motor vehicle fuel cylinder is necessary.

There is no loss in current code requirements. There is an enhancement by providing for the defueling of fixed site equipment and eliminating a misapplication of the defueling requirements.

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

F256-13

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

2311.8-F-DAVIDSON

F257 – 13
2310.5.3

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

2310.5.3 Rubbish containers. ~~Metal containers with tight-fitting or self-closing lids shall be provided for the temporary storage of combustible trash or rubbish.~~ Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material. The rubbish containers shall be constructed entirely of materials that comply with any one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m^2 ~~—~~when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.

Reason: Rubbish containers need not be constructed of metal but can be constructed of other noncombustible materials, including materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. The key requirement that the lids be tight fitting or self closing is retained in the proposal. Note that the requirement covers all type of rubbish and is not intended to address spills of combustible or flammable liquids (or Class I, II or IIIA liquids), covered by 2310.5.2. The use of the phrase “combustible debris, rubbish and waste” makes this section consistent with other sections of the IFC.

Cost Impact: This should lower costs by offering more alternatives.

F257-12

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

2310.5.3-F-HIRSCHLER

F258 – 13
2311.7

Proponent: Spencer Quong, Quong & Associates, Inc. representing Toyota Technical Center (squong@squong.com)

Revise as follows:

2311.7 Repair garages for vehicles fueled by lighter-than air fuels. Repair garages for the conversion and repair of vehicles which use CNG, liquefied natural gas (LNG), hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.7 through 2311.7.2.3 in addition to the other requirements of Section 2311.

Exceptions:

1. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance requiring no open flame or welding.
2. Repair garages where all of the following conditions exist:
   - 2.1 Work is not performed on the hydrogen storage tank and is limited to exchange of parts and maintenance requiring no open flame or welding.
   - 2.2 Where work is performed on the hydrogen fuel system, the hydrogen fuel storage container shall be securely sealed such that it is a closed system during maintenance using manufacturer approved procedures.
   - 2.3 The entire fuel system shall be defueled in accordance with Section 2311.8 to a quantity that is less than 200 cubic feet (5.6 m^3).

Reason: This proposal is requesting to modify exception to Section 2311.7 to allow work on the fuel system, except for the hydrogen storage tank without having to install additional ventilation and gas detection systems in the repair garage. If work is performed on the fuel system, the vehicle's shutoff valve must be securely closed on the fuel storage container so that it is a closed system and no gas can escape during maintenance operations. In addition, the proposal also requires that entire vehicle fuel system, including the storage container, be defueled to less than 200 cubic feet (NTP).

Although each hydrogen passenger vehicle is different, typically their storage containers hold between 5000-50000 cubic feet (NTP) of hydrogen at high pressure (5000-10000 psi). However, the hydrogen leaving the storage container is regulated to a lower pressure, typically less than 250 psi and less than 10 cubic feet (NTP) of hydrogen.

Any release of hazardous material can pose a problem. However, this proposal addresses the issues in two ways. First, it requires that the shutoff valve on the fuel storage container to be securely closed. Hydrogen vehicles are required to have a manual valve that can be shut off for maintenance[1]. In most vehicles, the shutoff valve fails shut, so the standard operating procedure to ensure that the valve is closed is to disconnect the 12V battery. For manual valves, it can be tagged and locked in the off position. Since almost all of the hydrogen is in the fuel storage container, this requirement will ensure only a minimal amount of hydrogen is left in the remainder of the fuel system.

Second, in the event that the fuel storage container is opened during repairs and all of the hydrogen is allowed to escape, this proposal requires that the entire fuel system be defueled to less than 200 cubic feet (NTP). **This is less than 20% of the Maximum Allowable Quantity (MAQ) per control area** listed in Table 5003.1.1(1) through 5003.1.1(4). In addition, Section 5308.1.1 allows for the indoor storage and use of cylinders of non-liquefied compressed, flammable gases not exceeding a capacity of 250 cubic feet NTP used for maintenance purposes without any ventilation and gas detection systems. Finally, according to Table 105.6.8, an operational permit is not required for less than 200 cubic feet (NTP) of flammable, compressed gases.

With more and more hydrogen vehicles on the road, there is a need to be able to work on the low pressure side of the fuel system at any repair garage without adding additional ventilation and gas detection systems. This proposal allows for this work as long as two requirements are met: the fuel storage container is closed and amount of hydrogen is less than **the existing IFC limitations for hazardous materials, and flammable and compressed gases**. Already, repair garages have industrial cylinders of acetylene and other flammable gases without additional ventilation and detection equipment. Even if the repair garages meet the requirements in this exception, they will still need to be in accordance with Sections 5001 and 5003.

[1] Section 4.1.1.3 of SAEJ2579 "Standard for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles"

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

F258-13

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

2311.7-F-QUONG

F259 – 13

2311.7, 2311.7.1 (IMC [F] 502.16), 2311.7.1.1 (IMC [F] 502.16.1), 2311.7.1.1 (New), 2311.7.1.2 (New)

Proponent: James Ranfone, American Gas Association (jranfone@aga.org)

Revise as follows:

2311.7 Repair garages for vehicles fueled by lighter-than-air fuels. Repair garages for the conversion and repair of vehicles which use CNG, liquefied natural gas (LNG), hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.7 through 2311.7.3 in addition to the other requirements of Section 2311.

Exception: Repair garages where work is not performed on the fuel system and is limited to minor repairs such as the exchange of parts and maintenance requiring no open flame or welding.

2311.7.1 (IMC [F] 502.16) Ventilation. Repair garages used for the major repair such as engine overhauls, painting, body and fender work, and repairs that require draining of the motor vehicle fuel tank are performed on, ~~of~~ natural gas- or hydrogen-fueled vehicles shall ~~be provided with an approved mechanical ventilation system. The mechanical ventilation system shall be in accordance with the *International Mechanical Code* and Sections 2311.7.1.1 and 2311.7.1.2~~ meet the requirements in 2311.7.1.1 or 2311.7.1.2.

2311.7.1.1 Electrical systems and equipment located within 18 inches (46 cm) of the ceiling shall be listed for installation in a flammable gas location.

2311.7.1.2. The area within 18 in. (46 cm) of the ceiling shall be provided with ventilation of at least 1 $ft^3/min/ft^2$ of floor area taken from a point within 18 in. (46 cm) of the highest point in the ceiling.

~~**Exception**: Repair garage with natural ventilation when approved~~.

~~**2311.7.1.1 (IMC [F] 502.16.1) Design.** Indoor locations shall be ventilated utilizing air supply inlets and exhaust outlets arranged to provide uniform air movement to the extent practical. Inlets shall be uniformly arranged on exterior walls near floor level. Outlets shall be located at the high point of the room in exterior walls or the roof.~~

Ventilation shall be by a continuous mechanical ventilation system or by a mechanical ventilation system activated by a continuously monitoring natural gas detection system or, for hydrogen, a continuously monitoring flammable gas detection system, each activating at a gas concentration of not more than 25 percent of the lower flammable limit (LFL). In all cases, the system shall ~~shut down the fueling system~~ alarm in the event of failure of the ventilation system.

~~The ventilation rat shall be at least 1 cubic foot per minute per 12 cubic feet [0.00139 m^3 x (s x m^3)] of room volume.~~

Reason: The industry standard for repair garages is NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages. NFPA 30A does not require general mechanical ventilation for repair garages that service either liquid or lighter-than-air odorized fuels. For odorized gases fuels NFPA30A does require that the area within 18 inches below the roof either be classified as a hazardous location (therefore requiring the installation of electrical equipment listed for hazardous locations) or be provided with mechanical ventilation (and therefore that area is no longer considered a hazardous location). This type of site-specific requirement is consistent with IFC section 2311.4.3 for liquid fuels, requiring mechanical ventilation for below grade locations to prevent the accumulation of flammable vapors. There is no technical justification to require general mechanical or natural ventilation for an entire repair garage that services either liquid or gaseous fueled vehicles.

Proposed revisions would:

- Make the IFC ventilation requirements consistent with NFPA 30A.
- Introduce the concept of minor and major repairs as means to clarify when code requirements are to be installed. This is consistent with NFPA 30A.
- The requirement that the fueling system be shut down in the event of a mechanical ventilation failure makes no sense since fueling operations are not occurring in the repair garage. The failure of such system should sound an alarm.

- The 1 ft^3/m/12 ft^3 room volume is being deleted in favor of 4 air changes per hour to be consistent with NFPA 30A.

Cost Impact: None.

F259-13

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

2311.7-F-RANFONE

F260 – 13
2404.6.1.2.1

Proponent: Geoff Raifsnider, P.E., Global Finishing Solutions representing self (graifsnider@globalfinishing.com)

Revise as follows:

2404.6.1.2.1 Interlocks. The spraying apparatus, drying apparatus and ventilating system for the spray booth or spray room shall be equipped with interlocks arranged to:

1. Prevent operation of the spraying apparatus while drying operations are in progress.
2. Where the drying apparatus is located in the spray booth or spray room, prevent operation of the drying apparatus until a timed purge of spray vapors from the spray booth or spray room is complete. This purge time shall be based upon completing not less than 4 air changes of spray booth or spray room volume. ~~Purge spray vapors from the spray booth or spray room for a period of not less than 3 minutes before the drying apparatus is rendered operable.~~
3. Have the ventilating system maintain a safe atmosphere within the spray booth or spray room during the drying process and automatically shut off drying apparatus in the event of a failure of the ventilating system.
4. Shut off the drying apparatus automatically if the air temperature within the booth exceeds 200°F (93°C).

Reason: The current language does not state how the value is calculated. The proposed language clarifies how to calculate the purge time and bases it upon the amount of fresh air introduced in the same manner that is used for purging an oven. This is appropriate since the drying operation has turned the spray booth into an oven.

As mentioned this proposal is based upon the language in NFPA 86 Standard for Ovens and Furnaces 2011 Edition. The idea is to replace the air in the booth at least four times (4 ft^3 of air/ft^3 of booth) to ensure that the concentration at the end of the purge interval is less than 25% of the lower flammable limit.

The IFC (2406.1.2) currently requires compliance with Chapter 30 when utilizing drying in a spray booth. Section 3007.2 states that a nameplate shall be provided that, among other information, indicates the required purge time (2107.2(3)). The code official can initially verify that the purge timer is set to this value. If there is cause to doubt this information the calculations mentioned can be performed to verify the minimum purge time.

The purge interval is a function of the spray booth size (cubic feet) and the ventilation rate (cubic feet per minute). Both of these values are documented and measurable for a given spray booth.

To verify that the purge time is sufficient to meet the code, multiply the volume of the booth by four (4) and divide by the exhaust flow rate. An example would be a spray booth that measures 10 ft wide x 10 ft high x 14 ft long (volume = 1,400 ft3). If this booth was designed for 100 feet per minute downdraft the exhaust flow rate would be 14,000 ft3/min (10 ft x 14 ft x 100 fpm). To calculate the minimum purge time you would multiply 1400 ft3 by four (4) and divide by 14,000 ft3/min. The resulting minimum purge time would be 0.4 minutes (1400x4/14000=0.4).

For booths that elevate the air temperature for curing via the same supply air unit used for tempering the air for painting, there is no need for a post paint purge of spray vapors. One type of spray/cure booth elevates the incoming (outside) air temperature and does not recirculate. This type poses no risk of bringing spray vapors back around and through the heating source. The other type of spray/cure booth switches to a recirculation mode during cure. In this mode, the spray/cure booth functions just like an oven and since other sections of the code require the concentration in the exhaust air stream to be less than 25% of the LFL the concentration that could be seen at the burner is not flammable. However if the drying apparatus is in the spray area and could be directly exposed to spray vapors, it makes sense to purge that space prior to energizing the drying apparatus.

There are many paint finishing operations, typically in the automotive refinish industry, that are negatively affected by the delay between painting and curing at an elevated temperature. By allowing the proposed changes, the spray booth designer can take into account the importance the purge interval may have on the process. By designing for the correct air flow, both a safe environment for energizing the drying apparatus and a minimum time between spray and cure can be achieved.

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

F260-13

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

2404.6.1.2.1-F-RAIFSNIDER

F261 – 13
2404.7.3 (IMC [F] 502.7.3.3)

Proponent: Geoff Raifsnider, P.E., Global Finishing Solutions representing self (graifsnider@globalfinishing.com)

Revise as follows:

2404.7.3 (IMC [F] 502.7.3.3) Air velocity. ~~Ventilation systems shall be designed, installed and maintained such that the average air velocity over the open face of the booth, or booth cross section in the direction of airflow during spraying operations, shall not be less than 100 feet per minute (0.51 m/s).~~ Each spray area shall be provided with mechanical ventilation in accordance with Sections 2404.7.3.1 through 2404.7.3.3 (IMC 502.7.3.3.1 through 502.7.3.3.3).

2404.7.3.1 (IMC [F] 502.7.3.3.1) Open face or open front spray booth. For spray application operations conducted in an open face or open front spray booth, the ventilation system shall be designed, installed and maintained such that the average air velocity into the spray booth through all openings shall be not less than 100 feet per minute (0.51 m/s).

> **Exception:** For fixed or automated electrostatic spray application equipment the average air velocity into the spray booth through all openings shall be not less than 50 feet per minute (0.25 m/s).

2404.7.3.2 (IMC [F] 502.7.3.3.2) Enclosed spray booth or spray room. For spray application operations conducted in an enclosed spray booth or spray room, the ventilation system shall be designed, installed and maintained so that the flammable contaminants are diluted in noncontaminated air to maintain concentrations in the exhaust air flow below 25 percent of the contaminant's lower flammable limit (LFL).

2404.7.3.3 (IMC [F] 502.7.3.3.3) Enclosed spray booth or spray room with openings for product conveyance. In addition to the requirements of 2404.7.3.2, the ventilation system shall be designed, installed and maintained so that the average air velocity into the spray booth through openings shall be not less than 100 feet per minute (0.51 m/s).

> **Exception:** Where methods are used to reduce cross drafts that can draw vapors and overspray through openings from the spray booth or spray room, the average air velocity into the spray booth or spray room shall be capable of capturing and confining vapors and overspray to the spray booth or spray room.

Reason: For spray application using flammable and combustible materials, the industry standards are OSHA 1910.107 and 1910.94, Chapter 24 of the International Fire Code (IFC), and NFPA 33.

With regards to ventilating spray booths and spray rooms, NFPA 33 and the IFC have similar language stating that the concentration of flammable materials in the exhaust system must be kept below 25 percent of the lower flammable limit (LFL). [1, 2] From this requirement alone the minimum ventilation rate of a spray booth or spray room could be calculated. And by dividing this ventilation rate by the cross sectional area of the booth in the direction of air flow a minimum average velocity can be calculated. OSHA requirements for average air velocity were based upon the 1969 edition of NFPA 33 and were intended to provide a measureable that could be used to check the effectiveness of maintaining the booth exhaust below 25% of the LFL. [5] OSHA has recognized that the requirements for average air velocity were not intended for totally enclosed booths. [6]

Current language in the IFC specifies 100 feet per minute minimum air velocity and offers explanation in their commentary that the objective is containment within a designated spraying space and limiting the overspray. [3, 4] It goes on to explain that 100 FPM is the minimum capture velocity for particulate spray material. In an open face booth, it may be necessary to have a face velocity of 100 FPM or higher to provide the capture needed; but in an enclosed booth the enclosure provides the containment.

The following ventilation design basis for paint spray booths is common in the industry and has been effective in providing clean, safe and reliable painting environments which are in compliance with the intent of the International Fire Code, OSHA, and NFPA 33.

1. The total exhaust ventilation rate shall be based upon the minimum amount of air required to maintain the concentration of flammable vapors in the exhaust below 25%
2. Where appropriate the exhaust rate shall be increased by the amount of air needed to:

- o maintain a minimum average velocity through all openings which prevent the escape of overspray from the spray booth
- o achieve the desired collection of overspray toward the exhaust filters
- o achieve the desired paint transfer efficiency

There are many types of booths and rooms in which the 100 fpm value would be detrimental to the quality of the product and based upon the amount of paint used is well in excess of the minimum dilution air needed to keep the exhaust below 25% of the LFL. This extra air also increases the operating costs. The air velocities for a specific spray booth or spray room should be specific to the individual design that accomplishes the desired performance (i.e. 25% LFL or containment of overspray at openings). Chapter 13.75 of Industrial Ventilation – A Manual of Recommended Practice 26th Edition Published by ACGIH, lists many recommended air velocity ranges for various painting operations, some above and some below 100 fpm. This publication could be referenced in the standard or commentary.

This proposal does not require additional knowledge or tools for the AHJ. The designer or owner of the spray booth or room can provide calculations showing the minimum ventilation rate based upon the type and amount of paint being sprayed. The ventilation rate can be converted into an average velocity in the spray area. The AHJ can ask for balancing information to confirm the installation meets the code requirements or can independently measure the design velocity in the same manner as currently used by the AHJ to confirm 100 FPM.

The following are the references indicated above:

1. Chapter 7.2, NFPA 33, Standard for Spray Application Using Flammable or Combustible Materials 2007 Edition
   "Each spray area shall be provided with mechanical ventilation that is capable of confining and removing vapors and mists to a safe location and is capable of confining and controlling combustible residues, dusts, and deposits. The concentration of the vapors and mists in the exhaust stream of the ventilation system shall not exceed 25 percent of the lower flammable limit."
2. Chapter 510.3, 2012 International Mechanical Code® 2012 Edition
   "The design and operation of the exhaust system shall be such that flammable contaminants are diluted in noncontaminated air to maintain concentrations in the exhaust flow below 25 percent of the contaminant's lower flammability limit."
3. Chapter 2404.7.3, 2012 International Fire Code® 2012 Edition
   "Air velocity. Ventilation systems shall be designed, installed and maintained such that the average air velocity over the open face of the booth, or booth cross section in the direction of airflow during spraying operations, shall not be less than 100 feet per minute (0.51 m/s)."
4. Chapter 1504.7.3, 2006 International Fire Code® Commentary

"To facilitate the keeping of flammable vapors within a designated spraying space and limiting the amount of overspray, the code requires that the exhaust system be adequately sized to maintain an average velocity over the open face of the booth or booth cross section of no less than 100 feet per minute (0.51 m/s), which is the minimum velocity to capture particulate spray material. Velocities exceeding 200 lineal feet per minute (1.01 m/s) have been determined to be too great for this purpose. To determine the minimum ventilation/exhaust capacity in cubic feet per minute (cfm), multiply the booth width (feet) by booth height (feet) by 100 (lineal per feet)."

1. OSHA Directive STD 01-05-010 - STD 1-5.10 - Clarification of 29 CFR 1910.107(b)(5)(i) Average Air Velocity of Spray Booths, June 1, 1973

   "The average air velocity requirements over the open face of the booth stated in this paragraph for spray finishing operations using flammable and combustible liquids were taken from NFPA-33-1969 and pertain to those hazards associated with fire protection or the removal of flammable vapor accumulation from the interior of the booth during spraying operations. This paragraph applies to maintaining the concentration of flammable vapors below the lower explosive limit (LEL) in a spray booth but does not apply to maintaining operator exposures to within the permissible exposure limits (PEL)."
2. OSHA Standard Interpretations 10/22/2001 - Clarification of minimum face velocity requirements for spray booths, October 22, 2001

*"**Question:** 29 CFR 1910.107(b)(5) only refers to a dry filter spray booth. What is the minimum air velocity requirement for a waterwash spray booth or an enclosed booth with no openings?*
***Reply:** OSHA currently does not have specific standards addressing velocity requirements for a waterwash spray booth or an enclosed booth with no openings. However, 1910.94(c)(6)(ii) requires that the vapor concentration in all area of the booth remain at a level below 25 percent of the lower explosive limit (LEL). This requirement corresponds to the requirements of NFPA 33, section 5.2, Ventilation, performance requirements (2000 edition)."*

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

F261-13

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

2404.7.3-F-RAIFSNIDER

F262 – 13
2703.15.3 (IBC [F] 415.10.10.3) (New)

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Semiconductor Industry Association (pmclaugma@aol.com)

Add new text as follows:

2703.15.3 (IBC [F] 415.10.10.3) Emergency power protection level. Where emergency power is required, the system shall meet the requirements for a Protection Level 2, Class 2 system in accordance with NFPA 110.

Reason: : Some jurisdictions have interpreted NFPA 110 classification level for semiconductor facilities to be Level 1 when it should be Level 2. Level 1 requires 96 hour of fuel and applies to hospitals and similar occupancies. The rationale is supported by the following:

- This would align H5 occupancies with NFPA 55 – Compressed Gases and Cryogenic Fluids Code
  - 6.6.2 Emergency Power. When emergency power is required, the system shall meet the requirements for a Protection **Level 2** system in accordance with NFPA 110, *Standard for Emergency and Standby Power Systems.*
- Semiconductor facilities meet the definition of Level 2 systems: "shall be installed when failure of the EPSS to perform is **less critical to human life and safety** and where the authority having jurisdiction shall permit a higher degree of flexibility than that provided by a Level 1 system". Failure of the EPSS in a H5 occupancy would not "result in loss of human life or serious injuries" as defined by NFPA 110. Level 1 systems are intended for facilities such as hospitals "when failure of the equipment to perform could **result in loss of human life or serious injuries".**
- Existing H5 facilities worldwide have Level 2 EPSS.
- EPSS manufacturers suggest that a H5 is not Level 1.
- Due to the large energy usage and backup systems in an H5 occupancy, fuel handling/storage for 96 hours poses increased environmental/public safety/security risks. A typical H5 occupancie utilizes 10 hours of EPSS. A comparison of the fuel storage between 10 hrs and 96 hrs is provided below:
  - 10hr: = 41,790 gallons
  - 96hr = 401,184 gallon

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

F262-13

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

2703.15.3 (NEW)-F-MCLAUGHLIN

F263 – 13
2705.2.3.1, 202 (IBC 202)

Proponent: Patrick A. McLaughlin, McLaughlin & Associates, representing The Semiconductor Industry Association (pmclaugma@aol.com)

Revise as follows:

2705.2.3.1 Construction. Workstations in *fabrication areas* shall be constructed of materials compatible with the materials used and stored at the workstation. The portion of the workstation that serves as a cabinet for HPM gases, ~~and HPM~~ Class I flammable liquids, Class II or Class IIIA combustible liquid shall be noncombustible and, if of metal, shall be not less than 0.0478-inch (18 gage) (1.2 mm) steel.

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

~~**HPM FLAMMABLE LIQUID.** An HPM liquid that is defined as either a Class I flammable liquid or a Class II or Class IIIA combustible liquid.~~

Reason: HPM flammable liquids, which include Class I, II and IIIA liquid, are mentioned only once in the Codes in IFC Section 2705.2.3.1. This change deletes the definition of HPM flammable liquids and replaces it in Section 2705.2.3.1 with the text from the HPM flammable liquids definition. The result will be that Section 2705.2.3.1 will still apply to the same materials, and the requirements in the Code that apply to other HPMs, will not be misapplied to Class II and IIIA combustible liquids. There is no justification to treat Class II and IIIA combustible liquids the same as flammable liquids in H5 occupancies. No other occupancy does so. The corresponding IBC definition is also deleted.

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

F263-13

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

2705.2.3.1-F-MCLAUGHLIN

F264 – 13
2808.3

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

2808.3 Size of piles. Piles shall not exceed 25 feet (7620 mm) in height, 150 feet (45 720 mm) in width and 250 feet (76 200 mm) in length.

Exception: The *fire code official* is authorized to allow the pile size to be increased when a fire protection plan is provided for approval that includes, but is not limited to the following:

1. Storage yard areas and materials-handling equipment selection, design, and arrangement shall be based upon sound fire prevention and protection principles.
2. Factors that lead to spontaneous heating shall be identified in the plan and control of the various factors shall be identified and implemented, including provisions for monitoring the internal condition of the pile.
3. The plan shall include means for early fire detection, reporting to the public fire department; and facilities needed by the fire department for fire extinguishment including a water supply and fire hydrants.
4. Fire apparatus access roads around the piles and access roads to the top of the piles shall be established, identified and maintained.
5. Regular yard inspections by trained personnel shall be included as part of an effective fire prevention maintenance program.

Additional fire protection called for in the plan ~~is~~ shall be provided and shall be installed in accordance with ~~Chapter 9~~ this code. The increase of the pile size shall be based upon the capabilities of the ~~system~~ installed fire protection systems and features.

Reason: The purpose of this proposal is to provide better tools and guidance for fire code officials when proposals to increase pile size are submitted. The current language for the exception to Section 2808.3 is:

Exception: The fire code official is authorized to allow the pile size to be increased when additional fire protection is provided in accordance with Chapter 9. The increase shall be based upon the capabilities of the system installed.

The language provides no actual guidance other than a statement that the pile size is based upon the systems installed in accordance with Chapter 9. A review of Chapter 9 provides no additional guidance.

In reality, the protection needed for increased pile size include fire flows through a hydrant system, fire apparatus access roads, means for monitoring pile temperatures, a means of notifying the fire department and a sound fire prevention maintenance program. The language added to modify the existing exception provides for these features to be addressed in a fire protection plan submittal to the fire code official for approval. Because the systems installed may be covered by various portions of the code such as fire apparatus access roads covered by Chapter 5, the reference to Chapter 9 was changed to "this code".

The basis of this language should not be new to experienced fire code officials, it can be found in the discontinued standard NFPA 46 which was referenced by some legacy fire code editions and it was located in NFPA 230 which was referenced by the 2003 edition of the IFC. When NFPA eliminated NFPA 230 and put some of the requirements in NFPA 13 with the bulk going to NFPA 1, no work was done to add language to the later editions of the IFC to replace language relied upon from the referenced standard.

Extract from NFPA 230-2003 PROTECTION OF STORAGE OF FOREST PRODUCTS

11.6.2 General.

11.6.2.1 The fire hazard potential inherent in storage piles shall be controlled by a positive fire prevention program under the direct supervision of upper level management that shall include the following:*

(1) Selection, design, and arrangement of storage yard areas and materials-handling equipment based upon sound fire prevention and protection principles
(2) Establishment of control over the various factors that lead to spontaneous heating, including provisions for monitoring the internal condition of the pile
(3) Means for early fire detection and extinguishment

(4) Driveways around the piles and access roads to the top of the piles for effective fire-fighting operations
(5) Facilities for calling the public fire department and facilities needed by the fire department for fire extinguishment
(6) Effective fire prevention maintenance program, including regular yard inspections by trained personnel

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

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

F264-13

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

2808.3-F-DAVIDSON

F265 – 13
2810 (New), 2801.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (rjd@davidsoncodeconcepts.com)

Add new text as follows:

SECTION 2810
WOOD AND PLASTIC PALLET STORAGE AND REHABILITATION

2810.1 General. All facilities with either storage or rehabilitation of pallets shall be in accordance with Sections 2810.2 through 2810.5.2 and Section 2803.

2810.2 Fire Flow. The minimum required fire flow in pallet storage yards exceeding 3200 sq feet of pallet storage areas shall be not less than 2,000 gpm (7571 L/m). For storage yards with stable piles greater that 6,200 sq. ft. (576 m2) the required fire flow shall be not less than 3,000 gpm (8516 L/m). Pallet storage yards shall not exceed the available fire hydrant flow and spacing.

2810.3 Fire Hydrants. Fire hydrants required for fire flow purposes for pallet storage arrays shall be installed in accordance with Section 507 within three hundred (300) feet (152.4m) of pallet locations measured along unobstructed access paths.

2810.4 Fire Department Access. Fire apparatus access roads in accordance with Section 503 shall be located within one hundred fifty (150) feet (45,720mm) of all portions of the pallet storage array(s). Permanent delineation of on-site fire apparatus access roads shall be provided as required by the fire code official.

2810.5 Idle Pallet Storage. Pallet storage shall be in compliance with Sections 2810.5.1 or 2810.5.2 as applicable.

2810.5.1 Exterior pallet repair and storage areas greater than 3,200 sq ft. Exterior pallet storage arrays greater than 3200 square feet shall comply with all of the following:

1. Stacks shall not exceed a height of fifteen (15) ft. (4.57 m).
2. Stacks shall be no closer than eight (8) ft. (2.44 m) to any property line or a distance equal to the stack height, whichever is greater.
3. Stacks shall be no closer than eight (8) ft. (2.44 m) to any other on-site storage area.
4. Stacks shall be no closer than fifteen (15) ft. (4.57 m) to any on-site structure.
5. Stacks shall be arranged to form stable piles.
6. Piles shall not contain more than six thousand (6,000) cu. ft. (170 m3) of pallets.
7. Piles shall be separated from other piles by a minimum distance of eight (8) ft. (2.44 m).
8. Piles shall be arranged in a grid system to form pallet storage arrays with a maximum dimension of fifty (50) ft. by fifty (50) ft. (15.25 m by 15.25 m).
9. Pallet storage arrays shall be separated by a minimum distance of twenty four (24) ft. (7.32 m).

2810.5.2 Exterior storage not greater than 3200 sq ft in area. Exterior pallet storage not greater than 3200 square feet shall comply with all of the following:

1. Stacks shall be no closer than eight (8) ft. (2.44 m) to any property line or a distance equal to the stack height, whichever is greater.
2. Stacks shall be no closer than eight (8) ft. (2.44 m) to any other on-site storage.
3. Stacks shall be no closer than fifteen (15) ft. (4.57 m) to any on-site structure.

Exception: Where approved by the fire code official, stacks located closer than fifteen (15) ft. to an on-site structure shall maintain minimum horizontal clearances based on the quantity of pallets and the level of protection provided by the building construction as follows:

1. The minimum horizontal clearance for 50 pallets or less adjacent to a masonry wall without openings located within twenty (20) ft. (6 m) horizontally of the pallet stacks, or adjacnt to a masonry wall with 2 hour fire-resistance rated protected openings shall be zero (0) feet (0 m).
. The minimum horizontal clearance for 51 to 200 pallets adjacent to a masonry wall without openings located within twenty (20) ft. (6 m) horizontally of the pallet stacks, or a masonry wall with 2 hour fire-resistance rated protected openings shall be eight (8) feet (2.44 m).
3. The minimum horizontal clearance for 50 pallets or less adjacent to a wood or metal building equipped throughout with an approved automatic sprinkler system shall be eight (8) ft. (2.44 m).
4. Stacks located less than fifteen (15) ft. (4.57 m) from an exterior building wall shall not exceed a height equal to thirty (30) inches below the roof line elevation, or fifteen (15) feet (4.57 m), whichever is less.
5. Stacks shall be arranged to form stable piles.

Revise as follows:

SECTION 2801
GENERAL

2801.1 Scope. The storage, manufacturing and processing of timber, lumber, plywood, non-metallic pallets, veneers and byproducts shall be in accordance with this chapter.

Reason: There have been an increasing number of large scale fires involving the repair and outdoor storage of combustible pallets. Numerous local jurisdictions have been adding local requirements to their fire code adoptions to deal with this increased fire threat. These new requirements are to provide code language in the IFC addressing the high challenge fire protection issues involving large amounts of idle pallets. The concepts for the technical language in this proposal were taken from the Clark County, Nevada fire code amendments, a county that has dealt with large scale fires and developed the requirements in response to those conflagrations.

Section 2810.2 specifies that the requirements apply to facilities that store or rehabilitate wood or plastic pallets. The rehabilitation activities include storage along with additional hazards introduced by the rehabilitation activities.

Fires in pallet storage areas are fast growing and spreading requiring an adequate fire flow. Threshold of 2,000 GPM for greater than 3,200 sq. ft. of storage will provide for up to 4 - 500 GPM master stream appliances to be utilized when required, increasing to 3,000 GPM when piles larger than 6,200 sq. ft. exist.

Referring to IFC Table B105.1 for required fire flows the 2,000 GPM requirement is for Type V-B buildings of 4,401 - 6,200 sq. ft., since the open array of the pallets provide for a faster fire spread and greater need for master stream appliances than a completed building typically would, the 2,000 GPM is appropriate for the minimum flow required. Since pile size is and separation from individual piles is provided for in Section 2810.5 a fire flow 3,000 GPM was utilized for areas of storage over 6,200 sq. ft.

Fire department access roads are required in section 2810.4.

Section 2810.5 provides for the storage arrangement of piles and stacks addressing height, maximum pile size and distances from exposures. A stack is an individual stack of pallets, a pile is a group of 2 or more stacks of pallets grouped together.

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

F265-13

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

2801.1-F-DAVIDSON

F266 – 13
3101.1, 3103.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

3101.1 Scope. Tents and membrane structures shall comply with this chapter. The provisions of Section 3103 are applicable only to temporary tents and membrane structures. The provisions of Section 3104 are applicable to temporary and permanent tents and membrane structures. Other temporary structures shall comply with the *International Building Code*.

3103.1 General. ~~All temporary t~~Tents and membrane structures used for temporary periods shall comply with this section. Other temporary structures erected for a period of 180 days or less shall comply with the *International Building Code*.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Background – There has been confusion with attempting to apply the IFC requirements in Chapter 31 to temporary structures. Typically this occurs because the fire code official is already involved with the temporary event regarding other operational permits required by the IFC.

For example, a weekend concert is planned at the fair. The fire code official is already involved with various IFC operational permits for Place of Assembly, Carnival/Fair, and Temporary Membrane Structures and Tents. However, when a stage, platform or other temporary structure is erected the IBC regulates the construction.

The proposal adds a sentence to IFC 3101.1 to send the code user to the IBC for temporary structures. IBC 108.2 and 3103 clearly address the design requirements for temporary structures. IBC 3103.1 has a similar reference back to the IFC to temporary membrane structures and temporary tents. Clearly, the IFC is designed to address 'temporary tents' and 'temporary membrane structures', while IBC 3103 is intended to address 'temporary structures'.

This reference to the IBC is repeated in IFC 3103.1. Normally a redundant sentence is not needed in the code, but since this has been an area of confusion, it is warranted to repeat the reference again.

See link for incident at Indiana State Fair - http://www.youtube.com/watch?v=4jEmtxnrVCI

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

F266-13

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

3101.1-F-ZUBIA-FCAC

F267 – 13
3103.3.1 (New)

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Add new text as follows:

3103.3.1 Special Amusement. Tents and other membrane structures erected for the purpose of a *special amusement building* shall comply with the provisions of Section 411 of the *International Building Code*.

Reason: The scoping language in Section 3101 doesn't leave much room for stepping outside Chapter 31 for proposed uses other than those contemplated in Chapter 31. However, temporary membrane structures are being used for an increasingly wider variety of occupancies. One of the more hazardous is special amusement buildings.

The growing popularity of haunted houses usually erected within a month of Halloween and dismantled shortly thereafter, has enticed producers to (try to) utilize temporary membrane structures for these events. Due to the intentionally disorienting nature of these occupancies, additional life-safety measures beyond those prescribed in Chapter 31 (which really only contemplates large, open, usually seated assembly occupancies) are required. The section cited in the IBC addresses temporary special amusement buildings as well as permanent, and provides established life-safety measures.

Cost Impact: This change will not affect the cost of construction.

F267-13

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

3103.3.1-F-EMERICK

F268 – 13
3103.9; 3103.9.1 (New), 3103.9.2 (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

3103.9 Anchorage required. Tents or membrane structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather and prevent against collapsing. ~~Documentation of structural stability shall be furnished to the fire code official on request.~~

3103.9.1 Structural design. Tents and membrane structures shall be designed and constructed to comply with Chapter 16 of the *International Building Code* where any of the following conditions occur:

1. The occupant load of the tent or membrane structure exceeds 100,
2. The tent or membrane structure is classified as a Group A, E, or I,
3. The tent or membrane structure is classified as a Group R Occupancy with an occupant load exceeding 50, or
4. The tent or membrane structure exceeds one story.

3103.9.2 Documentation. Documentation of structural stability shall be furnished to the fire code official upon request.

Reason: There has been confusion with attempting to apply the IFC requirements in Chapter 31 to temporary tents and membrane structures relative to structural stability.

These structures can be seen at concerts, outdoor functions, fairs, etc. Even though the provision of 'temporary' limits the usability of these structures to less than 180 days, improper structural design can still lead to problems.

Many of these temporary tents and temporary membrane structures have multiple floors, and over 30 feet in height. As the height increases, the impact of collapse increases and typically these structures are surrounded by hundreds of people.

This proposal revises IFC Section 3103.9 to include requirements for temporary tents and membrane structures to comply with IBC Chapter 16 structural requirements when there is a significant life hazard within the structure, as reflected in Section 3103.9.1. The relative significance is based on the occupancy classification, the occupant load, or the number of levels within the tent or membrane structure.

The requirement for documentation is relocated from 3103.9 to 3103.9.2.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Cost Impact: This code change may increase the cost of construction

F268-13

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

3103.9-F-ZUBIA-FCAC

F269 – 13
3105 (New), 202 (New), 3101.1, 3102.1, 105.6.43, 105.7.16, Chapter 80

Proponent: Anne vonWeller, representing Witt Associates; Karl Ruling, Technical Standards Manager, Professional Lighting and Sound Association representing self; Scott Adams, Deputy Chief Park City Fire District, representing self

Add new text as follows:

SECTION 3105
TEMPORARY STAGE CANOPIES

3105.1 General. Temporary stage canopies shall comply with Section 3104, Sections 3105.2 through 3105.8 and ANSI E1.21.

3105.2 Approval. Temporary stage canopies in excess of 400 square feet shall not be erected operated or maintained for any purpose without first obtaining approval and a permit from the fire code official.

3105.3 Permits. Permits shall be required as set forth in Sections 105.6 and 105.7.

3105.4 Use period. Temporary stage canopies shall not be erected for a period of more than 45 days.

3105.5 Required documents. All of the following documents shall be submitted to the fire code official for review before a permit is approved:

1. Construction documents: Construction documents shall be prepared by a registered design professional in accordance with the *International Building Code*. Construction documents shall include:
   1.1. A summary sheet showing design criteria, loads and support reactions.
   1.2. Detailed construction and installation drawings.
   1.3. Design calculations.
   1.4. Operating limits of the structure explicitly outlined by the design professional including environmental conditions and physical forces.
   1.5. Effects of additive elements such as video walls, supported scenery, audio equipment, vertical and horizontal coverings.
   1.6. Means for adequate stability including specific requirements for guying and cross-bracing, ground anchors or ballast for different ground conditions.
2. Designation of responsible party: The owner of the temporary stage canopy shall designate in writing a person to have responsibility for the temporary stage canopy on the site. The designated person shall have sufficient knowledge of the construction documents, manufacturer's recommendations and operations plan to make judgments regarding the structure's safety and to coordinate with the fire code official.
3. Operations plan: The operations plan shall reflect manufacturer's operational guidelines, procedures for environmental monitoring and actions to be taken under specified conditions consistent with the construction documents.

3105.6 Inspections. Inspections shall comply with Section 106 and Sections 3105.6.1 and 3106.6.2.

3105.6.1 Independent inspector. The owner of a temporary stage canopy shall employ a qualified, independent approved agency or individual to inspect the installation of a temporary stage canopy.

3105.6.2 Inspection report. The inspecting agency or individual shall furnish an inspection report to the fire code official. The inspection report shall indicate that the temporary stage canopy was inspected and was or was not installed in accordance with the approved construction documents. Discrepancies shall be

brought to the immediate attention of the installer for correction. Where any discrepancy is not corrected, it shall be brought to the attention of the fire code official and the designated responsible party.

3105.7 Means of egress. The means of egress for temporary stage canopies shall comply with Chapter 10.

3105.8 Location. Temporary stage canopies shall be located a distance from property lines and buildings to accommodate distances indicated in the construction drawings for guy wires, cross-bracing, ground anchors or ballast. Location shall not interfere with egress from a building or encroach on fire apparatus access roads.

SECTION 202
GENERAL DEFINITIONS

TEMPORARY STAGE CANOPY. A temporary stage canopy is a temporary ground-supported structure used to cover stage areas and support equipment in the production of outdoor entertainment events.

Revise as follows:

SECTION 3101
GENERAL

3101.1 Scope. Tents, canopies, temporary stage canopies and membrane structures shall comply with this chapter. The provisions of Section 3103 are applicable only to temporary membrane structures. The provisions of Section 3104 are applicable to temporary and permanent membrane structures.

SECTION 3102
DEFINITIONS

3102.1 Definitions. The following terms are defined in Chapter 2:

AIR-INFLATED STRUCTURE.
AIR-SUPPORTED STRUCTURE.
MEMBRANE STRUCTURE.
TEMPORARY STAGE CANOPY.
TENT.

[A] 105.6.43 Temporary membrane structures and tents. An operational permit is required to operate an air-supported temporary membrane structure, a temporary stage canopy or a tent having an area in excess of 400 square feet (37 m2).

Exceptions: 1. and 2. (No change to current text.)

[A] 105.7.16 Temporary membrane structures and tents. A construction permit is required to erect an air-supported temporary membrane structure, a temporary stage canopy or a tent having an area in excess of 400 square feet (37 m2).

Exceptions: 1. through 3. (No change to current text.)

Add new standard to Chapter 80 as follows:

ANSI

E1.21-2006	Entertainment Technology: Temporary Ground Supported Overhead Structures Used to Cover the Stage Areas and Support Equipment in the Production of Outdoor Entertainment Events.

Reason: There were four high-profile temporary stage canopy collapses during the 2011 summer concert season: one on August 7th at Brady District Block Party, Tulsa Oklahoma; one on July 17th at the Cisco Ottawa Blues Festival in Ottawa, Canada; one on August 13, 2011, at the Indiana State Fairgrounds which resulted in the loss of seven lives and the injury of fifty more; and another on August 18th at the Pukkelpop Festival in Kiewit, Belgium. Again, in the summer of 2012 an additional life was lost at a Radiohead concert in Toronto. All resulted in tremendous property damage and two in multiple fatalities. The obvious concern is for the safety of the performers and audiences, stage-hands, lighting technicians, security personnel and every other profession or individual that necessitates proximity to a temporary stage.

Temporary stage canopies are very specialized and complex. The nature of the structures must accommodate a wide variety of changing components such as audio equipment, video walls and scenery. The entertainment industry is continually evolving with new ways to improve shows creating larger and more complex spectacles.

Due to the nearly unique design of temporary stage canopies, it is difficult for most fire inspectors to find adequate guidance in current code language to satisfactorily regulate these specialized structures.

Witt Associates contracted with the Indiana State Fair Commission to complete a comprehensive assessment of the 2011 State Fair collapse incident. The assessment included a review of applicable laws and model codes as well as a nationwide survey of best practices. A major recommendation of the assessment was:

> "National model building and fire codes should adopt more specific standards for temporary membrane stage structures reflecting the increasing complexity of these structures"

The complete report may be reviewed at www.wittassociates.com/clients-projects/project-list/indiana-state-fair-collapse-independent-assessment. This proposal addresses the report recommendation, incorporates a reasonable industry standard and best practices.

3105.1 - An ANSI standard exists which is specifically targeted to temporary stage canopies. ANSI E1.21-2006 was produced by the Entertainment Services and Technology Association (ESTA). ESTA recently merged with an international organization, Professional Lighting and Sound Association (PLASA). Fire and building code officials may download the standard at no charge provided they register at www.plasa.org .

3105.2 - The trigger starting regulation at 400 square feet is consistent with the current International Fire Code.

3104.4 - The 45 day duration is consistent with ANSI E1.21.

3105.5 - This section is a summary of the relevant requirements of ANSI E1.21 necessary to provide guidance to regulating authorities. Stage canopies are subject to more diverse loads than most permanent structures. Because of the variable weights of equipment for different shows, the need to monitor changing weather conditions and the requirement to be able to raise and lower the roof to install equipment, there is a necessity for a design professional to fully analyze the structure and a need to designate a responsible person on site who understands this complexity of considerations.

3105.6 - It is unlikely many fire inspectors will be familiar with the specialized nature of these structures. That is the reason we are recommending a qualified specialized inspector be employed by the owner to inspect and report to the authority having jurisdiction and the designated responsible person. An Entertainment Technician Certification Program (ETCP) certification exists which would demonstrate competence to inspect the majority of temporary stage canopies. For large, unusually complex canopies there is latitude for the fire official to require inspection by structural engineer familiar with these types of temporary structures.

3105.7 and 3105.8 - This language is for general safety and is consistent with the International Fire Code.

3102 - Definitions were added to describe the specialized structure to be regulated.

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

F269-13

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

3105-F-VONWELLER

F270 – 13
3203

Proponent: Jeffrey M. Hugo, CBO, representing the National Fire Sprinkler Association (hugo@nfsa.org)

Revise as follows:

3203.1 Classification of commodities. Commodities shall be classified as Class I, II, III, IV in accordance with NFPA 13. ~~or high hazard in accordance with this section.~~ High hazard commodities shall be classified in accordance with Section 3203.3. Materials listed within each commodity classification are assumed to be unmodified for improved combustibility characteristics. Use of flame-retarding modifiers or the physical form of the material could change the classification. ~~See Section 3203.7 for classification of Group A, B and C plastics.~~

3203.2. Plastics. Plastics shall be designated as Group A, B or C in accordance with NFPA 13.

~~**3203.2 Class I commodities.** Class I commodities are essentially noncombustible products on wooden or nonexpanded polyethylene solid deck pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 3203.7.4. Examples of Class I commodities include, but are not limited to, the following:~~

~~Alcoholic beverages not exceeding 20-percent alcohol~~
~~Appliances noncombustible, electrical~~
~~Cement in bags~~
~~Ceramics~~
~~Dairy products in nonwax-coated containers (excluding bottles)~~
~~Dry insecticides~~
~~Foods in noncombustible containers~~
~~Fresh fruits and vegetables in nonplastic trays or containers~~
~~Frozen foods~~
~~Glass~~
~~Glycol in metal cans~~
~~Gypsum board~~
~~Inert materials, bagged~~
~~Insulation, noncombustible~~
~~Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity~~
~~Noncombustible metal products~~

~~**3203.3 Class II commodities.** Class II commodities are Class I products in slatted wooden crates, solid wooden boxes, multiple-thickness paperboard cartons or equivalent combustible packaging material with or without pallets. Class II commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 3203.7.4. Examples of Class II commodities include, but are not limited to, the following:~~

~~Alcoholic beverages not exceeding 20-percent alcohol, in combustible containers~~
~~Foods in combustible containers~~
~~Incandescent or fluorescent light bulbs in cartons~~
~~Thinly coated fine wire on reels or in cartons~~

~~**3203.4 Class III commodities.** Class III commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats and tires.~~

~~Group A plastics shall be limited in accordance with Section 3203.7.4. Examples of Class III commodities include, but are not limited to, the following:~~

~~Aerosol, Level 1 (see Chapter 28)~~
~~Combustible fiberboard~~
~~Cork, baled~~
~~Feed, bagged~~
~~Fertilizers, bagged~~
~~Food in plastic containers~~
~~Furniture: wood, natural fiber, upholstered, nonplastic, wood or metal with plastic-padded and covered armrests~~
~~Glycol in combustible containers not exceeding 25 percent~~
~~Lubricating or hydraulic fluid in metal cans~~
~~Lumber~~
~~Mattresses, excluding foam rubber and foam plastics~~
~~Noncombustible liquids in plastic containers having a capacity of more than 5 gallons (19 L)~~
~~Paints, oil base, in metal cans~~
~~Paper, waste, baled~~
~~Paper and pulp, horizontal storage, or vertical storage that is banded or protected with *approved* wrap~~
~~Paper in cardboard boxes~~
~~Pillows, excluding foam rubber and foam plastics~~
~~Plastic-coated paper food containers~~
~~Plywood~~
~~Rags, baled~~
~~Rugs, without foam backing~~
~~Sugar, bagged~~
~~Wood, baled~~
~~Wood doors, frames and cabinets~~
~~Yarns of natural fiber and viscose~~

~~**3203.5 Class IV commodities.** Class IV commodities are Class I, II or III products containing Group A plastics in ordinary corrugated cartons and Class I, II and III products with Group A plastic packaging, with or without pallets. Group B plastics and free-flowing Group A plastics are also included in this class. The total amount of nonfree-flowing Group A plastics shall be in accordance with Section 3203.7.4. Examples of Class IV commodities include, but are not limited to, the following:~~

~~Aerosol, Level 2 (see Chapter 51)~~
~~Alcoholic beverages, exceeding 20-percent but less than 80-percent alcohol, in cans or bottles in cartons~~
~~Clothing, synthetic or nonviscose~~
~~Combustible metal products (solid)~~
~~Furniture, plastic upholstered~~
~~Furniture, wood or metal with plastic covering and padding~~
~~Glycol in combustible containers (greater than 25 percent and less than 50 percent)~~
~~Linoleum products~~
~~Paints, oil base in combustible containers~~
~~Pharmaceutical, alcoholic elixirs, tonics, etc.~~
~~Rugs, foam back~~
~~Shingles, asphalt~~
~~Thread or yarn, synthetic or nonviscose~~

~~3203.6~~ 3203.3 High-hazard commodities. High-hazard commodities are high-hazard products presenting special fire hazards beyond those of Class I, II, III or IV. Group A plastics not otherwise classified are included in this class.

Examples of high-hazard commodities include, but are not limited to, the following:
Aerosol, Level 3 (see Chapter 51)
Alcoholic beverages, exceeding 80-percent alcohol, in bottles or cartons
Commodities of any class in plastic containers in carousel storage
Flammable solids (except solid combustible metals)
Glycol in combustible containers (50 percent or greater)
Lacquers, which dry by solvent evaporation, in metal cans or cartons
Lubricating or hydraulic fluid in plastic containers
Mattresses, foam rubber or foam plastics
Pallets and flats which are idle combustible
Paper and pulp, rolled, in vertical storage which is unbanded or not protected with an *approved* wrap
Paper, asphalt, rolled, horizontal storage
Paper, asphalt, rolled, vertical storage
Pillows, foam rubber and foam plastics
Pyroxylin
Rubber tires
Vegetable oil and butter in plastic containers

3203.7 Classification of plastics. Plastics shall be designated as Group A, B or C in accordance with Sections 3203.7.1 through 3203.7.4.

3203.7.1 Group A plastics. Group A plastics are plastic materials having a heat of combustion that is much higher than that of ordinary combustibles, and a burning rate higher than that of Group B plastics. Examples of Group A plastics include, but are not limited to, the following:

ABS (acrylonitrile-butadiene-styrene copolymer)
Acetal (polyformaldehyde)
Acrylic (polymethyl methacrylate)
Butyl rubber
EPDM (ethylene propylene rubber)
FRP (fiberglass-reinforced polyester)
Natural rubber (expanded)
Nitrile rubber (acrylonitrile-butadiene rubber)
PET or PETE (polyethylene terephthalate)
Polybutadiene
Polycarbonate
Polyester elastomer
Polyethylene
Polypropylene
Polystyrene (expanded and unexpanded)
Polyurethane (expanded and unexpanded)
PVC (polyvinyl chloride greater than 15-percent plasticized, e.g., coated fabric unsupported film)
SAN (styrene-acrylonitrile)
SBR (styrene-butadiene rubber)

3203.7.2 Group B plastics. Group B plastics are plastic materials having a heat of combustion and a burning rate higher than that of ordinary combustibles, but not as high as those of Group A plastics. Examples of Group B plastics include, but are not limited to, the following:

Cellulosics (cellulose acetate, cellulose acetate butyrate,
ethyl cellulose)
Chloroprene rubber
Fluoroplastics (ECTFE, ethylene-chlorotrifluoroethylene
copolymer; ETFE, ethylene-tetrafluoroethylene
copolymer; FEP, fluorinated ethylene-propylene

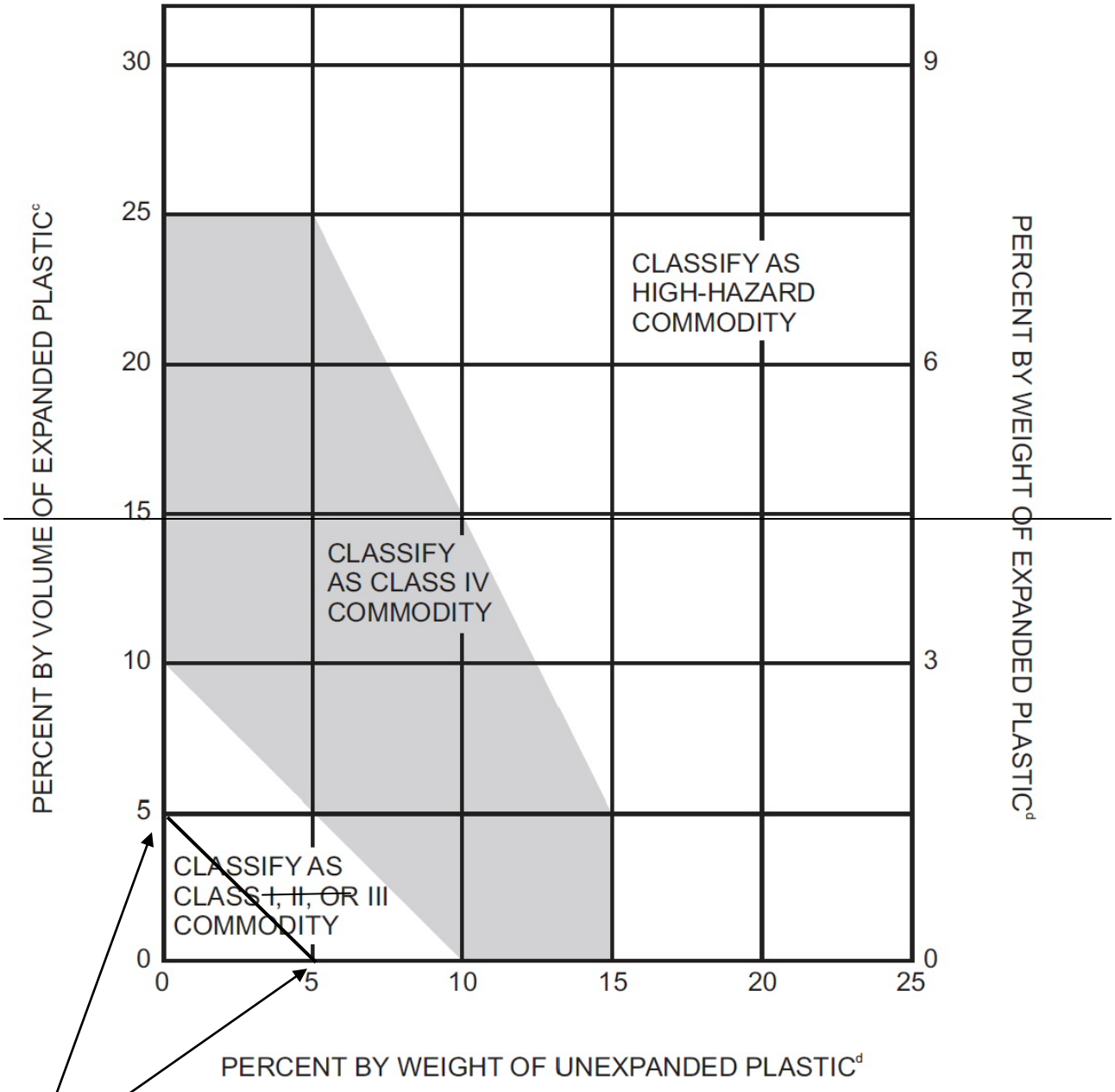
~~copolymer)~~
~~Natural rubber (nonexpanded)~~
~~Nylon (Nylon 6, Nylon 6/6)~~
~~PVC (polyvinyl chloride greater than 5-percent, but not exceeding 15-percent plasticized)~~
~~Silicone rubber~~

~~**3203.7.3 Group C plastics.** Group C plastics are plastic materials having a heat of combustion and a burning rate similar to those of ordinary combustibles. Examples of Group C plastics include, but are not limited to, the following:~~

~~Fluoroplastics (PCTFE, polychlorotrifluoroethylene;~~
~~PTFE, polytetrafluoroethylene)~~
~~Melamine (melamine formaldehyde)~~
~~Phenol~~
~~PVC (polyvinyl chloride, rigid or plasticized less than 5 percent, e.g., pipe, pipe fittings)~~
~~PVDC (polyvinylidene chloride)~~
~~PVDF (polyvinylidene fluoride)~~
~~PVF (polyvinyl fluoride)~~
~~Urea (urea formaldehyde)~~

3203.4 ~~3203.7.4~~ Limited quantities of Group A plastics in mixed commodities. Figure 3203.4 ~~3203.7.4~~ shall be used to determine the quantity of Group A plastics allowed to be stored in a package or carton or on a pallet without increasing the commodity classification.

Figure 3203.4 ~~3203.7.4~~ Mixed Commodities [a,b]



Shade in new area starting at 5% by weight and 5 % by volume instead of 10% by weight and 10% by volume.

a. This figure is intended to determine the commodity classification of a mixed commodity in a package, carton or on a pallet where plastics are involved.

b. The following is an example of how to apply the figure: A package containing a Class III commodity has 12-percent Group A expanded plastic by volume. The weight of the unexpanded Group A plastic is 10 percent. This commodity is classified as a Class IV

commodity. If the weight of the unexpanded plastic is increased to 14 percent, the classification changes to a high-hazard commodity.

c. Percent by volume = $\frac{\text{Volume of plastic in pallet load}}{\text{Total volume of pallet load, including pallet}}$

d. Percent by weight = $\frac{\text{Volume of plastic in pallet load}}{\text{Total volume of pallet load, including pallet}}$

Reason: The majority of these examples are in sync with the commodities of NFPA 13, however, there are several that conflict with the current and soon to be referenced edition of NFPA 13. These conflicts can cause significant problems for designers and incorrect storage protection for owners and communities. Removing the examples does not change the technical requirements of this chapter, but only directs the user to NFPA 13 to get the appropriate design commodity.

Cost Impact: Will not increase the cost of construction

F270-13

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

3203.2-F-HUGO

F271 – 13
3203.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

3203.2 Class I commodities. Class I commodities are essentially noncombustible products on wooden ~~or nonexpanded polyethylene solid deck pallets~~, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 3203.7.4. Examples of Class I commodities include, but are not limited to, the following:

Alcoholic beverages not exceeding 20-percent alcohol
Appliances noncombustible, electrical
Cement in bags
Ceramics
Dairy products in nonwax-coated containers (excluding bottles)
Dry insecticides
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glycol in metal cans
Gypsum board
Inert materials, bagged
Insulation, noncombustible
Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity
Noncombustible metal products

Reason: Nonexpanded Polyethylene Solid Deck Pallets increase the fuel load of pallet considerably. In NFPA 13, the commodity classification of products stored on plastic pallets are increased by 1-2 classes depending on the type of plastic pallets. In some cases [depending on the weights], it can even be classified as High Hazard Commodity when using Figure 3203.7.4.

Based on research of databases etc., there is no substantiation for classifying products stored on these types of pallets as Class I. However, there are major incidences such as the Post and Paddock Fire prepared by Scott Stookey [former ICC Senior Staff] which point to the possibility of sprinkler failure if the protection of noncombustible materials on nonexpanded polyethylene solid deck is based on Class I Commodity.

Additionally with the rampant use of non-listed plastic pallets [mainly shipped from overseas], these products are a major concern to fire fighter safety.

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

F271-13

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

3203.2-F-KLAUSBRUCKNER

F272 – 13
3206.4.1 (New), 3208.2.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (rjd@davidsoncodeconcepts.com)

Revise as follows:

3206.4.1 Pallets. Automatic sprinkler system requirements based upon the presence of pallets shall be in accordance with NFPA 13.

3208.2.1 Plastic ~~pallets and~~ shelves. Storage on ~~plastic pallets or~~ plastic shelves shall be protected by approved specially engineered fire protection systems.

> ~~**Exception:** Plastic pallets listed and labeled in accordance with UL 2335 shall be treated as wood pallets for determining required sprinkler protection.~~

Reason: As currently written, Chapter 32 gives the impression that pallets are only a factor when involving rack storage. This is not the case, NFPA 13 has extensive requirements for pallet use and storage based upon the type of pallet that must be designed for and and maintained during occupancy.

This proposal deletes refernces to plastic pallets and adds a section pointing the user of the code to NFPA 13 for design and installations requirements relative to the presence of pallets.

Example language from NFPA 13-2010
http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=13

3.9.1.11* Conventional Pallets. A material-handling aid designed to support a unit load with openings to provide access for material-handling devices. (See Figure A.3.9.1.11.)

3.9.1.21 Plastic Pallet. A pallet having any portion of its construction consisting of a plastic material.

3.9.1.22* Reinforced Plastic Pallet. A plastic pallet incorporating a secondary reinforcing material (such as steel or fiberglass) within the pallet.

3.9.1.27 Wood Pallet. Apallet constructed entirely of wood with metal fasteners.

5.6.2 Pallet Types.

5.6.2.1 **General.** When loads are palletized, the use of wood or metal pallets, or listed pallets equivalent to wood, shall be assumed in the classification of commodities.

5.6.2.2* **Unreinforced Plastic Pallets.** For Class I through Class IV commodities, when unreinforced polypropylene or unreinforced high-density polyethylene plastic pallets are used, the classification of the commodity unit shall be increased one class.

5.6.2.2.1 Unreinforced polypropylene or unreinforced highdensity polyethylene plastic pallets shall be marked with a permanent symbol to indicate that the pallet is unreinforced.

5.6.2.3* For Class I through Class IV commodities, when reinforced polypropylene or reinforced high-density polyethylene plastic pallets are used, the classification of the commodity unit shall be increased two classes except for Class IV commodity, which shall be increased to a cartoned unexpanded Group A plastic commodity.

5.6.2.3.1 Pallets shall be assumed to be reinforced if no permanent marking or manufacturer's certification of nonreinforcement is provided.

5.6.2.4 No increase in the commodity classification shall be required for Group A plastic commodities stored on plastic pallets.

5.6.2.5 For ceiling-only sprinkler protection, the requirements of 5.6.2.2 and 5.6.2.3 shall not apply where plastic pallets are used and where the sprinkler system uses spray sprinklers with a minimum K-factor of K-16.8 (240).

5.6.2.6 The requirements of 5.6.2.2 through 5.6.2.7 shall not apply to nonwood pallets that have demonstrated a fire hazard that is equal to or less than wood pallets and are listed as such.

5.6.2.7 For Class I through Class IV commodities stored on plastic pallets when other than wood, metal, or polypropylene or high-density polyethylene plastic pallets are used, the classification of the commodity unit shall be determined by specific testing conducted by a national testing laboratory or shall be increased two classes.

12.12* Protection of Idle Pallets.

12.12.1 Wood Pallets.

12.12.1.1* Wood pallets shall be permitted to be stored in the following arrangements:

(1) Stored outside
(2) Stored in a detached structure
(3) Stored indoors where arranged and protected in accordance with 12.12.1.2

Table 12.12.1.2(a) Control Mode Density/Area Sprinkler Protection for Indoor Storage of Idle Wood Pallets

12.12.2 Plastic Pallets.

12.12.2.1 Plastic pallets shall be permitted to be stored in the following manners:

(1) Plastic pallets shall be permitted to be stored outside.
(2) Plastic pallets shall be permitted to be stored in a detached structure.
(3) Plastic pallets shall be permitted to be stored indoors where arranged and protected in accordance with the requirements of 12.12.2.2.

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

F272-13

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

3206.4.1 (NEW)-F-DAVIDSON

F273 – 13
3206.6.1.1

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

3206.6.1.1 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 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 (30 480 mm).

> **Exception:** The lineal distance between adjacent access doors can exceed 100 feet (30 480 mm) in existing building where no change in occupancy is proposed. Final number and distribution of access doors in existing building shall be approved.

Reason: Many existing buildings do not meet the requirements of 100 foot distribution required in the second sentence of 3206.6.1.1. The section stating "The required access doors shall be distributed such that the lineal distance between adjacent access doors does not exceed 100 feet (30 480 mm)" was proposed and first appeared in the 2009 Edition of the Fire Code. Existing warehouses where one tenant moves out and a new tenant moves in will require a new high piled storage permit. As part of the permit, the current/adopted edition of Chapter 32 is applied which would result in many cases cutting holes in [in many cases concrete] exterior walls and/or restriction in business as a result of adding doors where currently roll up doors exist. This would allow a small amount of flexibility for building owners of existing buildings and the fire code official when adding doors appears costly and/or impractical.

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

F273-13

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

3206.6.1.1-F-KLAUSBRUCKNER

F274 – 13
3206.9.3

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

3206.9.3 Dead ends. Dead-end aisles shall ~~be in accordance with Chapter 10~~ not exceed 50 feet (15240 mm).

Reason: There are no dead-end requirements for aisles for storage warehouses in Chapter 10. The only dead end requirements in Chapter 10 apply to corridors [Section 1018.4] and in assembly occupancies.[Section 1028.9.5], as well as in existing occupancies [Section and Table 1104.17.2]. There are no requirements applicable to a warehouse and/or high piled storage area.

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

F274-13

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

3206.9.3-F-KLAUSBRUCKNER

F275 – 13
3208.2.1, Chapter 80

Proponent: Jesse J. Beitel, Hughes Associates, Inc, representing United Technologies Corporation (jbeitel@haifire.com)

Revise as follows:

3208.2.1 Plastic pallets and shelves. Storage on plastic pallets or plastic shelves shall be protected by approved specially engineered fire protection systems.

Exception: Plastic pallets listed and labeled in accordance with UL 2335 or FM 4996 shall be treated as wood pallets for determining required sprinkler protection.

Add new standard to Chapter 80 as follows:

FM

ANSI/FM 4996-13 Approval Standard for Classification of Pallets and Other Material Handling Products as Equivalent to Wood Pallets

Reason: This Code proposal adds an alternative test method for the purpose of determining if a plastic pallet is equivalent to a wood pallet. This test method is used by FM Approvals.

The test method requires that a plastic pallet be subjected to a series of fire tests. Upon successful completion of the required tests, a plastic pallet can be determined to be equivalent to a wood pallet.

The proposed test method, FM 4496 is currently being revised and is undergoing ANSI balloting. It is anticipated that the standard will be completed within the timeframe required by ICC.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, FM 4996-13, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F275-13

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

3208.2.1-F-BEITEL

F276 – 13
3208.2.2

Proponent: William Fletcher, P.E., Fletcher Fire Protection Engineering

Revise as follows:

3208.2.2 Racks with solid shelving. Racks with solid shelving having an area greater than ~~32~~ 20 square feet (~~3~~ 1.9 m^2), measured between *approved* flue spaces at all four edges of the shelf, shall be in accordance with this section.

Exceptions:

1. Racks with mesh, grated, slatted or similar shelves having uniform openings not more than 6 inches (152 mm) apart, comprised of at least 50 percent of the overall shelf area, and with *approved* flue spaces are allowed to be treated as racks without solid shelves.
2. Racks used for the storage of combustible paper records, with solid shelving, shall be in accordance with NFPA 13.

Reason: This proposal provides consistency with NFPA 13. Section 3.9.3.7.7 notes "shelves within racks with a surface area <=20 sq ft, or 50% open slats is considered an open rack, and thus ESFR ceiling only protection is appropriate. This maximum 20 sq ft shelve rule is the usual standard most consultants follow when determining if the rack shelving can be considered open, and thus appropriate for ESFR protection.

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

F276-13

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

3208.2.2-F-FLETCHER

F277 – 13
Table 3208.3

Proponent: William Fletcher, P.E., Fletcher Fire Protection Engineering

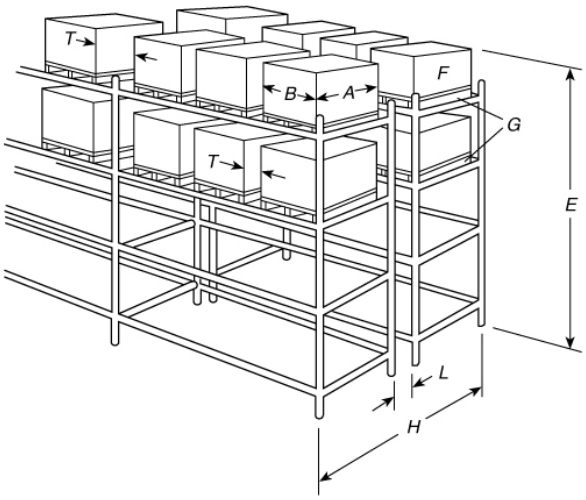
Revise as follows:

TABLE 3208.3
REQUIRED FLUE SPACES FOR RACK STORAGE

RACK CONFIGURATION	AUTOMATIC SPRINKLER PROTECTION		SPRINKLER AT THE CEILING WITH OR WITHOUT MINIMUM IN-RACK SPRINKLERS			IN-RACK SPRINKLERS AT EVERY TIER	NONSPRINKLERED
			≤ 25 feet		> 25 feet	Any height	Any height
	Storage height		Option 1	Option 2			
Single-row rack	Transverse flue space	Size[b~~a~~]	3 inches	Not Applicable	3 inches	Not Required	Not Required
		Vertically aligned	Not Required	Not Applicable	Yes	Not Applicable	Not Required
	Longitudinal flue space		Not Required	Not Applicable	Not Required	Not Required	Not Required
Double-row rack	Transverse flue space	Size[b~~a~~]	6 inches[~~a~~]	3 inches	3 inches	Not Required	Not Required
		Vertically aligned	Not Required	Not Required	Yes	Not Applicable	Not Required
	Longitudinal flue space		Not Required	6 inches	6 inches	Not Required	Not Required
Multi-row rack	Transverse flue space	Size[b~~a~~]	6 inches	Not Applicable	6 inches	Not Required	Not Required
		Vertically aligned	Not Required	Not Applicable	Yes	Not Applicable	Not Required
	Longitudinal flue space		Not Required	Not Applicable	Not Required	Not Required	Not Required

For 1 inch = 25.4 mm, 1 foot = 304.8 mm. SI:
~~a. Three-inch transverse flue spaces shall be provided at least every 10 feet where ESFR sprinkler protection is provided.~~
~~b~~.a. Random variations are allowed, provided that the configuration does not obstruct water penetration.

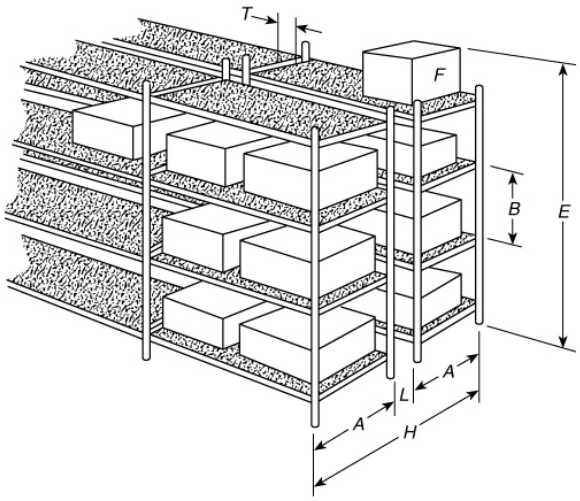
Reason: I would like to start by noting that I see a lot of people in our industry (consultants, insurance, ahj's) not adhering to the guidelines of open shelving within racks, when using ceiling only, ESFR sprinkler systems. If a fire occurs with ESFR protection, and solid shelves are present within the racks, the fire may not be controlled/suppressed. Large areas of shelving, whether created by pallets, hand stacking of boxes and parts, or even plywood sheets will defeat the key mechanisms needed for suppression of a rack storage fire when ceiling only, ESFR heads are used. The solid shelves will block the heat from rising and quickly fusing the heads, horizontal fire spread occurs, and the water from the heads cannot travel down in to the racks, to achieve suppression. This has been demonstrated by full scale fire testing at FM Global's research lab, and other nationally recognized testing labs as well.
Supporting Information
My concern is with how the 2012, IFC, and 2010, CFC Sec. is written.
The maximum allowable area for shelving within racks to be considered "open" is <32 sq ft. per 3208.2.2.
Table 3208.3 then defines various transverse and longitudinal flue space options, for different rack configurations. For Double Row Racks, Table 3208.3 has Foot note "a" that says: 3 in. transverse flues required every 10 ft. when ESFR used. And, no longitudinal flues are needed.
If this code section is followed, a warehouse operator can have a 3 in transverse flue space every 10 ft. For a typical double row rack using 40 x 48 in. pallets, the depth of one side of the double row rack (1/2 H, in Fig A.3.9.3. 7 "b" drawing below from NFPA 13) could be at least 4 ft or more. The total shelve area would then be 10 x 4 = 40 sq. ft. (unless open wire mesh shelving, or equivalent was used). This 40 sq. ft. helve area exceeds 32 sq. ft., and could theoretically be even larger than that.



A Load depth
B Load width
E Storage height
F Commodity
G Pallet
H Rack depth
L Longitudinal flue space
T Transverse flue space

FIGURE A.3.9.3.7(b)
Double-Row Racks Without Solid or Slatted Shelves.

The racks would then look more like Figure A.3.9.3.7© below.



A Shelf depth
B Shelf height
E Storage height
F Commodity
H Rack depth
L Longitudinal flue space
T Transverse flue space

FIGURE A.3.9.3.7(c)
Double-Row Racks with Solid Shelves.

In referring to NFPA 13 (I am using the 2010 Version, which is similar to the 2012 version in this area), Section 3.9.3.7.7 notes "shelves within racks with a surface area <=20 sq ft, or 50% open slats is considered an open rack, and thus ESFR ceiling only protection is appropriate. This maximum 20 sq ft shelve rule is the usual standard most consultants follow when determining if the rack shelving can be considered open, and thus appropriate for ESFR protection. If the 3 in. transverse flue every 10 ft. rule is applied, it is not even close, because as I noted, I can be well above 32 sq ft shelve area allowed by the IFC/CFC.

3.9.3.7.6 Rack Shelf Area.
The area of the horizontal surface of a shelf in a rack defined by perimeter aisle(s) or nominal 6 in. (152 mm) flue spaces on all four sides, or by the placement of loads that block openings that would otherwise serve as the required flue spaces.

3.9.3.7.7 Open Rack.
Racks without shelving or with shelving in racks that are fixed in place with shelves having a solid surface and a shelf area equal to or less than 20 ft^2 (1.9 m^2) or with shelves having a wire mesh, slatted surface, or other material with openings representing at least 50 percent of the shelf area including the horizontal area of rack members and where the flue spaces are maintained.

3.9.3.7.8 Slatted Shelf Rack.
A rack where shelves are fixed in place with a series of narrow individual solid supports used as the shelf material and spaced apart with regular openings.

3.9.3.7.9 Solid Shelf Rack.
A rack where shelves are fixed in place with a solid, slatted, or wire mesh barrier used as the shelf material and having limited openings in the shelf area.

3.9.3.8 Solid Shelving.
Solid shelving is fixed in place, slatted, wire mesh, or other type of shelves located within racks. The area of a solid shelf is defined by perimeter aisle or flue space on all four sides. Solid shelves having an area equal to or less than 20 ft^2 (1.9 m^2) shall be defined as open racks. Shelves of wire mesh, slats, or other materials more than 50 percent open and where the flue spaces are maintained shall be defined as open racks.

I therefore don't believe the Fire Code adequately addresses this topic, and allows somewhat of a loop hole that can allow ESFR protection with solid shelves. And I can tell you, I am seeing this first hand at many large warehouses I visit in my 24 year career.

Cost Impact: This proposal will not increase the cost of construction.

F277-13

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

3208.3T-F-FLETCHER

F278 – 13
3304.2, 3304.3 (New), 3304.4

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

~~**3304.2 Waste disposal.** Combustible debris shall not be accumulated within buildings. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site unless *approved*.~~

3304.2 Combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall comply with the requirements of Sections 3304.2.1 through 3304.2.4.

3304.2.1 Combustible debris, rubbish and waste material shall not be accumulated within buildings.

3304.2.2 Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.

3304.2.3 Rubbish containers. Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material, until the end of each shift of work. The rubbish containers shall be constructed entirely of materials that comply with any one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m^2 ~~when~~ when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.

3304.2.4 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a *listed* disposal container.

3304.3 Burning of combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site unless *approved*.

~~**3304.3**~~ **3304.4 Open burning.** *Open burning* shall comply with Section 307.

~~**3304.4 Spontaneous ignition.** Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a *listed* disposal container.~~

Reason: This section needs to be rewritten in a more logical fashion because 3304.2 needs to address what to do with combustible debris, rubbish and waste but not address prohibitions or *what not to do*, which should be covered in another section (burning of the rubbish). The use of the phrase “combustible debris, rubbish and waste material” makes this section consistent with other sections of the IFC.

When dealing with what needs to be done, the proper sequence is: (a) don’t accumulate it, (b) remove it at the end of a work shift and (c) (which is missing) put it in appropriate rubbish containers while you are working. Section 3304.4 addresses a special rubbish container for materials susceptible to pontaneous ignition and should also be covered under 3304.2 and not in a separate section.

With regard to burning of combustible waste, this should have its own section, preceding the section on open burning, and should not be covered under what to do with rubbish.

The added requirement for the rubbish containers (other than those for spontaneous ignition materials) tells inspectors that rubbish containers should be provided for temporary storage of combustible rubbish (until the end of the shift of work). Such containers should be constructed of materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. A key requirement is that the lids be tight fitting or self-closing.

Cost Impact: Minimal.

F278-12

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

3304.2 (NEW)-F-HIRSCHLER

F279 – 13
3304.2.1 (New)

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Add new text as follows:

3304.2.1 Rubbish containers. Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material, until the end of each shift of work. The rubbish containers shall be constructed entirely of materials that comply with either of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m^2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.

Reason: Rubbish containers should be provided for temporary storage of combustible rubbish (until the end of the shift of work). Such containers need not be constructed of metal but can be constructed of other noncombustible materials, including materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. A key requirement is that the lids be tight fitting or self closing. Note that this does not address materials susceptible to spontaneous ignition, such as oily rags, covered by 3304.4. The use of the phrase “combustible debris, rubbish and waste” makes this section consistent with other sections of the IFC.

Cost Impact: Minimal

F279-12

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

3304.2.1 (NEW)-F-HIRSCHLER

F280 – 13
3306.2 (New), Chapter 80

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

3306.2 Cleaning with flammable gas. Flammable gases shall not be used to clean or remove debris from piping open to the atmosphere.

3306.2.1 Pipe cleaning and purging. The cleaning and purging of flammable gas piping systems, including cleaning new or existing piping systems, purging piping systems into service, and purging piping systems out of service shall comply with NFPA 56.

Exceptions:

1. Compressed gas piping systems other than fuel gas piping systems where in accordance with Chapter 53.
2. Piping systems regulated by the *International Fuel Gas Code*.
3. Liquefied petroleum gas systems in accordance with Chapter 61.

Add a new referenced standard to Chapter 80 as follows:

NFPA

56-12 *Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems* 3306.2.1

Reason: In the past few years two explosions that killed 10 individuals were attributed to workers using natural gas flowing at high velocities to clean/clear fuel gas piping during the commissioning of fuel gas piping at industrial plants. The flammable gas and debris from the piping were subsequently vented to the atmosphere and ignited by sparks, one of which was suspected to be caused by static electricity. For details on the incidents see the U.S. Chemical Safety Board report at: http://www.csb.gov/assets/document/KleenUrgentRec.pdf

The practice of using flammable gases to clean or remove debris from fuel piping that is open to the atmosphere is not currently covered by the International Fire Code. This proposal revises Chapter 33 “Fire Safety During Construction and Demolition” requirements to prohibit this practice in piping systems open to the atmosphere.

The NFPA 56 *Provisional Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems* provides minimum safety requirements for the cleaning and purging of flammable gas piping systems, including cleaning new or existing piping systems, purging piping systems into service, and purging piping systems out of service. It includes the appropriate managerial and operational requirements necessary to ensure safe outcomes. NFPA 56 compliments the proposal and also does not allow flammable gases to be used for internal cleaning of piping open to the atmosphere.

The intent of the proposal is to address fire and explosion hazards with flammable gas piping that is typically found in electric generating plants and in industrial, institutional, and commercial applications.

It is not the intent of this proposal to cover cleaning or purging of (1) compressed gas piping systems other than fuel gas piping systems that comply with Chapter 53, (2) piping systems regulated by the International Fuel Gas Code, (3) liquefied petroleum gas systems that comply with Chapter 61, or (4) piping systems that are not open to the atmosphere.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Cost Impact: Approval of this change will increase the cost of flammable gas pipe purging because only inert or simple asphyxiant gases will be allowed.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 56-12, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F280-13

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

3306.(NEW)-F-ZUBIA-FCAC

F281 – 13
3313.1 (IBC [F] 3311.1, IEBC [F] 1506.1)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

3313.1 (IBC [F] 3311.1, IEBC [F] 1506.1) Where required. In buildings 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 prior to construction exceeding ~~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: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This code change proposal is intended to clarify the requirement for the timing of the installation of a standpipe during construction. The intent of the existing language is to have the standpipe installed by the time construction reaches 40 feet. However, based on the wording of the section, the standpipe could be required as soon as construction exceeds one story.

The current language states that the standpipe shall be installed at the time when the construction is 40 feet or less. This section has been applied to buildings that are only 15 in height.

The intent seems to be that standpipes are installed when the construction extends beyond the reach of firefighting operations utilizing ground level hose streams and ground ladders.

The proposed revision to this section allows construction up to 40 feet in height, but requires the standpipe to be installed before continuing beyond 40 feet.

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

F281-13

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

3313.1-F-ZUBIA-FCAC

F282 – 13
3510 (New), 202, 3504.1.7, 5704.2.7.6, Chapter 80

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

SECTION 3510
HOT WORK ON FLAMMABLE AND COMBUSTIBLE LIQUID STORAGE TANKS

3510.1 General. Hot work performed on the interior or the exterior of tanks that hold or have held flammable or combustible liquids shall be in accordance with 3510.2.1 through 3510.2.6 and Chapters 4,5,6,7 and 10 of NFPA 326.

3510.2 Prevention. The following steps shall be taken to minimize hazards when hot work must be performed on a flammable or combustible liquid storage container:

1. Use alternative methods to avoid hot work when possible
2. Analyze the hazards prior to performing hot work, identify the potential hazards and the methods of hazard control.
3. Hot work shall conform to the requirements of the code or standard to which the container was originally fabricated.
4. Test the immediate and surrounding work area with a combustible gas detector and provide for a means of continuing monitoring while conducting the hot work.
5. Qualified employees and contractors performing hot work shall use an industry approved hot work permit System to control the work.
6. Personnel shall be properly trained on hot work policies and procedures regarding equipment, safety, hazard controls and job specific requirements.
7. On-site safety supervision shall be present when hot work is in progress to protect the personnel conducting the hot work and provide additional overview of site specific hazards.

SECTION 202
GENERAL DEFINITIONS

COMBUSTIBLE GAS DETECTOR. An instrument that samples the local atmosphere and indicates the presence of ignitable vapors or gases within the flammable or explosive range expressed as a volume percent in air.

Revise as follows:

3504.1.7 Precautions in hot work. Hot work shall not be performed on containers or equipment that contains or has contained flammable liquids, gases or solids until the containers and equipment have been thoroughly cleaned, inerted or purged; except that “hot tapping” shall be allowed on tanks and pipe lines when such work is to be conducted by *approved* personnel. Hot work on flammable and combustible liquid storage tanks shall be conducted in accordance with Section 3510.

Revise as follows:

5704.2.7.6 Repair, alteration or reconstruction of tanks and piping. The repair, *alteration* or reconstruction, ~~including welding, cutting and hot tapping~~ of storage tanks and piping that have been placed in service, shall be in accordance with NFPA 30. Hot work, as defined in Section 202, on such tanks shall be conducted in accordance with Section 3510.

Add a new standard to Chapter 80:

NFPA

326- 2010 Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning or Repair,.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

There are numerous Hot Work permit and policy guidelines for every industry. There have been numerous incidents documented involving loss of life, injury and property damage occurring when hot work has occurred and industry specific precautions where not followed or personnel did not understand the hazard or risk.

This change will improve the general guidelines in the IFC for safely conducting hot work. The only references to hot work on flammable and combustible tanks are in regards to IFC Chapter 3504.1.7 and Chapter 5706 as it pertains to bulk handling and refineries.

This proposal recognizes that API RP 2009, 2002 edition; Safe Welding and Cutting Practices in Refineries, Gas Plants and Petrochemical Plants, is adopted by reference specific to a particular application within industry. Interestingly API 2009 is a recommended practice and not a standard. I propose NFPA 326 be adopted as a viable standard to provide specific safety procedures for hot work on tanks that fall outside of the scope of IFC Chapter 57.

Additionally, the Chemical Safety Board has published general guidelines applicable to most every situation welding or cutting on flammable, combustible or toxic tanks occur and I have included those steps to consider within a new section in IFC chapter 35 so anyone referencing what to do to be safe has some direction and a significant pointer to the standard applicable for the work to be accomplished.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 326-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F282-13

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

3504.1.7-F-ZUBIA-FCAC

F283 – 13
3603.4

Proponent: Marcelo M Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

3603.4 Rubbish containers. ~~Metal containers with tight-fitting or self-closing lids shall be provided for the temporary storage of combustible trash or rubbish.~~ Containers with tight fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material. The rubbish containers shall be constructed entirely of materials that comply with any one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m^2 ~~—~~when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.

Reason: Rubbish containers need not be constructed of metal but can be constructed of other noncombustible materials, including materials that have been shown to be safe by meeting a very severe fire test, just like those required by section 808 for I1, I2 and I3 occupancies. The key requirement that the lids be tight fitting or self closing is retained in the proposal. Note that the requirement covers all type of rubbish and is not intended to address spills of combustible or flammable liquids, covered by 3603.3. The use of the phrase “combustible debris, rubbish and waste material” makes this section consistent with other sections of the IFC.

Cost Impact: This should lower costs by offering more alternatives.

F283-12

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

3603.4-F-HIRSCHLER

F284 – 13

5001.1, Table 5003.1.1(1) [IBC [F] 307.1(1)], Table 5003.1.1(2) [IBC [F] 307.1(2)]; 5701.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1. In retail or wholesale sales occupancies, the quantities of medicines, foodstuffs~~,~~ or consumer ~~or industrial~~ products and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable shall not be limited, provided such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).

2 through 11 *(No change to current text)*

TABLE 5003.1.1(1) [IBC [F] 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

(No changes to table)

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 5003.8.3.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs~~,~~ or consumer ~~or industrial~~ products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

TABLE 5003.1.1(2) [IBC [F] 307.1(2)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD[a, b, c, h, i]

(No changes to table)

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 5003.8.3.
b. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs~~,~~ or consumer ~~or industrial~~ products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

c through i (*No changes to current text)*

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23.
2. Medicines, foodstuffs, cosmetics, and commercial~~,~~ or institutional ~~and industrial~~ products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solution not being flammable, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).

3. through 10. *(No change to current text.)*

Reason: The term “Industrial products” can apply to anything. A wholesaler of car and truck batteries containing sulfuric acid [e.g. exceeding the MAQs for Toxic and Corrosive liquids] would be exempt by this definition. The original intent of this code section is to exempt materials in smaller containers in occupancies such as supermarkets and pharmacies the small amounts of water-miscible hazardous materials [e.g. household bleach, make up, face toners, etc.] contribute negligible amounts of fuel to a fire.

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

F284-13

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

5003.1.1(1)T-F-KLAUSBRUCKNER

F285 – 13
5001.1, 5004.2.2, 5004.3, 5701.2

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Revise as follows:

5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.
This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1 through 9 *(No change to current text)*
~~10. The storage of distilled spirits and wines in wooden barrels and casks.~~
11. *(No change to current text)*

5004.2.2 Secondary containment for hazardous material liquids and solids. Where required by Table 5004.2.2 buildings, rooms or areas used for the storage of hazardous materials liquids or solids shall be provided with secondary containment in accordance with this section when the capacity of an individual vessel or the aggregate capacity of multiple vessels exceeds the following:

1. Liquids: Capacity of an individual vessel exceeds 55 gallons (208 L) or the aggregate capacity of multiple vessels exceeds 1,000 gallons (3785 L); and
2. Solids: Capacity of an individual vessel exceeds 550 pounds (250 kg) or the aggregate capacity of multiple vessels exceeds 10,000 pounds (4540 kg).

Exception: The release of a liquid or solid without secondary containment into a sanitary or storm-water drainage system or onto the ground is allowed when in compliance with federal, state, or local governmental agencies' regulations and permits.

5004.3 Ventilation. Indoor storage areas and storage buildings shall be provided with mechanical exhaust ventilation or natural ventilation where natural ventilation can be shown to be acceptable for the materials stored.

~~**Exception**~~ **Exceptions:**

1. Storage areas for flammable solids complying with Chapter 59.
2. Storage areas for distilled spirits in wooden barrels or casks.

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1 through 9 *(No change to current text)*
10. The storage of distilled spirits ~~and wines~~ in wooden barrels and casks.
11 The storage of fermented beverages with ethyl alcohol contents of 16% or less.

Reason: There is confusion about the applicability of flammable liquid (Chapter 57) hazardous materials (Chapter 50) provisions to distilled spirits because of the exceptions for distilled spirits and wines stored in wooden barrels and casks in IFC Chapters 50 and 57 (and NFPA 30). The issue arises because of the growing popularity of "boutique" or "craft" distillers locating their operations in urban areas. The proposed language clarifies bulk storage provisions for distilled spirits but does not alter the intent. The proposed language does not affect provisions applicable to use, nor those applicable to liquor storage in retail or wholesale establishments.

First, note distilled spirits are Class 1C and Class 1B flammable liquids. They are primarily comprised of ethyl alcohol (ethanol) and water with concentrations ranging from approximately 19% to 99%. The boiling point of pure ethanol is approximately 178ºF so an ethanol mixture with water will boil between 178ºF and 212ºF. The closed cup flash point for a 19% concentration of ethanol in water is 100ºF and for a 58% concentration is 73ºF making the mixtures in this range Class 1C flammable liquids (these values are not adjusted for altitude). Ethanol concentrations in water between 58% and 99% are Class 1B flammable liquids.

Second, the Building Code establishes occupancy. If a quantity of a Class 1B or Class 1C flammable liquid exceeding the maximum allowable quantity (MAQ), the room in which it is located is an H3 Occupancy. Please remember this applies to bulk storage (casks, barrels, metal containers, etc. exceeding 1.3 gallon capacities) and not to liquor stores and wholesale distributors for which there are several exceptions.

Third, H occupancies have to be sprinklered. This is the primary provision overlooked because of the confusion noted above. This is not because wood is inherently safer than metal, plastic or glass – it is not. It was probably inserted in the legacy code(s) back when casks were stored in liquid storage warehouses separated by hundreds of feet from one another and urban distilleries weren't contemplated. It was probably held over today because there is not yet an established sprinkler criteria for the storage of Class 1C flammable liquids in wooden barrels and casks. THIS HOWEVER DOES NOT MEAN THESE ROOMS SHOULD BE EXEMPT FROM SPRINKLERING REQUIREMENTS! An engineered sprinkler design is required.

Fourth, the applicable code requirements have not been changed. The UBC legacy code excepted distilled spirits stored in wooden barrels and casks from the secondary containment and ventilation requirements normally mandated for flammable liquids. The exception was often misinterpreted even then to extend to the entire range of code provisions. When flammable liquids requirements were brought into the IFC, the exception was moved to the scoping provisions which created the confusion recurring today. The deletion of the exception in Section 5001.1 removes the confusion associated with the applicable requirements. The modifications to Sections 5004.2.2 and 5004.3 reestablish the exceptions to secondary containment and ventilation contained in the legacy code.

The Nonapplicability of Chapter 57 to distilled spirits is retained. The word "wines" is removed from the exception for two reasons:

a) if the intent to read "distilled wines" then distilled spirits already includes this; and
b) if the intent is to read "wines and distilled spirits" then wines is included in new item 11 (along with beer).

Cost Impact: This change will not affect the cost of construction.

F285-13

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

5001.1-F-EMERICK

F286 – 13
5001.1

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.
This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1 through 11 *(No change to current text)*
12. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23.

Reason: The same exception can be found in Section 5701.2 (Exception 1). The Flammable and Combustible Liquids chapters 57 of the fire code defer to Chapter 23 [Motor Fuel-Dispensing Facilities and Repair Garages] which is very specific and covers the unique use of flammable liquids at motor fuel dispensing facilities, airports and marinas. We believe that it has been the intent to apply Chapter 23 and not Chapters 50 and 57 to these specific operations.

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

F286-13

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

5001.1-F-KLAUSBRUCKNER

F287 – 13
5001.1, 5701.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5001.1 Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1. through 11. *(No change to current text)*
12. Building and structures occupied for the application of flammable finishes, provided that such buildings or areas comply with the requirements of Chapter 24 of this code and Section 416 of the *International Building Code.*

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1. through 10. *(No change to current text)*
11. Building and structures occupied for the application of flammable finishes, provided that such buildings or areas comply with the requirements of Chapter 24 of this code and Section 416 of the *International Building Code*.

Reason: Per IBC Section 307.1 (Exception 1), an occupancy used for the application of Flammable Finishes cannot be classified as an H Occupancy even if the Maximum Allowable Quantities are exceeded. If the committee believes the intent of IBC is exempt flammable finish operations as long as IBC Section 416 and IFC Chapter 24 are met, then this section helps further clarify the requirements. If the intent of IBC Section 307.1 (Exception 1) is to exempt only the H Occupancy classification [construction, allowable area, egress, etc.], but leave the applicable requirements of IFC Chapters 50 and 57, then this code change proposal should not be approved.

NOTE: Flammable finishes do not just include spray booths, but spray rooms, dipping operations, dual-component coating if applied by brush or roller in quantities exceeding 1 gallon, limited spray spaces, etc. However IBC Section 416 only addresses Spray Rooms and Spray Spaces.

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

F287-13

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

5701.2-F-KLAUSBRUCKNER

F288 – 13
Table 5003.1.1(1) [IBC [F] TABLE 307.1(1)]; IBC [F] 307.5 (IFC 202)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

TABLE 5003.1.1(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]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN 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	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	Not Applicable	H-2	See Note q	Not Applicable	Not Applicable	See Note q	Not Applicable	Not Applicable	See Note q	Not Applicable
Combustible fiber [q]	Loose Baled [o]	H-3	(100) (1,000)	Not Applicable	Not Applicable	(100) (1,000)	Not Applicable	Not Applicable	(20) (200)	Not Applicable

(Portions of table not shown remain unchanged)

a. through p. *(No change to current text)*
q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 104.7.2 (IBC [F] 414.1.3).

Revise as follows:

IBC [F] 307.5 (IFC 202) High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less

Combustible fibers, other than densely packed baled cotton, where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3

Consumer fireworks, 1.4G (Class C, Common)
Cryogenic fluids, oxidizing
Flammable solids
Organic peroxides, Class II and III
Oxidizers, Class 2
Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

Reason: "*Operations involving combustible fibers are typically associated with salvage, paper milling, recycling, cloth manufacturing, carpet and textile mills and agricultural operations, among others. The primary hazard associated with these operations is the abundance of materials and their ready ignitability. These so-called "Rag Districts," where cloth scrap and clippings are collected and separated for reuse in paper manufacturing, have been associated with catastrophic conflagrations as recently as the 1970s*."

IFC Code Commentary:
The main hazard of combustible fibers is the ignitability of the product with rapid flame spread over exposed material surfaces. There can also be an associated combustible dust hazard depending on how the material is being handled. Currently, Section 5203.5 requires protection against combustible dust hazards by reference to IFC Chapter 22 "Combustible Dust-Producing Operations". The combustible dust hazard can, and in most cases would, present a greater hazard than the fiber ignitability hazard. If a facility complies with IFC Chapter 22 along with referenced standards and the combustible dust hazard is eliminated, "note q" added to Table 5003.1.1(1) / [F] TABLE 307.1(1) in the 2012 edition of the IFC/IBC eliminates the Group H-2 designation for the combustible dust hazard. However, there is no similar provision for the ignitability hazard of the fibers. If the combustible fibers are not manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard, then there should be a similar provision eliminating the H Group classification for the combustible fibers, a lesser hazard than the combustible dust. In many cases compliance with the reference to IFC Chapter 22 will eliminate the combustible fiber hazard as the combustible dust hazard is controlled.

This proposal adds note q to the entry in the tables for combustible fibers to eliminate the Group H-3 classification where it has been documented that when the fibers are being generated, stored or used, it is not in such a manner that the concentration and conditions create a fire or explosion hazard. The same language is also added to the Combustible fibers subdivision classification at IBC Section [F]307.5 as was done for combustible dust in code change F187-09/10.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

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

F288-13

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

5003.1.1T-F-DAVIDSON

F289 – 13
Table 5003.1.1(1) [IBC [F] Table 307.1(1)]

Proponent: Glenn A. Dean, Virginia State Fire Marshal's Office (glenn.dean@vdfp.virginia.gov)

Revise as follows:

TABLE 5003.1.1(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]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN 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	Solid pounds (cubic feet)	Liquid gallons (pounds)
Consumer fireworks	1.4G	H-3	125 ~~d~~, e, l	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

(Portions of table not shown remain unchanged)

Reason: Based on an October 2007 report entitled "Fire Safety in Consumer Fireworks Storage and Retail Facilities – Hazard Assessment", the NFPA Standards Council began a lengthy discussion on the amount of consumer fireworks that should be effectively permitted in retail establishments and some the built-in safety requirements that should be associated with that amount. To date the effective allowable amount in the NFPA standards has been 125 pounds net with an available increase to 250 pounds if the building is protected throughout with an approved automatic sprinkler system installed in accordance with NFPA 13. This same provision is mirrored in the IFC in all respects for the maximum allowable quantity of consumer fireworks, including the increase for sprinkler protection, and like the IFC, to allow a building to contain more than that, the NFPA standard would require additional construction requirements akin to those for a Group H-3 building.

Beginning with the October 2007 report, the NFPA Standards Council has since called into question the appropriateness and reasoning of an increase based on sprinkler protection in the absence of test data justifying the increase. Because of the lack of test data to determine at what level or quantity of consumer fireworks above 125 pounds net could or should have the benefit of sprinkler protection, the Standards Council has ordered the issuance of a Tentative Interim Amendment (TIA), in process at the time of this submission, eliminating the option of an increase for sprinkler protection until such time as acceptable test data is submitted to justify an increase and to what level of increase it could be. Therefore, due to the TIA, the maximum amount of consumer fireworks in the NFPA standard for retail establishments is limited to 125 pounds net. There will be no provision for increasing the amount due to sprinkler protection. In addition, with the TIA the maximum size of consumer firework storage buildings will be limited to 12,000ft2 in area. Full background information may be found at the document information tab at www.nfpa.org/1124.

For the same reasons, until such time as testing is completed, or if ever completed, this change is to delete the reference to footnote "d" that provided a 100% increase to the amount of consumer fireworks allowed if sprinkler protection is provided, when it has been revealed that the original increase was not based on a credible, verifiable series of tests to determine what the appropriate sprinkler design density should be for what may be typical of the quantities of consumer fireworks present in retail establishments and still not become a Group H-3 building.

Cost Impact: Cost of construction may increase.

F289-13

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

5003.1.1(1)T-F-DEAN

F290 – 13
Table 5003.1.1(1) [IBC [F] Table 307.1(1)], 5003.8.4

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Lonza Group and PPG Industries, Inc.(pmclaugma@aol.com)

Revise as follows:

TABLE 5003.1.1(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]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN 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	Solid pounds (cubic feet)	Liquid gallons (pounds)
Unstable (reactive)	4 3 2 1	H-1 H-1 or H-2 H-3 Not Applicable	1[e, g] 5[d, e] 50[d, e] Not Limited	(1)[e, g] (5)[d, e] (50)[d, e] Not Limited	10[e, g] 50[d, e] ~~250~~ 750[d, e] Not Limited	0.25[g] 1[d] 50[d] Not Limited	(0.25)[g] (1)[d] (50)[d] Not Limited	2[e, g] 10[d, e] ~~250~~ 750[d, e] Not Limited	0.25[g] 1[d] 10[d] Not Limited	(0.25)[g] (1)[d] (10)[d] Not Limited

*(Portions of table not shown remain unchanged_*

a through d *(No change to current text)*

e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, gas rooms, exhausted enclosures, or listed safety cans. Listed safety cans shall be in accordance with Section 5003.9.10. Where Note d also applies, the increase for both notes shall be applied accumulatively.

f through q *(No change to current text)*

5003.8.4 Gas rooms. Where a gas room is used to increase *maximum allowable quantity per control* area or provided to comply with the provisions of Chapter 60, the gas room shall be in accordance with Sections 5003.8.4.1 and 5003.8.4.2.

Reason: The 250 cubic feet appears to be a transcription error as it was taken from the Uniform Fire Code which allowed 750 cubic feet. The change will bring the IFC into alignment with NFPA 55, 2010 and 2013 Editions.

Gas rooms are required to be protected by automatic sprinklers, separated based on the occupancy, and have ventilation designed to operate at a negative pressure. These requirements are similar to those that apply to exhausted enclosures which allow the quantity increase. Section 5003.8.4 is modified to insure that the requirements apply if footnote e is used to increase maximum allowable quantities**.** Accepting this change will bring consistency between the requirements for gas cabinets, exhausted enclosures, and gas rooms with respect to application and MAQ.

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

F290-13

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

5003.1.1(1)T-F-MCLAUGHLIN

F291 – 13
Table 5003.1.1(1) [IBC Table [F] 307.1(1)]

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

TABLE 5003.1.1(1) [IBC Table [F] 307.1(1)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD [a, j, m, n, p]

(Portions of table not shown remain unchanged)

a. through o. *(No change to current text)*

p. The following shall not be included in determining the maximum allowable quantities:
   1. Liquid or gaseous fuel in fuel tanks on vehicles.
   2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
   3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code.*
   4. Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.
   5. In Group I-2, alcohol based hand rubs classified as Class I or II liquids where installed in accordance with Sections 5705.5 and 5705.5.1. The location of the alcohol based hand rub (ABHR) dispensers shall be provided in the construction documents.

q. (No change to current text)

Reason: This proposed change will allow a reasonable amount of Alcohol based Hand Rub for infection control and patient life safety located in Group I-2 occupancies in appropriately sized dispensers to be located in control areas and permits the amounts not to be included in determining the maximum allowable quantities. IFC Section 5705.5 addresses the specifics regarding these amounts and locations.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost Impact: This proposal will not increase the cost of construction.

F291-13

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

5003.1.1(1)T-F-BALDASSARRA-WILLIAMS-ADHOC-CTC

F292 – 13
Table 5003.1.1(1), Table 5003.1.1(2); IBC [F] Table 307.1(1), [F] Table 307.1(2)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise IFC Table 5003.1.1(1) as follows:

Editorial Revision: Replace all entries in table which state "Not Applicable" with "N/A".

Editorial Revision: Replace all entries in table which state "Not Limited" with "NL".

Editorial Revision: Add the following line at the bottom of the table above the Footnotes:
"N/A = Not Applicable; NL = Not Limited; UD = Unclassified Detonable"

Further revise IFC Table 5003.1.1(1) as follows:

TABLE 5003.1.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN 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)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	N/A	H-2	Note q	N/A	N/A	Note q	N/A	N/A	Note q	N/A
Combustible fiber	Loose Baled[o]	H-3	(100) (1,000)	N/A	N/A	(100) (1,000)	N/A	N/A	(20) (200)	N/A
Combustible liquid[c,i]	II IIIA IIIB	H-2 or H-3 H-2 or H-3 N/A	N/A	120[d, e] 330[d, e] 13,200[e,f]	N/A	N/A	120[d] 330[d] 13,200[f]	N/A	N/A	30[d] 80[d] 3,300[f]
Consumer fireworks	1.4G	H-3	125[d, e, l]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cryogenic Flammable	N/A	H-2	N/A	45[d]	N/A	N/A	45[d]	N/A	N/A	10[d]
~~Consumer fireworks~~	~~1.4G~~	~~H-3~~	~~125[d, e, l]~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
Cryogenic Inert	N/A	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Cryogenic Oxidizing	N/A	H-3	N/A	45[d]	N/A	N/A	45[d]	N/A	N/A	10[d]
Explosives~~~~	Division 1.1 Division 1.2 Division 1.3 Division 1.4 Division 1.4G Division 1.5 Division 1.6	H-1 H-1 H-1 or H-2 H-3 H-3 H-1 H-1	1[e, g] 1[e, g] 5[e, g] 50[e, g] 125[d,e,l] 1[e, g] 1[e, g]	(1)[e, g] (1)[e, g] (5)[e, g] (50)[e, g] N/A (1)[e, g] N/A	N/A N/A N/A N/A N/A N/A N/A	0.25[g] 0.25[g] 1[g] 50[g] N/A 0.25[g] N/A	(0.25)[g] (0.25)[g] (1)[g] (50)[g] N/A (0.25)[g] N/A	N/A N/A N/A N/A N/A N/A N/A	0.25[g] 0.25[g] 1[g] N/A N/A 0.25[g] N/A	(0.25)[g] (0.25)[g] (1)[g] N/A N/A (0.25)[g] N/A
Flammable gas	Gaseous Liquefied	H-2	N/A	N/A (150)[d,e]	1,000[d,e] N/A	N/A	N/A (150)[d,e]	1,000[d,e] N/A	N/A	N/A
Flammable liquid[c]	1A 1B and IC	H-2 or H-3	N/A	30[d, e] 120[d, e]	N/A	N/A	30[d] 120[d]	N/A	N/A	10[d] 30[d]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN 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)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Flammable liquid, combination (1A, 1B, 1C)	N/A	H-2 or H-3	N/A	120 [d, e, h]	N/A	N/A	120 [d, h]	N/A	N/A	30 [d, h]
Flammable solid	N/A	H-3	125 [d, e]	N/A	N/A	125 [d]	N/A	N/A	25 [d]	N/A
Inert gas ~~Cryogenic inert~~	Gaseous Liquefied ~~N/A~~	N/A N/A ~~N/A~~	N/A N/A ~~N/A~~	N/A N/A ~~N/A~~	NL NL ~~NL~~	N/A N/A ~~N/A~~	N/A N/A ~~N/A~~	NL NL ~~NL~~	N/A N/A ~~N/A~~	N/A N/A ~~N/A~~
Organic peroxide	UD I II III IV V	H-1 H-2 H-3 H-3 N/A N/A	1 [e, g] 5 [d, e] 50 [d, e] 125 [d, e] NL NL	(1) [e, g] (5) [d, e] (50) [d, e] (125) [d, e] NL NL	N/A N/A N/A N/A N/A N/A	0.25 [g] 1 [d] 50 [d] 125 [d] NL NL	(0.25) [g] (1) [d] (50) [d] (125) [d] NL NL	N/A N/A N/A N/A N/A N/A	0.25 [g] 1 [d] 10 [d] 25 [d] NL NL	(0.25) [g] (1) [d] (10) [d] (25) [d] NL NL
Oxidizer	4 3 [k] 2 1	H-1 H-2 or H-3 H-3 N/A	1 [e, g] 10 [d, e] 250 [d, e] 4,000 [e, f]	(1) [e, g] (10) [d, e] (250) [d, e] (4,000) [e, f]	N/A N/A N/A N/A	0.25 [g] 2 [d] 250 [d] 4,000 [f]	(0.25) [g] (2) [d] (250) [d] (4,000) [f]	N/A N/A N/A N/A	0.25 [g] 2 [d] 50 [d] 1,000 [f]	(0.25) [g] (2) [d] (50) [d] (1,000) [f]
Oxidizing gas	Gaseous Liquefied	H-3	N/A N/A	N/A (150) [d, e]	1,500 [d, e] N/A	N/A N/A	N/A (150) [d, e]	1,500 [d, e] N/A	N/A N/A	N/A N/A
Pyrophoric	N/A	H-2	4 [e, g]	(4) [e, g]	50 [e, g]	1 [g]	(1) [g]	10 [e, g]	0	0
Unstable (reactive)	4 3 2 1	H-1 H-1 or H-2 H-3 N/A	1 [e, g] 5 [d, e] 50 [d, e] NL	(1) [e, g] (5) [d, e] (50) [d, e] NL	10 [g] 50 [d, e] 250 [d, e] NL	0.25 [g] 1 [d] 50 [d] NL	(0.25) [g] (1) [d] (50) [d] NL	2 [e, g] 10 [d, e] 250 [d, e] NL	0.25 [g] 1 [d] 10 [d] NL	(0.25) [g] (1) [d] (10) [d] NL
Water reactive	3 2 1	H-2 H-3 N/A	5 [d, e] 50 [d, e] NL	(5) [d, e] (50) [d, e] NL	N/A N/A N/A	5 [d] 50 [d] NL	(5) [d] (50) [d] NL	N/A N/A N/A	1 [d] 10 [d] NL	(1) [d] (10) [d] NL

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

N/A = Not Applicable; NL = Not Limited; UD = Unclassified Detonable

a. For use of control areas, see Section 5003.8.3.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, exhausted enclosures, or in listed safety cans~~. Listed safety cans shall be~~ in accordance with Section 5003.9.10. Where Note d also applies, the increase for both notes shall be applied accumulatively.
f. Quantities shall not be limited in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
g. Allowed only in buildings equipped throughout with an approved automatic sprinkler system.
h. Containing not more than the maximum allowable quantity per control area of Class IA, Class IB or Class IC flammable liquids.
i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2.
j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment when the storage containers and the manner of storage are approved.
l. Net weight of pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks including packaging shall be used.
m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2.
n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 5003.11, see Table 5003.11.1.

o. Densely-packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.
p. The following shall not be included in determining the maximum allowable quantities:
   1. Liquid or gaseous fuel in fuel tanks on vehicles.
   2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
   3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.
   4. Liquid fuels in piping systems and fixed appliances, regulated by the *International Mechanical Code*.
q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 104.7.2.

Revise IFC Table 5003.1.1(2) as follows:

TABLE 5003.1.1(2)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD[a, ~~b,~~ c, f, h, i]

MATERIAL	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
	Solid pounds[d,e,]	Liquid gallons (pounds)[d,e]	Gas (cubic feet at NTP)[d]	Solid pounds (cubic feet)[d]	Liquid gallons (pounds)[d]	Gas (cubic feet at NTP)[d]	Solid pounds (cubic feet)[d]	Liquid gallons (pounds)[d]
Corrosive	5,000	500	Gaseous 810[e] Liquefied (150)	5,000	500	Gaseous 810[e] Liquefied (150)	1,000	100
Highly toxic	10	(10)	Gaseous 20[g] Liquefied (4)[g]	10	(10)	Gaseous 20[g] Liquefied (4)[g]	3	(3)
Toxic	500	(500)	Gaseous 810[e] Liquefied (150)[e]	500	(500)	Gaseous 810[e] Liquefied (150)[e]	125	(125)

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.
a. For use of control areas, see Section 5003.8.3.
~~b~~ c. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
~~c~~ f. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 5003.1.1, see Table 5003.11.1.
~~d~~ b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
~~e~~ d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.
~~f~~ e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the *International Fire Code*. Where Note e also applies, the increase for both notes shall be applied accumulatively.
g. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures as specified in the *International Fire Code*.
h. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2.

Revise IBC Table [F] 307.1(1) as follows:

Delete the table and replace with Table 5003.1.1(1) from the IFC.

Revise Footnotes to IBC Table [F] 307.1(1) as follows:

For SI: 1 cubic foot = 0.028<u>32</u> m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.
NL = Not Limited; N/A = Not Applicable; UD = Unclassified Detonable
a. For use of control areas, see Section 414.2.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

e. Maximum allowable quantities shall be increased 100 percent when stored in *approved* storage cabinets, day boxes, gas cabinets or exhausted enclosures or in *listed* safety cans in accordance with Section 5003.9.10 of the *International Fire Code*. Where Note d also applies, the increase for both notes shall be applied accumulatively.
f. ~~The permitted quantities~~ Quantities shall not be limited in a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
g. ~~Permitted~~ Allowed only in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
h. Containing not more than the maximum allowable quantity per *control area* of Class IA, IB or IC flammable liquids.
i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2 of the *International Fire Code*.
j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment~~. Storage containers and the manner of storage shall be *approved*~~ when the storage containers and the manner of storage are approved.
l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.
M For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the *International Fire Code*.
n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
o. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.
p. The following shall not be included in determining the maximum allowable quantities:

    1. Liquid or gaseous fuel in fuel tanks on vehicles.
    2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with ~~this code~~*International Fire Code*.
    3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code.*
    4. Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.

q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

Revise IBC Table 307.1(2) as follows:

Delete the table and replace with Table 5003.1.1(2) from the IFC.

Revise Footnotes to IBC Table [F] 307.1(2) as follows:

For SI: 1 cubic foot = 0.02832 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.
a. For use of control areas, see Section 414.2.
~~b~~c. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
~~c~~f. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
~~d~~b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
~~e~~d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.
~~f~~e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the *International Fire Code*. Where Note e also applies, the increase for both notes shall be applied accumulatively.
g. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures as specified in the *International Fire Code*.
h. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the *International Fire Code*.

Reason: Correlation between these sets of tables in the IFC and IBC is critical. There is no reason that the tables need to be formatted differently or contain different wording. This proposal does not change any requirements in the codes. It is editorial in nature and is designed to provide uniformity and consistency for the requirements found in the sets of tables.

Items 1 and 2 are editorial and only simplify the table.

Item 3 is needed to correlate with revisions made in Items 1 and 2.

Item 4 alphabetizes the listings in the table and provides consistency in the header of the table. The revisions in the footnotes provide identical wording to the wording in the IBC.

Item 5 restructures the footnotes to provide consistency for both the Health Hazard table and the Physical Hazard table.

Item 6 duplicates the table from the IFC into the IBC.

Item 7 provides identical wording for the footnotes in the IBC as is found in the IFC.

Item 8 duplicates the table from the IFC into the IBC.

Item 9 provides identical wording for the footnotes in the IBC as is found in the IFC.

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

F292-13

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

5003.1.1(1)T-F-ZUBIA-FCAC

F293 – 13
Table 5003.1.1(3)

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

TABLE 5003.1.1(3)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD IN AN OUTDOOR CONTROL AREA[a, b, c, d]

MATERIALS	CLASS	STORAGE[b]			USE-CLOSED SYSTEM[b]			USE-OPEN SYSTEM[b]	
		Solid Pounds (cubic feet)	Liquid gallons (pounds)[d]	Gas cubic feet at NTP	Solid Pounds (cubic feet)	Liquid gallons (pounds)[d]	Gas cubic feet at NTP	Solid Pounds (cubic feet)	Liquid gallons (pounds)[d]
Unstable (reactive)	4	2	(2)	20	1	(1)	2	0.25	(0.25)
	3	20	(20)	200	10	(10)	10	1	~~1~~(1)
	2	200	(200)	1,000	100	(100)	250	10	~~10~~(10)
	1	Not Limited	Not Limited	1,500	Not Limited	Not Limited	Not Limited	Not Limited	Not Limited

(Portions of the table not shown remain unchanged)

Reason: The amounts throughout the table are based on a conversion of 10 pounds per 1 gallon. Based on this conversion, effectively 10 times the amounts of water reactive 2 and 3 liquids in open system use are allowed than solids in the current table. Adding the parenthesis is to bring consistency in the requirements.

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

F293-13

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

5003.1.1(3)T-F-KLAUSBRUCKNER

F294 – 13
5003.2.1

Proponent: Daniel E. Nichols, P.E., New York State Department of State (dan.nichols@dos.ny.gov)

Revise as follows:

5003.2.1 Design and construction of containers, cylinders and tanks. Containers, cylinders and tanks shall be designed and constructed in accordance with *approved* standards. Containers, cylinders, tanks and other means used for containment of hazardous materials shall be of an *approved* type. Pressure vessels not otherwise regulated by this code shall comply with the ASME *Boiler and Pressure Vessel Code.*

Reason: The addition of the reference to the ASME Boiler and Pressure Vessel Code in the 2012 edition has added confusion to the IFC. A 'pressure vessel' is defined as "A closed vessel designed to operate at pressures above 15 psig (103 kPa)." This is not aligned with the requirements in the previous sentence, which states a "cylinder" (which is a closed vessel that has pressures higher than 40 psig and has a circular cross-section) shall be of an approved type. Nowhere in the code does in state that a cylinder is not a pressure vessel.

The proposal adds language to minimize confusion about applicable sections found in the product-specific hazardous materials chapters, such as 5301.2 for compressed gases and 6101.1 for the use of NFPA for liquefied petroleum gases. It is important to keep the allowance for approved types of containers, cylinders, tanks, and other means, even when it comes to pressurized storage components, since ASME is not the only standard for design. US Department of Transportation regulates pressurized storage components that are transported over public roads (The DOT specification). DOT differs from ASME in construction specifications as well as maintenance and testing. A vast majority of cylinders used to store common materials like propane, medical oxygen, carbon dioxide, helium, and compressed air are in DOT cylinders, not ASME.

This proposal is submitted with the endorsement of the New York State Building Officials Conference, the New York State Fire Marshals and Inspectors Association, and the Association of Fire Districts of New York State.

Cost Impact: This change is a clarification and has no cost impact.

F294-13

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

5003.2.1-F-NICHOLS

F295 – 13
5003.9, 5003.9.11 (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

5003.9 General safety precautions. General precautions for the safe storage, handling or care of hazardous materials shall be in accordance with Sections 5003.9.1 through ~~5003.9.10~~ 5003.9.11.

5003.9.11 Emergency showers and eyewash stations. In Group I-2 Condition 2, where the eyes or body of any person are at risk for exposure to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. The emergency showers and eyewash stations shall be installed in accordance with the *International Plumbing Code*.

Reason: This proposal addresses KTag K134. The IPC already provides the installation requirements but the requirements are not called up in the IFC. This proposal uses verbiage from OSHA with some minor revisions to remove permissive language. The focus is only on corrosive materials which are defined in the IFC. The scope of this change is limited to Group I-2 condition 2 due to the scoping limitations of the Ad Hoc Healthcare Committee.

Source of verbiage (no copyright issues):

OSHA
1910.151(c)
Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

For Reference:

International Plumbing Code 2012

SECTION 411
EMERGENCY SHOWERS AND EYEWASH STATIONS

411.1 Approval. Emergency showers and eyewash stations shall conform to ISEA Z358.1.

411.2 Waste connection. Waste connections shall not be required for emergency showers and eyewash stations.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact:

F295-13

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

5003.9-F-WILLIAMS-ADHOC

F296 – 13
5003.11

Proponent: Richard C. Ramsey, Director of Engineering, Universal Power Group, representing Universal Power Group.

Revise as follows:

5003.11 Group M storage and display and Group S storage. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials stored and displayed within a single *control area* of a Group M occupancy, or an outdoor *control area*, or stored in a single *control area* of a Group S occupancy, is allowed to exceed the *maximum allowable quantity per control area* indicated in Section 5003.1 when in accordance with Sections 5003.11.1 through 5003.11.3.10.

> **Exception:** VRLA, lithium-ion, lithium metal polymer or other types of sealed batteries with immobilized electrolyte shall not require storage and display volumetric limitations.

Reason: IFC 2012 physical limitations on stocking (storage) of corrosive material inventory are too restrictive to allow sufficient VRLA battery inventory volume to do normal business at a large battery distribution center. According to IFC 2012, section 608.5 Spill control and neutralization Exception: VRLA, lithium-ion, lithium metal polymer or other types of sealed batteries with immobilized electrolyte shall not require spill control. Spill control is the majority of control for corrosive/hazardous materials. If there is no possibility of spill, why would there be a stocking limit to the amount of inventory warehoused in one location?

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

F296-13

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

5003.11-F-RAMSEY.doc

F297 – 13
Table 5003.11.1 [IBC [F] 414.2.5 (1)]

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

TABLE 5003.11.1 [IBC [F] 414.2.5 (1)]
MAXIMUM ALLOWABLE QUANTITY PER INDOOR AND OUTDOOR CONTROL AREA IN GROUP M AND S OCCUPANCIES – NONFLAMMABLE SOLIDS, NONFLAMMABLE AND NONCOMBUSTIBLE LIQUIDS

CONDITION		MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA	
Material	**Class**	**Solids pounds**	**Liquids gallons**
A. HEALTH-HAZARD MATERIALS – NONFLAMMABLE AND NONCOMBUSTIBLE SOLIDS AND LIQUIDS			
2. Highly Toxics [d]	Not Applicable	20[b,c]	2[b,c]
3. Toxics [b,c,d]	Not Applicable	1,000	100

(Portions of table not shown remain unchanged)

For SI: 1 pounds = 0.454 kg, 1 gallon = 3.785 L, 1 cubic foot = 0.02832 m^3

a. Hazard categories are as specified in Section 5001.2.2
b. Maximum allowable quantities shall be increased by 100 percent in buildings equipped throughout with an automatic sprinkler in accordance with Section 903.3.1.1. When Note c also applies, the increase for both notes shall be applied accumulatively.
c. Maximum allowable quantities shall be increased by 100 percent when stored in approved storage cabinets in accordance with Section 5003.8. When Note b also applies, the increase for both notes shall be applied accumulatively.
d. Toxic or highly toxic solids or liquids displayed in original packaging in Group M or S occupancies and intended for maintenance, operation of equipment, or sanitation when contained in individual packaging not exceeding 100 lb (45.4 kg) shall be limited to an aggregate of 1,200 lb (544.3 kg) or 220 gal (832.8 L). The increases allowed by Notes b and c shall not apply to highly toxic solids and liquids.
~~d.~~e. See Table 5003.8.3.2 for design and number of control areas
~~e.~~f. Maximum allowable quantities for other hazardous material categories shall be in accordance with Section 5003.1.
~~f.~~g. Maximum allowable quantities shall be increased 100 percent in outdoor control areas.
~~g.~~h. Maximum allowable quantities are permitted to be increased to 2,250 pounds when individual packages are in the original sealed containers from the manufacturer or packager and not exceed 10 pounds each.
~~h.~~i. Maximum allowable quantities are permitted to be increased to 4,500 pounds when individual packages are in the original sealed containers from the manufacturer or packager and not exceed 10 pounds each.
~~i.~~j. Quantities are unlimited where protected by an automatic sprinkler system.
~~j.~~k. Quantities are unlimited in an outdoor control area.

Reason: The proposed change provides for a practical degree of storage flexibility for combinations of health hazard materials when intended for the designated use as ascribed. Additionally, the footnoted language is consistent with the updated revised footnoted material found in NFPA 400 Hazardous Materials Code (2013 Edition)

Cost Impact: No anticipated or projected cost impact with this proposal.

F297-13

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

5003.11.1T-F-MITCHELL

F298 – 13
IFC: 5004.7; IBC [F] 414.5.3

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

IFC 5004.7 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 NFPA 70 and Section 604.

Exceptions:

1. Emergency or standby power are not required for the following:
   - ~~1.~~ 1.1. Mechanical ventilation for storage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding ~~61/2~~ 6.5 gallons (25 L) capacity.
   - ~~2.~~ 1.2. Storage areas for Class 1 and 2 oxidizers.
   - ~~3.~~ 1.3. Storage areas for Class II, III, IV and V organic peroxides.
   - ~~4.~~ 1.4. Storage areas for asphyxiant, irritant and radioactive gases.

~~5. For storage areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2.~~

~~6~~2. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an approved fail-safe engineered system is installed.

For storage and use areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2.

IBC [F] 414.5.3 Emergency or standby power. Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required by the International Fire Code or this code, such systems shall be provided with an emergency or standby power system in accordance with Chapter 27.

Exceptions:

1. Emergency or standby power are not required for the following ~~storage areas~~:
   1.1. Mechanical ventilation for storage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding 6.5 gallons (25 L) capacity.
   1.2. Storage areas for Class 1 and 2 oxidizers.
   1.3. Storage areas for Class II, III, IV and V organic peroxides.
   1.4. Storage, use and handling areas for asphyxiant, irritant and radioactive gases.
   ~~1.5. For storage, use and handling areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2 of the International Fire Code~~.
2. Standby power for mechanical ventilation, treatment systems and temperature control systems shall not be required where an approved fail-safe engineered system is installed.

For storage and use areas for highly toxic or toxic materials, see Sections 6004.2.2.8 and 6004.3.4.2 of the International Fire Code.

Reason: This proposal is intended to correlate the IBC requirements with the requirements in the IFC. Section 414.5.3 in the IBC should be the same as Section 5004.7 in the IFC. However, there are slight differences. This proposal will correct those differences and provide consistency between the codes.

The revisions in IFC Section 5004.7 and IBC Section 414.5.3 are based on the following:

1. Item 1 is duplicated from the IBC and placed into the IFC. The item is revised so that it is not limited to storage. This is consistent with the following text in Item 1.4 which currently addresses use and handling areas.

2. The items are renumbered as subsections consistent with the IBC format.
3. Item 1.4 is relocated as a second paragraph in the section. This provision is not an exception, it does not eliminate emergency or standby power, but rather it adds additional criteria. This is further confirmed by IFC Section 604.2.11 which states “Emergency power shall be provided for occupancies with highly toxic or toxic materials in accordance with Sections 6004.2.2.8 and 6004.3.4.2.”

These two sections are then consistent and correlate with the other requirements found in the IFC and IBC. There is no change in requirements.

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

F298-13

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

5004.7-F-ZUBIA-FCAC

F299 – 13
5104.1, 5104.1.1 (New), 202 (IBC [F] 202)

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Consumer Specialty Products Association (pmclaugma@aol.com)

Revise as follows:

5104.1 General. The inside storage of Level 2 and 3 aerosol products shall comply with Sections 5104.2 through 5104.7and NFPA 30B. Level 1 aerosol products and those aerosol products covered by Section 5104.1.1 shall be considered equivalent to a Class III commodity and shall comply with the requirements for palletized or rack storage in NFPA 13.

5104.1.1 Aerosol products in plastic containers larger than 118 ml (4 fl. oz.) shall be considered to be equivalent to Class III commodities, as defined in NFPA 13, *Standard for the Installation of Sprinkler Systems,* where any of the following conditions are met:

1. Base product has no fire point when tested in accordance with ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester*, and nonflammable propellant.
2. Base product has no sustained combustion as tested in accordance with "Method of Testing for Sustained Combustibility", Title 49 Code of Federal Regulations, Part 173, Appendix H, and nonflammable propellant.
3. Base product contains up to 20% by volume (15.8% by weight) of ethanol and/or isopropyl alcohol in an aqueous mix, and nonflammable propellant.
4. Base product contains 4% by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified then the propellant shall be nonflammable.

SECTION 202 (IBC [F] 202)
GENERAL DEFINITIONS

AEROSOL CONTAINER. A metal can, or a glass or plastic bottle designed to dispense an aerosol. Metal cans or plastic containers shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Glass ~~or plastic~~ bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).

Reason: A significant amount of new research has been completed on aerosol products in plastic containers that clearly defines a "low hazard" version of the product that can be stored in general purpose warehouses without significantly increasing the fire hazard. The following discussion provides an overview of the work that was done and the conclusions from the effort.

1) Aerosol Products in Plastic Containers – Propellant: Nonflammable; Base: Liquid Content that Does not Support Combustion

The fire hazard created by aerosol products in metal containers is driven by their propellant and the liquid content. An aerosol product that contains a nonflammable propellant and a liquid content that does not support combustion would have a Chemical Heat of Combustion of 0 kJ/g and be classified as a Level 1 aerosol product. Level 1 aerosols are protected using the same protection criteria needed for Class III commodities provided by NFPA 13.

The fire hazard of an aerosol product in a plastic container cannot be directly compared to aerosol products in metal containers. However, using commodity classification information for plastic containers filled with liquids that do not burn supports proposing a protection level for equivalent aerosol products. In this case, the content of the aerosol would not contribute to a fire. Only the primary (plastic container) and secondary (carton) packaging would contribute. If the aerosol was not pressurized, it would directly compare to products listed in NFPA 13 Annex A and FM Global Property Loss Prevention Data Sheet 8-1 as shown below.

NFPA 13 Annex A
Table A.5.6.3
Milk in Plastic – Class I
Bottles, Jars / Filled noncombustible liquids / Plastic, PET – Class I

FM Global Property Loss Prevention Data Sheet 8-1
2.2.2.2 Examples of Class I Commodities
4. Other – Noncombustible liquids in 5 gal (19 l) or smaller plastic containers

Both standards treat a plastic container filled with a liquid that does not burn as a Class I commodity. The addition of a nonflammable propellant to a plastic container will not change the burning properties of the commodity (it may result in a violent rupture with no change in burning rates or severity). The above discussion would point to classifying the aerosol products in plastic containers charged with a nonflammable propellant and liquid that does not burn as a Class I commodity. However, in an effort to provide consistency in the protection of aerosols, the protection proposal targets using the same protection currently recommended for Level 1 aerosols.

2) Aerosol Products in Plastic Containers – Propellant: Nonflammable; Base: Liquid Content Consists of up to 20% Ethanol or Isopropyl Alcohol in Aqueous Solution

An aerosol product in a plastic container that contains a liquid that burns will create a fire hazard at least as severe as the same liquid in an unpressurized plastic container. The fire hazard may increase because the container is pressurized and will definitely increase if it is pressurized with a flammable propellant. As the fire hazard of the aerosol's content increases, the fire hazard of the actual aerosol will increase as well. If on the other hand, the aerosol product in a plastic container was charged with liquid components that can easily be protected in an unpressurized plastic container, similar to the discussion under item 1, there is a good chance that the aerosol products in plastic containers can be protected with a similar level of protection. The only question might be the impact of adding nonflammable propellant.

FM Global has developed protection criteria for several alcohol water mixtures in plastic bottles. The alcohols used in the testing are ethanol and isopropyl alcohol. The mixtures ranged from 100% alcohol (approximate) down to 20% by volume alcohol/80% by volume water. The 20% alcohol/80% water mixture in a plastic bottle in cartons was tested in a full-scale array with the overview of the test presented in Table 1. This alcohol/water mixture does have a definable fire point; however, it produces unstable burning.

Table 1. FM Global Test Summary

Fire Test Summary – Diluted Alcohol Test Series		
Test Number		5
Test Date		1-19-99
Test Parameters	Commodity	20% isopropyl alcohol / 80% water in a 1 pint [470 ml] plastic container in cartons
	Storage Arrangement	Rack
	Storage Height (ft) [m]	Nominal 20 [6.1]
	No. Tiers	4
	Ceiling Height (ft) [m]	30 [9.1]
	Aisle Width (ft) [m]	8 [2.4]
	Sprinkler Type (K factor gpm/psi$^{0.5}$ [L/min/bar$^{0.5}$], Temperature Rating)	K 5.6 [81]/ 286°F [140°C] / Standard Response
	Sprinkler Spacing (ft x ft) [m x m]	10 x 10 [3.0 x 3.0]
	Discharge Density (gpm/ft^2) [mm/min]	0.30 [12]
Test Results	First Sprinkler Operated (min:sec)	21:56
	Total Sprinklers Operated	2
	Peak Gas Temperature (°F) [°C]	585°F [307]
	Peak Steel Temperature (°F) [°C]	189°F [87.2]
	Test Concluded (min:sec)	30:00

Based on the results of this test, FM Global has recommended protecting 20%$_{vol}$ alcohol/80%$_{vol}$ water mixtures in plastic bottles with the same protection recommended for liquids that do not burn in plastic containers, i.e., Class I commodity. A final question is does pressurizing a plastic container filled with a 20%$_{vol}$ alcohol/80%$_{vol}$ water mixture with nonflammable propellant change the burning properties of the product.

Since the propellant will not burn, the only real opportunity to change the burning behavior would be to cause the alcohol/water mixture to burn more severely (e.g., maybe produce fireballs when the mixture if ejected from the container under pressure). To evaluate this potential, a small-scale test series was contracted with Underwriters Laboratories to investigate the impact of pressurizing aerosol products in plastic containers, filled with a $20\%_{vol}$ alcohol/$80\%_{vol}$ water mixture, with nonflammable propellants. A summary of 5 tests that were run is provided in Table 2. Two filling methods were investigated, direct fill (liquid and propellant in same space) and bag-on-valve (liquid in one compartment, propellant in outer compartment). UL reported the number of container failures. The overall fire behavior was provided through direct observation. The tests looked at two cases of six containers arranged with a 6 in. (15 cm) flue between them and a point igniter in the flue space. The cases were in a small pan.

Table 2 UL Testing Summary

Test #	Description	Fill Type	Test Results
1	15% ethanol and 85% water	Direct Fill	12 containers ruptured but burned in place No fire balls during rupture No pool fire Bottom of boxes unburned after 6 min
2	15% ethanol and 85% water	Bag on Valve	12 containers ruptured with some ejected away from case 50% of one carton unburned after 4 min No fire balls during rupture No pool fire
3	20% ethanol and 80% water	Direct Fill	12 containers ruptured but burned in place No fire balls during rupture No pool fire Bottom of boxes unburned after 5 min
4	20% ethanol and 80% water Unpressurized Containers	Direct Fill	12 containers ruptured but burned in place No fire balls during rupture No pool fire Bottom of boxes unburned after 10 min
5	20% ethanol and 80% water	Bag on Valve	5 containers ruptured Fire extinguished by rupturing containers

None of the tests produced a pool fire or fireball. In all five tests, portions of the aerosol products in plastic containers and cardboard cases remained unburned. Based on these tests, it appears that the fire properties of alcohol/water mixture remained unchanged when pressurized and that using Class III commodity protection will provide fully adequate protection for the aerosol products in plastic containers.

3) Aerosol Products in Plastic Containers – Propellant: 4% by Weight Nonflammable Propellant or Flammable Propellant that is Emulsified in Liquid Base; Base: Aqueous Base with no Fire Point.

An emulsion, in an aerosol product, would be a mixture of two or more liquids in which one is present as droplets, of microscopic or ultramicroscopic size, distributed throughout the other. Emulsions are formed from the component liquids either spontaneously or, more often, by mechanical means, such as agitation, provided that the liquids that are mixed have no (or a very limited) mutual solubility. Emulsions are stabilized by agents that form films at the surface of the droplets (e.g., soap molecules) or that impart to them a mechanical stability (e.g., colloidal carbon or bentonite). Colloidal distributions or suspension of one or more liquid(s) with another will have a shelf life that varies with the efficiency of the recipe used.

A Level 1 aerosol (metal can) was defined by the fire performance of shave cream. This product had limited amounts of flammable liquefied gas propellant to eject the mixture and to cause foaming of the mixture. In a fire, the hydrocarbon propellant would be ejected and burn, but the large quantities of foam mix and water tended to produce a very limited fire severity. A similar product was evaluated when placed in a plastic aerosol container.

The product consisted of several liquid components that do not support combustion mixed with water and a maximum of 4% by weight flammable liquefied gas propellant. The liquefied gas was held within the liquid mixture as an emulsion. The gas would eject the liquid product and cause the liquid mixture to foam. Since the liquid components do not burn, the main concern centers around the flammable liquefied gas propellant. The evaluation used small, intermediate, and full-scale fire testing to evaluate the fire hazard created by this product. All of the testing was completed at Underwriters Laboratories.

The intermediate and large-scale testing are summarized in Table 3. The large-scale test used the 12-Pallet Aerosol Classification Test protocol. This methodology only applies to metal aerosol products but, lacking any test data, it was considered a good starting point. The 12 pallet load palletized array operated 4 sprinklers in 10 seconds at around a minute and a half after ignition. The fire was quickly knocked down. The test was run for 32 minutes. The liquid product was released during the test and did not contribute. The flammable liquefied gas did create brief flare-ups of the fire when released and continued to create small fireballs throughout the test. The high sprinkler discharge density (0.79 gpm/ft^2) (32 mm/min) easily extinguished the majority of the array and limited the fire spread to the ignition flue located in the center of the array. The fire test seemed to demonstrate that the limited amount of flammable liquefied gas in the product would not produce a severe fire; however, the high water density does not permit easy comparison to a Class III commodity fire.

An intermediate-scale test was run under the calorimeter at UL to evaluate the effect of a significantly lower water density (0.25 gpm/ft^2) (10 mm/min) on this product. The product was placed in a double row rack with a storage height of 15 ft (4.6 m). Four open sprinklers were located 10 ft (3 m) above the top of the array and arranged to deliver a 0.25 gpm/ft^2 (10 mm/min). The sprinklers were activated at approximately one minute after ignition. The test was terminated at 4 minutes since the fire was extinguished. The percent damage was not provided in the UL report; however the pictures indicate that the fire was again confined to the ignition flue.

NFPA 13 requires a 0.25 gpm/ft^2 (10 mm/min) to protect 15 ft (4.6 m) high double row rack storage of Class III commodity in a 25 ft (7.6 m) high building using low temperature ceiling sprinklers [NFPA 13, Table 16.2.1.3.2, Figure 16.2.1.3.2(c) curves E & F, Figure 16.2.1.3.4.1]. The intermediate-scale test indicates that this same protection level easily controlled/extinguished a fire involving the foam shave cream in a plastic aerosol container.

Table 3 UL Test Summary

Shave Cream Intermediate and Large-Scale Fire Test Summaries			
Test Number		**1 (Intermediate-Scale)**	**1 (Large-Scale)**
Report Date		12/31/09	10/26/09
Test Parameters	Commodity	Shave Foam in 11 oz (330 ml) Plastic Aerosol	Shave Foam in 11 oz (330 ml) Plastic Aerosol
	Storage Arrangement (pallet loads)	Rack Array under Calorimeter 2 x 2 x 3 high	Palletized Array 2 x 2 x 3 high
	Storage Height (ft) [m]	15 [4.6]	14 [4.3]
	No. Tiers	3	3
	Ceiling Height (ft) [m]	Sprinklers at 25 [7.6] above floor	25 [7.6]
	Aisle Width (ft)	None	None
	Sprinkler Type (K factor gpm/psi$^{0.5}$ [L/min/bar$^{0.5}$],, Temperature Rating)	K = 8.0 [120] / Open	11.2 [161] / 155^{o}F [68°C]
	Sprinkler Spacing (ft x ft) [m x m]	10 x 10 [3 x 3]	10 x 10 [3 x 3]
	Discharge Density (gpm/ft^2) [mm/min]	0.25 [10]	0.79 [32]
Test Results	First Sprinkler Operated (min:sec)	1:07 water on	1:23
	Total Sprinklers Operated	4	4
	Peak Gas Temperature (^{o}F) [^{o}C]	3000 kW peak heat release rate	1242 [672]
	Peak Steel Temperature (^{o}F) [^{o}C]	None recorded	165 [74]
	Test Concluded (min:sec)	4:00	32:00

In addition to the intermediate and large-scale fire test, a number of small-scale tests were also done to provide a visual documentation on how a plastic aerosol container with a shave foam type product behaves when exposed to fire without sprinkler protection. These tests consisted of placing two cases of six containers on each side of a standard igniter. The containers were contained in a cardboard box. A shave cream and a hair mousse were tested. A general description of the test results is provided in Table 4. Test 9 used a product that was very similar to what was tested in the intermediate and large-scale testing. It was a shave cream product that had a small percentage of a flammable liquefied gas that was in a stable emulsion with a multi-component liquid mixture. The liquid mixture did not support combustion. The product in Test 10 had a higher weight percent flammable liquefied gas that did not form a stable emulsion in the bottle. A liquefied gas layer formed in the container. It was not clear what the liquid mixture was made up of. In both products, the flammable liquefied gas was used to eject the liquid mixture out of the container and cause the liquid product to create foam.

In Test 9, all but two of the containers failed. The shave foam covered the cases, containers and pan after the test. The product burned weakly and extinguished the igniter used in the test. The product used in Test 10 did appear to burn more vigorously. Container failure produced momentary fireballs. While this limited-scale test cannot predict the behavior of a product in a full-scale arrangement, it did demonstrate that there were differences between the shave cream and the hair mousse, and that the hair mousse produced a more vigorous fire.

Table 4 UL Testing Summary

Test #	Description	Fill Type	Test Results
9	Shave Cream Emulsion (4% by weight hydrocarbon propellant – the emulsion was stable, no propellant layer was noticeable in container)	Direct Fill	Initially flames are about 3 to 4 ft (0.9 to 1.2 m) high. First container ruptures at :50 seconds. Multiple container ruptures follow. The igniter is extinguished by a container rupture at approximately 1:15. The fire goes out at approximately 6 minutes. The two cases are covered in foam shave cream and two containers did not fail. There was no pool fire. The ruptures did not produce noticeable fireballs or increased burning.
10	Mousse and conditioner (6% by weight hydrocarbon propellant – the emulsion was not stable and a propellant layer formed in container)	Direct Fill	Initially flames are about 3 to 4 ft (0.9 to 1.2 m) high. First container ruptures at :48 seconds. Multiple container ruptures follow. The flames increase in intensity with the container ruptures. Eventually all of the containers are breached. A small pool of burning liquid formed but went out quickly. An increase in burning was noticeable with each container failure.

The results of the intermediate-scale testing, the full-scale testing, and the small-scale testing, indicate that an aerosol product in a plastic container filled with a liquid mixture that does not support combustion and no more than 4% by weight flammable liquefied gas in a stable emulsion with the liquid mixture can be protected using criteria recommended for a Class III commodity.

The aerosol container definition was also modified to reflect the current definition in NFPA 30B 2011, edition, that is referenced by the IFC.

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

F299-13

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

5104.1-F-MCLAUGHLIN

F300 – 13
5203.7 (New), 5204.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5203.7 Sources of ignition. Sources of ignition shall comply with Sections 5203.7.1 through 5203.7.2.

5003.7.1 Smoking. Smoking shall be prohibited and "No Smoking" signs provided as follows:

1. In rooms or areas where materials are stored or dispensed or used in open systems .
2. Within 25 feet (7620 mm) of outdoor storage or open use areas.
3. Facilities or areas within facilities that have been designated as totally "no smoking" shall have "No Smoking" signs placed at all entrances to the facility or area. Designated areas within such facilities where smoking is permitted either permanently or temporarily, shall be identified with signs designating that smoking is permitted in these areas only.

Signs required by this section shall be in English as a primary language or in symbols allowed by this code and shall comply with Section 310.

5203.7.2 Open flames. Open flames and high-temperature devices shall not be used in a manner which creates a hazardous condition and shall be listed for use with the materials stored or used.

5204.1 General. Loose combustible fibers, not in suitable bales or packages and ~~whether housed or~~ stored outdoors in the open, shall ~~not be stored within 100 feet (30 480 mm) any structure, except as indicated in this chapter~~ comply with Section 2808 of this code. Occupancies involving the indoor storage of loose combustible fibers in amounts exceeding the maximum allowable quantity per control area as set forth in Section 5003.1 shall comply with Sections 5204.2 through 5204.6.

Reason: This proposal is part of a package of proposals concerning Chapter 52 Combustible Fibers. An issue identified in review of the current code language and structure is that though Chapter 52 Combustible Fibers is located in the "Hazardous Materials" portion of the code, combustibles fibers are not defined as a hazardous material.

5001.2 Material classification. *Hazardous materials are those chemicals or substances defined as such in this code. Definitions of hazardous materials shall apply to all hazardous materials, including those materials regulated elsewhere in this code.*

5001.2.1 Mixtures. *Mixtures shall be classified in accordance with hazards of the mixture as a whole. Mixtures of hazardous materials shall be classified in accordance with nationally recognized reference standards; by an approved qualified organization, individual, or Material Safety Data Sheet (MSDS); or by other approved methods.*

5001.2.2 Hazard categories. *Hazardous materials shall be classified according to hazard categories. The categories include materials regulated by this chapter and materials regulated elsewhere in this code.*

5001.2.2.1 Physical hazards. *The material categories listed in this section are classified as physical hazards. A material with a primary classification as a physical hazard can also pose a health hazard.*

1. *Explosives and blasting agents.*
2. *Combustible liquids.*
3. *Flammable solids, liquids and gases.*
4. *Organic peroxide solids or liquids.*
5. *Oxidizer, solids or liquids.*
6. *Oxidizing gases.*
7. *Pyrophoric solids, liquids or gases.*
8. *Unstable (reactive) solids, liquids or gases.*
9. *Water-reactive materials solids or liquids.*
10. *Cryogenic fluids.*

5001.2.2.2 Health hazards. *The material categories listed in this section are classified as health hazards. A material with a primary classification as a health hazard can also pose a physical hazard.*

1. *Highly toxic and toxic materials.*
2. *Corrosive materials.*

Combustible fibers do not fit into those parameters. A review of the definition of hazardous materials found within the code also documents that the materials regulated by Chapter 52 are not hazardous materials.

[F] HAZARDOUS MATERIALS. *Those chemicals or substances that are physical hazards or health hazards as classified in Section 307 and the International Fire Code, whether the materials are in usable or waste condition.*

[F] HEALTH HAZARD. *A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic or highly toxic, and corrosive.*

[F] PHYSICAL HAZARD. *A chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer (solid or liquid), oxidizing gas, pyrophoric (solid, liquid or gas), unstable (reactive) material (solid, liquid or gas) or water- reactive material (solid or liquid).*

Since the scoping of Chapter 50, including the sections within Chapter 50, are for the regulation of hazardous materials, even basic requirements found within Chapter 50 such as control of ignition hazards would not apply to the activities regulated by Chapter 52.

CHAPTER 50
HAZARDOUS MATERIALS—GENERAL PROVISIONS

SECTION 5001
GENERAL

5001.1 Scope. *Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling* ***of*** *hazardous materials shall be in accordance with this chapter.*

This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

SECTION 5003
GENERAL REQUIREMENTS

5003.1 Scope. *The storage, use and handling* ***of all hazardous materials*** *shall be in accordance with this section.*

This proposal addresses this issue by adding a Section 5203.7 "Sources of ignition" by extracting requirements from current Section 5003.7 "Sources of ignition" that would be appropriate for combustible fibers. In reality, there isn't any other section of Chapter 50 that provides for the regulation of combustible fibers.

In addition, this proposal is building upon a separate proposal to recognize the ability to control the hazards of combustible fibers just as the code provides for recognition of the control of combustible dust by modifying the language found in Section 5204.1.

Section 5204.1 is proposed to be modified to point to Section 2808 "STORAGE AND PROCESSING OF WOOD CHIPS, HOGGED MATERIAL, FINES, COMPOST AND RAW PRODUCT ASSOCIATED WITH YARD WASTE AND RECYCLING FACILITIES" of the fire code as the appropriate standard for the exterior storage of combustible fibers. The materials and hazards presented are similar.

Section 5204.1 is further modified to indicate that the more restrictive indoor storage of combustible fibers regulated by Sections 5204.2 through 5204.6 is for those facilities that have amounts exceeding the maximum allowable quantity per control area as set forth in Section 5003.1. If the hazards are controlled eliminating the application of IFC Table 5003.1.1/IBC [F]307.1.1(1) and Sections 307.4 and 307.5 of the IBC, the increased protection levels are not necessary.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

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

F300-13

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

5203.7 (NEW)-F-DAVIDSON

F301 – 13
Chapter 52; Chapter 37 (New)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

CHAPTER ~~52~~ 37
COMBUSTIBLE FIBERS

Reason: .Currently Chapter 52 regulating Combustible Fibers is located in a portion of the International Fire Code that applies to hazardous materials and the activities involving the handling, storage or use of hazardous materials.

Part V—Hazardous Materials

CHAPTER 50
HAZARDOUS MATERIALS—GENERAL PROVISIONS

SECTION 5001
GENERAL

5001.1 Scope. *Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling* ***of hazardous materials*** *shall be in accordance with this chapter.*

This chapter shall apply to all hazardous materials*, including those materials regulated elsewhere in this code, except that when specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.*

5001.2 Material classification. *Hazardous materials are those chemicals or substances defined as such in this code. Definitions of hazardous materials shall apply to all hazardous materials, including those materials regulated elsewhere in this code.*

5001.2.1 Mixtures. *Mixtures shall be classified in accordance with hazards of the mixture as a whole. Mixtures of hazardous materials shall be classified in accordance with nationally recognized reference standards; by an approved qualified organization, individual, or Material Safety Data Sheet (MSDS); or by other approved methods.*

5001.2.2 Hazard categories. *Hazardous materials shall be classified according to hazard categories. The categories include materials regulated by this chapter and materials regulated elsewhere in this code.*

5001.2.2.1 Physical hazards. *The material categories listed in this section are classified as physical hazards. A material with a primary classification as a physical hazard can also pose a health hazard.*

1. *Explosives and blasting agents.*
2. *Combustible liquids.*
3. *Flammable solids, liquids and gases.*
4. *Organic peroxide solids or liquids.*
5. *Oxidizer, solids or liquids.*
6. *Oxidizing gases.*
7. *Pyrophoric solids, liquids or gases.*
8. *Unstable (reactive) solids, liquids or gases.*
9. *Water-reactive materials solids or liquids.*
10. *Cryogenic fluids.*

5001.2.2.2 Health hazards. *The material categories listed in this section are classified as health hazards. A material with a primary classification as a health hazard can also pose a physical hazard.*

1. *Highly toxic and toxic materials.*
2. *Corrosive materials.*

Combustible fibers do not fit into those parameters. A review of the definition of hazardous materials found within the code documents that the materials regulated by Chapter 52 are not by definition hazardous materials.

[F] HAZARDOUS MATERIALS. *Those chemicals or substances that are physical hazards or health hazards as classified in Section 307 and the International Fire Code, whether the materials are in usable or waste condition.*

[F] HEALTH HAZARD. *A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic or highly toxic, and corrosive.*

[F] PHYSICAL HAZARD. *A chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer (solid or liquid), oxidizing gas, pyrophoric (solid, liquid or gas), unstable (reactive) material (solid, liquid or gas) or water- reactive material (solid or liquid).*

Because the scoping of Chapter 50 is for the regulation of hazardous materials, the requirements of Chapter 50 would not apply to the materials or activities regulated by Chapter 52 Combustible Fibers.

SECTION 5003
GENERAL REQUIREMENTS

5003.1 Scope. *The storage, use and handling* ***of all hazardous materials*** *shall be in accordance with this section.*

SECTION 5004
STORAGE

5004.1 Scope. Storage of hazardous materials *in amounts exceeding the maximum allowable quantity per control area as set forth in Section 5003.1 shall be in accordance with Sections 5001, 5003 and 5004. Storage of hazardous materials in amounts not exceeding the maximum allowable quantity per control area as set forth in Section 5003.1 shall be in accordance with Sections 5001 and 5003. Retail and wholesale storage and display of nonflammable solid and nonflammable and noncombustible liquid hazardous materials in Group M occupancies and Group S storage shall be in accordance with Section 5003.11.*

SECTION 5005
USE, DISPENSING AND HANDLING

5005.1 General. Use, dispensing and handling of hazardous materials *in amounts exceeding the maximum allowable quantity per control area set forth in Section 5003.1 shall be in accordance with Sections 5001, 5003 and 5005. Use, dispensing and handling of hazardous materials in amounts not exceeding the maximum allowable quantity per control area set forth in Section 5003.1 shall be in accordance with Sections 5001 and 5003.*

IFC Code Commentary for Chapter 52 Combustible Fibers:

"The operations involving combustible fibers are typically associated with salvage, paper milling, recycling, cloth manufacturing, carpet and textile mills and agricultural operations, among others. The primary hazard associated with these operations is the abundance of materials and their ready ignitability. The greatest hazard presented would be a dust explosion hazard and in that case Section 5203.5 requires an approved dust-collecting and exhaust system be installed and compliance with Chapter 22 "Combustible Dust-Producing Operations".

It appears that the Chapter for Combustible Fibers ended up in the hazardous materials portion of the International Fire Code simply because the presence of more than a threshold amount of fibers could result in a Group H classification. In comparison, a combustible dust hazard, which could also result in a Group H classification, has the requirements for controlling the hazard located in Chapter 22 in the Special Occupancies and Operations portion of the code book.

This proposal does not make any technical changes and simply suggests taking the existing Combustible Fiber requirements and move them to the Special Occupancies and Operations portion of the code book as a more appropriate location. This is additionally supported by the fact that the combustible fiber activities are linked to Chapter 22 Combustible Dusts by Section 5203.5. The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

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

F301-13

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

CHAPTER 52-F-DAVIDSON

F302 – 13
5301.1, Chapter 80

Proponent: Robert Boyd, Boyd Hydrogen, LLC, representing self (Bob@BoydH2.com)

Revise as follows:

5301.1 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 23, NFPA 52 and the *International Fuel Gas Code*.
3. Compressed hydrogen (CH2) for use as a vehicular fuel shall comply with Chapter 23, NFPA 2 and the *International Fuel Gas Code*.

Add new standard to Chapter 80 as follows:

NFPA

2-11 Hydrogen Technologies Code 5301.1

Reason: The fueling, use, and operation of hydrogen powered fuel cell vehicles is functionally equivalent to the fueling, use, and operation of CNG powered vehicles.

The California Fuel Cell Partnership's 2012 update on FCV deployment plans provides details on the expectation and goal of government agencies including the Department of Energy, California EPA, California Energy Commission and South Coast Air Quality Management District to have an established fleet of at least 50,000 hydrogen powered fuel cell hybrid electric vehicles deployed from 7 automakers* and operating in California sometime between 2015 and 2018.

A link to "A California Road Map: The Commercialization of Hydrogen Fuel Cell Vehicles"
Is shown below:

http://cafcp.org/sites/files/A%20California%20Road%20Map%20June%202012%20(CaFCP%20technical%20version)_1.pdf

Without this proposed change and additional exception to 5301.1, local AHJ's might be confused and believe that hydrogen powered vehicles should comply with chapter 53

*7 automakers with stated plans to deploy hydrogen powered fuel cell electric vehicles: GM, Honda, Toyota, Nissan, Kai, Hyundai, VW/Audi/Porsche.

Cost Impact: None

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F302-13

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

5301.1-F-BOYD

F303 – 13
5301.1, 5305.7

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5301.1 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 23, NFPA 52 and the International Fuel Gas Code.
3. Compressed hydrogen (CH_2) for use as a vehicular fuel shall comply with Chapters 23 and 58 of this code, the *International Fuel Gas Code* and NFPA 2.

5305.7 Transfer. Transfer of gases between containers, cylinders and tanks shall be performed by qualified personnel using equipment and operating procedures in accordance with CGA P-1.

Exception: The f ~~F~~ueling of vehicles with compressed natural gas (CNG) or compressed hydrogen gas, that is being conducted in accordance with Chapter 23.

Add new referenced standard to Chapter 80 as follows:

NFPA

2-11 Hydrogen Technologies Code

Reason: These two items are a proposed as a correlation cleanup. In retrospect this cleanup should have been added back in 2003 editions when hydrogen motor fueling was added to Chapter 23.

The added Section 5301.1, Exception 3 mirrors the language for CNG found at Exception 2 with a point to Chapter 23, Chapter 58 and an additional pointer to NFPA 2 to coordinate this proposal with previous proposals in this grouping submitted on behalf of NREL.

With the modification of the exception at Section 5305.7, in addition to adding fueling of vehicles with compressed hydrogen gas, the proposal makes it clear that the exception is due to compliance with Chapter 23 provisions, it is not a unrestricted exception.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F303-13

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

5301.1-F-DAVIDSON

F304 – 13
5301.1, 5303.6.2

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Compressed Gas Association (pmclaugma@aol.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of *compressed gases* in *compressed gas* containers, cylinders, tanks and systems shall comply with this chapter and NFPA 55, 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 23, NFPA 52 and the International Fuel Gas Code.

Cutting and welding gases shall also comply with Chapter 35.

Cryogenic fluids shall comply with Chapter 55. Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.

Compressed gases classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).

LP-gas shall also comply with Chapter 61 and the International Fuel Gas Code.

5303.6.2 Caps and plugs. *Compressed gas* containers, cylinders and tanks designed for valve protection caps or other protective devices shall have the caps or devices in place. ~~attached.~~ When valve outlet caps or plugs are provided for valve outlet protection they shall be in place.

Exception: *Compressed gas* containers, cylinders or tanks in use, being serviced or being filled.

Reason:

5301.1: Flammable gases and flammable and oxidizing cryogenic fluids are currently also required to comply with NFPA 55. It seems reasonable that all compressed gases comply with NFPA 55, as it is the source of many of the IFC provisions. Because of the three year adoption cycle, and the adoption processes of the two entities being out of sync, the IFC may be up to five or more years out of date. This change will also help keep the IFC updated to current technology. For example, NFPA 55 is the source document for the fundamental requirements for compressed hydrogen gas (GH2), or liquefied hydrogen gas (LH2) system installations. It serves as a source for the fundamental controls used by NFPA 2, *Hydrogen Technologies Code*, 2011 Edition, which contains requirements for vehicular fueling.

5306.6.2: The code change clarifies that when provided, both the protective devices and valve caps must be in place. It also aligns with NFPA 55 requirements.

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

F304-13

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

5301.1-F-MCLAUGHLIN

F305 – 13
5305.7

Proponent: Robert Boyd, Boyd Hydrogen, LLC, representing self (Bob@BoydH2.com)

Revise as follows:

5305.7 Transfer. Transfer of gases between containers, cylinders and tanks shall be performed by qualified personnel using equipment and operating procedures in accordance with CGA P-1

Exception: Fueling of vehicles with compressed natural gas (CNG) or compressed hydrogen.

Reason: fueling of hydrogen powered fuel cell vehicles is functionally equivalent to fueling CNG powered cars used by normal licensed private vehicle operators.

The training and expertise required for consumer training of operators of CNG and compressed hydrogen vehicles are quite similar and quite different from what is specified in CGA P-1.

All Compressed Hydrogen or CNG dispensers are required by NFPA-2 (H2) and NFPA-52 (CNG) to have a pressure sensor and automatic shut off valve and the dispenser must conduct an integrity check of the dispenser hose, the vehicle fueling system and the integrity of the nozzle / reprisal connection. The dispenser must perform the integrity check at the beginning of fueling and then at least once during the fueling process. If the dispenser senses any leaks it must terminate the fueling process.

The California Fuel Cell Partnership's 2012 update on FCV deployment plans \ the expectation of government agencies including the Department of Energy, California EPA, California Energy Commission and South Coast Air Quality Management District clearly defines the goals to have an established fleet of at least 50,000 hydrogen powered fuel cell hybrid electric vehicles deployed from 7 automakers* and operating in California sometime between 2015 and 2018.

Without this change local AHJ's might be confused and believe that qualified personnel using equipment and operating procedures in accordance with CGA P-1 are required to fill vehicles that are fueled with compressed hydrogen.

*7 automakers with stated plans to deploy hydrogen powered fuel cell electric vehicles: GM, Honda, Toyota, Nissan, Kai, Hyundai, VW/Audi/Porsche.

A link to "A California Road Map: The Commercialization of Hydrogen Fuel Cell Vehicles"
Is shown below:

http://cafcp.org/sites/files/A%20California%20Road%20Map%20June%202012%20(CaFCP%20technical%20version)_1.pdf

Cost Impact: None

F305-13

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

5305.7-F-BOYD

F306 – 13
5306, 5306.1, 5306.4

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 5306
MEDICAL GASES ~~SYSTEMS~~

5306.1 General. ~~*Compressed*~~ Medical *gases* at healthcare related ~~hospitals and similar~~ facilities intended for patient care, inhalation or sedation including, but not limited to, analgesia systems for dentistry, podiatry, veterinary and similar uses shall comply with Sections 5306.2 through 5306.4 in addition to other requirements of this chapter.

5306.4 Transfilling. Transfilling areas and operations including, but not limited to, ventilation and separation, shall comply with NFPA 99.

(Renumber remaining section.)

Reason: This proposal addresses CMS KTag 143. This KTag is concerned with the transferring or what is often termed transfilling of oxygen in a gaseous or liquid form within hospitals and other medical facilities. The current provisions in the IFC are actually fairly consistent with NFPA 99 and the requirements of the KTags in this respect. The only major differences found were that the IFC requirements do not specifically address transfilling and the type of floor surface allowed. Transfilling is the transfer of oxygen to smaller portable containers from larger storage containers. This can occur in liquid or gaseous state. Currently the provisions only relate to storage. This has been revised by the proposal. The reference to NFPA will provide restrictions on the floor used to concrete or ceramic due to the noncombustible nature of the floors.

This proposal addresses two other issues as follows:

Title 5306. This was changed to delete the term "systems" since transfilling and storage of oxygen is not necessarily part of a system. This will be a more general title which is more applicable to all of Section 5306.

Section 5306.1. The terms hospitals and similar facilities were deleted in favor of a more all encompassing set of terms "Healthcare related facilities." The current language seems to give priority to hospitals and can be somewhat unclear that it would also apply to ambulatory care facilities and nursing homes.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public."

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

F306-13

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

5306.1-F-BALDASSARRA-WILLIAMS-ADHOC

F307 – 13
5306.2

Proponent: Masoud Sabounchi, Advanced Consulting Engineers Inc., representing self (masoud@acecode.com)

Revise as follows:

5306.2 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 5306.2.1, 5306.2.2 or 5306.2.3, respectively. Rooms or areas where medical gases are stored or used in quantities exceeding the *maximum allowable quantity per control area* as set forth in Section 5003.1 shall be in accordance with the *International Building Code* for high-hazard Group H occupancies.

Exceptions:

1. In Group I-2 and ambulatory health care occupancies, areas containing medical gas cabinets or medical gas rooms constructed in accordance with Sections 5306.2.1, 5306.2.2 or 5306.2.3, where quantity of the stored oxidizing gases exceeds the maximum allowable quantities shall not be considered Group H.
2. In Group I-2 and ambulatory health care occupancies, oxygen cylinders that are in use shall comply with applicable provisions of NFPA 99.

Reason: This proposal reverts the provisions of 2012 IFC Section 5306.2 to that of 2006 IFC Section 3006.2.1 regarding storage and use of the medical gases in health care occupancies without declaration of the storage/use rooms/areas as hazardous occupancy where quantity of oxidizing gases exceed the maximum allowable quantities (MAQs). This proposal does not change the existing requirements where flammable medical gases are used or stored.

IFC Section 5306 requires 1-hour fire resistance rated interior or exterior medical gas rooms where quantity of medical gases exceeds the permit amount. Per IFC Table 105.6.8 permit amounts of oxidizing gases is 504 cubic feet.

In a 10 story hospital, number of control areas and quantity of oxidizing gases per control area varies based on location of the control areas. Per IBC Table 414.2.2 floors (above grade plane) 4, 5 and 6 may have two control areas and limit quantity of hazardous materials to 12.5% of the MAQs. Quantity of oxidizing gases in each control area on floors 4, 5, and 6 would be limited to 1500 x 2 (due to sprinkler protection) x 12.5/100=375 cubic feet unless these rooms are considered H-3 Occupancy. This quantity is less than the 504 cubic feet which is the permit quantity. It is not clear if the 504 cubic feet permit limit or the limit of 375 cubic feet would govern the occupancy designation of the medical gas rooms.

If the 375 cubic feet limit is the MAQ, the control area has to be declared an H-3 occupancy. As such, IBC would require 2-hour fire resistance rated separation to enclose the medical gas storage rooms in hospitals and IBC Section 415.5 would require these H-3 occupancy medical gas storage rooms to have 25% of the wall area as exterior walls. Most health care occupancies have oxygen cylinders for patient use-if quantity of in use oxidizing gases exceed 375 cubic feet on floors 4, 5 and 6, the occupancy group of these health care floors would have to be H-3 which clearly is not the intent of the code.

On floors 7 and up quantity of oxidizing gases would be limited to 5% of MAQs or 150 cubic feet without declaration of an H-3 occupancy for the floor or reduction of the in use oxygen to less than 150 cubic feet and introduction of H-3 occupancy rooms for storage of oxidizing gases. This quantity is extremely limiting considering a large hospital floor area. On floor levels above the 9th, only one control area with total quantity of 150 cubic feet oxidizing gases is permitted which mandates creation of H-3 occupancy rooms and would limit total quantity of "in use" oxygen cylinders to 150 cubic feet in the remainder of the floor. Reference to NFPA 99 regarding "in use" quantities noted in exception number two would coordinate IFC provisions with NFPA 99.

Cost Impact: This change will not affect the cost of construction.

F307-13

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

5306.2-F-SABOUNCHI

F308 – 13
5306.2.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

5306.2.1 One-hour exterior rooms. A 1- hour exterior room shall be a room or enclosure separated from the remainder of the building by fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *International Building Code*, or both, with a fire- resistance rating of not less than 1- hour. Openings between the room or enclosure and interior spaces shall be self-closing smoke- and draft-control assemblies having a fire protection rating of not less than 1hour. Rooms shall have at least one exterior wall that is provided with at least two non-closable louvered vents. Each vent shall have a minimum free opening area of 24 square inches (155 cm^2) for each 1,000 cubic feet (28 m^3) at normal temperature and pressure (NTP) of gas stored in the room and shall not be less than ~~36~~ 72 square inches (~~0.023 m^2~~ 465 cm^2) in aggregate free opening area. One vent shall be within 6 inches (152 mm) of the floor and one shall be within 6 inches (152 mm) of the ceiling. Rooms shall be provided with at least one automatic sprinkler to provide container cooling in case of fire.

Reason: The purpose of this proposal is to update Section 5306.2.1 on Medical Gas Systems to clarify and address the differences with the language in NFPA 99-2012, Section 9.3.7.5.2 with which hospitals are required to comply.

This proposed revision requires the vents to be of the non-closable type which is not currently required in the IFC, and to be of a larger size. It further defines the louver opening as "aggregate free opening" as required which is not currently specified in the IFC.

NFPA 99 is the more restrictive and sets the design of the louver to be specifically fixed where the IFC language may result is a "closable" louver which is not the intent of this code section. It also provides clarification on the sizing of the louver as it relates to the amount of gas being stored in the room where the IFC currently does not.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

F308-13

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

5306.2.1-F-BALDASSARRA-WILLIAMS-ADHOC-CTC

F309– 13
5306.4

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

5306.4 Medical gas systems. Medical gas systems including, but not limited to, distribution piping, supply manifolds, connections, pressure regulators and relief devices and valves, shall be installed in accordance ~~comply~~ with NFPA 99 and the general provisions of this chapter. Existing medical gas systems shall be maintained in accordance with the maintenance, inspection and testing provisions of NFPA 99 for medical gas systems.

Reason: This proposal clarifies that once medical gas systems are installed in accordance with NFPA 99 that the new construction requirements of NFPA 99 are not intended to be retroactively enforced. Instead the intention is that the systems be maintained in accordance with the maintenance provisions of NFPA 99. This addresses CMS K-Tag K78.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

Cost impact: The code change proposal should not increase the cost of construction because compliance with the standard is already required by facility licensure requirements.

F309-13

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

5306.4-F-WILLIAMS-ADHOC

F310 – 13
5307 (New), 908.7 (New), 105.6.4 (New), Table 105.6.8

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

SECTION 5307
CARBON DIOXIDE (CO_2) SYSTEMS USED IN BEVERAGE DISPENSING APPLICATIONS

5307.1 General. Carbon dioxide systems with 100 or more pounds of carbon dioxide used in beverage dispensing applications shall comply with Sections 5307.2 through 5307.5.2.

5307.2 Permits. Permits shall be required as set forth in Section 105.6.

5307.3 Equipment. The storage, use, and handling of liquid carbon dioxide shall be in accordance with Chapter 53 and the applicable requirements of NFPA 55, Chapter 13.

5307.4 Protection from damage. Carbon dioxide systems shall be installed so the storage tanks, cylinders, piping and fittings are protected from damage by occupants or equipment during normal facility operations.

5307.5 Required protection. Where carbon dioxide storage tanks, cylinders, piping and equipment are located indoors, rooms or areas containing carbon dioxide storage tanks, cylinders, piping and fittings and other areas where a leak of carbon dioxide can collect shall be provided with either ventilation in accordance with Section 5307.5.1 or an emergency alarm system in accordance with Section 5307.5.2.

5307.5.1 Ventilation. Mechanical ventilation shall be in accordance with the *International Mechanical Code* and shall comply with all of the following:

1. Mechanical ventilation in the room or area shall be at a rate of not less than 1 cubic foot per minute per square foot [0.00508 $m^3/(s \cdot m^2)$].
2. Exhaust shall be taken from a point within 12 inches (305 mm) of the floor.
3. The ventilation system shall be designed to operate at a negative pressure in relation to the surrounding area.

5307.5.2 Emergency alarm system. An emergency alarm system shall comply with all of the following:

1. Continuous gas detection shall be provided to monitor areas where carbon dioxide can accumulate.
2. The threshold for activation of an alarm shall not exceed 5,000 parts per million (9,000 mg/m^3).
3. Activation of the emergency alarm system shall initiate a local alarm at an approved location.

908.7 Carbon dioxide (CO_2) systems. Emergency alarm systems in accordance with Section 5307.5.2 shall be provided where required for compliance with Section 5307.5.

105.6.4 Carbon dioxide systems used in beverage dispensing applications. An operational permit is required for carbon dioxide systems used in beverage dispensing applications with more than 100 pounds of carbon dioxide.

(Renumber subsequent sections.)

Revise as follows:

TABLE 105.6.8
PERMIT AMOUNTS FOR COMPRESSED GASES

TYPE OF GAS	AMOUNT (cubic feet at NTP)
Inert and simple asphyxiant [a]	6,000

(Portions of table not shown remain unchanged)

For SI: 1 cubic foot = 0.02832 m^3.

a. For carbon dioxide used in beverage dispensing applications, see Section 105.6.4.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal is intended to address fatal CO_2 poisoning incidents in restaurants where CO_2 leaked from large storage tanks and displaced oxygen in these areas. Two such incidents can be found at:

http://articles.orlandosentinel.com/2005-02-12/news/0502120303_1_carbon-dioxide-central-florida-sanford

http://savannahnow.com/news/2011-09-14/carbon-dioxide-blamed-pooler-mcdonalds-death

Individual requirements are proposed based on the following:

105.6.4 and Table 105.6.8 – Operational permits are required for CO_2 systems used in the beverage dispensing applications covered by new Section 5307.

5307.1 – The intent of the proposal is to address locations where CO_2 is used in conjunction with carbonators to produce carbonated beverages. A minimum trigger of 100 lbs. was selected for these requirements because it was felt that systems with lesser amounts of CO_2 do not pose as great a risk of asphyxiation as is present with large quantities of the gas.

5307.2 – Provides a reference to permit requirements that is consistent with other such references in the code.

5307.3 - Components in a compressed gas system are already required to comply with Chapter 53 which will cover items such as pressure vessel and piping requirements, among others. An additional reference to NFPA 55, Chapter 13 brings in additional requirements that relate specifically to these installations.

5307.4 - This section includes basic requirements that are intended to protect CO_2 storage tanks, cylinders, piping and fittings are protected from damage by occupants or equipment during normal facility operations. This will decrease the chance of damage that may cause leaks, which is especially important in the facilities in which gas detection systems are not provided.

5307.5 – This section requires buildings in which the CO_2 systems are installed to be provided with either ventilation that complies with Section 5307.5.1 or an emergency alarm system that complies with Section 5307.5.2. It does not require that both ventilation and gas detection be required.

The hazard associated with these systems is that the heavier than air CO_2 may accumulate and displace oxygen, creating an asphyxiation hazard. Leaks are most likely from fittings and connections, but could also be from plastic or other runs of piping.

5307.5.2 – When the emergency alarm system option is selected, it shall include a continuous gas detection system with CO_2 detectors of adequate number and spacing to cover the protected area. The trigger level of 5000 ppm CO_2 is the OSHA Permissible Exposure Limit (PEL).

Cost Impact: This proposal will add to the cost of construction.

F310-13

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

5307 (NEW)-F-ZUBIA-FCAC

F311 – 13
5501.1, 5503.1.3.1, 5503.2.6, Table 5504.3.1.1

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Compressed Gas Association (pmclaugma@aol.com)

Revise as follows:

5501.1 Scope. Storage, use and handling of *cryogenic fluids* shall comply with this chapter and NFPA 55. *Cryogenic fluids* classified as hazardous materials shall also comply with the general requirements of Chapter 50 ~~for general requirement~~s. 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 63, as applicable.

Flammable *cryogenic fluids*, including hydrogen, methane and carbon monoxide, shall comply with ~~NFPA 55~~ and Chapters 23 and 58, as applicable.

Inert *cryogenic fluids*, including argon, helium and nitrogen, shall comply with ANSI/CGA P-18.

5503.1.3.1 Temperature effects. When container foundations or supports are subject to exposure to temperatures below -130°F (-90°C) ~~-150°F (-101°C)~~, the foundations or supports shall be constructed of materials to withstand the low-temperature effects of *cryogenic fluid* spillage.

5503.2.6 Shutoffs between pressure relief devices and containers. Shutoff valves shall not be installed between pressure relief devices and containers.

Exceptions:

1. A shutoff valve is allowed on containers equipped with multiple pressure-relief device installations where the arrangement of the valves provides the full required flow through the minimum number of required relief devices at all times.

2 . A locking type shutoff valve, is allowed to be used upstream of the pressure relief device for service-related work performed by the supplier when in accordance with the requirements of the ASME *Boiler and Pressure Vessel Code*.

TABLE 5504.3.1.1
SEPARATION OF STATIONARY CONTAINERS FROM EXPOSURE HAZARDS

EXPOSURES	MINIMUM DISTANCE (feet)
Building exits	10

(Portions of table not shown remain unchanged)

Reason:

5501.1: The proposal requires compliance to NFPA 55 for all cryogenic fluids and provides the correct title for the already reference P-18. Without the expanded NFPA 55 reference, the scope is inconsistent. It currently requires compliance with NFPA 55 oxidizing and flammable cryogenic fluids. If it is appropriate for these materials it is appropriate for all cryogenic fluids.

5503.1.3.1: A cryogenic fluid is defined as having a boiling point lower than -130 F by the IFC, DOT, OSHA, and internationally. The requirements should apply at that temperature otherwise the foundation or supports of those cryogenic fluids within the range not covered are at risk. . Also, the change brings the IFC into alignment with NFPA 55.

5503.2.6: The proposal brings the IFC into alignment with NFPA 55. The ASME Boiler and Pressure Vessel code allows the use of a locking valve on the upstream side of a pressure relief device in instances where it is impractical to install multiple pressure relief devices and valves, or where having the multiple valves creates more potential safety hazards during maintenance work on the devices. The BPV code has detailed requirements for working on relief devices with the use of upstream valves, including the requirement to lock the valve open when not working on the valve and the requirement to lower pressure vessel pressure before maintenance. The BPV code also requires that personnel monitor vessel pressure during maintenance and have access to an alternate valve other than a pressure relief valve to relieve unexpected pressure rises during maintenance activities. Petrochemical plants and industrial gas plant personnel have used the procedures successfully for many years, as evidenced by the continued allowance of the procedure in the BPV code.

Table 5504.3.1.1: The proposal correlates this Table with IFC Table 5504.3.1.2.1, Separation of Portable Containers from Exposure Hazards and NFPA 55.

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

F311-13

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

5501.1-F-MCLAUGHLIN

F312 – 13
5601.3

Proponents: Glenn A. Dean, Virginia State Fire Marshal's Office (glenn.dean@vdfp.virginia.gov); Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

5601.3 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~~ <u>forbidden for transport</u> 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 100–185.

    Exception: Gelatin dynamite.

Reason - DEAN: The U.S. Department of Transportation (DOTn) does not "condemn" materials. It never has. What DOTn does do, when appropriate, is list explosive products as "forbidden" by any mode of transport. This change is simply to reflect that reality by deleting the antiquated language that has for decades wrongly existed in the model codes, and replace it with specific, enforceable language.

A complete list of materials forbidden to transport by DOTn is available at http://www.phmsa.dot.gov.

Reason - ZUBIA: While it does prohibit transporting certain materials on the public highways, the Federal Department of Transportation (DOTn) does not condemn explosives.

Example: Triacetone Triperoxide (TATP)

These materials are already banned or prohibited from transportation by DOT. The DOT prohibition is not affected by the deletion of this outdated language.

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

F312-13

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

5601.3-F-DEAN-ZUBIA-FCAC

F313 – 13
5601.1.3

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 5604.
2. Manufacture, assembly and testing of fireworks as allowed in Section 5605.
3. The use of fireworks for fireworks displays as allowed in Section 5608.
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 NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100 – 185, for consumer fireworks.

Reason: Consumer fireworks present an unusually high risk to the public. This is reflected in the general provision of this paragraph – a prohibition of such facilities – although certain exceptions are allowed. Incidents have been documented in a report prepared for the NFPA Fire Protection Research Foundation by Schirmer Engineering Corporation, *Fire Safety in Consumer Fireworks Storage and Retail Facilities – Hazard Assessment*, *October, 2007*, available from The Research Foundation. The report further identified concerns about the lack of technical documentation for various design criteria, including the lack of a basis for appropriate automatic sprinkler protection design criteria for such facilities.

The current provision in Exception 4 is inadequate to assure that a reasonable level of safety will be provided. Reference to NFPA will provide additional important criteria related to construction, allowable area, egress and protection which is not identified in CPSC 16 CFR, Parts 1500 and 1507, or DOTn 49 CFR, Parts 100 – 185. NFPA has recently undertaken a major review of the consumer fireworks provisions in NFPA 1124 to assure that the provisions are technically sound and provide a reasonable level of safety for this hazard.

Cost Impact: This proposal may have a negative impact on the construction of large consumer fireworks facilities. The exact impact cannot be quantified. Nevertheless, the industry will have options to safely operate its businesses.

F313-13

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

5601.1.3-F-BALDASSARRA

F314 – 13
5704.2.5

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5704.2.5 Explosion control. Explosion control shall be provided in accordance with Section 911 <u>for indoor tanks</u>.

Reason: This section is under 5704.2 which is applicable to indoor and outdoor tanks. Explosion control is typically applied for indoor storage and/or use. Explosion control using mechanical ventilation as deflagration prevention or using barricaded construction, is not applicable to outdoor tank storage.

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

F314-13

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

5704.2.5-F-KLAUSBRUCKNER

F315 – 13
5704.2.7.1, 5704.2.11, 5704.2.11.1

Proponent: Bob Eugene, representing UL LLC (Robert.Eugene@ul.com)

Revise as follows:

5704.2.7.1 Materials used in tank construction. The materials used in tank construction shall be in accordance with NFPA 30. The materials of construction for tanks and their appurtenances shall be compatible with the liquids to be stored.

5704.2.11 Underground tanks. Underground storage of flammable and *combustible liquids* in tanks shall comply with Section 5704.2 and Sections 5704.2.11.1 through 5704.2.11.4.2 ~~5704.2.11.5.2~~.

~~**5704.2.11.1 Contents.** Underground tanks shall not contain petroleum products containing mixtures of a nonpetroleum nature, such as ethanol or methanol blends, without evidence of compatibility.~~

(Renumber subsequent sections)

Reason: Combustible and flammable liquid tanks are being used to store an ever increasing number of liquids, including gasoline/ethanol blends and diesel/biodiesels blends. A sentence was added to the general tank storage section requiring the tank materials to be compatible with the stored liquids. This is consistent with NFPA 30, Section 21.4.1.1. With this requirement in place for all tanks, it is no longer necessary to include a similar compatibility requirement for underground tanks in Section 5704.2.11.1.

Cost Impact: None

F315-13

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

5704.2.7.1-F-EUGENE

F316 – 13
5704.2.7.3.6

Proponent: Lynne M. Kilpatrick, Sunnyvale Department of Public Safety, representing California Fire Chiefs Association (lkilpatrick@sunnyvale.ca.gov)

Delete without substitution:

~~**5704.2.7.3.6 Tank venting for tanks and pressure vessels storing Class IB and Class IC liquids.** Tanks and pressure vessels storing Class IB or Class IC liquids shall be equipped with venting devices which shall be normally closed except when venting under pressure or vacuum conditions, or with listed flame arresters. The vents shall be installed and maintained in accordance with Section 21.4.3 of NFPA 30 or API 2000.~~

Reason: Revisions to Section 5704.2.7.3.2 that were approved during the last code cycle fully address the requirements for venting tanks containing Class IB and IC flammable liquids currently found in Section 5704.2.7.3.6, making this Section redundant.

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

F316-13

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

5704.2.7.3.6-F-KILPATRICK

F317 – 13
5704.2.9.7.3

Proponent: Lynne M. Kilpatrick, Sunnyvale Department of Public Safety, representing California Fire Chiefs Association (lkilpatrick@sunnyvale.ca.gov)

Delete without substitution:

~~**5704.2.9.7.3 Flame arresters.** Approved flame arresters or pressure breather valves shall be installed in normal vents.~~

Reason: As written, this code section requires that a flame arrester or pressure-vacuum (PV) vent be installed in the normal vent of all protected aboveground tanks (UL 2085) containing flammable or combustible liquids. Because the primary function of a flame arrester is to prevent the unrestricted propagation of flame through flammable gas or vapor mixtures, there is no technical reason to require a flame arrester on tanks containing combustible liquids. Other national standards (i.e. NFPA 30: 21.4.3.9) require the venting devices or flame arresters only on tanks containing Class I flammable liquids. Even the provisions found in Section 5704.2.7.3.2 of this code addressing other tanks whose design and construction provide less protection and control than a protected aboveground tank, only require tanks to be equipped with such venting devices when the tank contains a Class I liquid. Consider the following example of this inconsistency: A diesel generator with an integral UL142 (steel aboveground) tank is not required to be equipped with a flame arrester on the normal vent, but the same diesel generator with an integral UL 2085 tank is required to have a flame arrester.

Approving this code change proposal deletes the special requirement for all protected aboveground tanks to be equipped with a venting device or flame arrester regardless of the tank contents and relies on Section 5704.2.7.3.2 to drive the conditions under which the device is needed. This is consistent with the current code requirement for tanks other than protected aboveground tanks and other national standards and maintains a requirement for all tanks to be equipped with a tank venting device or flame arrester when there is a sound technical reason to provide one.

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

F317-13

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

5704.2.9.7.3-F-KILPATRICK

F318 – 13
5704.3.3.2

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5704.3.3.2 Incompatible materials. Materials that will react with water or other liquids to produce a hazard shall not be stored in the same room with flammable and *combustible liquids* except where stored in accordance with Section 5003.9.8.

Reason: The code section, as it is currently written, provides conflicting information. Materials that will react with water or other liquids to produce a hazard are allowed in the same room as flammable and combustible liquids when restricted by container size isolated from each other by methods listed in 5003.9.8 (1) through (4) . Therefore the language stating "shall not be stored in the same room" is in conflict with "in accordance with Section 5003.9.8."

We believe the intent is to isolate the two materials to avoid a reaction. The language as it is can be problematic in places such as lab facilities where a storage area using hazardous materials cabinets are used to store small vials of materials.

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

F318-13

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

5704.3.3.2-F-KLAUSBRUCKNER

F319 – 13
Table 5704.3.6.3(7), Table 5704.3.7.5.1, 5704.3.8.5

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

TABLE 5704.3.6.3(7)
AUTOMATIC AFFF WATER PROTECTION REQUIREMENTS FOR RACK STORAGE OF LIQUIDS IN METAL CONTAINERS GREATER THAN 5-GALLON CAPACITY [a,b]

(No changes to table)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 pound per square inch = 6.895 kPa, 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 gallon per minute per square foot = 40.75 L/min/m^2.

a. System shall be a closed-head wet system with *approved* devices for proportioning aqueous film-forming foam.
b. Except as modified herein, in-rack sprinklers shall be installed in accordance with NFPA 13.
c. The height of storage shall not exceed 25 feet.
d. Hose stream demand includes $1^1/_2$-inch inside hose connections ~~hand hose~~, when required.

TABLE 5704.3.7.5.1
AUTOMATIC AFFF-WATER PROTECTION REQUIREMENTS FOR SOLID-PILE AND PALLETIZED STORAGE OF LIQUIDS IN METAL CONTAINERS OF 5-GALLON CAPACITY OR LESS[a, b]

(No changes to table)

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m2, 1 gallon per minute = 3.785 L/m, 1 gallon per minute per square foot = 40.75 L/min/m2, °C. = [(°F)-32]/1.8.

a. System shall be a closed-head wet system with approved devices for proportioning aqueous film-forming foam.
b. Maximum ceiling height of 30 feet.
c. Hose stream demand includes 11/2-inch inside hose connections ~~hand hose~~, when required.

5704.3.8.5 Warehouse hose lines. In liquid storage warehouses, either 1 1/2-inch (38 mm) lined or 1-inch (25 mm) hard rubber ~~hand~~ hose lines shall be provided in sufficient number to reach all liquid storage areas and shall be in accordance with Section 903 or Section 905.

Reason: The term “hand hose” is only used in Chapter 57, while the remainder of the IFC uses the term “hose connections.”

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

F319-13

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

5704.6.3T-F-KLAUSBRUCKNER

F320 – 13
5705.5, 5705.5.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

5705.5 Alcohol-based hand rubs classified as Class I or II liquids. The use of wall-mounted dispensers containing alcohol- based hand rubs classified as Class I or II liquids shall be in accordance with all of the following:

1. The maximum capacity of each dispenser shall be 68 ounces (2 L).
2. The minimum separation between dispensers shall be 48 inches (1219 mm).
3. The dispensers shall not be installed ~~directly adjacent to, directly~~ above**,** ~~or~~ below**,** or closer than 1 inch to an electrical receptacle, switch, appliance, device or other ignition source. The wall space between the dispenser and the floor or intervening counter top shall be free ~~remain clear and unobstructed~~ of electrical receptacles, switches, appliances, devices, or other ignition sources.
4. Dispensers shall be mounted so that the bottom of the dispenser is a minimum of 42 inches (1067 mm) and a maximum of 48 inches (1219 mm) above the finished floor.
5. Dispensers shall not release their contents except when the dispenser is manually activated. Facilities shall be permitted to install and use automatically activated “touch free” alcohol-based hand-rub dispensing devices with the following requirements:
   5.1. The facility or persons responsible for the dispensers shall test the dispensers each time a new refill is installed in accordance with the manufacturer’s care and use instructions.
   5.2. Dispensers shall be designed and must operate in a manner that ensures accidental or malicious activations of the dispensing device are minimized. At a minimum, all devices subject to or used in accordance with this section shall have the following safety features:
      5.2.1. Any activations of the dispenser shall only occur when an object is placed within 4 inches (98 mm) of the sensing device.
      5.2.2. The dispenser shall not dispense more than the amount required for hand hygiene consistent with label instructions as regulated by the United States Food and Drug Administration (USFDA).
      5.2.3. An object placed within the activation zone and left in place will cause only one activation.
6. Storage and use of alcohol-based hand rubs shall be in accordance with the applicable provisions of Sections 5704 and 5705.
7. Dispensers installed in occupancies with carpeted floors shall only be allowed in smoke compartments or fire areas equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

5705.5.1 Corridor installations. In addition to the provisions of Section 5705.5, ~~W~~ where wall-mounted dispensers containing alcohol-based hand rubs are installed in corridors or rooms and areas open to the corridor, they shall be in accordance with all of the following:

1. Level 2 and 3 aerosol containers shall not be allowed in corridors.
2. The maximum capacity of each Class I or II liquid dispenser shall be 41 ounces (1.21 L) and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (0.51 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 1aerosols, 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 1,135 ounces (32.2 kg) such that the sum of the ratios of the liquid and aerosol quantities divided by the allowable quantity of liquids and aerosols, respectively, shall not exceed one.

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: Because ABHR dispensers are often installed above fixed casework countertops, Section 5705.5(3) is being revised to address the practical issue of clearances from the dispenser to ignition sources associated with the countertop installation. Establishing the minimum clearance requirements provides clarity to the fire code official and to designers and facility administrators.

As part of an institution's infection control protocol, many places where ABHR dispensers are installed in healthcare facilities are areas that are open to the corridor as permitted by Section 407 of the *International Building Code*. As such, Section 5705.5.1 is being revised to include such areas.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/cc/ctc/index.html. Since its inception in April, 2005, the CTC has held 25 meetings – all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

Cost impact: This proposal will not increase the cost of construction.

F320-13

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

5705.5-F-BALDASSARRA-WILLIAMS-ADHOC-CTC

F321 – 13
5706.5.1.5

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

5706.5.1.5 Spill control and secondary containment. Areas where transfer operations are located shall be provided with spill control and secondary containment in accordance with Section 5703.4. The spill control and secondary containment system in bulk plants, bulk terminals, and refineries shall have a design capacity capable of containing the capacity of the largest tank compartment located in the area where transfer operations are conducted. Containment of the rainfall volume specified in Section 5004.2.2.6 is not required.

Reason: The requirements of spill control above is under 5706, "Special Operation." These requirements are mostly intended for large flammable/combustible liquids bulk tanks, plants and terminals. However since Bulk Transfer is defined as:

BULK TRANSFER. The loading or unloading of flammable or combustible liquids from or between tank vehicles, tank cars or storage tanks.

Since most flammable/combustible liquids storage tanks will need refilling, the requirements of 5706.5.1.5 [as it is written] apply to ALL flammable/combustible liquids storage tanks, not just in bulk terminals and plants. In other words, the design of secondary containment having a design capacity capable of containing the capacity of the largest tank **compartment** would be applied to the largest tank vehicle or tank car compartment filling or fuelling regular tanks on site. This section was clearly intended bulk plants, terminals and refineries.

For example if a single double walled tank for a generator is proposed, Section 5706.5.1.5, as it exists, would still require that a spill control and secondary containment be designed and installed. The containment would have to be designed to contain the largest tank compartment [which can be a tank car, tank vehicle, etc.]. There is no method of verifying what tank vehicle or tank car [i.e. largest compartment on that tank] will be refilling the on-site diesel generator tank. This was clearly intended for bulk plants, bulk terminals and refineries, not for single tanks used on site.

Please also note that overfill protection is required for tanks that do not fall under "Special Operations" in sections 5704.2.7.5.8, 5704.2.8.18, 5704.2.9.5.1, 5704.2.9.7.6, 5704.2.11.4. These overfill protection requirements address the hazards associated with possibly overfilling tanks.

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

F321-13

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

5706.5.1.5-F-KLAUSBRUCKNER

F322 – 13
5706.8 (New), 5706.1

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

5706.8 Liquid Biofuels. Production, processing and storing of liquid biofuels shall comply with all applicable requirements in this chapter. Biofuel dispensing operations shall be in accordance with Chapter 23.

(Renumber subsequent sections)

5706.1 General. This section shall cover the provisions for special operations which include, but are not limited to, storage, use, dispensing, mixing or handling of flammable and *combustible liquids*. The following special operations shall be in accordance with Sections 5701, 5703, 5704 and 5705, except as provided in Section 5706.

1. Storage and dispensing of flammable and *combustible liquids* on farms and sites.
2. Well drilling and operating.
3. Bulk plants or terminals.
4. Bulk transfer and process transfer operations utilizing tank vehicles and tank cars.
5. Tank vehicles and tank vehicle operation.
6. Refineries.
7. Liquid biofuels.
8. Vapor recovery and vapor-processing systems.

Reason: A growing number of citizens are obtaining used cooking grease and other combustible liquids, to then distill into biodiesel and other liquid biofuels. This proposal provides clear cut requirements for code officials to use to prevent this processing operation from being conducted unless in conformance with the code.

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

F322-13

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

5706.8 (NEW)-F-ZUBIA-FCAC

F323 – 13
5801.1, Chapter 80

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5801.1 Scope. The storage and use of flammable gases and flammable cryogenic fluids shall be in accordance with this chapter and NFPA 55. Compressed gases shall also comply with Chapter 53 and cryogenic fluids shall also comply with Chapter 55. Flammable cryogenic fluids shall comply with Section 5806. Hydrogen motor fuel-dispensing stations and repair garages and their associated above-ground hydrogen storage systems shall also be designed , ~~and~~ constructed and maintained in accordance with Chapter 23 and NFPA 2.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Liquefied petroleum gases and natural gases regulated by Chapter 61.
3. Fuel-gas systems and appliances regulated under the International Fuel Gas Code other than `gaseous hydrogen systems and appliances.
4. Pyrophoric gases in accordance with Chapter 64.

Add new standard to Chapter 80 as follows:

NFPA

2-11	Hydrogen Technologies Code	5801.1

Reason: This minor modification to Section 5801.1 clarifies that hydrogen motor fuel dispensing stations and repair garages must be maintained in accordance with Chapter 23 in addition to being design and constructed in accordance with that chapter. Additionally, a reference is added to NFPA 2 to coordinate with previous proposals in this series of changes submitted on behalf of NREL.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F323-13

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

5801.1-F-DAVIDSON

F324 – 13
5803.1.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5803.1.1 Special limitations for indoor storage and use. Flammable gases shall not be stored or used in Group A, E, I or R occupancies or in offices in Group B occupancies.

Exceptions:

1. Cylinders of nonliquefied compressed gases not exceeding a capacity of 250 cubic feet (7.08 m3) or liquefied gases not exceeding a capacity of 40 pounds (18 kg) each at normal temperature and pressure (NTP) used for maintenance purposes, patient care or operation of equipment.
2. Food service operations in accordance with Section 6103.2.1.7.
3. Hydrogen gas systems located in a hydrogen cutoff room constructed in accordance with Section 421 of the *International Building Code*.

Reason: Starting with the 2003 edition of the I-Codes there were provisions for the use of a "hydrogen cutoff room" as an incidental use for the storage and use of hydrogen. The purpose was to provide rules for the indoor application of new hydrogen fuel technology.

Though language was added to Chapter 23 pointing to the hydrogen cutoff room provisions for indoor fueling operations, no pointer was provided for other uses of the new technology such as the use of hydrogen fuel cells with hydrogen gas cylinders as a fuel supply for clean energy backup power systems.

The use of the hydrogen fuel cell backup power supplies is not Group specific and though Exception 1 currently permits the hydrogen for operation of equipment, the amount permitted, 250 cubic feet, is insufficient for the backup power application.

The new pointer to the use of the hydrogen cutoff room will provide for the safe use of this technology in the Groups currently restricted by Section 5803.1.1 by allowing the application of the hydrogen cutoff rooms which have increased protective measures. The limiting factor would be the MAQ for flammable gas currently specified by the code.

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

F324-13

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

5803.1.1-F-DAVIDSON

F325 – 13
6003.1.4.1

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

6003.1.4.1 Floors. In addition to the requirements set forth in Section 5004.12, floors of storage areas <u>where highly toxic and toxic liquids are stored</u> shall be of liquid-tight construction.

Reason: Liquid tight flooring for storage of highly toxic and toxic solids is illogical. We believe the code section was intended for storage of liquids only.

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

F325-13

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

6003.1.4.1-F-KLAUSBRUCKNER

F326 – 13
6003.1.5.2, 6003.1.5.3

Proponent: Elley Klausbruckner representing Klausbruckner & Associates Inc (ek@klausbruckner.com)

Revise as follows:

6003.1.5.2 Exhaust ventilation for open systems. Mechanical exhaust ventilation shall be provided for highly toxic and toxic liquids used in *open systems* in accordance with Section 5005.2.1.1.

Exception: Liquids ~~or solid~~s that do not generate highly toxic or toxic fumes, mists or vapors.

6003.1.5.3 Exhaust ventilation for closed systems. Mechanical exhaust ventilation shall be provided for highly toxic and toxic liquids used in *closed systems* in accordance with Section 5005.2.2.1.

Exception: Liquids ~~or solids~~ that do not generate highly toxic or toxic fumes, mists or vapors.

Reason: Editorial Change. The charging statement is specific to highly toxic and toxic liquids. However the exception mentions solids.

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

F326-13

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

6003.1.5.2-F-KLAUSBRUCKNER

F327 – 13
Table 6104.3

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

TABLE 6104.3
LOCATION OF LP-GAS CONTAINERS

LP-GAS CONTAINER CAPACITY (water gallons)	MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS AND BUILDINGS~~, PUBLIC WAYS~~ OR LOT LINES OF ADJOINING PROPERTY THAT CAN BE BUILT UPON		MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS [b, c] (feet)
	Mounded or underground LP-gas containers [a] (feet)	Above-ground LP-gas containers [b] (feet)	

(Portions of table not shown remain unchanged)

Reason: The definition in the International Fire Code of "public way" is:
"A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet."

The Commentary to the IFC elaborates by saying:
"The Public way marks the termination of the exit discharge portion of the means of egress system. It is the final destination for occupants, and is presumed to be safe from the emergency occurring in the structure or that it will directly connect to other routes so that occupants can move a distance away from the danger."

Based on the history of the term "public way," the chief concern is being able to egress the occupants of a building in a manner that allows them to have access to a safe space outside the building. The presumption is that an emergency has occurred inside the building and the occupants must egress the building safely.

The restriction on the placement of a propane container with respect to a public way is not consistent with the purpose for establishing a public way because the threat to the occupants does not come from the propane container. The container is required to be located a specific distance from the building based on its size and therefore, the container will not be threatened by a fire event that occurs within the building. It has been shown that the distances required by Table 6104.3 are sufficient to maintain the safety of the container even if the building is on fire. Therefore, there is no threat to the occupants from the propane container as they egress the building. In addition, the potential concern of vehicular impact to the propane container is already addressed in Section 312 of the IFC.

Chapter 61 refers to NFPA 58 as a standard that "fills in the gaps" that may not be addressed in Chapter 61. In this case, NFPA 58 has a restriction (Table 6.5.3) on the location of product transfers with respect to public ways and places of public assembly. Transfers of propane into or out of the container are prohibited within 10 feet of a public way and within 50 feet of outdoor places of public assembly. Therefore, the threat to the general public during product transfer operations is addressed by NFPA 58.

The limitation in the IFC on the placement of containers with respect to public ways creates a conflict between Section 6104.3 with Table 6104.3 in the IFC and Section 6.3.1 with Table 6.3.1 in NFPA 58. This conflict has led to differing interpretations by various authorities having jurisdiction and we propose to delete the term "public ways" to resolve the conflict.

In summary, elimination of the term "public way" will not compromise the safety of the occupants of the building and will resolve a conflict between the IFC and NFPA 58.

Cost Impact: This proposal will not increase the cost of construction.

F327-13

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

6104.3-F-SWIECICKI

F328 – 13
Table 6104.3

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

TABLE 6104.3
LOCATION OF LP-GAS CONTAINERS

LP-GAS CONTAINER CAPACITY (water gallons)	MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS AND BUILDINGS, PUBLIC WAYS OR LOT LINES OF ADJOINING PROPERTY THAT CAN BE BUILT UPON		MINIMUM SEPARATION BETWEEN LP-GAS CONTAINERS [b, c] (feet)
	Mounded or underground LP-gas containers [a] (feet)	Above-ground LP-gas containers [b] (feet)	
Less than 125[c, d]	10	5 e	None
501 to 2,000	10	25 ~~e~~, f	3

(Portions of table not shown remain unchanged)

a through d (No changes to current text)

e. The following shall apply to above-ground containers installed alongside buildings:

1. LP-gas containers of less than a 125-gallon water capacity are allowed next to the building they serve and with no separation from a property line when in compliance with Items 2, 3 and 4.
2. Department of Transportation (DOTn) specification LP-gas containers shall be located and installed so that the discharge from the container pressure relief device is at least 3 feet horizontally from building openings below the level of such discharge and shall not be beneath buildings unless the space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The discharge from LP-gas container pressure relief devices shall be located not less than 5 feet from exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.
3. ASME LP-gas containers of less than a 125-gallon water capacity shall be located and installed such that the discharge from pressure relief devices shall not terminate in or beneath buildings and shall be located at least 5 feet horizontally from building openings below the level of such discharge and not less than 5 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances, or mechanical ventilation air intakes.
4. The filling connection and the vent from liquid-level gauges on either DOTn or ASME LP-gas containers filled at the point of installation shall not be less than 10 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances or mechanical ventilation air intakes.

f. *(No changes to current text)*

Reason: This proposal will bring the IFC into closer correlation with NFPA 58 regarding the installation of small containers next to buildings. There is no technical basis for permitting the installation of a small container next to a building and still mandating a separation distance from a lot line, as Note e to Table 6104.3 may currently be interpreted to require. ICC staff previously responded to a request for interpretation and agrees that an installation in which a small container is located next to a building does not constitute a violation if the property line is within 5 feet of the container.

The other change would strike the reference to Note e in the cell for 501-2000 gallon above-ground containers. Since Note e is only applicable to containers less than 125 gallons, there is no need to reference it in that cell.

Cost Impact: This proposal will not increase the cost of construction.

F328-13

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

6104.3T #1-F-SWIECICKI

F329 – 13
6105.2

Proponent: Bruce Swiecicki representing National Propane Gas Association. (bswiecicki@npga.org)

Revise as follows:

6105.2 Release to the atmosphere. LP-gas shall not be released to the atmosphere, except in accordance with Section 7.3 of NFPA 58. ~~through an *approved* liquid-level gauge or other *approved* device.~~

Reason: Currently, the IFC permits LP-gas to be released to the atmosphere only while the container is being filled, through the fixed maximum liquid level gauge. However, there are many other situations that require the release of LP-gas under controlled conditions. Referencing Section 7.3 of NFPA 58 will accomplish the intent of this proposal by recognizing all the different circumstances that necessitate the release of gas to the atmosphere, including the following:

- The release of gas when the filling hose is disconnected from the filler valve on the container.
- The release of gas necessary to make cylinders and other containers safe prior to being serviced.
- The release of gas that may be necessary in order to properly purge a container of air to make it safe for filling.

These are a few of the common occurrences in the propane industry that necessitate the release of LP-gas to the atmosphere.

Cost Impact: This proposal will not increase the cost of construction.

F329-13

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

6105.2-F-SWIECICKI

F330 – 13
6106.2

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

6106.2 Overfilling. LP-gas containers shall not be filled or maintained with LP-gas in excess of either the volume determined using the fixed maximum liquid-level gauge ~~installed by the manufacturer~~ installed in accordance with the manufacturer's specifications and in accordance with Section 5.7.5 of NFPA 58, or the weight determined by the required percentage of the water capacity marked on the container. Portable LP-gas containers shall not be refilled unless equipped with an overfilling prevention device (OPD) where required by Section 5.7.3 of NFPA 58.

Reason: This paragraph requires usage of manufacturer installed liquid level gauge to fill a container. It is common practice in the industry to field repair and replace valves and gauges on both ASME tanks and DOT cylinders as needed.

The liquid level gauge is generally an integral part of the service valve which is used to turn the tank on and off. Service valves have rubber or plastic o-rings that can start to leak over time. When a service valve becomes faulty, a new valve is installed with a liquid level gauge tube of exactly the same length. In addition, OPD systems on DOT cylinders may also require periodic replacement. The propane industry has procedures and training to successfully perform these replacements and repair.

The current code text eliminates the ability to service and repair propane containers in the field. The proposed rewrite would correct this and acknowledge that the service and repair of propane containers in the field does take place. NFPA 5.7.5 "Liquid Level Gauging Device" covers the requirements for proper installation and the use of liquid level gauges.

Cost Impact: This proposal will not increase the cost of construction.

F330-13

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

6106.2-F-SWIECICKI

F331 – 13
6107.4, 6109.13

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

6107.4 Protecting containers from vehicles. Where exposed to vehicular damage due to proximity to alleys, driveways or parking areas, LP-gas containers, regulators and piping shall be protected in accordance with NFPA 58.~~Section 312~~.

6109.13 Protection of containers. LP-gas containers shall be stored within a suitable enclosure or otherwise protected against tampering. Vehicular protection shall be provided as required by Section 6107.4. ~~the fire code official.~~

Reason: Sections 6107.4 and 6109.13 both require vehicle impact protection for LP-gas containers, but the requirements are not consistent between the two sections. Furthermore, Section 6109.13 provides no guidance on when protection is necessary or what type of protection should be provided. The proposed revisions correlate the two sections and provide a reference to NFPA 58 for design requirements that are specific to LP-gas equipment. Because NFPA 58 is specific to LP-gas and it contains requirements for vehicle impact protection, as well as annex guidance on how to accomplish such protection, it makes sense for Chapter 61 to reference NFPA 58 for this topic, as it does for various other LP gas topics, to avoid conflicts between the code and the reference standard.

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

F331-13

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

6107.4-F-SHAPIRO

F332 – 13
6110.1, 6110.2

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

6110.1 ~~Temporarily out of service~~ Containers disconnected from service at consumer sites. LP-gas containers disconnected from service ~~whose use has been temporarily discontinued~~ at consumer sites shall comply with all of the following:

~~1. Be disconnected from appliance piping.~~
~~2~~1. ~~Have~~ The LP-gas container outlets, except pressure relief valves, shall be closed ~~or~~ and plugged or capped.
~~3~~2. ~~Be~~ The container shall be positioned with the pressure relief valve in direct communication with the LP-gas container vapor space.

6110.2 ~~Permanently out of service~~ Retrieval of disconnected containers. ~~LP-gas containers to be placed permanently out of service shall be removed from the site.~~ LP-gas containers that have been disconnected from service shall be retrieved by the owner.

Reason: As currently worded, the text in Section 6110 is confusing and difficult to implement. A reading of the 2012 Commentary indicates that the concern is over LP-gas containers that have been disconnected from service due to a customer's request, usually because the customer wants to switch suppliers. The text proposed above will clarify in concise terms what needs to be done in order to avoid the release of gas from a container that has been disconnected from service. The proposal accomplishes the following:

- The changed titles clarify the intent of these sections.
- The deletion of current #1 occurs because the first sentence of the paragraph establishes that the container has already been disconnected from the piping system.
- Changing "outlets" to "appurtenances" is more accurate since not every valve on a container is an "outlet." Container appurtenances are defined in NFPA 58 as "devices installed in container openings for safety, control or operating purposes."
- It is necessary not only to close the valve, but also to plug or cap it.

Current 6110.2 was reworded slightly to establish the responsibility lies with the container owner by recognizing that although the majority of propane tanks are owned by the propane marketer, some are owned by the property owner and therefore the marketer has no control over them.

Cost Impact: This proposal will not increase the cost of construction.

F332-13

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

6110.1-F-SWIECICKI

F333 – 13
6111.2, 6111.2.1, 6111.2.2

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiecicki@npga.org)

Revise as follows:

6111.2 Unattended parking. The unattended parking of LP-Gas cargo tank vehicles not in service shall be in accordance with ~~Sections 6111.2.1 and 6111.2.2~~ one of the following:

1. Vehicles shall be parked within a LP-Gas Bulk Plant.
2. Vehicles shall be parked off of public streets, highways, public avenues or public alleys.
3. Vehicles shall be parked at other *approved* locations not less than 50 feet (15. 240 m) from buildings, other than those *approved* for the storage or servicing of such vehicles.

~~**6111.2.1 Near residential, educational and institutional occupancies and other high-risk areas.** LP-gas tank vehicles shall not be left unattended at any time on residential streets or within 500 feet (152 m) of a residential area, apartment or hotel complex, educational facility, hospital or care facility. Tank vehicles shall not be left unattended at any other place that would, in the opinion of the *fire code official*, pose an extreme life hazard.~~

~~**6111.2.2 Durations exceeding 1 hour.** LP-gas tank vehicles parked at any one point for longer than 1 hour shall be located as follows:~~

~~1. Off public streets, highways, public avenues or public alleys.~~
~~2. Inside of a bulk plant.~~
~~3. At other *approved* locations not less than 50 feet (15 240 mm) from buildings other than those *approved* for the storage or servicing of such vehicles.~~

Reason: LP-gas tank vehicles are more commonly referred to as “cargo tank vehicles” and they are under the jurisdiction of the U.S. Department of Transportation, Title 49 of the Code of Federal Regulations. The transportation of hazardous materials (propane is classified as a flammable gas, Division 2.1) is regulated by the Hazardous Materials Regulations (Parts 171-185) and the Federal Motor Carrier Safety Regulations (Parts 350-399).

The current text in 6111.2 addresses “unattended” parking, in which the operator of the vehicle is not present and able to react to an emergency situation by either driving the vehicle or controlling the flow of product into or out of the cargo tank. A vehicle that is parked for the purpose of transferring product into or out of the cargo tank would not be considered to be “unattended” because paragraph 177.834 (i) requires the operator to be in attendance during the product transfer operation. Therefore, the requirements in 6111.2 would not be applicable whenever the cargo tank vehicle was being loaded or unloaded.

The requirements in 6111.2.1 address unattended parking with respect to certain occupancies and other locations that are termed “high-risk” areas. This paragraph is not needed in the code because it imposes requirements that are unwarranted and contradictory as compliance with 6111.2.1 and 6111.2.2 is muddled, i.e., it is not uncommon for LP-gas bulk plants to be located within 500 feet of the occupancies and locations that are mentioned in 6111.2.1. Therefore, the parking of cargo tank vehicles *even within the confines of the bulk plant could constitute a violation.*

Furthermore, the requirements from 49 CFR Part 397.7(b) makes no mention of the occupancies or locations described in 6111.2.1:

> *§ 397.7Parking*
> *(b) A motor vehicle which contains hazardous materials other than Division 1.1, 1.2, or 1.3 materials must not be parked on or within five feet of the traveled portion of public street or highway except for brief periods when the necessities of operation require the vehicle to be parked and make it impracticable to park the vehicle in any other place.*

The requirements in current paragraph 6111.2.2 are reasonable and do not impose an undue burden on operators of LP-gas cargo tank vehicles. Those requirements are more consistent (but not identical) with those in paragraph 9.7.2 of NFPA 58. Therefore, this wording is retained in 6111.2.

The 50-foot separation distance has been shown to be a valid separation distance to protect the cargo tank from exposure to nearby fires. The 50-foot separation is required for stationary containers greater than 2,000 gallons water capacity and has been justified by numerical modeling of steel containers exposed to fire. The research paper, (*Journal of Hazardous Materials*, April 2006) analyzed steel propane containers of the sizes referred to in Table 6104.3 that were exposed to a severe petroleum pool fire 100 feet in diameter. The modeling indicated that the temperatures of the container walls were well below the temperature at which steel begins to yield. Since all LPG cargo tank motor vehicles are less than 30,000 gallons water capacity, the fifty foot separation distance is justified.

Cost Impact: This proposal will not increase the cost of construction.

F333-13

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

6111.2-F-SWIECICKI

F334 – 13
6303.1.1.2, 6303.2, 6304.1, 6304.2.1

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Lonza Group and PPG Industries, Inc.(pmclaugma@aol.com)

Revise as follows:

6303.1.1.2 Class 3 liquid and solid oxidizers. A maximum of 200 pounds (91 kg) of solid or 20 gallons (76 L) of liquid Class 3 oxidizer is allowed in ~~Group I occupancies~~ storage and use when such materials are necessary for maintenance purposes or operation of equipment. The oxidizers shall be stored in *approved* containers and in an *approved* manner.

~~**6303.2 Quantities exceeding the maximum allowable quantity per control area.** The storage and use of oxidizing materials in amounts exceeding the *maximum allowable quantity per control area* indicated in Section 5003.1 shall be in accordance with Chapter 50 and this chapter~~.

6303.2 Class 1 oxidizer storage configuration. The storage configuration of Class I liquid and solid oxidizers shall be as set forth in Table 6303.2

~~**6304.2.1 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 6304.1.2.~~

6304.1 Indoor storage. Indoor storage of oxidizing materials in amounts exceeding the *maximum allowable quantity per control area* indicated in Table 5003.1.1(1) shall be in accordance with Sections 5001, 5003 and 5004 and this chapter.

~~**6304.1.1 Detached storage.** Storage of liquid and solid oxidizers shall be in detached buildings when required by Section 5003.8.2.~~

~~**6304.1.2 Distance from detached storage buildings to exposures.** In addition to the requirements of the *International Building Code*, detached storage buildings shall be located in accordance with Table 6304.1.2.~~

~~**TABLE 6304.1.2**~~
~~**OXIDIZER LIQUIDS AND SOLIDS-DISTANCE FORM DETACHED BUILDINGS AND OUTDOOR STORAGE AREAS TO EXPOSURES**~~

~~**6304.1.3**~~ **6304.1.1 Explosion control.** Indoor storage rooms, areas and buildings containing Class 4 liquid or solid oxidizers shall be provided with explosion control in accordance with Section 911.

~~**6304.1.4**~~ **6304.1.2 Automatic sprinkler system.** The *automatic sprinkler system* for oxidizer storage shall be designed in accordance with NFPA ~~430~~ 400.

~~**6304.1.5**~~ **6304.1.3 Liquid-tight floor.** In addition to Section 5004.12, floors of storage areas for liquid and solid oxidizers shall be of liquid-tight construction.

~~**6304.1.6**~~ **6304.1.4 Smoke detection.** An *approved* supervised smoke detection system in accordance with Section 907 shall be installed in liquid and solid oxidizer storage areas. Activation of the smoke detection system shall sound a local alarm.

Exception: Detached storage buildings protected by an *approved* automatic fire-extinguishing system.

~~**6304.1.7**~~ **6304.1.5 Storage conditions.** The maximum quantity of oxidizers per building in ~~detached~~ storage buildings shall not exceed those quantities set forth in Tables 6304.1.~~7~~ 5(1) through 6304.1.~~7~~ 5(~~4~~ 3). The storage configuration for liquid and solid oxidizers shall be as set forth in Tables 6304.1.~~7~~ 5(1) through 6304.1.~~7~~ 5(~~4~~ 3). Class 2 oxidizers shall not be stored in *basements* except when such storage is in stationary tanks. Class 3 and 4 oxidizers in amounts exceeding the *maximum allowable quantity per control area* set forth in Section 5003.1 shall be stored on the ground floor only.

~~**6304.1.8**~~ **6304.1.6 Separation of Class 4 oxidizers from other materials.** In addition to the requirements in Section 5003.9.8, Class 4 oxidizer liquids and solids shall be separated from other hazardous materials by not less than a 1- hour *fire barrier* or stored in hazardous materials storage cabinets. ~~Detached storage buildings for Class 4 oxidizer liquids and solids shall be located a minimum of 50 feet (15 240 mm) from other hazardous materials storage.~~

6304.1.9 6304.1.7 Contamination. Liquid and solid oxidizers shall not be stored on or against combustible surfaces. Liquid and solid oxidizers shall be stored in a manner to prevent contamination.

~~**6304.1.1**~~ **6304.1.8 Detached storage.** Storage of liquid and solid oxidizers shall be in detached buildings when required by Section 5003.8.2. *(moved from Section 6304.1.1)*

6304.1.8.1 Separation Distance. Detached storage buildings for Class 4 oxidizer liquids and solids shall be located a minimum of 50 feet (15 240 mm) from other hazardous materials storage.

Table ~~6304.1.7(1)~~ 6303.2
STORAGE OF CLASS 1 OXIDIZER LIQUIDS AND SOLIDS ~~IN COMBUSTIBLE CONTAINERS~~[a]

STORAGE CONFIGURATION	LIMITS (feet)
Piles	
~~Maximum length~~	~~No Limit~~
Maximum width	~~50~~ 24 (7.3 m)
Maximum height	20 (6.1 m)
Maximum distance to aisle	12 (3.7 m)
Minimum distance to next pile[b]	~~3~~ 4 (1.2 m)
Minimum distance to walls[c]	2 (0.6 m)
Maximum quantity per pile	~~No Limit~~ 200 tons (181met ton)
Maximum quantity per building	No Limit

~~a. Storage in noncombustible containers or in bulk in detached storage buildings is not limited as to quantity or arrangement.~~
b. The minimum aisle width shall be equal to the pile height, but not less than 4 (1.2m) ft. and not greater than 8 (2.4m) ft.
c. There shall be no minimum distance from the pile to a wall for amounts less than 9000 lb. (4082 kg).

Table ~~6304.1.7 (2)~~ 6304.1.5(1)
STORAGE OF CLASS 2 OXIDIZER LIQUIDS AND SOLIDS d~~a, b~~

		LIMITS	
STORAGE CONFIGURATION	~~Segregated storage~~ Control Area Storage	~~Cutoff storage rooms~~~~c~~ Group H Occupancy Storage	Detached ~~building~~ Storage
Piles			
Maximum width	16 feet (4.9 m)	25 feet (7.6 m)	25 feet (7.6 m)
Maximum height	~~10 feet~~ Note a	~~12 feet~~ Note a	~~12 feet~~ Note a
Maximum distance to aisle	8 feet (2.4 m)	12 feet (3.7)	12 feet (3.7)
Minimum distance to next pile	Note ~~d~~ b	Note ~~d~~ b	Note ~~d~~ b
Minimum distance to walls	2 feet (0.6 m)	2 feet~~c~~ (0.6 m)	2 feet~~c~~ (0.6 m)
Maximum quantity per pile	~~20 tons~~ MAQ	~~50~~ 100 tons (91 met ton)	200 tons (181 met tons)
Maximum quantity per building	~~200 tons~~ MAQ	~~500~~ 2000 tons (907 met tons)	No Limit

For SI: 1 foot = 304.8 mm, 1 ton = 0.907185 metric ton.

~~a. Storage in noncombustible containers is not limited as to quantity or arrangement, except that piles shall be at least 2 feet from walls in sprinkerered buildings and 4 feet from walls in nonsprinklered buildings.~~
~~b. Quantity limits shall be reduced by 50 percent in buildings or portions of buildings used for retail sales.~~
~~c. Cutoff storage rooms shall be separated from the remainder of the building by 2-hour fire barriers.~~
~~d~~ a. Maximum storage height in non sprinklered buidlings is limited to 6 ft. (1.8 m). In sprinklered buildings see NFPA 400 for storage heights based on ceiling sprinkler protection.
b. The minimum aisle width shall be equal to the pile height, but not less than 4 ft. (1.2m) and not greater than 8 ft. (2.4m). ~~Aisle width shall not be less than the pile height.~~
c. For Protection Level and Detached Storage under 4500 lb (2041 kg), there shall be no minimum separation distance between the pile and any wall.

Table ~~6304.1.7(3)~~ 6304.1.5(2)
STORAGE OF CLASS 3 OXIDIZER LIQUIDS AND SOLIDS ~~a~~

		LIMITS	
STORAGE CONFIGURATION	~~Segregated storage~~ Control Area Storage	~~Cutoff storage rooms~~~~c~~ Group H Occupancy Storage	Detached ~~building~~ Storage
Piles			
Maximum width	12 feet	16 feet	20 feet
Maximum height	~~8 feet~~ Note a	~~10 feet~~ Note a	~~10 feet~~ Note a
Maximum distance to aisle	8 feet (2.4 m)	10 feet (3 m)	10 feet (3 m)
Minimum distance to next pile	Note ~~d~~ b	Note ~~d~~ b	Note ~~d~~ b
Minimum distance to walls	4 feet	4 feet~~c~~	4 feet~~c~~
Maximum quantity per pile	~~20 tons~~ NA	30 tons	~~150~~ 100 tons
Maximum quantity per building	~~100 tons~~ MAQ	~~500~~ 1200 tons	No Limit

For SI: 1 foot = 304.8 mm, 1 ton = 0.907185 metric ton.

~~a. Storage in noncombustible containers is not limited as to quantity or arrangement, except that piles shall be at least 2 feet from walls in sprinkerered buildings and 4 feet from walls in nonsprinklered buildings.~~
~~b. Quantity limits shall be reduced by 50 percent in buildings or portions of buildings used for retail sales.~~
~~c. Cutoff storage rooms shall be separated from the remainder of the building by 2-hour fire barriers~~.
a. Maximum storage height in non sprinklered buidlings is limited to 6 feet. In sprinklered buildings see NFPA 400 for storage heights based on ceiling sprinkler protection.

~~d~~ b. The minimum aisle width shall be equal to the pile height, but not less than 4 (1.2m) ft. and not greater than 8 (2.4m) ft. ~~Aisle width shall not be less than the pile height.~~

c. For Protection Level and Detached Storage under 2300 lb (1043 kg), there shall be no minimum separation distance between the pile and any wall.

Table ~~6304.1.7(4)~~ 6304.1.5(3)
STORAGE OF CLASS 4 OXIDIZER LIQUIDS AND SOLIDS

(Portions of table not shown remain unchanged)

Add new standard to Chapter 80 as follows:

NFPA

400-10 Hazardous Materials Code

Reason: The Chapter 63 provisions on liquid and solid oxidizers were originally extracted from NFPA 430. As a result, Chapter 63 contains terminology that does not exist in the IFC, and creates conflicts and confusion. Furthermore, NFPA developed a new standard on hazardous materials, NFPA 400, using the UFC as the base and NFPA 430 requirements were moved into it, and updated to incorporate the terminology of the IFC relating to hazardous material, and, subsequently, NFPA 430 was withdrawn. However, the IFC was not updated to reflect the new NFPA requirements, nor the current IFC hazardous material requirements. This code change updates Chapter 63 so that it now parallels the terminology of the hazardous materials provisions in the IFC.

6303.1.1.2 - This section, as written, could lead the user to believe that 200 pounds are not allowed in other occupancies because they are not mentioned. However IFC Table 5003.1.1(1) footnote k allows 200 pounds for these purposes in all occupancies. The result of the change would be to provide clarity. Group I occupancies would not be impacted as the section would continue to apply to them.

6303.2 - Class 1 oxidizer storage configuration limits are currently referenced in Section 6304.1.7 which only applies to oxidizers in excess of the maximum allowable quantity. Since there is no maximum allowable quantity for sprinklered Class 1 oxidizers, the reference is added here and the tables renumbered. The current Section is deleted because it is redundant.

6304.1.2 - This section which applies to detached oxidizer storage distances, conflicts with IBC Sections 415.5.1.2 and 415.5.1.3 so it is deleted. Also, the Class 4 oxidizer distances were extracted from NFPA 430 where they apply only to distances of tanks from buildings and not liquid and solid oxidizer from exposures as the current table indicates.

6304.1.4 – The reference to NFPA 430 is changed to NFPA 400 because NFPA 430 no longer exists. The automatic fire sprinkler requirements for oxidizer storage have been moved to Chapter 15 of NFPA 400. The Standard is available to read at: http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=400.

6304.1 - The material is reorganized by moving the detached building requirement to the end for clarity. Also, 6304.1.2 which applies to detached oxidizer storage conflicts with IBC Sections 415.5.1.2 and 415.5.1.3. The Class 4 oxidizer distances, which are deleted, were from NFPA 430 where they applied only to distances of tanks from buildings and not liquid and solid oxidizer from exposures as the current table indicates. Lastly, the newly renumbered Section 6304.1.5 is amended to clarify that it applies to all storage of liquid and solid oxidizers, not just detached building storage.

Tables 6304.1.7(1), 6304.1.7(2) and 6304.1.7(3) These tables were amended in NFPA 400 to make them consistent with the International Fire Code terminology, to replace "segregated storage" with "control area storage" and "cutoff storage rooms" with "protection level storage". The quantity allowances were also modified to reflect those found in the IFC for those storage areas. Finally, the Tables were renumbered to reflect the relocation of the Class 1 Table to the general requirements section and the relocation of the charging paragraph.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 400-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F334-13

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

6303.1.1.2-F-MCLAUGHLIN

F335 – 13
6303.1.1.2

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

6303.1.1.2 Class 3 liquid and solid oxidizers. A maximum of 200 pounds (91 kg) of solid or 20 gallons (76 L) of liquid Class 3 oxidizers is allowed in Group A,B, E, I and R occupancies when such materials are necessary for maintenance purposes or operation of equipment. The oxidizers shall be stored in *approved* containers and in an *approved* manner.

Reason: The current language contained in 2012 IFC infers that the storage allowance is extended to Group I (Institutional) group settings. What about the other settings (e.g., Group A – Assembly, Group B – Business, etc.? These other assemblies have the same potential "*maintenance*" and/or "*operational*" needs as the Group I occupancies.

Cost Impact: No anticipated or projected cost impact with this proposal.

F335-13

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

6303.1.1.2-F-MITCHELL

F336 – 13
6304.1.4, Chapter 80

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

6304.1.4 Automatic Sprinkler System. The automatic sprinkler system shall be designed in accordance with NFPA ~~430~~ 400.

Add new standard to Chapter 80 as follows:

NFPA

400-13 Hazardous Materials Code

Reason: Correlation with correct NFPA code. NFPA 430 has been discontinued and its content incorporated into NFPA 400 Hazardous Materials Code.

Cost impact: None given

Analysis: A review of the standard proposed for inclusion in the code, NFAP 400-13, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013.

F336-13

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

6304.1.4 #1-F-MITCHELL

F337 – 13
Appendix C101, C102, C103, C104, C105

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

APPENDIX C
FIRE HYDRANT LOCATIONS AND DISTRIBUTION

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION C101
GENERAL

C101.1 Scope. In addition to the requirements of Section 507.5.1 of the *International Fire Code*, fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed or moved into the jurisdiction.

~~**C102**~~
~~**LOCATION**~~

~~**C102.1 Location.** Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.~~

C102 ~~C103~~
NUMBER OF FIRE HYDRANTS

C102.1 ~~C103.1~~ Minimum number of fire hydrants for a building ~~available~~. The ~~minimum~~ number of fire hydrants available to a building shall not be less than the minimum specified ~~that listed~~ in Table C102.1 ~~C105.1~~.

~~The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted~~

~~**SECTION C104**~~
~~**CONSIDERATION OF EXISTING FIRE HYDRANTS**~~

~~**C104.1 Existing fire hydrants.** Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.~~

SECTION C103 ~~C105~~
FIRE HYDRANT SPACING ~~DISTRIBUTION OF FIRE HYDRANTS~~

C103.1 ~~C105.1~~ Hydrant spacing. Fire apparatus access roads and public streets providing required access to buildings in accordance with Section 503 of the *International Fire Code* shall be provided with one or more fire hydrants, as determined by Section C102.1. Where more than one fire hydrant is required, the distance between required fire hydrants shall be in accordance with Sections C103.2 and C103.3

C103.2 Average spacing. The average spacing between fire hydrants shall be in accordance with ~~not exceed that listed in~~ Table C102.1 ~~C105.1~~.

Exception: ~~The fire chief is authorized to accept a deficiency of up to 10 percent~~ The average spacing shall be permitted to be increased by 10 percent where existing fire hydrants provide all or a portion of the required number of fire hydrant~~s service~~.

C103.3 Maximum spacing. ~~Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1 and the minimum number of hydrants are provided.~~ The maximum spacing between fire hydrants shall be in accordance with Table C102.1.

TABLE C102.1 ~~C105.1~~
REQUIRED NUMBER AND SPACING ~~DISTRIBUTION~~ OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a,b,c, f, g]	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d, f, g]
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.
b. Where streets are provided with median dividers which 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. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
d. Reduce by 50 feet for dead-end streets or roads.
e. One hydrant for each 1,000 gallons per minute or fraction thereof.
f. A 50 percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 of the *International Fire Code*.
g. A 25 percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Sections 903.3.1.2 or 903.3.1.3 of the *International Fire Code* or Section P2904 of the *International Residential Code*..

SECTION C104
CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available to meet the requirements of Sections C102 and C103. Existing fire hydrants on adjacent properties ~~shall not be considered available unless~~ are allowed to be considered as available to meet the requirements of Sections C102 and C103 provided that a fire apparatus access road~~s~~ extends between properties and that an ~~and~~ easement~~s are~~ is established to prevent obstruction of such road~~s~~.

Reason: This code change proposal:

1. Clarifies how the requirements of 507.5.1 are to be utilized with Appendix C when Appendix C is adopted by the jurisdiction. Previously, it was not clear how these two sections were to be integrated when Appendix C was adopted.
2. States the buildings moved into the jurisdiction are also under the scope of this appendix. These buildings should be treated like new buildings when they are relocated.

3. The location language, in the current C102.1, is now addressed in the revised C102.1 by addressing the minimum number of hydrants for a building. The location spacing language has been provide in the new C103.1. The proposed C102.1 and title has been revised for better clarity as to the intent and the minimum number of hydrant that are available to a building.
4. The “complex” and “subdivision” paragraph has been deleted as basing the spacing on individual building fire flow covers every building in a complex or subdivision. There is no need for additional “complex or subdivision” text which can’t be applied without an identifiable fire flow.
5. C103.1 has been revised for better clarity and application by the user. Poor code language, such as “regardless of the average spacing” has been replaced with clearer code text.
6. Table C102.1 has three modifications to the footnotes. First, the 7,000 GPM threshold for arranging hydrants on an alternating basis does not appear to have any basis in application and creates confusion as to its true intent so it has been deleted. Second, a modifier for a 50% increase in hydrant spacing is proposed for building protected by a fire sprinkler system installed in accordance with NFPA 13. Lastly, a modifier for a 25% increase in hydrant spacing is proposed for those buildings protected by a fire sprinkler system installed in accordance with NFPA 13D, 13R or P2904. This spacing increase is justified due to the documented success of fire sprinklers systems in extinguishing and controlling fires.
7. The existing hydrant section was relocated for better flow of the appendix and additional text was provided to clarify how it should be applied.

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

F337-13

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

C101.1-F-ZUBIA-FCAC

F338 – 13
Appendix C Table C105.1

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a,b,c]	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d]
~~1,750~~ 1,250 or less	1	500	250
~~2,000~~1,500-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.
b. Where streets are provided with median dividers which 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.
c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
d. Reduce by 50 feet for dead-end streets or roads.
e. One hydrant for each 1,000 gallons per minute or fraction thereof.

Reason: This proposal changes the fire-flow threshold within the table which, in turn, changes the minimum number of hydrants and spacing for the modified threshold numbers. As an example a building with a required fire flow of 1,750 GPM would only require a single fire hydrant under the current provisions of Table C105.1. Under this proposal, that same building would require two fire hydrants.

The reasons for this change are:

1. ISO only recognizes a maximum of 1,000 GPM of flow per fire hydrant in the Fire Suppression Rating Schedule as specified in Section 614. The current table could result in a grading deficiency of 750 gallons per minute if the full 1,750 is provided from a single hydrant for a protected property.
2. There are practical fire flow delivery problems when the entire 1,750 GPM is provide from a single hydrant. Typically, a single fire apparatus is supplied from a single hydrant. Fire departments are not normally set up to operate in a dual pumping operation from a single fire hydrant. Two hydrants providing the 1,750 GPM would provide improved spacing, access and flexibility for responding units.
3. A single hydrant providing 1,750 GPM does not provide a backup in case the hydrant is out of service due to maintenance, obstructions or cold weather conditions.

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

F338-13

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

C105.1T-F-APFELBECK

F339 – 13
Appendix D103.5

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

D103.5 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. ~~The minimum gate width shall be 20 feet (6096 mm).~~ Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway the gate width shall be not less than 12 feet (3658 mm).
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. ~~Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.~~
~~7~~6. Methods of ~~L~~locking ~~device specifications~~ shall be submitted for approval by the fire code official.
~~8~~7. Electric gate operators, where provided, shall be listed in accordance with UL 325.
~~9~~8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

Reason: This proposal is designed to clarify and simplify the list of criteria for security gates.

Item 1 is revised to address the reality that many locations are now splitting the roadway with a guard station or island which holds the gate operating mechanism. When the roadway is split, a gate that is 20' wide is not necessary on each side. Item 1 is reworded to specify that when there is a single gate, the gate width must be 20', but in the situation of a split roadway, a 12' wide gate in each direction is adequate.

The requirements in Item 6 are easily covered in the revision to Item 7. Item 6 currently lists specific methods of locking access gates. Item 6 then becomes unnecessary so it is proposed to be deleted.

The reality is that there are many other methods available which can be utilized to lock a gate. Whatever the method of locking, the need is to have the method approved. This will now be covered in the new Item 6.

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

F339-13

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

D103.5-F-ZUBIA-FCAC

F340 – 13
Appendix B105.1, Table B105(1) (New), B105.2, Table B105(2) (New), Table B105.1

Proponent: Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

B105.1 One- and two-family dwellings, congregate living facilities of Groups R-3 and R-4 and townhouses,. The minimum fire-flow and flow duration requirements for one- and two-family *dwellings*, congregate living facilities of Group R-3 and R-4 and townhouses ~~having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. 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.~~ shall be as specified in Tables B105(1) and B105(3).

~~**Exception:** A reduction in required fire-flow of 50 percent, as approved, is allowed when the building is equipped with an approved automatic sprinkler system.~~

TABLE B105(1)
REQUIRED FIRE-FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, CONGREGRATE LIVING FACILITIES OF GROUP R-3 AND R-4 AND TOWNHOUSES,

FIRE-FLOW CALCLUATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601-greater	No automatic sprinkler system	Value in Table B105(3)	Duration in Table B105(3) at the required fire-flow rate
0-3,600	Section 903.3.1.3 of the *International Fire Code*. or Section P2904 of the *International Residential Code*	500	0.5
3,601-greater	Section 903.3.1.3 of the *International Fire Code*. or Section P2904 of the *International Residential Code*	½ value in Table B105(3)	1

B105.2 Buildings other than one- and two-family dwellings, congregate living facilities of Group R-3 and R-4 and Townhouses. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings,* congregate living facilities of Group R-3 and R-4 and Townhouses shall be as specified in Tables ~~B105.1~~ B105(2) and B105(3).

~~**Exception:** A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.~~

TABLE B105(2)
REQUIRED FIRE-FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, CONGREGRATE LIVING FACILITIES OF GROUP R-3 AND R-4 AND TOWNHOUSES,

AUTOMATIC SPRINKLER SYSTEM(Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.3	Duration in Table B105(3)
Section 903.3.1.1 of the *International Fire Code*.	25% of the value in Table B105(3)[a]	Duration in Table B105(3) at the reduced flow rate
Section 903.3.1.2 of the *International Fire Code*.	25% of the value in Table B105(3)[b]	Duration in Table B105(3) at the reduced flow rate

a. The reduced fire-flow shall not be less than 1,000 gallons per minute (5678 L/min)
b. The reduced fire-flow shall not be less than 1,500 gallons per minute (3785 L/min)

B105.3 Water supply for buildings equipped with an automatic sprinkler system. For buildings equipped with an approved *automatic sprinkler system*, the water supply shall be capable of providing the greater of:

1. The automatic *sprinkler system demand*, including hose stream allowance.
2. The required fire-flow.

TABLE ~~B105.1~~ B105(3)
~~MINIMUN REQUIRED FIRE FLOW AND FLOW DURATION FOR BUILDINGS~~
REFERENCE TABLE FOR TABLES B105(1) AND B102(2)

(Portions of table not shown remain unchanged)

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

1. Clarifies that "Townhouses" R-3 and R-4 congregate living facilities are to be treated as one-and-two family dwellings with respect to developing needed fire flow in accordance with appendix B.
2. Relocates the fire flow modifiers from the paragraph to a table format in B105(1) and B105(2) for easier readability and application by the user.
3. Recognizes the provisions of P2904 in the IRC as equivalent to NFPA 13D when determining needed fire flow.
4. Provides a reduction in the required duration of fire flow for fully sprinklered one-and two-family dwellings less than 3,600 square feet as a reasonable incentive for the installation of a fire sprinkler system. Experience with fire sprinklers shows that a vast majority of fires in one and two family dwellings will be controlled or extinguished by the fire sprinkler system. This duration modifier also provides an achievable fire flow in rural applications where the development of a 1 hour duration is unrealistic.
5. Provides reduction to 1,000 GPM, rather than 1,500 GPM, for buildings other than one-and two-family dwellings and townhomes protected in accordance with NFPA 13 sprinkler systems. Currently, the appendix treats both NFPA 13R and NFPA 13 systems similarly permitting a reduction in fire flow to 1,500 GPM. An NFPA 13 system provides a significantly greater level of protection via the system design area, water supply and protection of concealed combustible spaces. Due to this level of protection, there should be a reduced minimum fire flow for buildings protected in accordance with NFPA 13 systems as opposed to NFPA 13R systems.
6. The current language provides no guidance to the Fire Chief as to criteria upon which to base approval of the required fire flow reduction for sprinkler protected buildings. The change simply allows the reduction by the elimination of the exceptions and codifying the credits in the tables.
7. This code change proposal clarifies in B105.3 that a fire sprinkler demand should not be added to the manual fire flow demand in developing the needed fire flow. The greater of the sprinkler demand or the demand developed in accordance with Appendix B will be the required fire flow.
8. IFC Section 903.3.1.3 was revised last cycle to include Group R-3 and R-4 congregate residences as well as townhouses. Fair Housing by law requires group homes to be considered the same as single family.

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

F340-13

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

B105.1-F-ZUBIA-FCAC

F341 – 13
Appendix D106.3 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Add new text as follows:

D106.3 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Reason: Currently, Section D106, Multiple-Family Residential Developments, does not require fire apparatus access roads to be remote when more than one access road is required. D104, Commercial and Industrial Developments, and D107, One- or Two-Family Residential Developments already contain a "remoteness" provision.

This code change proposal duplicates the language from D104.3 into a new 106.3 placing new "Remoteness" language within the Section D106 that is directly relevant to Multiple-Family Residential Developments.

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

F341-13

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

D106.3-F-APFELBECK

F342 – 13
Appendix D107.1, D107.2 (New)

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing self (ACApfelbeck@Altamonte.org)

Revise as follows:

D107.1 One-or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with separate and approved fire apparatus access roads. ~~and shall meet the requirements of Section D104.3.~~

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1., 903.3.1.2 or 903.3.1.3.3, access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official.

D107.2 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Reason: This proposal is an editorial change that is intended to clarify the remoteness reference in D107.1. This proposal does not modify the technical aspect of the code.

The current Section D107.1 refers the user to Section D104.3 which is titled “Commercial and Industrial Developments.” Referring to Section D104.3 places the user in a section that is not germane to one-and two family dwelling and has to potential to create confusion to the fire code official and the code user.

This code change proposal duplicates the language from D104.3 into a new 107.2 placing new “Remoteness” language within the Section D107 that is directly relevant to one-and two-family dwellings. This code change does not modify any technical aspect of the current code remoteness requirement for one-and two-family dwellings.

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

F342-13

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

D107.1-F-APFELBECK

F343 – 13
Appendix E102.1.7.1

Proponent: Kirk Mitchell, Kirk Mitchell & Associates, LLL, representing Isocyanurates Industry Ad Hoc Committee (IIAHC) (pkmitchell@bellsouth.net)

Revise as follows:

E102.1.7.1 Examples of liquid and solid oxidizers according to hazard.

Class 4: ammonium perchlorate (particle size greater than 15 microns), ammonium permanganate, guanidine nitrate, hydrogen peroxide solutions more than 91 percent by weight, perchloric acid solutions more than 72.5 percent by weight, potassium superoxide, tetranitromethane.

Class 3: ammonium dichromate, calcium hypochlorite (over 50 percent by weight), chloric acid (10 percent maximum concentration), hydrogen peroxide solutions (greater than 52 percent up to 91 percent), mono-(trichloro)-tetra-(monopotassium di-chloro)-penta-s-triazinetrione, nitric acid, (fuming - more than 86 percent concentration), perchloric acid solutions (60 percent to 72 percent by weight), potassium bromate, potassium chlorate, potassium dichloro-s-triazinetrione (potassium dichloro-isocyanurate), potassium perchlorate (99 percent), potassium permanganate (greater than 97.5 percent), sodium bromate, sodium chlorate, sodium chlorite (over 40 percent by weight) and sodium dichloro-s-triazinetrione anhydrous (sodium dichloro-isocyanurate anhydrous.

Class 2: barium bromate, barium chlorate, barium hypochlorite, barium perchlorate, barium permanganate, 1-bromo-3-chloro-5, 5-dimethylhydantoin, calcium chlorate, calcium chlorite, calcium hypochlorite (50 percent or less by weight), calcium perchlorate, calcium permanganate, calcium peroxide (75 percent), chromium trioxide (chromic acid), copper chlorate, halane (1, 3-di-chloro-5, 5-dimethylhydantoin), hydrogen peroxide (greater than 27.5 percent up to 52 percent), lead perchlorate, lithium chlorate, lithium hypochlorite (more than 39 percent available chlorine), lithium perchlorate, magnesium bromate, magnesium chlorate, magnesium perchlorate, mercurous chlorate, nitric acid (more than 40 percent but less than 86 percent), perchloric acid solutions (more than 50 percent but less than 60 percent), ~~potassium perchlorate~~, ~~potassium permanganate~~, potassium peroxide, potassium superoxide, silver peroxide, sodium chlorite (40 percent or less by weight), sodium perchlorate, sodium perchlorate monohydrate, sodium permanganate, sodium peroxide, sodium persulfate (99 percent), strontium chlorate, strontium perchlorate, thallium chlorate, ~~trichloro-s-triazinetrione (trichloroisocyanuric acid)~~, urea hydrogen peroxide, zinc bromate, zinc chlorate and zinc permanganate.

Class 1: all inorganic nitrates (unless otherwise classified), all inorganic nitrites (unless otherwise classified), ammonium persulfate, barium peroxide, ~~calcium peroxide~~, hydrogen peroxide solutions (greater than 8 percent up to 27.5 percent), lead dioxide, lithium hypochlorite (39 percent or less available chlorine), lithium peroxide, magnesium peroxide, manganese dioxide, nitric acid (40 percent concentration or less), perchloric acid solutions (less than 50 percent by weight), potassium dichromate, potassium monopersulfate (45 percent $KHSO_5$ or 90 percent triple salt), potassium percarbonate, potassium persulfate, sodium carbonate peroxide, sodium dichloro-s-triazinetrione dihydrate, sodium dichromate, sodium perborate (anhydrous), sodium perborate monohydrate, sodium perborate tetra-hydrate, sodium percarbonate, ~~sodium persulfate~~, strontium peroxide, trichloro-s-triazinetrione (trichloroisocyanuric acid) and zinc peroxide.

Reason: This proposal suggests moving Trichloro-*s*-triazinetrione (trichloroisocyanuric acid) from a Class 2 oxidizer to a Class 1 oxidizer. Trichloro-*s*-triazinetrione (trichloroisocyanuric acid) is a Class 1 oxidizer (See NFPA 400 – Hazardous Materials Code 2013 Edition – Section G.3.2 Class 1 Oxidizers.)

NFPA reclassified trichloro-*s*-triazinetrione (trichloroisocyanuric acid) as a Class 1 Oxidizer in the 1995 edition of NFPA 430 based on extensive test data supplied by a consortium of chlorinated isocyanurate manufacturers and reported out in large scale burn tests conducted at Safety Engineering Laboratories, Inc. Since then, trichloro-*s*-triazinetrione (trichloroisocyanuric acid) has been one of very few oxidizers which are listed in different classes by the IFC compared to NFPA 430/400.

Additionally, recent work by Elizabeth Buc provided supplementary experimental burn rate data on trichloro-*s*-triazinetrione (trichloroisocyanuric acid). This work confirmed that trichloro-*s*-triazinetrione (trichloroisocyanuric acid) is appropriately classified as a Class 1 Oxidizer. Reference: E. Buc, Oxidizer Classification Research Project: Tests and Criteria, Fire and Materials Research Laboratory, LLC, November 2, 2009.
(*See attached electronic PDF titled FMRL_Oxidizer_Classification_Research_Project_Report*)

This proposal also suggests making changes to typical oxidizers based on test results and criteria from Table G.1.2(a) – NFPA Oxidizer Class Tests and Criteria of NFPA 400 Hazardous Materials Code (2013 Edition) and Section G.2.2 Class 1 Oxidizer through G.2.4 Class 3 Oxidizer and Table 5.2.1.13.3(a) Maximum Allowable Quantity (MAQ) per Indoor and Outdoor Control Area for Selected Hazard Categories in Merchantile, Storage and Industrial Occupancies.

Cost Impact: The portion of this proposal reclassifying trichloro-*s*-triazinetrione (trichloroisocyanuric acid) may result in reduced cost of construction and protection of referenced material due to its proper oxidization classification in appendix.

With the exception of the inclusion of 'anhydrous' following sodium dichloro-*s*-triazinetrione, the other proposed changes to Appendix E Section E102.1.7.1 Examples of Liquid and Solid Oxidizers According to Hazard may result in an increase in the cost of construction and/or protection as the other identified changes represents a categorical increase in the oxidizer classification ranking based on the newly adopted oxidizer testing and classification scheme.

F343-13

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

E102.1.7.1 #1-F-MITCHELL

F344 – 13
Appendix K (New)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov)

Revise as follows:

APPENDIX K
CONSTRUCTION REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

K101.1 Scope. The provisions of this chapter shall apply to existing buildings containing ambulatory care facilities in addition to the requirements of Chapter 11. Where the provisions of this chapter conflict with either the construction requirements within Chapter 11 or the construction requirements that applied at the time of construction, the most restrictive provision shall apply.

K101.2 Intent. The intent of this appendix is to provide a minimum degree of fire and life safety to persons occupying and existing buildings containing ambulatory care facilities where such building do not comply with the minimum requirements of the *International Building Code*.

SECTION K102
FIRE SAFETY REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES

K102.1 Separation. Ambulatory care facilities where the potential for four or more care recipients are to be incapable of self-preservation at any time, whether rendered incapable by staff or staff accepted responsibility for a care recipient already incapable, shall be separated from adjacent spaces, corridors or tenants with a fire partition installed in accordance with Section 708 of the *International Building Code*.

K102.2 Smoke compartments. Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m2) on one *story*, the *story* shall be provided with a *smoke barrier* to subdivide the *story* into no fewer than two *smoke compartments*. The area of any one such *smoke compartment* shall be not greater than 22,500 square feet (2092 m2). The travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be installed in accordance with Section 709 of the *International Building Code* with the exception that *smoke barriers* shall be continuous from outside wall to an outside wall, a floor to a floor, or from a *smoke barrier* to a *smokebarrier* or a combination thereof.

K102.2.1 Refuge area. Not less than 30 net square feet (2.8 m_2) for each nonambulatory care recipient shall be provided within the aggregate area of *corridors,* care recipient rooms, treatment rooms, lounge or dining areas and other low-hazard areas within each *smoke compartment.* Each occupant of an *ambulatory care facility* shall be provided with access to a refuge area without passing through or utilizing adjacent tenant spaces.

K102.2.2 Independent egress. A *means of egress* shall be provided from each *smoke compartment* created by smoke barriers without having to return through the *smoke compartment* from which *means of egress* originated.

K102.3 Ambulatory care automatic sprinkler system. An *automatic sprinkler system* shall be provided throughout the entire floor containing an ambulatory care facility in Type II-B, III-B and V-B construction where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self preservation, whether rendered incapable by staff of staff has accepted responsibility for care recipients already incapable.
2. One ore more care recipients that are incapable of self preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed throughout the entire floor where such care is provided and all floors below, and all floors between the level of ambulatory care and the nearest level of exit discharge, including the level of exit discharge.

K102.4 Ambulatory care automatic fire alarm system. *Fire areas* containing ambulatory care facilities shall be provided with an electronically supervised automatic smoke detection system installed within the ambulatory care facility and in public use areas outside of tenant spaces, including public *corridors* and elevator lobbies.

Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 of the *International Fire Code*, provided the occupant notification appliances will activate throughout the notification zones upon sprinkler waterflow.

SECTION K103
INCIDENTAL USES IN EXISTING AMBULATORY CARE FACILITIES

K103.1 General. Incidental uses associated with and located within existing ambulatory care facilities required to be separated by Section 422 in the *International Building Code*, and that generally pose a greater level of risk to such occupancies shall comply with the provisions of Sections K103.2 through K103.4.2.1. Incidental uses in ambulatory care facilities required to be separated by Section 422 in the *International Building Code* are limited to those listed in Table K103.1.

K103.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1 of the *International Building Code*. Incidental uses shall be included in the building occupancies within which they are located.

K103.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

K103.4 Separation and protection. The incidental uses listed in Table K103.1 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

K103.4.1 Separation. Where Table K103.1 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the *building* in accordance with Section 509.4.1 of the *International Building Code*.

K103.4.2 Protection. Where Table K103.1 permits an *automatic sprinkler system* without a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke in accordance with Section 509.4.2 of the *International Building Code*.

K103.4.2.1 Protection limitation. Except as otherwise specified in Table K103.1 for certain incidental uses, where an *automatic sprinkler system* is provided in accordance with Table K103.1, only the space occupied by the incidental use need be equipped with such a system.

TABLE K103.1
INCIDENTAL USES IN EXISTING AMBULATORY CARE FACILITIES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	1 hour in ambulatory care facilities
Incinerator rooms	2 hours and provide automatic sprinkler system
Laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
Waste and linen collection rooms with containers with total volume of 10 cubic feet or greater.	1 hour or provide automatic sprinkler system
Storage rooms greater than 100 square feet	1 hour or provide automatic sprinkler system
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in ambulatory care facilities

For SI: 1 square foot = 0.0929 m^2, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

SECTION K104
MEANS OF EGRESS REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES

K104.1 Size of doors. The minimum width of each door opening shall be sufficient for the *occupant load* thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). In ambulatory care facilities, doors serving as means of egress from patient treatment rooms shall provide a clear width of not less than 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The height of doors openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. Door openings to storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum width.
2. Width of door leafs in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
3. *Exit access* doors serving a room not larger than 70 square feet (6.5 m^2) shall be not less than 24 inches (610 mm) in door width.
4. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the door.

K104.2 Corridor and Aisle width. Corridor width shall be as determined in Section 1005.1 of the *International Fire Code* and this section. The minimum width of corridors and aisles that serve gurney traffic in areas where patients receive care that causes them to be incapable of self preservation shall be not less than 72 inches (1829mm)

K104.3 Existing elevators. Existing elevators, escalators, dumbwaiters and moving walks shall comply with the requirements of Sections K104. 3.1 and K104.3.2.

K104.3.1 Elevators, escalators, dumbwaiters and moving walks. Existing elevators, escalators, dumbwaiters and moving walks in ambulatory care facilities required to be separated by Section 422 shall comply with ASME A17.3.

K104.3.2 Elevator emergency operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

SECTION J 105
REFERENCED STANDARDS

ICC IBC-15 *International Building Code* …….K101.2, K102.1, K102.2, K103.1, K103.2, K103.3.1, K104.1, K104.2

ICC IFC-15 *International Fire Code*……K102.4, K104.2

ASME A17.3-08……..K104.3.1, K104.3.2

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx

The intent of this section is to provide jurisdictions an option for assessing a minimum fire and life safety requirements for buildings containing ambulatory care facilities. While this appendix is written with the intent to apply retroactive minimum standards, we recognize that the ambulatory care requirements are relatively recent additions to the code. For that reason, these requirements are presented as an appendix, so that the adopting authority can exercise judgment in the adoption and application of this section.

This is an especially important option for federal authorities having jurisdiction, who have long standing minimum fire and life safety standards for ambulatory care facilities. Those federal standards were applied to new and existing construction long before the creation of the ambulatory care use that currently in the International Building Code. Therefore, we have a situation where some (but not all) ambulatory care facilities were built very specific defend-in-place features. This subset of facilities was those that were certified by the federal government as “ambulatory surgical facilities.” Many other medical facilities that would be classified today as ambulatory care were not required to have defend in place features, such a smoke compartmentation. The federal AHJs highly value these defend-in-place concepts and need retroactive standard. This appendix would be that standard.

This appendix would also be useful for those local and state jurisdictions that are specifically focused in ensuring the safety for existing ambulatory care. If a surgery center was constructed as recently as 2009, there would have been no defend in place features required by the ICC family of codes. Post adoption of the 2009 IBC, there would have been. This appendix could be used to assess post 2009 surgery centers and free standing emergency departments. It could also be used to bring those earlier facilities into compliance with the current standards at the discretion of the adopting jurisdiction.

The technical requirements are based on the current IBC language, as well as several concepts approved in the 2012 Group A changes. The significant difference is a relaxation of the sprinkler requirement for existing facilities. This appendix would only require retroactive sprinklering of unprotected construction, which is consistent with the overall concept of the current federal requirements.

Cost impact: The code change proposal should not increase the cost of construction because compliance is already required by facility licensure requirements.

F344-13

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

APPENDIX X (NEW)-F-WILLIAMS-ADHOC

F345 – 13
Appendix K (new)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@rjagroup.com)

Add new text as follows:

Appendix K
Employee Qualifications

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION K101
FIRE INSPECTOR
AND FIRE PLAN EXAMINER QUALIFICATIONS

K101.1. Fire inspector and fire plan examiner. The *fire code official* shall appoint or hire such number of officers, fire inspectors, fire plan examiners, assistants and other employees as shall be authorized by the jurisdiction. A person shall not be appointed or hired as a fire inspector or fire plans examiner who has less than five years' experience as a contractor, engineer, architect, a member of the fire service, or a member of a fire prevention organization. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. Fire inspectors and fire plan examiners shall be certified through a recognized certification program for such position.

Reason: This proposed change is a result of the CTC's investigation of the area of study entitled "NIST Charleston Sofa Store Fire Recommendations". The scope of the activity is noted as:

> Review the NIST and other investigative reports on the fire that occurred on the evening of June 18, 2007 in the Sofa Super Store in Charleston, South Carolina to identify issues that can be addressed by the International Codes.

In connection with their investigation, NIST analyzed the fire ground, consulted with other experts, and performed computer simulations of fire growth alternatives. Based on these analyses, NIST concluded that the following sequence of events is likely to have occurred. A fire began in packing material and discarded furniture outside an enclosed loading dock area. The fire spread to the loading dock, then into both the retail showroom and warehouse spaces. During the early stages of the fire in the two latter locations, the fire spread was slowed by the limited supply of fresh air. This under-ventilation led to generation of a large mass of pyrolyzed and only partially oxidized effluent. The smoke and combustible gases flowed into the interstitial space below the roof and above the suspended ceiling of the main retail showroom. As this space filled with unburned fuel, the hot smoke also seeped through the suspended ceiling into the main showroom and formed a hot smoke layer below the suspended ceiling. Up to this time, the extent of fire spread into the interstitial space was not visible to fire fighters in the store. If the fire spread had been visible to the fire fighters in the store, it would have provided a direct indication of a fire hazard in the showroom. Meanwhile, the fire at the back of the main showroom and the gas mixture below the suspended ceiling were both still fuel rich. When the front windows were broken out or vented, the inflow of additional air allowed the heat release rate of the fire to intensify rapidly and added air to the layer of unburned fuel below the suspended ceiling enabling the ignition of the unburned fuel/air mixture. The fire swept from the rear to the front of the main showroom extremely quickly, and then into the west and east showrooms. Nine fire fighters were killed in the Sofa Super Store fire. NIST developed eleven recommendations to help mitigate such future losses.

Recommendation 3 of the NIST report reads as follows:

> **"Qualified Fire Inspectors and Building Plan Examiners:** NIST recommends that all state and local jurisdictions ensure that fire inspectors and building plan examiners are professionally qualified to a national standard such as NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner. Professional qualification may be demonstrated through a nationally accepted certification examination, such as the Fire Plan Examiner; Fire Inspector I and II, and Certified Fire Marshal."

Following a review of recommendation 3 of the NIST report a new Appendix K is proposed. This proposal is similar in scope and intent to Section A101.3 of Appendix A of the International Building Code where suggested qualifications for building official, chief inspector, inspector and plan examiner are established.

The purpose of this proposal is to provide optional criteria for qualifications of employees who enforce the Fire Code through inspections and plan examinations. A jurisdiction that wants to make this appendix a mandatory part of the code would need to

specifically list this appendix in its adoption ordinance. In recognition of the fact that some jurisdictions are mandated by applicable state law to employ only persons licensed by the state to perform certain duties, the proposal was drafted as an Appendix.

This proposal would not require fire inspectors or fire plan examiners to have had previous experience in Fire Code enforcement, but would merely require that they possess experience in a related job category. It is not our intent to prohibit a plan review and inspection staff from hiring and training entry level employees. The training of entry level shall be supervised by trained and certified personnel.

This proposal is submitted by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

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

F345- 13

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

APPENDIX K (NEW)-F-BALDASSARRA-CTC

F346 – 13
Appendix K (New), 508.1.5

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

APPENDIX K
REQUIREMENTS FOR FIREFIGHTER AIR REPLENISHMENT SYSTEMS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION K101
GENERAL

K101.1 Scope. Firefighter air replenishment systems (FARS) shall be provided in accordance with this appendix. The adopting ordinance shall specify building characteristics or special hazards that establish thresholds triggering a requirement for the installation of a FARS. The requirement shall be based upon the fire department's capability of replenishing firefighter breathing air during sustained emergency operations. Considerations shall include:

1. Building characteristics, such as number of stories above or below grade plane, floor area, type of construction, and fire-resistance of the *primary structural frame* to allow sustained firefighting operations based on a rating of not less than 2-hours.
2. Special hazards, other than buildings, that require unique accommodations to allow the fire department to replenish firefighter breathing air.
3. Fire department staffing level.
4. Availability of a fire department breathing air replenishment vehicle.

SECTION K102
DEFINITIONS

K102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIREFIGHTER AIR REPLENISHMENT SYSTEM (FARS). A permanently installed arrangement of piping, valves, fittings and equipment to facilitate the replenishment of breathing air in self contained breathing apparatus (SCBA) for firefighters engaged in emergency operations.

SECTION K103
PERMITS

K103.1 Permits. Permits shall be required to install and maintain a FARS. Permits shall be in accordance with Sections 103.2 and 103.3.

K103.2 Construction permit. A construction permit is required for installation of or modification to a FARS. The construction permit application shall include documentation of an acceptance and testing plan as specified in Section K105.

K103.3 Operational permit. An operational permit is required to maintain a FARS

SECTION K104
DESIGN AND INSTALLATION

K104.1 Design and installation. A FARS shall be designed and installed in accordance with Sections K104.2 through K104.15.

K104.2 Standards. Firefighter air replenishment systems shall be in accordance with Sections K104.2.1 and K104.2.2.

K104.2.1 Pressurized system components. Pressurized system components shall be designed and installed in accordance with ASME B31.3.

K104.2.2 Air quality. The system shall be designed to convey breathing air complying with NFPA 1989.

K104.3 Design and operating pressure. The minimum design pressure shall be 110 percent of the fire department's normal SCBA fill pressure. The system design pressure shall be marked in an approved manner at the supply connections, and adjacent to pressure gauges on any fixed air supply components. Pressure shall be maintained in the system within five percent of the design pressure.

K104.4 Cylinder refill rate. The FARS shall be capable of refilling breathing air cylinders of a size and pressure used by the fire department at a rate of not less than two empty cylinders in two minutes.

K104.5 Breathing air supply. Where a fire department mobile air unit is available, the FARS shall be supplied by an external mobile air connection in accordance with Section K104.13. Where a fire department mobile air unit is not available, a stored pressure air supply shall be provided in accordance with Section K104.4.1. A stored pressure air supply shall be permitted to be added to a system supplied by an external mobile air connection provided that a means to bypass the stored pressure air supply is located at the external mobile air connection.

K104.5.1. Stored pressure air supply. A stored pressure air supply shall be designed based on NFPA 1901, Chapter 24, except that provisions applicable only to mobile apparatus or not applicable to system design shall not apply. A stored pressure air supply shall be capable of refilling a minimum of fifty empty breathing air cylinders of a size and pressure used by the fire department

K104.5.2. Retrofit of external mobile air connection. A FARS not initially provided with an external mobile air connection due to the lack of a mobile air unit shall be retrofitted with an external mobile air connection if a mobile air unit becomes available. Where an external mobile air connection is provided, a means to bypass the stored pressure air supply shall be located at the external mobile air connection. The retrofit shall be completed not more than 12 months after notification by the fire code official.

K104.6 Isolation valves. System isolation valves that are accessible to the fire department shall be installed on the system riser to allow piping beyond any air cylinder refill panel to be blocked.

K104.7 Pressure relief valve. Pressure relief valves shall be installed at each point of supply and at the top or end of every riser. The relief valve shall meet the requirements of the CGA S-1.3 and shall not be field adjustable. Pressure relief valves shall discharge in a manner that does not endanger personnel who may be in the area. Valves, plugs or caps shall not be installed in the discharge of a pressure relief valve. Where discharge piping is used the end shall not be threaded.

K104.8 Materials and equipment. Pressurized system components shall be listed or approved for their intended use and rated for the maximum allowable design pressure in the system. Piping and fittings shall be stainless steel.

K104.9 Welded connections. Piping connections that are concealed shall be welded.

K104.10 Protection of piping. System piping shall be protected from physical damage in an approved manner.

K104.11 Compatibility. Fittings and connections intended to be used by the fire department shall be compatible with the fire department's equipment.

K104.12 Security. Connections to a FARS shall be safeguarded from unauthorized access in an approved manner.

K104.13 Fill stations. Firefighter air replenishment fill stations shall comply with Section K104.12.1 through K104.12.3.

K104.13.1 Location. Fill stations for refilling breathing air cylinders shall be located as follows:

1. Fill stations shall be provided at the fifth floor above and below the ground level floor and every third floor level thereafter.
2. On floor levels requiring fill stations, one fill station shall be provided adjacent to a required exit stair at a location designated by the Fire Code Official. In buildings required to have three or more exit stairs, additional fill stations shall be provided at a ratio of one fill station for every three stairways.

K104.13.2 Design Fill stations for breathing air cylinders shall be designed to meet the following requirements:

1. Pressure control, A pressure gauge and pressure-regulating devices and controls shall be provided to allow the operator to control the fill pressure and fill rate on each cylinder fill hose.
2. Valves controlling cylinder fill hoses shall be slow operating valves
3. A separate flow restriction device shall be provided on each fill hose.
4. A method shall be provided to bleed each cylinder fill hose.
5. The fill station shall be designed to provide a containment area that 1) fully encloses any cylinder being filled and flexible cylinder fill hoses, and 2) directs the energy from a failure away from personnel. Fill stations shall be designed to prohibit filling of cylinders that are not enclosed within the containment area.

   Exception: Where required or approved by the Fire Chief, fill stations providing for the direct refilling of the firefighters' breathing air cylinders using Rapid Intervention Crew/Company Universal Air Connection (RIC/UAC) fittings shall be used in lieu of cylinder fill stations that utilize containment areas.

K104.13.3 Cylinder refill rate. Fill stations shall be capable of simultaneously filling two or more empty breathing air cylinders equivalent to those used by the fire department to their design pressure within two (2) minutes.

K104.14 External mobile air connection. An external mobile air connection shall be provided for fire department mobile air apparatus where required by Section K104.4 to supply the system with breathing air.

K104.14.1 Location. The location of the external mobile air connection shall be accessible to mobile air apparatus and approved by the fire chief.

K104.14.2 Protection from vehicles. A means of vehicle impact protection in accordance with Section 312 shall be provided to protect mobile air connections that are subject to vehicular impact.

K104.14.3 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 external mobile air connections.

K104.15 Air monitoring system. An approved air monitoring system shall be provided. The system shall automatically monitor air quality, moisture and pressure on a continual basis. The air monitoring system shall be equipped with a minimum of two content analyzers capable of detecting carbon monoxide, carbon dioxide, nitrogen, oxygen, moisture and hydrocarbons.

K104.15.1 Alarm conditions. The air monitoring system shall transmit a supervisory signal when any of the following levels are detected:

1. Carbon monoxide exceeds 5 ppm
2. Carbon dioxide exceeds 1,000 ppm
3. An oxygen level below 19.5 percent or above 23.5 percent
4. A nitrogen level below 75 percent or above 81 percent
5. Hydrocarbon (condensed) content exceeds 5 milligrams per cubic meter of air
6. The moisture concentration exceeds 24 ppm by volume
7. The pressure falls below 90% of the maintenance pressure specified in Section K104.2

K104.15.2 Alarm supervision, monitoring and notification. The air monitoring system shall be electrically supervised and monitored by an approved supervising station, or when approved, shall initiate audible and visual supervisory signals at a constantly attended location.

K104.15.3 Air quality status display. Air quality status shall be visually displayed at the external mobile air connection required by K104.13.

SECTION K105
ACCEPTANCE TESTS

K105.1 Acceptance tests. Upon completion of the installation, a FARS shall be acceptance tested to verify compliance with equipment manufacturers' instructions and design documents. Oversight of the acceptance tests shall be provided by a registered design professional. Acceptance testing shall include the following:

1. A pneumatic test in accordance with ASME B31.3 of the complete system at a minimum test pressure of 110 percent of the system design pressure using oil free dry air, nitrogen or argon shall be conducted.. Test pressure shall be maintained for a minimum of 24 hours. During this test, all fittings, joints and system components shall be inspected for leaks. Any defects in the system or leaks detected shall be documented and repaired.
2. A cylinder filling performance test shall be conducted to verify compliance with the required breathing air cylinder refill rate from the exterior mobile air connection and, where provided, a stored air pressure supply system.
3. The air quality monitoring system shall be tested to verify that: 1) Visual indicators required by Section K104.14.1 function properly, and 2) Supervisory signals are transmitted as required by Section K104.14.2 for each sensor based on a sensor function test.
4. Connections intended for fire department use shall be confirmed as compatible with the fire department's mobile air unit, SCBA cylinders and, where provided, RIC/UAC connections.
5. Air samples shall be taken from not less than two fill stations and submitted to an approved gas analysis laboratory to verify compliance with NFPA 1989. The FARS shall not be placed into service until a written report verifying compliance with NFPA 1989 has been provided to the code official.

SECTION K106
INSPECTION, TESTING AND MAINTENANCE

K106.1 Periodic inspection, testing, and maintenance. A FARS shall be continuously maintained in an operative condition and shall be inspected at least annually. At least quarterly, an air sample shall be taken from the system and tested to verify compliance with NFPA 1989. The laboratory test results shall be maintained onsite and readily available for review by the fire code official.

SECTION K107
REFERENCED STANDARDS

ASME B31.3, 2012,	Process Piping	K104.2.1, K105.1
CGA S-1.3-2008	Pressure Relief Device Standards – Part 3 Stationary Storage Containers for Compressed Gases	.K104.7
NFPA 1901-09	Standard for Automotive Fire Apparatus	K104.5.1,
NFPA 1989-13	Breathing Air Quality for Fire Emergency Services Respiratory Protection	K104.2.2, K105.1, K106.1

Revise as follows:

508.1.5 Required features. The *fire command center* shall comply with NFPA 72 and shall contain the following features:

1 through 11. *(No change to current text)*
12. Schematic building plans indicating the typical floor plan and detailing the building core, *means of egress*, *fire protection systems*, firefighter air replenishment system, fire-fighting equipment and fire department access, and the location of *fire walls*, *fire barriers*, *fire partitions*, *smoke barriers* and smoke partitions.
13. through 18. *(No change to current text)*

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Breathing air is critical for firefighting operations. Historically, fire departments have supplied air bottles by means of a "bottle brigade", whereby firefighters manually transport air bottles up stairways. This is usually accomplished by stationing a firefighter on alternating floors, and each firefighter carries two to four bottles at a time up two floors, passes them to the next firefighter, then goes down two flights of stairs and receives more air bottles from the firefighter stationed below. This process is extraordinarily firefighter intensive, and takes firefighters away from their primary mission of rescue and firefighting. Even when fires are insignificant or controlled by sprinklers, copious amounts of smoke and other combustion byproducts require the use of self contained breathing apparatus (SCBA) for extended periods of time to conduct search, rescue, suppression, and overhaul. These extended missions require a large number of air bottles to be transported to support the operation. Transporting bottles is not the highest and best use of highly trained firefighters – it is a costly solution to a serious problem that can be addressed by installing firefighter breathing air replenishment systems.

Technology exists at this point in time to address the issue using in-building air supply systems. Firefighter Breathing Air Systems were introduced in the late 1980's. These systems are now required in a number of communities throughout the United States, and several hundred systems have been installed and are now operational. The system has been called a "standpipe for air", which is an accurate description. The system consists of stainless steel, high pressure piping that is supplied by on site air storage, fire department air supply units, or both; a few systems have breathing air compressors installed. Air filling stations are then strategically located throughout the building, using either quick fill connections or rupture containment fill stations complying with NFPA 1901. These systems allow firefighters to refill breathing air cylinders inside the fire building, negating the required "bottle brigade", and making more firefighters available for search, rescue, and fire suppression operations.

While not every jurisdiction will necessarily embrace this technology, there is a need to standardize the installation criteria in jurisdictions that determine the systems are needed. It is now being recognized as a basic principle of fire protection that once a community has identified an unacceptable risk that risk mitigation must occur to reduce that risk to a level that allows the fire department to be both efficient and effective in coping with it. Thus, an adoptable appendix to provide guidance to these jurisdictions is appropriate and needed in the International Fire Code. More and more jurisdictions are considering requiring these systems, and guidance from the International Fire Code is needed.

Cost Impact: This code change will add to the cost of construction

Analysis: A review of the standards proposed for inclusion in the code, NFPA 1901-09 and NFPA 1989-08, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2013. ASME B31.3-

04 and CGA S1.3 (2005) are currently referenced in the IFC. Updates in year editions will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

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F346-13

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

APPENDIX K (NEW) #1-F-ZUBIA-FCAC

F347 – 13
Appendix K (New)

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

APPENDIX K
HIGH-RISE BUILDINGS - RETROACTIVE AUTOMATIC SPRINKLER REQUIREMENT

SECTION K101
SCOPE

K101.1 Scope. An *automatic sprinkler system* shall be installed in all existing high-rise buildings in accordance with the installation requirements and compliance schedule of this appendix.

SECTION K102
WHERE REQUIRED

K102.1 High-Rise Buildings. An *automatic sprinkler system* installed in accordance with Section 903.3.1.1 of the *International Fire Code* shall be provided throughout existing high-rise buildings.

Exceptions:

1. Airport traffic control towers.
2. Open parking structures.
3. Group U Occupancies.
4. Occupancies in Group F-2.

SECTION K103
COMPLIANCE

K103.1 Compliance Schedule. Building owners shall file a compliance schedule with the *fire code official* no later than 365 days after the first effective date of this code. The compliance schedule shall not exceed 12 years for an automatic sprinkler system retrofit.

SECTION K104
REFERENCED STANDARDS

ICC IFC-15 International Fire Code ……K102.1

Reason: This proposal provides model code text for adoption by jurisdictions that choose to require existing high-rise buildings to be retrofitted with fire sprinklers. It is recognized that not all jurisdictions may choose to or have legal authority to enact a retroactive construction requirement of this nature, so the proposal has been suggested for inclusion in the IFC as an adoptable appendix.

Modern fire and building codes require complete automatic fire sprinkler protection and a variety of other safety features in new high-rise construction. Many older high-rise buildings lack automatic fire sprinkler protection and other basic fire protection features necessary to protect the occupants, emergency responders, and the structure itself. Without complete automatic fire sprinkler protection, fire departments cannot provide the level of protection that high-rise buildings demand.

Existing high-rise buildings that are not protected with fire sprinklers represent a significant hazard to the occupants and firefighters. Additionally, High-Rise fires can significantly impact a communities' infrastructure and the economic viability.

Between 2003 and 2006, there was an average of 13,400 reported structure fires in high-rise buildings annually. These incidents resulted in 62 civilian deaths, 490 civilian injuries, and $179 million in direct property damage per year. Furthermore, from 1977 to 2009, 25 firefighters died from non-stress related cardiac death during fire suppression operations in high-rise buildings. By their very nature, high-rise fires present unique firefighting challenges that are extremely difficult for firefighters to mitigate without the presence of fire sprinkler systems. Some of these challenges include:

High-rise structure fires require significantly more resources, such as personnel and equipment, to extinguish than do fires in other types of occupancies. This further strains the responding fire department and firefighters.

Due to their height, smoke movement in high-rise structures is very different from that of other structures. Temperature gradients result in varying pressures throughout the structure, which can allow for the rapid, uncontrolled movement of smoke and flame (known as the “stack effect”). By design, exits from high-rise structures are limited. In an emergency, the movement of people out of a building is particularly difficult. A prime example of this hazard is the One Meridian Plaza fire. This fire occurred on the 22nd floor of the 38-story Meridian Bank Building and was reported to the Philadelphia Fire Department on February 23, 1991 at approximately 2040 hours and burned for more than 19 hours. The fire caused three firefighter fatalities and injuries to 24 firefighters. The 12-alarms brought 51 engine companies, 15 ladder companies, 11 specialized units, and over 300 firefighters to the scene. It was the largest high-rise office building fire in modern American history, completely consuming eight floors of the building, and was only controlled only when it reached a floor that was protected by automatic sprinklers. In 1999 the building was torn down amidst a storm of litigation. The HVAC and other utilities in some high-rises service multiple levels and can facilitate the spread of smoke and flame through a building.

Due to the height of the building, response times for the fire department to reach the actual fire itself are extended, contributing to larger fire growth thereby attributing to extensive smoke spread throughout the building.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

Cost Impact: This change will increase the cost of operating an existing High-Rise building.

F347-13

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

APPENDIX K (NEW) #2-F-ZUBIA-FCAC

F348 – 13
907.2.6.2 (IBC [F] 907.2.6.2); IBC [F] 407.8

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care (john.williams@doh.wa.gov) and Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (cbaldassarra@RJAGroup.com)

Revise as follows:

907.2.6.2 (IBC [F] 907.2.6.2) Group I-2. An automatic smoke detection system shall be installed in *corridors* in Group I-2 Condition 1 ~~*nursing homes*, long term care facilities, detoxification~~ facilities and spaces permitted to be open to the *corridors* by Section 407.2. The system shall be activated in accordance with Section 907.4. Group I-2 Condition 2 ~~Hospitals~~ shall be equipped with an automatic smoke detection system as required in Section 407.

Exceptions:

1. Corridor smoke detection is not required in smoke compartments that contain sleeping units where such units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each sleeping unit and shall provide an audible and visual alarm at the care provider's station attending each unit.
2. Corridor smoke detection is not required in smoke compartments that contain sleeping units where 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.

IBC [F] 407.8 Automatic ~~fire~~ smoke detection. An automatic smoke detection system shall be installed in *corridors* in Group I-2 Condition 1 ~~*nursing homes*, long-term care facilities, *detoxification facilities*~~ and spaces permitted to be open to the *corridors* by Section 407.2 ~~shall be equipped with an automatic fire detection system~~. The system shall be activated in accordance with Section 907.4. Group I-2 Condition 2 ~~Hospitals~~ shall be equipped with an automatic smoke detection system as required in Section 407.2 and 407.4.3.

Exceptions:

1. *Corridor* smoke detection is not required ~~where sleeping rooms~~ in smoke compartments that contain sleeping units where such units are provided with *smoke detectors* that comply with UL 268. Such detectors shall provide a visual display on the *corridor* side of each sleeping ~~room and~~ unit and shall provide an audible and visual alarm at the care provider's station attending each unit.
2. *Corridor* smoke detection is not required ~~where sleeping room~~ in smoke compartments that contain sleeping units where 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.

Reason: The proposed language in IBC 407.8 and IBC/IFC 907.2.6.2 coordinates with the proposed language automatic smoke detection system requirements in IBC 407.4.3 submitted by the Adhoc Health Care committee during Group A hearings. The intent is also to make the language consistent between the two sections.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 8 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

This proposal is being co-sponsored by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/CTC/Pages/default.aspx. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F348-13

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

407.8-F-BALDASSARRA-WILLIAMS-ADHOC

F349 – 13
3203.4

Proponent: Darren Meyers, P.E., International Energy Conservation Consultants, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (dmeyers@ieccode.com)

Revise as follows:

3203.4 Class III commodities. Class III commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats and tires. Group A plastics shall be limited in accordance with Section 3203.7.4. Examples of Class III commodities include, but are not limited to, the following:

Aerosol, Level 1 (see Chapter 28)
Biomass briquettes, bagged, totes and static piles
Biomass pellets, bagged, totes and static piles
Charcoal
Combustible fiberboard
Cork, baled
Corn cobs, static piles
Corn stover, baled and chopped
Feed, bagged
Fertilizers, bagged
Firewood
Food in plastic containers
Forest residue, round wood or chipped (branches, bark, cross-cut ends, edgings and treetops)
Furniture: wood, natural fiber, upholstered, non-plastic, wood or metal with plastic-padded and covered armrests
Glycol in combustible containers not exceeding 25 percent
Lubricating or hydraulic fluid in metal cans
Lumber
Mattresses, excluding foam rubber and foam plastics
Noncombustible liquids in plastic containers having a capacity of more than 5 gallons (19 L)
Paints, oil base, in metal cans
Paper, waste, baled
Paper and pulp, horizontal storage, or vertical storage that is banded or protected with *approved* wrap
Paper in cardboard boxes
Peanut hulls, bagged, totes and static piles
Pillows, excluding foam rubber and foam plastics
Plastic-coated paper food containers
Plywood
Rags, baled
Recovered construction wood
Rice hulls, bagged, totes and static piles
Rugs, without foam backing
Seasonal grasses, baled and chopped
Straw, baled
Sugar, bagged
Wood, baled
Wood chips, bagged, totes and static piles
Woody biomass, round wood or chipped (vase-shaped stubby bushes, bamboo, willows; branches, bark and stem wood)
Wood doors, frames and cabinets
Wood pellets, bagged, totes and static piles

Yarns of natural fiber and viscose

Reason: The additions clarify that certain “crop-residue” as solid, biomass feedstock as biofuel are appropriately identified as Class III commodities.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers (ASABE).

Fire codes related to storage, handling, and pre-processing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and pre-processing technologies, the BFICOCS has identified changes in the IFC that benefit both industry and the public.

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

F349-13

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

3203.4-F-MEYERS

F350 – 13
2801.1, 2802.1, 2804.1, 2808.1, 2808.2, 2809.1, 2809.2, 202

Proponent: Darren Meyers, P.E., International Energy Conservation Consultants, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (dmeyers@ieccode.com)

Revise as follows:

CHAPTER 28
LUMBER YARDS, AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES

SECTION 2801
GENERAL

2801.1 Scope. The storage, manufacturing and processing of solid biomass feedstock, timber, lumber, plywood, veneers and agro-industrial byproducts shall be in accordance with this chapter.

SECTION 2802
DEFINITIONS

2802.1 Definitions. The following terms are defined in Chapter 2:

AGRO-INDUSTRIAL.
BIOMASS.
STATIC PILES.
SOLID BIOFUEL.
SOLID BIOMASS FEEDSTOCK.

SECTION 2804
FIRE PROTECTION

2804.1 General. Fire protection in timber and lumber production mills, ~~and~~ plywood and veneer mills, and agro-industrial facilities shall comply with Sections 2804.2 through 2804.4.

SECTION 2808
STORAGE AND PROCESSING OF WOOD CHIPS, HOGGED MATERIAL, FINES, COMPOST, SOLID BIOMASS FEEDSTOCK, AND RAW PRODUCT ASSOCIATED WITH YARD WASTE, AGRO-INDUSTRIAL AND RECYCLING FACILITIES

2808.1 General. The storage and processing of wood chips, hogged materials, fines, compost, solid biomass feedstock and raw product produced from yard waste, debris, agro-industrial and recycling facilities shall comply with Sections 2808.2 through 2808.10.

2808.2 Storage site. Storage sites shall be level and on solid ground, elevated soil lifts or other all-weather surface. Sites shall be thoroughly cleaned before transferring wood products to the site.

SECTION 2809
EXTERIOR STORAGE OF FINISHED LUMBER AND SOLID BIOFUEL PRODUCTS

2809.1 General. Exterior storage of finished lumber and solid biofuel products shall comply with Sections 2809.1 through 2809.5.

2809.2 Size of piles. Exterior ~~lumber~~ storage shall be arranged to form stable piles with a maximum height of 20 feet (6096 mm). Piles shall not exceed 150,000 cubic feet (4248 m_3) in volume.

2809.3 Fire apparatus access roads. Fire apparatus access roads in accordance with Section 503 shall be located so that a maximum grid system unit of 50 feet by 150 feet (15 240 mm by 45 720 mm) is established.

2809.4 Security. Permanent ~~lumber~~ storage areas shall be surrounded with an *approved* fence. Fences shall be a minimum of 6 feet (1829 mm) in height.

Exception<u>s</u>:

1. Lumber piles inside of buildings and production mills for lumber, plywood and veneer.
2. <u>Solid biofuel piles inside of buildings and agro-industrial processing facilities for solid biomass feedstock.</u>

2809.5 Fire protection. An *approved* hydrant and hose system or portable fire-extinguishing equipment suitable for the fire hazard involved shall be provided for open storage yards. Hydrant and hose systems shall be installed in accordance with NFPA 24. Portable fire extinguishers complying with Section 906 shall be located so that the travel distance to the nearest unit does not exceed 75 feet (22 860 mm).

SECTION 202
GENERAL DEFINITIONS

<u>AGRO-INDUSTRIAL.</u> <u>Technologies, methods and associated machinery used in transforming raw agricultural products into intermediate or consumable products.</u>

<u>BIOMASS.</u> <u>Plant or animal-based material of biological origin, including but not limited to materials originating from arboriculture, agriculture, aquaculture, horticulture and forestry, excluding material embedded in geological formations or transformed into fossil.</u>

STATIC PILES. Piles in which processed wood product <u>or solid, biomass feedstock</u> is mounded and is not being turned or moved.

<u>SOLID BIOFUEL.</u> <u>Densified biomass made with or without additives in the form of cubiform, polyhedral, polyhydric or cylindrical units, produced by compressing milled biomass.</u>

<u>SOLID BIOMASS FEEDSTOCK.</u> <u>The basic materials, including agricultural residues, including but not limited to corn cobs, corn stover, rice hulls, and peanut hulls; herbaceous crops, including but not limited to warm- and cool-seasonal grasses; forest residue, including but not limited to branches, bark, cross-cut ends, edgings and treetops; short-rotation woody crops, including but not limited to vase-shaped stubby bushes, bamboo, willows with five to ten-year rotations and their branches, bark and stem wood; agricultural waste, including but not limited to garden or park waste, grass or flower cuttings and hedge trimmings; and dried manure; from which biofuel is comprised, manufactured or made.</u>

Reason: The proposed language facilitates fire control and reduces exposures to and from facilities storing and processing "crop-residue" as solid biomass feedstock for biofuel production.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers (ASABE).

Fire codes related to storage, handling, and pre-processing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and pre-processing technologies, the BFICOCS has identified changes in the IFC that benefit both industry and the public.

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

F350-13

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

2801.1-F-MEYERS

FG1– 13
IFGC [F] 413.2.3, IFGC [F] 413.3, IFGC [F] 413.4

Proponent: James Ranfone, American Gas Association (jranfone@aga.org)

Revise as follows:

IFGC [F] 413.2.3 General. Residential fueling *appliances* shall be *listed*. ~~The capacity of a residential fueling *appliance* shall not exceed 5 standard cubic feet per minute (0.14 standard cubic meter/min) of natural gas.~~

IFGC [F] 413.3 Location of dispensing operations and equipment. Compression, storage and dispensing *equipment* shall be located above ground ~~outside~~ outdoors.

Exceptions:

1. Compression, storage or dispensing *equipment* is allowed in buildings of noncombustible construction, as set forth in the *International Building Code*, that are unenclosed for three-quarters or more of the perimeter.
2. Compression, storage and dispensing *equipment* is allowed to be located indoors or in vaults in accordance with the *International Fire Code*.
3. Residential fueling *appliances* and *equipment* in accordance with Section 413.4. ~~shall be allowed to be installed indoors in accordance and the *equipment* manufacturer's instructions and Section 413.4.3~~.

IFGC [F] 413.4 Residential fueling appliance installation. Residential fueling *appliances* shall be installed in accordance with Sections 413.4.1 through 413.4.3.

IFGC [F] 413.4.2 Outdoor installation. Residential fueling *appliances* located outdoors shall be listed for outdoor installation and installed in accordance with the *appliance* manufacturer's instructions. Residential fueling *appliances* located outdoors shall be installed on a firm, noncombustible base.

IFGC [F] 413.4.3 Indoor installation. Residential fueling *appliances* located indoors shall be listed for indoor installation and installed in accordance with the *appliance* manufacturer's instructions. ~~Where located indoors,~~ Residential fueling *appliances* shall be vented to the outdoors. A gas detector set to operate at one-fifth of the lower limit of flammability of natural gas shall be installed in the room or space containing the *appliance*. The detector shall be located within 6 inches (152 mm) of the highest point in the room or space. The detector shall stop the operation of the *appliance* and activate an audible or visual alarm.

Reason: Residential fueling of natural gas vehicles represents a nationally-important opportunity to increase adoption of natural gas passenger cars and other light duty vehicles. Natural gas promises to be a major contributor toward reducing U. S. dependence upon foreign oil and petroleum products and making use of abundant, low cost U. S. natural gas supplies, the development of which is adding significantly to the recovery of U. S. economy.

However, the current text in IFGC Section 413.2.3 is inconsistent with modern approaches and gas flow rates being proposed for vehicle residential fueling by arbitrarily restricting residential fueling appliances to a gas flow rate of 5 standard cubic feet (of natural gas) per minute (scfm). Current research and technology development programs are targeting delivering natural gas at higher flow rates, especially at the initiation of the fueling cycle, to achieve practical vehicle refueling rates. A wide variety of technologies and commercial interests are focused on approaches for which the 5 scfm flow rate limitation would represent a technology barrier.

The current 5 scfm flow rate limitation in Section 413.2.3 raises a number of issues, including whether it is a reasonable, meaningful, or enforceable limit:

- The 5 scfm flow rate limit, if inferred as a potential leakage limit to an indoor garage or other space, is provided without a release time duration or profile, which would be required to determine how such a leak would present flammability hazards. As such, a 5 scfm limitation appears arbitrary and incomplete.
- Detailed fault tree analysis, failure modes and effects analysis, and computational fluid dynamics analysis of residential fueling appliance releases conducted by TIAX in 2004 showed that leak rates from various release scenarios and median residential garage air tightnesses and ventilation rates should be below 1 scfm to maintain steady state gas-in-air concentrations below

combustible levels. The TIAX analysis suggests that a 5 scfm flow rate, when inferred as a potential leak rate, may be unsafe with respect combustion hazards in residential garages from releases from the vehicle fueling appliance and dispenser hose, as well as from the onboard vehicle fuel system.

- The 5 scfm flow limit may not be enforceable by code authorities, particularly if the listing standard (which is undefined by the current code language) does not readily provide a code official with gas flow information.
- Review of ICC records suggests that according to the 2006 ICC Code Commentary the 5 scfm limit as well as other technical provisions of Section 413 were adopted for consistency with National Fire Protection Association (NFPA) Standard 52 and based on flow rates for residential fueling appliances available at that time. NFPA Standard 52 records show that the flow rate was adopted in the 1988 standard cycle, but no specific technical justification for the flow rate limitation was provided.

Since requirements in Section 413.2.3 apply to the residential refueling appliance and specifically require it to be listed, leakage prevention and mitigation is most properly addressed in the listing standard. The proponent of this code change and a vast array of other organizations have convened a Technical Advisory Group (TAG) to draft a national consensus standard under the American National Standards Institute (ANSI) processes of CGA Group, an ANSI- recognized standards development organization (SDO) for natural gas vehicle standards. Completion of the standard is expected between 18 and 24 months from the submission date of this proposal.

The ANSI standard development activity is directly addressing the requirement in Section 413.2.3 for the residential fueling appliance to be listed and is addressing prevention and mitigation of leak hazards consistent with the 2004 TIAX analysis for critical leaks relevant to indoor refueling operations. In doing so, the ANSI standard is addressing the intent of the 5 scfm gas flow limitation but is based on preventing and mitigation releases must more conservatively than the current flow limitation approach. Leak mitigation is being included in the standard through a variety of performance-based automatic and redundant means and verified in standards-based methods of test in the design certification process. Since the ANSI process is open and invites public review, the adequacy and appropriateness of the listing requirements and methods of test a open to public input from all stakeholders and expertise. Therefore, the basis for leak prevention and mitigation will be likewise open to public review and comment.

Changes proposed to Section 413.4 address the lack of differentiation of residential fueling appliances designed for outdoor and indoor installation. The new language directs the authority having jurisdiction to the specific listing for outdoor or indoor installation and associated listing requirements for those environments, including leak prevention and hazard mitigation, environmental conditions, and other requirements for germane to the installation location. The proposed language is consistent with current direction in development of the ANSI standard, which makes this differentiation and applies relevant requirements to the appliance design certification.

Cost Impact: None.

FG1-13

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

[F] 413.2.3-FG-RANFONE

G1 – 13
IBC [F] 307.1

Proponent: Maureen Traxler, City of Seattle, WA representing Washington Association of Building Officials (Maureen.Traxler@seattle.gov)

Revise as follows:

IBC [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 *control areas* complying with Section 414, based on the maximum allowable quantity limits for *control areas* set forth in Tables 307.1(1) and 307.1(2). 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*. Hazardous materials stored, or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with the *International Fire Code*.

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

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*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (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* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. The storage of distilled spirits and wines in wooden barrels and casks
~~7~~8. Refrigeration systems.
~~8~~9. The storage or utilization of materials for agricultural purposes on the premises.
~~9~~10. Stationary batteries utilized for facility emergency power, uninterruptable 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*.
~~10~~11. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
~~11~~12. 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.*
~~12~~13. 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.
~~13~~14. 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: IFC Section 5001.1 has an exception providing that "The storage of distilled spirits and wines in wooden barrels and casks" is not required to comply with the chapter's general requirements for hazardous materials. IFC Section 5701.2 states that

Chapter 57's provisions for flammable and combustible liquids do not apply to "The storage of distilled spirits and wines in wooden barrels and casks". Similarly, Chapter 9 of NFPA 30-2012 Flammable and Combustible Liquids Code, exempts the storage of distilled spirits and wines in wooden barrels or casks from the general requirements for storage of liquids in containers. However, the Building Code classifies that same storage as an H-3 occupancy. It is inconsistent for the Building Code to classify an occupancy as a hazardous occupancy due to the presence of this type of storage if none of the mitigation measures are required by the Fire Code. The IFC exempts storage of spirits in wooden containers from all the IBC provisions that would otherwise apply. For example, IBC Section 415.4 requires sprinklers for all Group H occupancies—IFC Section 5004.5 requires sprinklers in indoor storage, but storage of spirits in wooden containers is not required to comply because it is exempt from Chapter 50. Adding this exception to the list of exceptions in IBC section 307.1 will eliminate this inconsistency between the codes and will eliminate unnecessary confusion about how to classify such uses and apply the IBC provisions.

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

G1-13

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

[F] 307.1 #1-G-TRAXLER

G2 – 13
IBC [F] 307.1

Proponent: William E. Koffel, P.E., Koffel Associates, Inc., representing American Pyrotechnics Association (APA) (wkoffel@koffel.com)

Revise as follows:

IBC [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 *control areas* complying with Section 414, based on the maximum allowable quantity limits for *control areas* set forth in Tables 307.1(1) and 307.1(2). 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*. Hazardous materials stored, or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with the *International Fire Code*.

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

1 through 13 *(No change to current text)*

14. Retail sales of consumer fireworks in Group M occupancies in accordance with the requirements of Section 5601.1.3 of the *International Fire Code* and NFPA 1124.

Reason: Chapter 7 of NFPA 1124 provides requirements for both new and existing facilities in which consumer fireworks are sold. The intent is to reduce the risk to that comparable to occupants within other mercantile occupancies. Some of the requirements include:

- Limitations on the use of aerial devices
- Automatic sprinkler protection when in excess of 3000 sq ft for new, 7500 sq ft for existing
- Fire alarm system
- Separation distances
- 75 ft travel distance with no dead ends and in most instances a requirement for three exits
- Increased egress capacity factor
- Minimum four foot aisles
- Flame breaks
- Fuse covers
- Maximum shelf height
- Limitations on the proximity the consumer fireworks may be to an exit

Full scale fire tests have demonstrated the effectiveness of the fuse cover requirement to greatly decrease the likelihood of ignition and the growth of a fire, should one occur.

Cost Impact: None since it provides another compliance alternative

G2-13

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

[F] 307.1-G-KOFFEL

G3 – 13
IBC [F] 307.1; IBC [F] 307.1.1 (New)

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee (bajnaic@chesterfield.gov)

Revise as follows:

IBC [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 control areas complying with Section 414, based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2). 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. Hazardous materials stored, or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with the International Fire Code.

~~Exceptions:~~ ~~The following~~ **IBC [F] 307.1.1 Uses other than Group H.** The storage, use or handling of hazardous materials as described in one or more of the following items shall not cause the occupancy to be classified as Group H, but shall be classified as the occupancy that they most nearly resemble~~.~~:

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.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the International Fire Code.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (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 constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable 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*.
10. Corrosive ~~s shall not include~~ personal or household products in their original packaging used in retail display. ~~or~~
11. Commonly used corrosive building materials.

~~11~~12. 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*.

~~12.~~13. 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.

~~13.~~ 14. 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*.

[F] ~~307.1.1~~ 307.1.2 Hazardous materials. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the *International Fire Code*.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 6 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

This proposal takes a long "exception list" and turns the language into a positive statement list of hazardous material activities that would not be classified as a High Hazard Group occupancy.

Cost Impact: This proposal will not increase the cost of construction.

G3-13

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

[F] 307.1-G-BAJNAI-BCAC

G4 – 13
IBC [F] 403.3.2 (IFC 914.3.1.2)

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration (jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

IBC [F] 403.3.2 (IFC 914.3.1.2) Water supply to required fire pumps. In buildings that are more than 420 feet (128 m) in *building height,* required fire pumps shall be supplied by connections to no fewer than two water mains located in different streets. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

> **Exception:** Two connections to the same main shall be permitted provided the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through no fewer than one of the connections.

Reason: The text in this section originated with Proposal G46-07/08. That proposal was accepted based on a public comment that had a reason statement that began with "*The purpose of this public comment is to increase the reliability of fire sprinkler systems in very tall buildings, those that exceed 420 feet in height, by requiring a minimum of two risers for each sprinkler zone and pumps to be supplied by a minimum of two connections to the municipal distribution system*." Although Section 403.3.1, which was also created by the same public comment included the 420 foot threshold, the threshold was clearly overlooked in the text of 403.3.2. The text as written technically applies to any high-rise building, which comes at very significant cost, yet there is no documented justification as a basis for applying the code in that manner. The proposed revision resolves the apparent oversight in the current code text.

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

G4-13

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

[F] 403.3.2-G-SHAPIRO

G5 – 13
IBC [F] 414.3

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee (bajnaic@chesterfield.gov)

Revise as follows:

IBC [F] 414.3 Ventilation. Rooms, areas or spaces ~~of Group H~~ in which explosive, corrosive, combustible, flammable or highly toxic dusts, mists, fumes, vapors or gases are or may be emitted due to the processing, use, handling or storage of materials shall be mechanically ventilated ~~as~~ where required by this code, the *International Fire Code* or ~~and~~ the *International Mechanical Code*.

~~Ducts conveying explosives or flammable vapors, fumes or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts and plenums~~.

> ~~**Exception:** Ducts conveying vapor or fumes having flammable constituents less than 25 percent of their lower flammable limit (LFL) are permitted to pass through other spaces.~~

Emissions generated at workstations shall be confined to the area in which they are generated as specified in the International Fire Code and the International Mechanical Code.

~~The location of supply and exhaust openings shall be in accordance with the *International Mechanical Code*. Exhaust air contaminated by *highly toxic* material shall be treated in accordance with the *International Fire Code*~~.

~~A manual shutoff control for *ventilation* equipment required by this section shall be provided outside the room adjacent to the principal access door to the room. The switch shall be of the break-glass type and shall be labeled: VENTILATION SYSTEM EMERGENCY SHUTOFF.~~

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 6 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

This proposal clarifies that ventilation may be required when hazardous materials are handled regardless of whether the activity is located in a H Group. The proposal also eliminates language that is covered by the IMC for the design and installation of the exhaust systems.

Note that this section does not trigger the installation of the exhaust systems, it refers to the IBC, IFC and IMC for those triggers such as: IBC [F] 415.8.2.7, IBC [F] 415.10.1.6, IBC [F] 415.10.5.8, IMC 502.1, IMC 502.2 – IMC 502.17, IFC 2105.2.3, IFC 2106.3.3, IFC 5003.8.4.2, IFC 5003.8.5.2, and IFC 5004.3 as a few examples.

Cost Impact: This proposal will not increase the cost of construction.

G5-13

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

[F] 414.3-G-BAJNAI-BCAC

G6 – 13
IBC [F] 414.5, IBC [F] 414.6, IBC [F] 414.7

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Revise as follows:

IBC [F] ~~414.5~~ 415.6 Inside storage, dispensing and use. The inside storage, dispensing and use of hazardous materials shall be in accordance with Sections ~~414.5.1~~ 415.6.1 through ~~414.5.4~~ 415.6.3 of this code and the *International Fire Code*.

IBC [F] ~~414.5.1~~ 415.6.1 Explosion control. *(No change to current text)*

IBC [F] Table ~~414.5.1~~ 415.6.1 Explosion Control Requirements *(No change to current text)*

IBC [F] 414.5.2 Monitor control equipment. *(No change to current text)*

IBC [F] ~~414.5.3~~ 415.6.2 Emergency or standby power. *(No change to current text)*

IBC [F] ~~414.5.4~~ 415.6.3 Spill control, drainage and containment. Rooms, buildings or areas occupied for the storage or use of solid and liquid hazardous materials shall be provided with a means to control spillage and to contain or drain off spillage and fire protection water discharged in the storage area where required in the *International Fire Code*. The methods of spill control shall be in accordance with the *International Fire Code*.

IBC [F] 414.6 Outdoor storage, dispensing and use. *(No change to current text)*

IBC [F] 414.6.1 Weather protection. *(No change to current text)*

IBC [F] 414.6.1.1 Walls. *(No change to current text)*

IBC [F] 414.6.1.2 Separation distance. *(No change to current text)*

IBC [F] 414.6.1.3 Noncombustible construction. *(No change to current text)*

IBC [F] ~~414.7~~ 415.7 Emergency alarms. *(No change to current text)*

IBC [F] ~~414.7.1~~ 415.7.1 Storage. *(No change to current text)*

IBC [F] ~~414.7.2~~ 415.7.2 Dispensing, use and handling. *(No change to current text)*

IBC [F] ~~414.7.3~~ 415.7.3 Supervision. *(No change to current text)*

(Renumber subsequent sections)

Reason: The above sections apply only to Group H occupancies. Section 414 contains requirements which apply to all hazardous materials. Section 415 contains the requirements which apply to Group H occupancies, where the MAQ has been exceeded.

Even the text in these sections state that they only apply to Group H occupancies. For example, Section 414.5.1 starts off by saying;

> "Explosion control shall be provided in accordance with the International Fire Code as required by Table 414.5.1 ***where quantities of hazardous materials specified in that table exceed the maximum allowable quantities in Table 307.1(1)***…"

Therefore, all of these sections are relocated into Section 415. The only two changes in text occur in Section 415.6 and 415.6.3. Section 415.6 contains an editorial revision so that it references the correct relocated sections. Section 415.6.3 is revised to include the term 'use' in addition to 'storage'. This section addresses spill control and secondary containment. Spill control is required in

areas of ‘use’. Secondary containment is required in areas of ‘storage’ and ‘use’. Therefore, including the term ‘use’ just correlates this section with the rest of the code.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx..

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

G6-13

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

[F] 414.5-G-ZUBIA-FCAC

G7 – 13
IBC [F] 414.5.2

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Delete without substitution:

~~**IBC [F] 414.5.2 Monitor control equipment.** Monitor control equipment shall be provided where required by the International Fire Code.~~

(Renumber subsequent sections)

Reason: Section 414.5.2 refers to regulations in the IFC for application to "monitor control equipment". The term "monitor control equipment" is not used in the IFC as suggested by this reference to the IFC.

This IBC section is referring to a term that is not utilized, therefore, this section is proposed to be deleted. The term is not used and do not relate to building construction requirements.

Process control equipment is already addressed in the IFC and the provisions in the IFC cover these items. The proposal eliminates the confusion which occurs when the user refers to the IFC and finds nothing specified for 'monitor control equipment'. Deleting this section does not eliminate any of the requirements.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx..

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

G7-13

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

[F] 414.5.2-G-ZUBIA-FCAC

G8 – 13
IBC [F] 414.7, [F] 414.7.1, [F] 414.7.2, [F] 414.7.3

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee (bajnaic@chesterfield.gov)

Revise as follows:

IBC [F] ~~414.7~~ 415.5 Emergency alarms. Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as set forth herein.

IBC [F] ~~414.7.1~~ 415.5.1 Storage. An approved manual emergency alarm system shall be provided in buildings, rooms or areas used for storage of hazardous materials. Emergency alarm-initiating devices shall be installed outside of each interior exit or exit access door of storage buildings, rooms or areas. Activation of an emergency alarm-initiating device shall sound a local alarm to alert occupants of an emergency situation involving hazardous materials.

IBC [F] ~~414.7.2~~ 415.5.2 Dispensing, use and handling. Where hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704 are transported through corridors, interior exit stairways or ramps, or exit passageways there shall be an emergency telephone system, a local manual alarm station or an approved alarm-initiating device at not more than 150-foot (45 720 mm) intervals and at each exit and exit access doorway throughout the transport route. The signal shall be relayed to an approved central, proprietary or remote station service or constantly attended on-site location and shall initiate a local audible alarm.

IBC [F] ~~414.7.3~~ 415.5.3 Supervision. Emergency alarm systems 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.

(Renumber subsequent sections)

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 6 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

The scope of Section 414 applies to all buildings and structures where hazardous materials are present.

> ***[F] 414.1 General.*** *The provisions of Sections 414.1 through 414.7 shall apply to buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials.*

However, current Section 414.5 only applies to Group H occupancies. For clarification the section is proposed to be relocated to Section 415 which is the portion of the IBC that applies to H Group occupancies.

Cost Impact: This proposal will not increase the cost of construction.

G8-13

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

[F] 414.7-G-BAJNAI-BCAC

G9 –13
IBC [F] 415.6

Proponent: Homer Maiel, PE, CBO, Town of Atherton (CA), representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay)

Revise as follows:

IBC [F] 415.6 Special provisions for Group H-1 occupancies. Group H-1 occupancies shall be in ~~buildings used for no other purpose, shall not exceed one *story* in height and be without basements, crawl spaces or other under-floor spaces.~~ *detached buildings*. Roofs shall be of lightweight construction with suitable thermal insulation to prevent sensitive material from reaching its decomposition temperature. Group H-1 occupancies containing materials that are in themselves both physical and health hazards in quantities exceeding the maximum allowable quantities per *control area* in Table 307.1(2) shall comply with requirements for both Group H-1 and H-4 occupancies.

Reason: This is only an editorial change. The entire stricken out portion is the definition for “detached buildings”. Hence replacing it with “detached buildings”

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

G9-13

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

[F] 415.6-G-MAIEL.doc

G10 – 11
IBC [F] 415.7.1

Proponent: Homer Maiel, PE, CBO, Town of Atherton (CA), representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay)

Delete without substitution as follows:

~~**IBC [F] 415.7.1 Detached buildings.** Detached buildings shall not exceed one story in height and shall be without basements, crawl spaces or other under-floor spaces.~~

Reason: Since this section is already covered in Chapter 2 as a definition, there is no need to be repeated here.

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

G10-13

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

[F] 415.7-G-MAIEL.doc

G11 – 13
IBC [F] 415.7.5

Proponent: Tony Crimi, A.C. Consulting Solutions Inc, representing North American Insulation Manufacturers Association (NAIMA) (tcrimi@sympatico.ca)

Add new text as follows:

IBC [F] 415.7.5. Noncombustible Roof Insulation. Roof insulation for Group H-2, H-3 or H-4 occupancies shall comply with the requirements for Class NC (noncombustible core) in accordance with the requirements of FM 4470.

(Renumber subsequent sections.)

Reason: This proposal introduces a new type class of non-combustible roof insulation products which are specifically evaluated for a higher level of resistance to ignition based upon testing and conformance with the current edition of FM 4470 Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet,Built-Up Roof (BUR) and Liquid Applied Roof Assemblies. It does not preclude the use of other roof insulation materials. This proposal does not does not preclude the use of other roof insulation materials. It merely recognizes that in order for a roof insulation to be considered non-combustible, it needs to comply with the new FM 4470 standard.

There is a long history of losses connected with fires in roofing materials and roof coverings. According to NFPA statistics, an average of 4,200 fires starting with exterior roof coverings, surfaces or finishes made of sawn wood occurred per year during the five year period from 1994 through 1998. These fires caused an average of five civilian deaths, 23 civilian injuries and an estimated $7.0 million in direct property damage per year. During this time period, these fires accounted for 0.7% of the 567,100 total reported structure fires, 0.1% of the 3,744 civilian structure fire deaths, 0.1% of the 21,293 civilian structure fire injuries, and 1.1% of the $7.2 billion in direct property damage. These totals exclude from the analysis fires where the roof covering was recorded as composed of hardboard, plywood, fiberboard or wood pulp, as these products are considered more likely to refer to decking or framing, rather than to shingles and covering. Also excluded are fires where the roof covering was recorded as growing wood, felled but unsawn wood, wood shavings, or unclassified or unknown-type wood. More importantly, this analysis excludes fires that begin with some other fuel but grow and spread primarily through secondary involvement of wooden roof coverings. Such fires cannot be identified in existing national databases.[1]

The roof insulation is one of the most vulnerable parts of a building. Group H buildings are designed to address hazards beyond the other occupancies to provide minimum regulations intended to mitigate the risk to life and structures.

[1] Marty Ahrens, NFPA Report, Wood Shingle or Wood Shake Roof Fires, Statistical Analysis, July 2001

Cost Impact: This proposal will not increase the cost of construction.

Analysis: FM 4470 (1992) is currently referenced in the IBC. Updates in the year edition will be accomplished by an administrative standards update code change to be heard by the ADM Code Development Committee.

G11-13

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

[F] 415.7.5-(NEW)-G-CRIMI

G12 – 13
IBC [F] 415.10.3.2, IBC [F] 415.10.5.8

Proponent: Patrick A. McLaughlin McLaughlin & Associates, representing the Semiconductor Industry Association (pmclaugma@aol.com)

Revise as follows:

IBC [F] 415.10.3.2 Mechanical ventilation. *Service corridors* shall be mechanically ventilated as required by Section 415.10.1.6 or at not less than six air changes per hour~~, whichever is greater~~.

IBC [F] 415.10.5.8 Ventilation. Mechanical exhaust *ventilation* shall be provided in liquid storage rooms, HPM rooms and gas rooms at the rate of not less than 1 cubic foot per minute per square foot (0.044 L/s/m^2) of floor area or six air changes per hour~~, whichever is greater, for categories of material~~.

Exhaust *ventilation* for gas rooms shall be designed to operate at a negative pressure in relation to the surrounding areas and direct the exhaust *ventilation* to an exhaust system.

Reason: The six air changes per hour was developed assuming a maximum ceiling height of 10 feet. Currently some of the rooms have ceiling height in excess of 25 feet. There is no justification for the air movement that is required to reach the 6 air changes per hour. The NPFA handbook ventilation discussion states "NFPA 30 allows the use of the traditional approach of 1 cfm of ventilation per square foot (0.3 m3/minlm2) of floor area. This is based on an old, but very effective, rule of thumb: areas where liquids are used should be ventilated at a rate of six air changes per hour. However, most industrial facilities are high-ceilinged; six air changes per hour involve exhausting a great volume of air, with a correspondingly large energy loss in winter. Because most vapors are generated and tend to remain at or near floor level, it is reasonable to assume an arbitrary ceiling height of 10 ft (3 m). With each square foot of floor area translating to 10 ft^3, six air changes per hour equals 60 ft^3 per hour, or 1 cfm for that one square foot of floor area". As the semiconductor industry moves to future technologies, the ceiling heights of HPM rooms are in some cases over 25', which would require massive amounts of make-up air and result in a large energy loss due to cooling and heating of the space. This proposed change would than align the IFC and IBC provisions with NFPA 30, while still maintaining requirements for adequate makeup air into HPM rooms.

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

G12-13

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

[F] 415.10.5.8-G-MCLAUGHLIN

G13 – 13
IBC [F] 415.10.6.4

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

IBC [F] 415.10.6.4 Installations in corridors and above other occupancies. The installation of HPM piping and tubing within the space defined by the walls of corridors and the floor or roof above, or in concealed spaces above other occupancies, shall be in accordance with Sections 415.10.6.1 through 415.10.6.3 and the following conditions:

1. through 3. *(No change to current text.)*
4. HPM supply piping and tubing and nonmetallic waste lines shall be separated from the corridor and from occupancies other than Group H-5 by fire barriers or by an approved piping protective system that have a fire-resistance rating of not less than 1 hour Where gypsum wallboard is used, joints on the piping side of the enclosure are not required to be taped~~, provided the joints occur over framing members~~. Access openings into the enclosure shall be protected by approved fire protection-rated assemblies.
5. *(No change to current text.)*

Exception: Transverse crossings of the corridors by supply piping that is enclosed within a ferrous pipe or tube for the width of the corridor need not comply with Items 1 through 5.

Reason: The purpose of this proposal is to allow for additional methods of fire-resistance protection for supply piping and tubing. Depending on the configuration and installation details, a fire-resistance wrap material can provide the required fire-resistance rating.

An additional change is to eliminate the wording ", provided the joints occur over framing members" which addresses the elimination of taping joints on the supply piping side of the fire-resistance protection. The IBC Commentary states:
The elimination of the taping of the wallboard joints on the piping side of a rated assembly is in recognition of actual installation difficulties and the reduced likelihood of a fire on the interior of the wall cavity. To eliminate the taping of joints, however, the joints must occur over framing members.

If the elimination is related to the practical difficulty of taping on the inside of the barrier and the reduces likelihood of a fire on the interior of the cavity, in other words the protection is for an exposure fire, then elimination of the interior taping is not reliant on the joints being over framing members.

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

G13-13

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

[F] 415.10.6.4-G-DAVIDSON

G14 – 13
IBC [F] 421, Table 509.1, 202; IFC 5808 (New); 5802.1, 202

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

IBC SECTION 421
HYDROGEN ~~CUTOFF~~ GAS ROOMS

[F] 421.1 General. Where required by the International Fire Code, hydrogen ~~cutoff~~ gas rooms shall be designed and constructed in accordance with Sections 421.1 through 421.8.

[F] 421.2 Definitions. The following terms are defined in Chapter 2:

GASEOUS HYDROGEN SYSTEM.

HYDROGEN ~~CUTOFF~~ GAS ROOM.

[F] 421.3 Location. Hydrogen ~~cutoff~~ gas rooms shall not be located below grade.

[F] 421.4 Design and construction. Hydrogen ~~cutoff~~ gas rooms not classified as Group H shall be ~~classified with respect to occupancy in accordance with Section 302.1 and~~ separated from other areas of the building in accordance with Section 509.1 ~~by not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both; or as required by Section 508.2, 508.3 or 508.4, as applicable~~ .

[F] 421.4.1 ~~Opening protectives~~ Pressure control. ~~Doors within the fire barriers, including doors to corridors, shall be self-closing in accordance with Section 716. Interior door openings shall be electronically interlocked to prevent operation of the hydrogen system when doors are opened or ajar or the room shall be provided with a mechanical exhaust ventilation system designed in accordance with Section 421.4.1.1.~~ Hydrogen gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

~~**[F] 421.4.1.1 Ventilation alternative**. Where an exhaust system is used in lieu of the interlock system required by Section 421.4.1, exhaust ventilation systems shall operate continuously and shall be designed to operate at a negative pressure in relation to the surrounding area. The average velocity of ventilation at the face of the door opening with the door in the fully open position shall not be less than 60 feet per minute (0.3048 m/s) and not less than 45 feet per minute (0.2287 m/s) at any point in the door opening.~~

[F] 421.4.2 Windows. Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716.

[F] 421.5 Exhaust Ventilation. ~~Cutoff~~ Gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions ~~for repair garages in Chapter 5~~ of Section 502.16.1 of the *International Mechanical Code*.

[F] 421.6 Gas detection system. Hydrogen ~~cutoff~~ gas rooms shall be provided with an approved flammable gas detection system in accordance with Sections 421.6.1 through ~~421.6.3~~ 421.6.4.

[F] 421.6.1 System design. The flammable gas detection system shall be listed for use with hydrogen and any other flammable gases used in the room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

[F] 421.6.2 Gas detection system components. Gas detection system control units shall be listed and labeled in accordance with UL 864 or UL 2017. Gas detectors shall be listed and labeled in accordance with UL 2075 for use with the gases and vapors being detected.

[F] 421.6.3 ~~421.6.2~~ Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the ~~cutoff~~ gas room.
2. Activation of the mechanical exhaust ventilation system.

[F] 421.6.4 ~~421.6.3~~ Failure of the gas detection system. Failure of the gas detection system shall result in activation of the mechanical exhaust ventilation system, cessation of hydrogen generation and the sounding of a trouble signal in an approved location.

[F] 421.7 Explosion control. Explosion control shall be provided ~~in accordance with Chapter 9 of the International Fire Code~~ where required by Section [F] 414.5.1. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Chapter 27.

IBC TABLE 509.1
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Hydrogen ~~cutoff~~ gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

(Portions of table not shown remain unchanged)

IBC SECTION 202
DEFINITIONS

[F] HYDROGEN ~~CUTOFF~~ GAS ROOM. A room or space that is intended exclusively to house a gaseous hydrogen system.

Add new IFC text as follows:

SECTION 5808
HYDROGEN GAS ROOMS

5808.1 General. Where required by the International Fire Code, hydrogen gas rooms shall be designed and constructed in accordance with Sections 5808.1 through 5808.7 and the *International Building Code*.

5808.2 Location. Hydrogen gas rooms shall not be located below grade.

5808.3 Design and construction. Hydrogen gas rooms not exceeding the maximum allowable quantities in Table 5003.1.1(1) shall be separated from other areas of the building in accordance with Section 509.1 of the *International Building Code*.

5808.3.1 Pressure control. Hydrogen gas rooms shall be provided with a ventilation system designed to maintain the room at a negative pressure in relation to surrounding rooms and spaces.

5808.3.2 Windows. Operable windows in interior walls shall not be permitted. Fixed windows shall be permitted where in accordance with Section 716 of the *International Building Code*.

5808.4 Exhaust Ventilation. Gas rooms shall be provided with mechanical exhaust ventilation in accordance with the applicable provisions of Section 502.16.1 of the *International Mechanical Code*.

5808.5 Gas detection system. Hydrogen gas rooms shall be provided with an approved flammable gas detection system in accordance with Sections 5808.5.1 through 5808.5.4.

5808.5.1 System design. The flammable gas detection system shall be listed for use with hydrogen and any other flammable gases used in the room. The gas detection system shall be designed to activate when the level of flammable gas exceeds 25 percent of the lower flammability limit (LFL) for the gas or mixtures present at their anticipated temperature and pressure.

5808.5.2 Gas detection system components. Gas detection system control units shall be listed and labeled in accordance with UL 864 or UL 2017. Gas detectors shall be listed and labeled in accordance with UL 2075 for use with the gases and vapors being detected.

5808.5.3 Operation. Activation of the gas detection system shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals both inside and outside of the gas room.
2. Activation of the mechanical exhaust ventilation system.

5808.5.4 Failure of the gas detection system. Failure of the gas detection system shall result in activation of the mechanical exhaust ventilation system, cessation of hydrogen generation and the sounding of a trouble signal in an approved location.

5808.6 Explosion control. Explosion control shall be provided where required by Section 911.

5808.7 Standby power. Mechanical ventilation and gas detection systems shall be connected to a standby power system in accordance with Chapter 6.

Add new IFC definition as follows:

IFC SECTION 202
DEFINITIONS

GASEOUS HYDROGEN SYSTEM. An assembly of piping, devices and apparatus designed to generate, store, contain, distribute or transport a nontoxic, gaseous hydrogen containing mixture having at least 95-percent hydrogen gas by volume and not more than 1-percent oxygen by volume. Gaseous hydrogen systems consist of items such as *compressed gas* containers, reactors and appurtenances, including pressure regulators, pressure relief devices, manifolds, pumps, compressors and interconnecting piping and tubing and controls.

HYDROGEN GAS ROOM. A room or space that is intended exclusively to house a *gaseous hydrogen system*.

Revise as follows:

5802.1 Definitions. The following terms are defined in Chapter 2:

FLAMMABLE GAS.
FLAMMABLE LIQUEFIED GAS.
GASEOUS HYDROGEN SYSTEM.
HYDROGEN GAS ROOM.
METAL HYDRIDE.
METAL HYDRIDE STORAGE SYSTEM.

Reason:

IBC Changes: The purpose of this submittal is cleanup of language, correlation with NFPA 2 "Hydrogen Technologies Code", and correlation with other portions of the IBC. NFPA 2 has been formed to provide a source document for the storage, use and handling

of hydrogen and much work has gone into refining terms and requirements. For consistency the concepts and terms within the IFC, the IBC and NFPA should correlate for effective and efficient application of hydrogen technologies.

From the 2011 edition of NFPA 2:

Origin and Development of NFPA 2
"With the increased interest in hydrogen being used as a fuel source, the National Fire Protection Association was petitioned to develop an all-encompassing document that establishes the necessary requirements for hydrogen technologies. In 2006, the Technical Committee on Hydrogen Technology was formed and tasked to develop a document that addresses all aspects of hydrogen storage, use, and handling, that draws from existing NFPA codes and standards, and that identifies and fills technical gaps for a complete functional set of requirements for code users and enforcers. This document is also structured so that it works seamlessly with building and fire codes."

The term "Hydrogen Cutoff Room" is proposed to be changed to "Hydrogen Gas Room" which is the phrase used by NFPA 2 for consistency. The change would be reflected in the definition, titles and technical language found within the code.

Section [F]421.4 is modified to improved correlation of this section with Section 509 Incidental Uses. Hydrogen cutoff rooms not classified as a Group H are in Table 509 as an Incidental use. The specifications for separation are covered by 509.4.1. The "hydrogen cutoff room" was not intended to be an H Group, so the language referring to Group separated or non-separated uses is not necessary. That language will apply if a Group H classification is determined to apply. The change provides a cleaner, easier to understand application of these requirements

Section [F] 421.4.1 is modified to be consistent with the newer requirements found within NFPA 2 for hydrogen gas rooms.

Section [F]421.5 is modified to clarify that it is an "exhaust" ventilation system that is required and a pointer to the specific section in the IMC has been added instead of the generic Chapter 5 reference for clarity.

A new Section [F] 421.6.2 has been added to provide standards for the required gas detection system. This language and the referenced standards already exists in the IFC,IBC and IMC for when gas detection systems are required to be installed.

Section [F421.6.2, Item 2 and Section [F]421.6.3 are proposed to be modified by adding the word "exhaust" to add clarity that it is a "mechanical exhaust system" that is be required.

Section [F]421.7 has been modified to point to the explosion control requirements located within Chapter 4 of the IBC, they are a match for the requirements of the IFC.

IFC Changes: This is duplication of language that is currently in the building code. Because most of the requirements for hydrogen are in the Fire Code, there is a tendency to only use the IFC along with the IFGC and IMC for detailed requirements. The existence of the allowance for use of a hydrogen gas room is not always recognized. By copying the existing language to this new section in the fire code officials will not only provide for increase awareness on the application of hydrogen gas rooms, but will also highlight the systems that must be maintained.

The only modifications made were to fit the language to application out of this code as compared to the IBC as has been done with similar language duplication on other topics.

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

G14-13

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

[F] 421-G-DAVIDSON WITH 5808-F-DAVIDSON~COMBINED

G15 – 13
IBC [F] 425 (New), [F] 415.8.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

IBC SECTION [F] 425
COMBUSTIBLE DUSTS, GRAIN PROCESSING AND STORAGE

[F] ~~415.8.1~~ 425.1 Combustible dusts, grain processing and storage. The provisions of Sections ~~415.8.1.1~~ 425.1.1 through ~~415.8.1.6~~ 425.1.6 shall apply to buildings in which materials that produce combustible dusts are stored or handled. Buildings that store or handle combustible dusts shall comply with the applicable provisions of NFPA 61, NFPA 85, NFPA 120, NFPA 484, NFPA 654, NFPA 655 and NFPA 664, and the International Fire Code.

[F] ~~415.8.1.1~~ 425.1.1 Type of construction and height exceptions. Buildings shall be constructed in compliance with the height and area limitations of Table 503 ~~for Group H-2~~; except that where erected of Type I or II construction, the heights and areas of grain elevators and similar structures shall be unlimited, and where of Type IV construction, the maximum building height shall be 65 feet (19 812 mm) and except further that, in isolated areas, the maximum building height of Type IV structures shall be increased to 85 feet (25 908 mm).

[F] ~~415.8.1.2~~ 425.1.2 Grinding rooms. Every room or space occupied for grinding or other operations that produce combustible dusts in such a manner that the room or space is classified as a Group H-2 occupancy shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating of the enclosure shall be not less than 2 hours where the area is not more than 3,000 square feet (279 m2), and not less than 4 hours where the area is greater than 3,000 square feet (279 m2).

[F] ~~415.8.1.3~~ 425.1.3 Conveyors. *(No change to current text)*

[F] ~~415.8.1.4~~ 425.1.4 Explosion control. *(No change to current text)*

[F] ~~415.8.1.5~~ 425.1.5 Grain elevators. *(No change to current text)*

[F] ~~415.8.1.6~~ 425.1.6 Coal pockets. *(No change to current text)*

Reason: The IBC requirements for *Combustible dusts, grain processing and storage* are located in a section of the IBC that only applies to activities that have been designated as High Hazard Groups involving hazardous materials, yet, starting with the 2012 edition IFC Table 5003.1.1(1) / IBC Table 307.1(1) provides for an exception to the High Hazard Group designation if the combustible dust hazard is controlled, in that event the requirements would not apply when some of them should apply, including the height and area exceptions, regardless of the Group classification.

[F] 415.1 Scope.
*The provisions of Sections 415.1 through 415.10 shall apply to the **storage and use of hazardous materials** in excess of the maximum allowable quantities per control area listed in Section 307.1. Buildings and structures with an occupancy in Group H shall also comply with the applicable provisions of Section 414 and the International Fire Code.*

Further, combustible dusts and fibers are not "hazardous materials" as defined by the IFC/IBC and should not be merged in with hazardous material requirements regardless of Group classification.

***[F] HAZARDOUS MATERIALS.** Those chemicals or substances that are physical hazards or health hazards as classified in Section 307 and the International Fire Code, whether the materials are in usable or waste condition.*

***[F] HEALTH HAZARD.** A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic or highly toxic, and corrosive.*

[F] PHYSICAL HAZARD. *A chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer*

Based upon the scoping of Section [F]415.1 and the definitions for hazardous materials, the current location for [F]415.8.1 is a mismatch. Though the presence of combustible dusts can cause a high hazard group classification, the material involved is not necessarily a "hazardous material" by definition.

From a practical standpoint, this proposal is a follow up coordination with the code change F187-09/10 which added "combustible dusts" to IFC Table 5003.1.1(1) / IBC Table 307.1(1) along with Note q that provides for elimination of the Group H-2 classification where the hazards are controlled. Prior to that code change the existence of a combustible dust caused an H-2 classification and section [F] 415.8.1 would have applied, (though a designer/facility operator could still question the hazardous materials scoping of Section 415.1 mentioned above).

Some of the provisions found in existing IBC Sections [F]415.8.1 through [F]415.8.1.6 need to be applied regardless of the H Group classification and in most cases it will be compliance with these sections that assists the occupancy to avoid the H Group classification.

This proposal moves the requirements for Combustible dusts, grain processing and storage to a new Section [F]425 to eliminate the H Group scoping limitation and makes minor modifications necessitated by the relocation.

Sections [F]415.8.1.1, proposed as [F]425.1.1, has been modified to eliminate the reference to the H-2 Group, the section provides for a height exception for these occupancies which should apply regardless of the Group classification. Another way to express this is to point out that if the height increase was warranted for an H-2 Group classification, it is clearly warranted for an S, F or U Group classification.

[F]415.8.1.2, proposed as [F]425.1.2, is modified to clarify that the those construction requirements are for occupancies that are classified as Group H, which is the hazard classification they are based upon in the current code language. If the hazard is controlled providing for elimination of the Group H designation, then the increased construction requirements are not necessary. The remaining sections are not modified as they should apply in all cases as appropriate.

The Biomass Feedstock Industry Committee on Codes and Standards (BFICOCS), led by Oak Ridge National Laboratory (ORNL), is an initiative of the Department of Energy Biomass Technologies Office (BTO). As part of the BTO integrated biorefinery efforts, the BFICOCS was assembled to conduct analysis of existing fire and building codes and to prepare proposed code changes designed to facilitate the development of the commercial-scale biomass industry while maintaining a focus on safety. The committee is made up of managers, engineers and code officials from industry, government laboratories, consulting firms, and the American Society of Agricultural and Biological Engineers.

Fire codes related to storage, handling, and preprocessing of biomass are based on industries that operate in a significantly different manner than the growing biomass-based energy industry. Applying current research on biomass properties and knowledge of conventional and emerging storage, handling, and preprocessing technologies, the BFICOCS has identified changes in the IFC that benefit industry and the public.

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

G15-13

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

[F] 425 (NEW)-G-DAVIDSON

G16 – 13
IBC [F] 501.2

Proponent: Tim Swanson, City of Greeley, representing Colorado Chapter of the International Code Council

Revise as follows:

IBC [F] 501.2 Address identification. New and existing buildings shall be provided with *approved* address numbers or letters. Each character shall be ~~not less than 4 inches (102 mm) in height and not less than 0.5 inch (12.7 mm) in width.~~ a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm).They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. When required by the fire code official, address numbers shall be provided in additional *approved* locations to facilitate emergency response. 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. Address numbers shall be maintained.

Reason: The language in the current IBC would literally allow the entire character to be as narrow as ½" wide. I know that is not the intent, but that is what the current language it would allow. The intent of requiring a visible, recognizable character is better stated with the language that was in the 2006 IBC and is currently in the 2012 IFC, and the 2012 IRC.

Cost Impact: None

Analysis: Current IFC Section 505.1, IPMC Section 304.3 and IRC R319.1 contain the proposed phraseology.

G16-13

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

[F]**501.2-G-SWANSON**

G17 – 13
IBC [F] 2702.2.10, [F] 2702.2.11, [F] 2702.2.12

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azumiamia@yahoo.com)

Revise as follows:

IBC [F] 2702.2.10 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials ~~in accordance with Section 414.5.3~~ where required by the *International Fire Code*.

~~**IBC [F] 2702.2.11 Highly toxic and toxic materials.** Emergency power shall be provided for occupancies with highly *toxic* or *toxic* materials in accordance with the *International Fire Code*.~~

~~**IBC [F] 2702.2.12 Organic peroxides.** Standby power shall be provided for occupancies with organic peroxides in accordance with the *International Fire Code*.~~

(Renumber subsequent sections)

Reason: This proposal is intended to simplify the IBC requirements and correlate the IBC with the requirements in the IFC. This proposal does not change any requirements, it only reformats them.

Section 2702.2.10 currently references back to 414.5.3. Section 414.5.3 states that "…systems shall be provided with an emergency or standby power system in accordance with Chapter 27." So the reality is that both sections reference each other. To solve this confusion, IBC 414.5.3 is retained to reference Chapter 27, and 2702.2.10 is revised to reference the IFC.

Sections 2702.11 and 2702.12 are deleted since they are covered under the definition of 'hazardous materials' addressed in Section 2702.10 and the revision to 2702.10 covers their reference to the IFC.

. This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

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

G17-13

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

[F] 2702.2.10-G-ZUBIA-FCAC

M1–13
IMC [F] Table 1103.1

Proponent: Debra Kennoy, Arkema Inc., representing self (debra.kennoy@arkema.com)

Revise as follows:

IMC [F] TABLE 1103.1
REFRIGERANT CLASSIFICATION, AMOUNT AND OEL

REFRIGERANT	FORMULA	CHEMICAL NAME OF BLEND	REFRIGERANT CLASSIFICATION	DEGREES OF HAZARD[a]	[M] AMOUNT OF REFRIGERANT PER OCCUPIED SPACE			
					Pounds per 1,000 cubic feet	ppm	g/m^3	OEL[e]
R-32	CH_2F_2	difluoromethane (methylene fluoride)	A2	1-4-0	4.8	36,000	77	1,000
R-141b	CH_3CCl_2F	1,1-dichloro-1-fluoroethane	—	2-1-0	0.78	2,600	12	500
R-142b	CH_3CClF_2	1-chloro-1,1-difluoroethane	A2	2-4-0	5.1	20,000	83	1,000
R-427A	zeotrope	R-32/125/143a/134a (15.0/25.0/10.0/50.0)	A1	2-1-0	18	76,000	280	1,000

(Portions of table not shown remain unchanged)

Reason: Several refrigerants including R-32, R-141b, R-142b, and R-427A are missing the Degrees of Hazard information in ANSI/ASHRAE Standard 34, Designation and Safety Classification of Refrigerants. The information for these refrigerants is provided in the modification to Table 1103.1 as shown above.

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

M1-13

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

[F] 1103.1T-M-KENNOY

P1– 13
IPC [F] 1202.1; IPC Chapter 14

Proponent: Jonathan Humble (Chairman), representing ICC Reference Standards Committee and Sharon Myers, RA, MPE, CBO. State of Ohio, representing Division of Industrial Compliance, Bureau of Building Code Compliance (SHARON.MYERS@COM.STATE.OH.US)

Revise as follows:

IPC [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 99~~C~~.

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*.

Revise IPC Chapter 14 as follows:

NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169-7471	
Standard reference number	Title	Referenced in code section number
~~NFPA 99C-05~~ NFPA 99-2012	~~Gas and Vacuum Systems~~ Health Care Facilities Code	1202.1

Reason (Humble): NFPA has also announced that starting 2012 NFPA 99C will no longer be a stand-alone document, which makes this proposal necessary in order to be consistent with the updating of the NFPA referenced standards. NFPA 99C represented an "extract reprint" of NFPA 99, specifically from Chapter 5 of NFPA 99.

As a result, the proposal before you is recommending that the above changes be accepted to reflect the current state of the reference standards.

Further information about this change can be found on the www.nfpa.org web page or at http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=99&cookie%5Ftest=1 to view a copy of the read-only NFPA 99.

Reason (Myers): NFPA 99C has been incorporated into NFPA 99 and the reference is no longer valid. This proposal simply revises the reference to NFPA 99 and the edition to 2012 to be consistent with other references to NFPA 99 throughout the I-Codes.
Cost Impact: The code change proposal will not increase the cost of construction.

P1-13

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

[F] 1202.1-P-HUMBLE