

**PART I**  
**AD HOC HEALTH CARE**  
**GENERAL STUDY GROUP**  
**TOPIC CODE CHANGE PROPOSALS**  
**September 30, 2011**

**PROPOSAL 1 – Topic 2 Defend in Place**

**(IBC AND IFC) Add a new definition as follows:**

**DEFEND IN PLACE.** A method of emergency response that engages building components and trained staff to ensure occupant safety during an emergency without evacuating occupants from the building. Emergency response involves remaining in place, relocating within the building, or both, without evacuating the building.

**IBC Revise as follows:**

**407.4 Means of egress.** Group I-2 occupancies shall be provided with a means of egress complying with Chapter 10 and Sections 407.4.1 through 407.4.3. Group I-2 Occupancies shall be permitted to use a defend in place emergency response strategy in accordance with IFC 404 and 408. (possibly language should be added to Section 407.1)

**422.3.1 Defend in place.** Ambulatory care facilities required to be separated in accordance with this section shall be permitted to use a defend in place emergency response strategy.

**Reason:** The defend in place, or protect in place, concept has long been employed as the preferred method of fire response in hospitals due to the nature of the occupants. Occupants in this setting are often dependent upon the building infrastructure and immediate evacuation would place their lives at risk. Patients in these occupancies are typically on life support systems that require medical gases, emergency power, and environmental controls that rely on continued building operation. Previous versions of this code and the legacy codes have created a tried and tested set of requirements to support this concept, such as smoke compartmentation and areas of refuge. However,

previous codes while providing the necessary building components and systems have not specifically described the concept of occupants remaining within a building during a fire emergency.

This code change would name and describe the concept to provide clarity for code officials. Since so much of the defend in place concept relies on the actions of trained staff, clear direction is provided to describe these actions in the fire safety and evacuation plan. A successful defend in place environment also requires close coordination between the initial construction and the fire safety plan. The code official must be provided with both a set of life safety plan that describes how the building is built AND an operational plan that describes how the building is going to work. Requiring the life safety and fire safety plans will give the code official all of the components needed to make an informed decision. This will lead to a more consistent application of the code.

## **(Topic 2 – General WG)**

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### **PROPOSAL 2 – Topic 3 Smoke Compartment Size**

#### **(IBC)Revise as follows:**

**407.5 Smoke barriers.** *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than ~~40,000~~ ~~22,500~~ square feet (2092 m<sup>2</sup>) and 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 in accordance with Section 709.

**Reason:** Over the previous 20 years or so, there has been a steady increase in the size of patient treatment rooms in hospitals. The primary reason for the increase is the equipment and utility necessary for the treatment of a patient, including monitoring, gases, and diagnostics, while maintaining enough space for the medical staff to access the patient. In response to these needs, the Guidelines that are adopted by design review at state departments of health have also increased, making these operational considerations actual requirements when planning. In the case of the inpatient bed unit, the adoption of a single bed in a patient room has had the largest impact on square footage, while not significantly increasing the actual amount of occupants (patient, staff or visitor) on the unit. Please note that this proposal considers the continuation of a

minimum of two smoke zones per patient sleeping floor, and would not seek to change that requirement.

Although not required yet, the idea of a single patient room is taking off in other types throughout the hospital. Emergency departments, although still allowed to use an open bay configuration, are opting for private patient exam spaces with hard walls, primarily for infection control and patient privacy considerations. Similarly, radiology areas are being driven by technology and clearance issues which go beyond the required minimums, and have impacts on square footages to achieve clearances. In some cases, there has been an increase in the types of required support spaces, including ratios of equipment storage per treatment room, the increased importance of computer equipment rooms, and various staff areas. However, support spaces have remained largely the same, while the main increases have been in the size of the patient treatment areas themselves.

During the time these spaces have been increasing in size, the smoke compartment size has been left unchanged in the building codes. Even in that time, allowable travel distance has increased from 150 feet to 200 feet. The old basis for the suite size is largely regarded to be the 150 square foot travel distance (150 by 150 yielding 22,500), so using the allowable 200 foot travel distance as a basis results in a 40,000 square foot smoke zone.

When studying the contemporary sizes of functions such as emergency departments, radiology operations, and bed units, the larger size allows for greater visualization from the staff to the patient, which is a crucial aspect of planning a patient area. This operational consideration could more easily be achieved before the increase in patient areas, but the same operational considerations require an increase to the smoke zone size to match contemporary requirements, delivery of care and technologies.

Additional data is found in an attached study of programs which compare the 2010 Guideline requirements with the 1996-97 Guidelines, which covers inpatient bed units, emergency departments, and radiology suites.

**IBC Revise as follows:**

**422.3 Smoke compartments.** Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m<sup>2</sup>) 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 40,000 ~~22,500~~-square feet (2092 m<sup>2</sup>). 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 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 *smoke barrier* or a combination thereof.

(Topic 3 – General WG)

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## PROPOSAL 3– Topic 3 Smoke Compartment Size

(IBC) Revise as follows:

**717.5.5 Smoke barriers.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *smoke barrier*. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 717.3.3.2.

**Exceptions:**

1. *Smoke dampers* are not required where the openings in ducts are limited to a single smoke compartment and the ducts are constructed of steel.
2. *Smoke dampers* are not required in Group I-2 occupancies where the HVAC system is fully ducted. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. [Smoke compartments are required to be sprinklered throughout in accordance with Section 903.3.1.1.]

Reason: To be drafted.

(Topic 2 – General WG)

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## PROPOSAL 4 – Topic 4 Use of facilities during renovations

(IBC) Add new text as follows:

**3304.8 Group I-2.** For buildings employing a *defend in place* method in Group I-2 hospitals, an on-site fire watch shall be provided in accordance with the Section 901.7 of the *International Fire Code*.

**3311.3 Group I-2.** Temporary construction within corridors serving bed or stretcher movement in Group I-2 hospitals shall not reduce the corridor width to less than 60 inches.

**Reason:** Statement to be drafted.

(Topic 4 – General WG)

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## PROPOSAL 5 - Topic 9 Mixed Use and accessory occupancy provisions.

(IBC) Revise as follows: PARKING LOT??????

### Option 1

**1004.6 Multiple occupancies.** Where a building contains two or more occupancies, the *means of egress* requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same *means of egress* system, those egress components shall meet the more stringent requirements of all occupancies that are served.

**Exception:** Means of egress components in non separated mixed occupancies and accessory use areas are not required to comply with the requirements for Group I-2 hospitals occupancies where such components are not used for patients.

### Option 2

**1018.2 Width.** The minimum width of *corridors* specified in Table 1018.2 shall be as determined in Section 1005.1.

**Exception:** In Group I-2 hospitals, corridors are not required to have a clear width of 96 inches (2438 mm) in areas where there will not be stretcher or bed movement for access to care or as part of the defend in place strategy.

**Table 1018.2**  
**MINIMUM CORRIDOR WIDTH**

<b>Occupancy</b>	<b>Width (min)</b>
Any facilities not listed below	44 inches (1118 mm)
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24 inches (610 mm)
With a required occupancy capacity less than 50	36 inches (914 mm)
Within a dwelling unit	36 inches (914 mm)
In Group E with a <i>corridor</i> having a required capacity of 100 or more	72 inches (1829 mm)
In <i>corridors</i> and areas serving gurney traffic in occupancies where patients receive outpatient medical care, which causes the patient to be incapable of <i>self-preservation</i>	72 inches (1829 mm)
Group I-2 in areas where required for bed movement	96 inches (2438 mm)

**Reason:** Since hospitals typically include accessory spaces or non separated mixed use occupancies that are not patient care, the code official should have the clear ability to apply judgment in determining the appropriate means of egress components. For example a large assembly space may need certain Group requirements, while a mechanical space with no patient would not need an 8' corridor.

**(Topic 9 – General WG)**

## **PROPOSAL 6 – Topic 9 Mixed Use and accessory occupancy provisions.**

**(IBC) Table 508.4 Add a new footnote e (referenced from Group B occupancies) as follows:**

e. See Section 422.2 for ambulatory care facilities.

**Reason:** This footnote reminds the reader that although there is no separation required for many B occupancy to other occupancies that Section 422.2 would still require a 1

hour fire partition between other group B occupancies and F-1, M and S-1 occupancies.

**(Topic 9 – General WG)**

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**PROPOSAL 7 - Topic 12 Existing standard references and terminology related to health care**

**(IBC) Revise as follows:**

**[F]2702.1.1 Stationary generators.** Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200 and the installation shall comply with ASCE 24.

**Reason:** 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.

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.

**(Topic 12 – General WG)**

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**PROPOSAL 8 – Topic 13**

**Find and replace the terms “gurney” and “litter” throughout the I-Codes with the term “stretcher.”**

**407.5.1 Refuge area.** 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<sup>2</sup>) for each care recipient confined to bed or ~~litter~~ stretcher.
2. Not less than 6 square feet (0.56 m<sup>2</sup>) for each ambulatory care recipient not confined to bed or ~~litter~~ stretcher and for other occupants.

Areas or spaces permitted to be included in the calculation of refuge area are *corridors*, sleeping areas, treatment rooms, lounge or dining areas and other low hazard areas.

**407.9 Secured yards.** Grounds are permitted to be fenced and gates therein are permitted to be equipped with locks, provided that safe dispersal areas having 30 net square feet (2.8 m<sup>2</sup>) for bed and ~~litter~~ stretcher care recipients and 6 net square feet (0.56 m<sup>2</sup>) for ambulatory care recipients and other occupants are located between the building and the fence. Such provided safe dispersal area shall be located not less than 50 feet (15 240 mm) from the building they serve.

**Table 1018.2**  
**MINIMUM CORRIDOR WIDTH**  
**Occupancy Width (min)**

In *corridors* and areas serving ~~gurney~~ stretcher traffic in occupancies where patients receive outpatient medical care, which causes the patient to be incapable of *self-preservation*.

**Reason:** Revising these terms will be more consistent with current healthcare terminology.

**(Topic 12 – General WG)**

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**PART II**  
**AD HOC HEALTH CARE**  
**GENERAL STUDY GROUP**  
**K-TAG CODE CHANGE PROPOSALS**  
**September 30, 2011**

**K11 - Separation/Nonconforming – Sharon Myers**

**Add new text to the IFC as follows:**

2 hour separation from I-2 occupancies (chapter 11)

**K12 – Building construction type – Sharon Myers**

**K23 – Number of smoke compartments - Rick Kabele**

**Add new text to the IFC as follows:**

**Minimum Smoke barriers.** *Smoke barriers shall be provided to subdivide every story used by persons receiving care, treatment or sleeping and to divide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments. [perhaps combine with smoke compartment size] (Section 407.5 in part)*

**Refuge area.** *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<sup>2</sup>) for each care recipient confined to bed or litter.

2. Not less than 6 square feet (0.56 m<sup>2</sup>) for each ambulatory care recipient not confined to bed or litter and for other occupants.

Areas or spaces permitted to be included in the calculation of refuge area are corridors, sleeping areas, treatment rooms, lounge or dining areas and other low hazard areas. .(407.5.1).

**K24 – Smoke compartment size (See also Proposal 2 from Topic 3) – Rick Kabele**

**K25 - Minimum smoke barrier rating – Mike Crowley**

**K26- Smoke compartment size for evacuation – Mike Crowley**

**K27- Smoke barrier door rating – Mike Crowley**

**K28 –Smoke barrier door width - Mike Crowley**

**K104 – Smoke dampers – Mike Crowley**

**K29 – Incidental use - Jeff O’Neill**

**K30 - Gift Shops - Jeff O’Neill (change not needed)**

**K67 – Heating appliances – Jeff Bressette**

**Add new text IFGC as follows:**

**301.16 Safety features.** In Group I-2 occupancies, appliances used for heating shall automatically and immediately shut down and stop fuel flow to the appliance either in the event of temperatures exceeding the appliance listing or failure to ignite.

**Reason:** IFGC Section 308.1 provides similar criteria for required clearances to combustible materials and has the same language for installation of appliances in accordance with mfg specs. Neither the IFGC, nor the IFC, restricts fuel gas appliances (i.e., fireplaces) within Group I-2 occupancies similar to the NFPA (2009) standards. IFGC Section 602.2 has some automatic shut-off language, but not complete.

**K68 – Combustion air – Jeff Bressette**

**Add new text IFGC as follows:**

**304.1 General.** Air for combustion, ventilation and dilution of flue gases for appliances installed in buildings shall be provided by application of one of the methods prescribed in Sections 304.5 through 304.9. Where the requirements of Section 304.5 are not met, outdoor air shall be introduced in accordance with one of the methods prescribed in Sections 304.6 through 304.9. Direct-vent appliances, gas appliances of other than natural draft design and vented gas appliances other than Category I shall be provided with combustion, ventilation and dilution air in accordance with the appliance manufacturer’s instructions.

**Exception:** 1. Type 1 clothes dryers that are provided with makeup air in accordance with Section 614.5. 2. Combustion air for appliances in Group I-2 occupancies shall be taken directly from the exterior of the building.

**K69 – Cooking Facilities – Jeff Bressette (Change not needed)**

**K70 – Portable space heating - Jeff Bressette (Change not needed)**

**K31 – Hazmat in Labs - Bob Davidson**

**K136 – Emergency response labs – Bob Davidson**

**K131 – Emergency Spills – Bob Davidson (Change not needed)**

**K132 – Safety Education – Bob Davidson**

**K133 – Fume Hoods – Bob Davidson**

**K134 – Eye wash -- Bob Davidson**

**K135 – Flammable and combustible liquid containers – Bob Davidson ( change not needed)**

**K77 - Piped medical gas- John Williams**

**K78 – Anesthetizing locations. – John Williams**

**K140 – Alarm panels – John Williams**

**K141 – No smoking signs O<sub>2</sub> – John Williams**

**K142 – Hyperbaric chambers – John Williams**

**Revise IBC as follows:**

~~407.9.XXX.x Hyperbaric facilities in Group I-2 occupancies shall meet the requirements in Chapter 20 of NFPA 99.~~

**Add new text to the IFC as follows:**

**XXX.x Hyperbaric facilities.** Hyperbaric facilities shall meet the requirements of Chapter 20 in NFPA 99.

**Reason:** The medical gas section in the IFC would refer you to NFPA 99 for the med gas requirements, but it doesn't specifically say anything about the hyperbaric requirements. Both need to be referenced. The IBC currently refers to "Chapter 20 of NFPA 99" for hyperbaric chambers in group I-2. Narrowing the scope to Group I-2 is not the best because frequently hyperbaric are used in outpatient facilities, doctor's office, etc. I suggest we make the IBC language more generic, also we add the language into the IFC.

**K143 – Oxygen transport – John Williams**

**PART III  
GENERAL WORK GROUP  
REPORT  
(IBC Chs 3-6, 12, 13, 27-34)**

**PART I: CURRENT CODE ISSUES:**

**TOPIC #1:**

**Ambulatory Care.** (Sharon Myers) Generally there was concern during previous meetings as to whether ambulatory healthcare facilities are appropriate to remain as a Group B occupancy with special provisions in Section 422 or if it needed to be considered as an I-2 occupancy. There was extensive discussions related to the following issues

- **Definition.** This definition can include a little as one person receiving care that are rendered incapable. This definition was felt to be sufficiently inclusive.

**AMBULATORY CARE FACILITY.** Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on less than 24 hour basis to individuals who are rendered incapable of self preservation by the services provided.

- **Separation requirements.** IBC Currently requires 1 hour fire partition from adjacent tenants.
- **Sprinkler and fire alarm provisions.** Note that the sprinkler provisions have changed from the fire area concept to instead sprinklering the entire floor from the 2009 to the 2012 edition.
- **Existing buildings and mixed used.** Section 422 seemed to be a better fit for implementing into existing buildings and mixed use based upon how the requirements were designed. Smoke compartments and other relevant safety features were still provided but flexibility in design was afforded.
- **Size concerns.** There was some concern that such facilities would be too extensive perhaps there should be a size limit. It was noted that the smoke compartment requirements and all the safety requirements would continue to apply so there was not an increase in hazard. [Comments were made that the size of the facilities would not become **extremely large facilities** because it would not be economically feasible to run and would not likely be constructed as Ambulatory care facilities.]

## **TOPIC #1 Conclusions:**

- Provisions for Ambulatory healthcare provided in Section 422 of the IBC were sufficient and classification as a Group I-2 occupancy did not seem necessary.
- In addition it was felt that Section 422 was more flexible for mixed use and existing buildings than the requirements in Section 407.
- Life Safety issues seem adequately addressed and consistent with CMS guidelines.

***This topic is complete. Issues regarding related construction, systems and equipment requirements in outside standards are being addressed by Topic #11.***

## **TOPIC #2**

### **Defend in place (David Howard, John Williams)**

The topic of defend in place was raised due to a concern that it is a concept not well addressed in the I-Codes currently. The IBC provides the necessary tools to undertake this strategy in the form of smoke compartments separated by smoke barriers, quick response sprinklers, refuge areas, corridor requirements, fire alarm systems and several other related construction requirements. Building evacuation is not an appropriate strategy for these facilities and clarification within the code is necessary.

Evacuation strategies are not mandated for any type of building within the code so the best solution was to provide a definition of “defend in place” that could be referenced. Additionally, direction needed to be provided to the Fire Safety WG on possible provisions in Chapter 4 of the IFC. Chapter 4 of the IFC deals specifically with fire safety and evacuation planning. The topic of defend in place includes both Group I-2 occupancies and ambulatory care facilities.

The following was the definition accepted at the the ad hoc meeting June 28-29, 2011. Since then more revisions have been made and further development of section language to reference the term has been developed. See conclusions for the most current version.

**DEFEND IN PLACE.** A method of emergency response that relies on the action of ~~designated occupants~~ staff and building components to ensure occupant safety during a fire that does not evacuate occupants from the building. Emergency response ~~may~~ involves remaining in place or relocating within or a both in the building without evacuating the building. Defend in place methods shall be described in the fire evacuation plan as described in International Fire Code Section 40x.x.

## **TOPIC #2 Conclusions:**

The following recommendations were passed along to Firesafety group regarding what should be addressed in a fire safety plan

- **Occupant condition**
- **Maximum number of people incapable of self preservation at any one time**
- **Defend in place or evacuation plan**
- **Assessment of existing building means of egress as it relates to the above.**

The general WG is also considering adding a provision to require submission of a fire safety plan during the permitting process. Note that section 1001.4 of the IBC and IFC already require the fire safety and evacuation plan be provided.

In addition to the above conclusions a definition was drafted for inclusion into the IBC and IFC for the terms “defend in place”. Draft language that references the term is also included. Note that the phrase “the action of designated staff and” was removed as “defend in place” is used in other types of buildings/occupancies where staff does not play the same role.

**DEFEND IN PLACE.** A method of emergency response that engages ~~relies on~~ ~~the action of designated staff and building components~~ and trained staff to ensure occupant safety during an emergency ~~a fire that does not~~ without evacuating occupants from the building. Emergency response involves remaining in place, relocating within the building, or both, without evacuating the building. ~~Defend in place methods shall be described in the fire safety and evacuation plan as described in International Fire Code Section 40x.x.~~

The following is language referencing the term and also looking for specific documentation but were not included in the proposal as the IBC addresses in Section 1001.4

**407.x Fire safety and evacuation plans.** Group I-2 occupancies using a defend in place method of emergency response shall submit to the building official a fire safety and evacuation plan in accordance with International Fire Code Section 40x.x. This shall include a comprehensive set of life safety drawings that identify the location of the building components needed to support the defend in place response.

**422.x Fire safety and evacuation plans.** Buildings containing a Group B Ambulatory Care Facility using a defend in place method of emergency response shall submit to the building official a fire safety and evacuation plan in accordance with International Fire Code Section 40x.x. This shall include a comprehensive set of life safety drawings that identify the location of the building components needed to support the defend in place response.

Initial language to permit defend in place strategy but ultimately the ambulatory care facilities moved to a different section more closely related to egress.

**407.4 Means of egress.** Group I-2 occupancies shall be provided with a means of egress complying with Chapter 10 and Sections 407.4.1 through 407.4.3. Group I-2 Occupancies shall be permitted to use a defend in place emergency response strategy. (possibly language should be added to Section 407.1)

**422.1 General.** Occupancies classified as *ambulatory care facilities* shall comply with the provisions of Sections 422.1 through 422.7 and other applicable provisions of this code. ~~Ambulatory care facilities shall be permitted to use a defend in place emergency response strategy.~~

**422.3.1 Defend in place.** Ambulatory care facilities required to be separated in accordance with this section shall be permitted to use a defend in place emergency response strategy.

**Substantiation:**

The defend in place, or protect in place, concept has long been employed as the preferred method of fire response in hospitals due to the nature of the occupants. Occupants in this setting are often dependent upon the building infrastructure and immediate evacuation would place their lives at risk. Patients in these occupancies are typically on life support systems that require medical gases, emergency power, and environmental controls that rely on continued building operation. Previous versions of this code and the legacy codes have created a tried and tested set of requirements to support this concept, such as smoke compartmentation and areas of refuge. However, previous codes while providing the necessary building components and systems have not specifically described the concept of occupants remaining within a building during a fire emergency.

This code change would name and describe the concept to provide clarity for code officials. Since so much of the defend in place concept relies on the actions of trained staff, clear direction is provided to describe these actions in the fire safety and evacuation plan. A successful defend in place environment also requires close coordination between the initial construction and the fire safety plan. The code official must be provided with both a set of life safety plan that describes how the building is built AND an operational plan that describes how the building is going to work. Requiring the life safety and fire safety plans will give the code official all of the components needed to make an informed decision. This will lead to a more consistent application of the code.

**See Proposal 1**

### **TOPIC #3**

#### **Size of compartments (Enrique Unanue).**

The focus of this issue is whether the current smoke compartment sizes are sufficient. It was pointed out that the current smoke compartment size of 22,500 sq feet simply came from the square of the 150 foot travel distance at the time the concept was developed. There were possible concerns with the current size related to the possible limitations imposed upon large ICUs. There was also a concern with smoke dampers and the inconveniences and added expense with limited benefit they provided when the HVAC system is fully ducted. ASHE was currently researching the smoke compartment size at the time of the 1<sup>st</sup> Ad Hoc meeting.

After extensive discussion there was felt to be a need to increase the smoke compartment size. This need is based upon the movement to single patient rooms and also programmatic needs in certain portions of the building such as in radiology. .

### **TOPIC #3 Conclusions:**

This conclusion includes several issues. The first is smoke compartment size which is looking to increase the smoke compartment from 22500 sq ft to 40,000 sq.ft. The second deals with the exemption of smoke dampers in fully ducted systems. The third was addressing unusable smoke compartments due to small size in ambulatory care facilities but during the June 19<sup>th</sup> meeting of this group that this third proposal was not necessary.

**Smoke compartment size.** The following proposal was developed July 19, 2011 and increases the smoke compartment size based upon various justifications. Some of the primary justification comes from move to single patient rooms, needs in areas such as radiology and decreased occupant load in actual use. The requirements will still require a minimum of two compartments per floor.

**407.5 Smoke barriers.** *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than 40,000 ~~22,500~~-square feet (2092 m<sup>2</sup>) and 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 in accordance with Section 709.

**(Ambulatory care facilities need to be reviewed further. The current reason statement is not applicable to such facilities) 422.3 Smoke compartments.** Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m<sup>2</sup>) 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 40,000 ~~22,500~~-square feet (2092 m<sup>2</sup>). 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 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 *smoke barrier* or a combination thereof.

**Reason:** Over the previous 20 years or so, there has been a steady increase in the size of patient treatment rooms in hospitals. The primary reason for the

increase is the equipment and utility necessary for the treatment of a patient, including monitoring, gases, and diagnostics, while maintaining enough space for the medical staff to access the patient. In response to these needs, the Guidelines that are adopted by design review at state departments of health have also increased, making these operational considerations actual requirements when planning. In the case of the inpatient bed unit, the adoption of a single bed in a patient room has had the largest impact on square footage, while not significantly increasing the actual amount of occupants (patient, staff or visitor) on the unit. Please note that this proposal considers the continuation of a minimum of two smoke zones per patient sleeping floor, and would not seek to change that requirement.

Although not required yet, the idea of a single patient room is taking off in other types throughout the hospital. Emergency departments, although still allowed to use an open bay configuration, are opting for private patient exam spaces with hard walls, primarily for infection control and patient privacy considerations. Similarly, radiology areas are being driven by technology and clearance issues which go beyond the required minimums, and have impacts on square footages to achieve clearances. In some cases, there has been an increase in the types of required support spaces, including ratios of equipment storage per treatment room, the increased importance of computer equipment rooms, and various staff areas. However, support spaces have remained largely the same, while the main increases have been in the size of the patient treatment areas themselves.

During the time these spaces have been increasing in size, the smoke compartment size has been left unchanged in the building codes. Even in that time, allowable travel distance has increased from 150 feet to 200 feet. The old basis for the suite size is largely regarded to be the 150 square foot travel distance (150 by 150 yielding 22,500), so using the allowable 200 foot travel distance as a basis results in a 40,000 square foot smoke zone.

When studying the contemporary sizes of functions such as emergency departments, radiology operations, and bed units, the larger size allows for greater visualization from the staff to the patient, which is a crucial aspect of planning a patient area. This operational consideration could more easily be achieved before the increase in patient areas, but the same operational

considerations require an increase to the smoke zone size to match contemporary requirements, delivery of care and technologies.

Additional data is found in an attached study of programs which compare the 2010 Guideline requirements with the 1996-97 Guidelines, which covers inpatient bed units, emergency departments, and radiology suites.

**Smoke dampers.** The following is a proposal developed for discussion and is based on language used for fire barriers to be consistent. The issue is to exempt smoke dampers in smoke barriers where the systems are fully ducted.

**717.5.5 Smoke barriers.** *A listed smoke damper designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a smoke barrier. Smoke dampers and smoke damper actuation methods shall comply with Section 717.3.3.2.*

**Exceptions:**

1. Smoke dampers are not required where the openings in ducts are limited to a single smoke compartment and the ducts are constructed of steel.

2. Smoke dampers are not required in Group I-2 occupancies where the HVAC system is fully ducted. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. [Smoke compartments are required to be sprinklered throughout in accordance with Section 903.3.1.1.]

*Note: This last part in brackets is something that needs to be discussed in more detail as to whether this should be proposed in code text language. Also this topic of smoke dampers is also being addressed by the firesafety WG and correlation of these efforts is necessary.*

**REASON STATEMENT NEEDED. SMOKE DAMPER REPORT ETC. BELOW IS ALSO SUMMARY OF WHY NFPA 101 DOES NOT REQUIRE.**

Note that the 2009 & 2012 IFC retroactively requires sprinklers in any I-2 Fire area and the entire floor where the I-2 is located. The sprinklers are required to be provided from that floor to the level of exit discharge. Some debate with the above proposed exception as to whether new construction requirements should address sprinkler requirements for existing buildings that may not be sprinklered in accordance with the IBC or IFC.

The following is a summary of why NFPA 101 has eliminated smoke dampers in fully ducted systems from smoke barriers:

1. Healthcare is a highly compartmented occupancy. These compartments include:
  - a. Patient rooms
  - b. Treatment rooms
  - c. Suites
  - d. Hazardous area rooms
  - e. Corridor walls that resist the passage of smoke
  - f. Smoke barrier walls
  - g. Stair enclosures walls
  - h. Shaft enclosures walls
2. Quick response sprinklers are required in the patient sleeping areas
3. The intent of LSC is to protect the person not intimate with a fire and improve the chances of survival of person intimate with the fire.
  - a. Smoke dampers are not an issue for person intimate with a fire.
  - b. Current fire records are showing smoke movement as a minimal effect in fully sprinklered healthcare buildings.
4. Quick response sprinklers and normal response sprinkler when activated:
  - a. Reduce the temperature in the area of fire origin.
  - b. Reduce the smoke generation rates by slowing the combustion or extinguishing the fire
  - c. Cause the smoke and products of combustion to mix with the room air and become less buoyant.
  - d. Less energy in the products of combustion means less movement of the smoke.
5. The LSC Technical Committee in 1991 felt this was adequate justification to remove smoke damper from the requirements of smoke barrier. Based on the items

above significant amounts of smoke would not be transferred through a fully ducted system in amounts that would endanger persons not intimate with the fire.

**Small smoke compartments.** The following proposal was submitted by Rick Kabele for consideration of the concern of unusually small smoke compartments which could not accommodate relocation from the adjacent smoke compartment. Some concern that this was not a large issue but the concept had some merit. See proposal as follows:

**422.3 Smoke compartments.** Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m<sup>2</sup>) on one *story*, the *story* shall be provided with a *smoke barrier* to subdivide the *story* into no fewer than two *smoke compartments*. All such separated smoke compartments shall be sufficient to provide for the relocation of patients from the largest adjacent patient care smoke compartment. The area of any one such *smoke compartment* shall be not greater than 22,500 square feet (2092 m<sup>2</sup>). 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 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 *smoke barrier* or a combination thereof.

***Decided that the above proposal is not necessary as it should be addressed by both Section 422.4 and the fire plan in chapter 4 of the IFC. July 19, 2011.***

**Note for future reference for existing facility requirements:**

Number of smoke zones for ambulatory facilities less than 5000 square feet (NFPA 101 has exception for facilities less than 5000 square feet when detection is provided throughout) space is not required to be subdivided. Note IEBC change of occupancy would require compliance with special occupancy provisions for Ambulatory Care Facilities (Section 1002.1).

## **TOPIC #4**

### **Use of facilities during renovations (Brad Pollit).**

Discussed this issue and the primary focus was on Chapter 33 of the IFC and IBC. Many of the issues are fire related and thus being addressed by the Firesafety group. Some discussion on how these chapters might work with fire safety and evacuation plans.

## **TOPIC #4 Conclusions:**

More work is needed on the fire safety and evacuation plans to perhaps generate language that would work with those provisions in Chapter 33 of the IBC. Of primary concern is how the defend in place strategies and general fire protection will function during construction/alterations. Some issues also related to HVAC shut down during construction. The following provisions for Chapter 33 of the IFC are proposed to address the concerns related to the construction and alteration process.

### **CHAPTER 33**

#### **FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION**

##### **SECTION 3301**

##### **PRECAUTIONS AGAINST FIRE**

**3304.1 Smoking.** Smoking shall be prohibited except in *approved* areas. Signs shall be posted in accordance with Section 310. In *approved* areas where smoking is permitted, *approved* ashtrays shall be provided in accordance with Section 310.

**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*.

**3304.3 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.

**3304.5 Fire watch.** When required by the *fire code official* for building demolition, or building construction during working hours that is hazardous in nature, qualified personnel shall be provided to serve as an on-site fire watch. Fire watch personnel shall be provided with at least one approved means for notification of the fire department and their sole duty shall be to perform constant patrols and watch for the occurrence of fire.

**3304.6 Cutting and welding.** Operations involving the use of cutting and welding shall be done in accordance with Chapter 35.

**3304.7 Electrical.** Temporary wiring for electrical power and lighting installations used in connection with the construction, *alteration* or demolition of buildings, structures, equipment or similar activities shall comply with NFPA 70.

**3304.8 Group I-2.** For buildings employing a *defend in place* method in Group I-2 hospitals, an on-site fire watch shall be provided in accordance with the Section 901.7 of the *International Fire Code*.

## **SECTION 3308**

### **OWNER'S RESPONSIBILITY FOR FIRE PROTECTION**

**3308.1 Program superintendent.** The *owner* shall designate a person to be the fire prevention program superintendent who shall be responsible for the fire prevention program and ensure that it is carried out through completion of the project. The fire prevention program superintendent shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter.

Where guard service is provided, the superintendent shall be responsible for the guard service.

**3308.2 Prefire plans.** The fire prevention program superintendent shall develop and maintain an *approved* prefire plan in cooperation with the fire chief. The fire chief and the *fire code official* shall be notified of changes affecting the utilization of information contained in such prefire plans.

**3308.3 Training.** Training of responsible personnel in the use of fire protection equipment shall be the responsibility of the fire prevention program superintendent.

**3308.4 Fire protection devices.** The fire prevention program superintendent shall determine that all fire protection equipment is maintained and serviced in accordance with this code. The quantity and type of fire protection equipment shall be *approved*.

**3308.5 Hot work operations.** The fire prevention program superintendent shall be responsible for supervising the permit system for hot work operations in accordance with Chapter 35.

**3308.6 Impairment of fire protection systems.** Impairments to any *fire protection system* shall be in accordance with Section 901.

**3308.7 Temporary covering of fire protection devices.** Coverings placed on or over fire protection devices to protect them from damage during construction processes shall be immediately removed upon the completion of the construction processes in the room or area in which the devices are installed.

## SECTION 3311

### MEANS OF EGRESS

**[B] 3311.1 Stairways required.** Where a building has been constructed to a *building height* of 50 feet (15240 mm) or four stories, or where an existing building exceeding 50 feet (15 240 mm) in *building height* is altered, at least one temporary lighted *stairway* shall be provided unless one or more of the permanent *stairways* are erected as the construction progresses.

**3311.2 Maintenance.** Required *means of egress* shall be maintained during construction and demolition, remodeling or *alterations* and additions to any building.

**Exception:** *Approved temporary means of egress* systems and facilities.

**3311.3 Group I-2.** Temporary construction within corridors serving bed or stretcher movement in Group I-2 hospitals shall not reduce the corridor width to less than 60 inches.

**REASON: STATEMENT TO BE DRAFTED.**

#### Notes:

- Coordinate with CTC care facilities to see if they want this applicable to nursing homes.
- Add requirement with connection to the overall fire safety plan.
- Bring back with revision.

## TOPIC #5

### Hazardous materials locations (Sharon Myers).

The only concerns were possibly related to difficulty in meeting MAQ limitations on upper floors for labs and portable oxygen. The specific concerns were unclear and further direction is needed.

#### **TOPIC #5 Conclusions:**

More direction, if any, is needed as to the particular concern with this topic in order to develop possible proposals to correct problems. **No resolution at this time based upon the need for additional feedback.**

## HANDED OFF TO FIRE SAFETY

## TOPIC#6

### Incidental use areas.

This issue was discussed and more feedback is necessary from the Adhoc committee. Currently the table addresses “waste and linen collection rooms” of any size in Group I-2 and Ambulatory care facilities. These rooms are to be separated by one hour fire barriers.

### **TOPIC #6 Conclusions:**

Need more feedback but the WG did generate the following questions for discussion as possible areas of concern.

1. Perhaps a minimum size is necessary?
2. Only addresses waste and collection of linens – should it deal with storage of clean linens and storage in general?
3. Would the general storage requirements elsewhere in the I-Codes be considered sufficient and no changes are needed here?

### **HANDED OFF TO FIRE SAFETY, ITEM #11**

### **TOPIC #7**

### **SEISMIC REQUIREMENTS & EXISTING BUILDINGS.**

This was placed in the parking lot initially due to the fact that existing building requirements were being dealt with later in the process. Generally seismic is dealt with in Chapter 34 and the IEBC throughout.

### **TOPIC #7 CONCLUSIONS.**

Topic is on hold for future assignment & currently in the ‘parking lot’ given the majority of issues are related to existing facilities. See Part II New code issues

### **Moved to parking lot since this deals with existing buildings**

### **TOPIC #8**

### **Smoke compartment alternative/tradeoff for fully suppressed buildings. (Bill Koffel and Sharon Myers/John Williams).**

This issue was related to allowing sprinkler modifications for issues other than building construction type in existing buildings that are not fully sprinklered. Bill Koffel explained the concept and will be assembling draft code language to address these possible allowances. Note that the IFC requires retroactive sprinkler requirements for group I-2 by fire area, throughout the floor where the I-2 is located and all floors between the Group I-2 occupancy and the level of exit discharge. Therefore the only portions of a building that would be permitted to be unsprinklered would be above the existing Group I-2 occupancy.

## **TOPIC #8 Conclusions:**

- In process; no conclusions or recommendations to date.

## **TOPIC # 9**

### **Mixed Use and accessory occupancy provisions.**

During our May 17<sup>th</sup> call this issue came to light that perhaps the requirements for non separated mixed use may not be satisfactory in addressing ambulatory care facilities and Group I-2 occupancies. Section 508.3.1 does not reference Sections 407 and 422 in the same way the high rise building requirements are referenced. This was placed on our list but after discussion realized that the bulk of the issues were in Chapter 9 which is already clearly addressed by Section 508.3.1.

Based upon discussion there was still a need to address egress as it applies in a mixed occupancy building. This may be a larger problem in existing buildings where ambulatory care facilities are being constructed with many other uses. This issue with egress is an issue for both non separated and separated mixed use occupancies.

Emergency rooms were also a topic of discussion as it relates to mixed occupancy and accessory occupancy. Some question as to whether they were accessory to the I-2? Also when they separate through fire resistance rated construction what the occupancy classification would be. Generally such facilities whether standalone or separated from an I-2 with fire resistance rated construction would be considered as an Ambulatory care facility.

**TOPIC #9 CONCLUSION:** Initially there was concern with group I-2 occupancies with other occupancies as the means of egress components may not be appropriate. Section 1004.6 of the 2012 IBC was noted which generally addresses this concern. There was some concern that perhaps this could be too restrictive and an exception is proposed to address this concern. An additional issue addressed under Topic #9 was a clarification of the separation of Ambulatory care facilities from other occupancies including other Group B occupancies.

### **Proposed exception to 1004.6**

#### **Option 1**

**1004.6 Multiple occupancies.** Where a building contains two or more occupancies, the *means of egress* requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same

means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.

**Exception:** Means of egress components in non separated mixed occupancies and accessory use areas are not required to comply with the requirements for Group I-2 hospitals occupancies where such components are not used for patients.

**Option 2**

**1018.2 Width.** The minimum width of corridors specified in Table 1018.2 shall be as determined in Section 1005.1.

**Exception:** In Group I-2 hospitals, corridors are not required to have a clear width of 96 inches (2438 mm) in areas where there will not be stretcher or bed movement for access to care or as part of the defend in place strategy.

**Table 1018.2  
MINIMUM CORRIDOR WIDTH**

<b>Occupancy</b>	<b>Width (min)</b>
Any facilities not listed below	44 inches (1118 mm)
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24 inches (610 mm)
With a required occupancy capacity less than 50	36 inches (914 mm)
Within a dwelling unit	36 inches (914 mm)
In Group E with a corridor having a required capacity of 100 or more	72 inches (1829 mm)
In corridors and areas serving gurney traffic in occupancies where patients receive outpatient medical care, which causes the patient to be incapable of <i>self-preservation</i>	72 inches (1829 mm)
Group I-2 in areas where required for bed movement	96 inches (2438 mm)

**Reason:** Since hospitals typically include accessory spaces or non separated mixed use occupancies that are not patient care, the code official should have the clear ability to apply judgment in determining the appropriate means of egress components. For example a large assembly space may need certain Group requirements, while a mechanical space with no patient would not need an 8' corridor.

The above proposal conflicts with Section 1018.2, Item5 for ambulatory health care. It is felt not to be necessary and already addressed in the code. Moved to parking lot with an additional option provided for review in October.

### **Ambulatory care facility separation.**

Also to clarify the needed separation for ambulatory care facilities the following is offered as a revision:

#### **Table 508.4 Add a new footnote e (referenced from Group B occupancies) as follows:**

e. See Section 422.2 for ambulatory care facilities.

**Reason:** This footnote reminds the reader that although there is no separation required for many B occupancy to other occupancies that Section 422.2 would still require a 1 hour fire partition between other group B occupancies and F-1, M and S-1 occupancies.

○

Stand alone emergency rooms are being placed in the parking lot. Generally it was determined that any separated mixed occupancy in a hospital would have a 2 hour separation in accordance with Table 508.4.

### **Topic # 10 [combined existing KTAGS 7/19/2011]**

#### **K Tags/ Existing building issues non seismic**

These apply to new and existing but with a primary focus on existing. Focus needs to be on physical construction requirements not licensure requirements.

Sharon Myers labeled the General related items on the KTag document to begin the review process. ASHE is the process of doing an in depth analysis of the relative KTAG issues. Note that the issues that the WG's need to address may go beyond these lists. Need to be sure that only addressing physical construction requirements, not licensure requirements.

Seismic requirements in existing buildings were initially part of this list but placed in the parking lot to defer existing building issues until later in the process. This item expands the existing building issues beyond simply seismic. Seismic issues as initially noted in the work plan will also be addressed.

**TOPIC #10 Conclusions:** See K-Tag list and associated proposals related to K-Tags.

### **Topic # 11 Construction , Systems and Equipment requirements**

This issue came about during discussion of ambulatory care facilities and whether facilities would be designed without regard for these issues such as redundant power, mechanical isolation etc. Concern is that appropriate references within the I-Codes may be necessary to ensure that issues are not miss during the design and construction process. Specifically documents such as NFPA 99 and 45 are being reviewed to see what construction, systems and equipment requirements should be linked into the I-Codes. Other standards such as ASHRE 170 also need to be reviewed as compared to current IMC requirements. Note that this separate topic denotes that this is for both ambulatory care facilities and Group I-2 hospitals.

**TOPIC #11 Conclusions:** Review spread sheet Sharon Myers developed with John Williams comments to see where some of these gaps exist and whether they need to be addressed in the IBC or other I-Codes. The issues are focused only on the tab “Construction requirements and systems.” No new developments at this time.

### **Topic # 12 Existing standard references and terminology related to health care**

Current references to standards related to healthcare requirements should be reviewed to make sure they are accurate and are scoped properly for the subject matter. This topic also includes any terminology consistency issues that arise.

**TOPIC #12 Conclusions.** Revise term “litter” and “gurney” to “stretcher” throughout the code to be more consistent with current healthcare terminology. Proposal provided below.

**Find and replace the terms “gurney” and “litter” throughout the I-Codes with the term “stretcher.”**

**407.5.1 Refuge area.** 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<sup>2</sup>) for each care recipient confined to bed or ~~litter~~ stretcher.
2. Not less than 6 square feet (0.56 m<sup>2</sup>) for each ambulatory care recipient not confined to bed or ~~litter~~ stretcher and for other occupants.

Areas or spaces permitted to be included in the calculation of refuge area are *corridors*, sleeping areas, treatment rooms, lounge or dining areas and other low hazard areas.

**407.9 Secured yards.** Grounds are permitted to be fenced and gates therein are permitted to be equipped with locks, provided that safe dispersal areas having 30 net square feet (2.8 m<sup>2</sup>) for bed and ~~litter~~ stretcher care recipients and 6 net square feet (0.56 m<sup>2</sup>) for ambulatory care recipients and other occupants are located between the building and the fence. Such provided safe dispersal area shall be located not less than 50 feet (15 240 mm) from the building they serve.

**Table 1018.2**  
**MINIMUM CORRIDOR WIDTH**  
**Occupancy Width (min)**

In *corridors* and areas serving gurney stretcher traffic in occupancies where patients receive outpatient medical care, which causes the patient to be incapable of *self-preservation*.

**Reason:** Revising these terms will be more consistent with current healthcare terminology.

Issue of flood provisions related to standby power was felt to be necessary to address. The following is the proposal to address this concern. Note that initially it was included in Section 2702.1 but was suggested it be more appropriate in Section 2702.1.1. See notes from AHC meeting #3.

**(IBC) Revise as follows:**

**[F]2702.1.1 Stationary generators.** Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200 and the installation shall comply with ASCE 24.

**Reason:** 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.

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.

## **PART II: NEW CODE ISSUES:**

**1. Applicability of Section 422.** Definition of ambulatory care center does not have the 4 person cut off – therefore, literally all the provisions here are applicable to the defined term. The provisions were only intended if the space was required to be separated in accordance with 422.2.

**422.1 General.** Occupancies classified as *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 comply with the provisions of Sections ~~422.1~~ 422.2 through 422.7 and other applicable provisions of this code.

**422.2 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.

**2. Stair access issues ambulatory care facilities.** Problem with no stairway requirement in the smoke compartment – can we use the direct access to stairways same as elevator lobby?

**422.5 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.

**3. Continuity problem.** Need an exception for ambulatory health care that is a portion of a larger building and not on an outside wall. Note potential proposal below.

**709.4 Continuity.** *Smoke barriers* shall form an effective membrane continuous from outside wall to outside wall and from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, deck or slab above, including continuity through concealed spaces, such as those found above suspended ceilings, and interstitial structural and mechanical spaces. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall or floor supported in buildings of other than Type IIB, IIIB or VB construction.

**Exceptions:**

1. Smoke-barrier walls are not required in interstitial spaces where such spaces are designed and constructed with ceilings that provide resistance to the passage of fire and smoke equivalent to that provided by the smoke-barrier walls.
2. Smoke barriers used for elevator lobbies in accordance with Section 405.4.3, 3007.4.2 or 3008.11.2 are not required to extend from outside wall to outside wall.
3. Smoke barriers used for areas of refuge in accordance with Section 1007.6.2 are not required to extend from outside wall to outside wall.
4. Smoke barriers walls used to enclose smoke zones in ambulatory care facilities are not required to extend from outside wall to outside wall.

## **PART III: WG CROSS OVER ISSUES:**

1. **Defend in place.** Defend in place concern communicated to the Fire safety work group. See notes under Topic #2 “defend in place” above.
2. **Smoke Dampers.** See Topic #4 for smoke damper information; code language drafts.
3. **Egress Issues For Healthcare Occupancies.** Occupancy B & I-2. See Topic #9.
4. **Smoke Compartment size.** Related to work by MOE WG with their investigations on Suite Sizes; also see narrative under Topic #3 in this report.

## **PART IV: FURTHER RESEARCH ISSUES:**

None at this time.

## **Part V PARKING LOT Issues within Scope**

### **TOPIC #7**

#### **SEISMIC REQUIREMENTS & EXISTING BUILDINGS.**

This was placed in the parking lot initially due to the fact that existing building requirements were being dealt with later in the process. Generally seismic is dealt with in Chapter 34 and the IEBC throughout.

#### **TOPIC #7 CONCLUSIONS.**

Topic is on hold for future assignment & currently in the ‘parking lot’ given the majority of issues are related to existing facilities. See Part II New code issues

### **TOPIC # 9**

#### **Mixed Use and accessory occupancy provisions.**

#### **Proposed exception to 1004.6**

**1004.6 Multiple occupancies.** Where a building contains two or more occupancies, the *means of egress* requirements shall apply to each portion of the building based on the occupancy of that space. Where two or

more occupancies utilize portions of the same *means of egress* system, those egress components shall meet the more stringent requirements of all occupancies that are served.

**Exception:** Means of egress components in non separated mixed occupancies and accessory use areas are not required to comply with the requirements for Group I-2 occupancies where such components are not used for patients.

**Reason:** Since hospitals typically include accessory spaces or non separated mixed use occupancies that are not patient care, the code official should have the clear ability to apply judgment in determining the appropriate means of egress components. For example a large assembly space may need certain Group requirements, while a mechanical space with no patient would not need an 8' corridor.

**See discussion and additional option for this issue in Topic 9.**

## **Part VI OUT-OF-SCOPE ISSUES:**

### **Independent Emergency rooms/Emergency Healthcare facilities.**

An issue was discussed during several conference calls regarding emergency rooms that are independent of the Group I-2 occupancy or separated from the Group I-2. It was noted that these facilities would either still be classified as I-2 or be classified as a Group B Ambulatory Care Facility; both classifications have been occurring across the country. Such facilities would not simply be considered Group B occupancies unless they were very small. The concern seemed to have more to do with licensing requirements; thus is outside the scope of this group.

Note that there is still some discussion in the mixed occupancy/ accessory occupancy requirements as to how these facilities, whether stand alone or in conjunction with a hospital, are classified (separated or non separated).

Statements were made by some workgroup members that this is possibly just one of many healthcare uses that may have individualized issues and/or requirements; however, given the rapidly increasing prevalence for the development of this type of facility, the General WG recommends that additional discussion, investigation and research is necessary to determine if possible code language would be advisable and emergency care facilities and requirements should be reviewed.

Note:

- Should free-standing emergency departments be considered a general doctor's office (Group B), an Ambulatory Care Center (Group B with protection) or a hospital (Group I-2)?
- The 24 hours is based on patient stay, not the fact that the facility might be open 24 hours a day.
- If licensure or risk category would require different systems – redundant power, separate mechanical systems, etc. – that should be addressed.
- Description of an urgent care facility vs. an emergency care facility.
- Emergency care is an extension of a hospital.
- Urgent care is most likely an ambulatory care center.
- Let the licensure issues be addressed by the individual states.
- Add this issue to the Parking Lot.

## **PART VII: ADDITIONAL ISSUES TO BE BROUGHT TO AHC ATTENTION**

None at this time.

## **PART VIII: WG PROGRESS ASSESSMENT:**

Progress is gaining momentum. The Adhoc General WG has had **11** calls all approximately 1 hour and 45 minutes in duration. There have been 4 calls since the last Ad Hoc meeting on July 12, July 21, 26 and August 2, 2011.

The group continues to move along with all of the issues and during the last meeting has added several more. All have been since moved into the workplan. The progress by this WG is approximately ½ way complete at this time.