

**AHC Meeting #9
March 21-22, 2013
General Work Group Report**

The following 2013 Group B changes have been compiled for the above noted AHC Work Group. Code changes with an (*) indicate AHC sponsored Code changes. These changes are intended to serve as the agenda for the AHC in order to establish AHC positions, if any, for the upcoming 2013 Group B Committee Action Hearings.

EB3-13	F230-13*	F309-13*
F54-13*	F243-13*	F333-13
F58-13	F262-13	F334-13*
F59-13	F295-13*	PM12-13
F96-12*	F306-13*	

EB3-13

301.1, 301.2, 302 (New), 302.1 (New), 302.1.1 (New), 303 (New), 705.1, Chapter 16

Proponent: David S. Collins, FAIA, The Preview Group, Inc. (dcollins@preview-group.com), The American Institute of Architects and Robert J Davidson, Davidson Code Concepts, LLC

Revise as follows:

**CHAPTER 3
COMPLIANCE METHODS, APPLICABILITY AND MINIMUM REQUIREMENTS**

301.1 General. The *repair, alteration, change of occupancy, addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant in addition to complying with the minimum requirements in Sections 302 and 303. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the *code official*. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an existing building subject to *repair, alteration, change of occupancy, addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

Exception: Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural alteration as defined in Section 907.4.3. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations of existing buildings in flood hazard areas* shall comply with Section 701.3.

**SECTION 302
ADDITIONAL CODES AND REQUIREMENTS**

301.2 Additional codes 302.1 General. *Alterations, repairs, additions and changes of occupancy* to, or relocation of, *existing buildings* and structures shall comply with the provisions for *alterations, repairs, additions and changes of occupancy* or relocation, respectively, in this code and the *International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage*

Disposal Code, International Residential Code and NFPA 70. Where provisions of the other codes conflict with provisions of this code, the provisions of this code shall take precedence.

302.1.1 Accessibility. Level 1 alterations shall comply with the 2015 ANSI A117.1 to the extent of the altered element. Areas of an existing building that are outside the specific work area or otherwise unaffected by alterations Level 1, 2 or 3, that are required to be accessible by Chapter 7 shall comply with the 2003 ANSI A117.1.

Work performed under Level 2 and 3 alterations shall comply with the 2015 ANSI A117.1 and all spaces that change configuration as part of the alterations shall comply with the 2015 ANSI A117.1.

SECTION 303 **EXISTING BUILDING MINIMUM REQUIREMENTS**

303.1 Administration. Sections 303.1.1 through 303.1.4 shall set the scope, intent and administration of provisions related to minimum requirements that are applicable to existing buildings.

303.1.1 ([F] 1101.1) Scope. The provisions of this Section shall apply to existing buildings constructed prior to the adoption of this code.

303.1.2 ([F] 1101.2) Intent. The intent of this Section is to provide a minimum degree of fire and life safety to persons occupying existing buildings by providing minimum construction requirements where such existing buildings do not comply with the minimum requirements of the International Building Code.

303.1.3 ([F] 1101.3) Permits. Permits for alterations necessary to conform with this Section shall be required as set forth in Sections 105.1.

303.1.4 ([F] 1101.4) Owner notification. When a building is found to be in noncompliance with this chapter, the code official shall duly notify the owner of the building. Upon receipt of such notice, the owner shall, subject to the following time limits, take necessary actions to comply with the provisions of this chapter.

303.1.4.1 ([F] 1101.4.1) Construction documents. Construction documents necessary to comply with this chapter shall be completed and submitted within a time schedule approved by the code official.

303.1.4.2 ([F] 1101.4.2) Completion of work. Work necessary to comply with this chapter shall be completed within a time schedule approved by the code official.

303.1.4.3 ([F] 1101.4.3) Extension of time. The code official is authorized to grant necessary extensions of time when it can be shown that the specified time periods are not physically practical or pose an undue hardship. The granting of an extension of time for compliance shall be based on the showing of good cause and subject to the filing of an acceptable systematic plan of correction with the code official.

303.2 ([F] SECTION 1103) Fire safety requirements for existing buildings. Minimum fire safety requirements for existing buildings shall be provided in accordance with Sections 303.2.1 through 303.2.9.

303.2.1 ([F] 1103.1) Required construction. Existing buildings shall comply with not less than the minimum provisions specified in Table 303.2.1 and as further enumerated in Sections 303.2.2 through 303.2.9.

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.

Exception: Group U occupancies.

**TABLE 303.2.1 (IF TABLE 1103.1)
OCCUPANCY AND USE REQUIREMENTS^a**

SECTION	USE			OCCUPANCY CLASSIFICATION																			
	High rise	Atrium or covered mall	Under-ground building	A	B	E	F	H1	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	
301.3.5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
301.3.6	R	-	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
301.3.7.1	R	-	R	-	-	-	-	-	-	-	-	-	R	R	R	R	-	-	-	-	-	-	-
301.3.7.2	R	-	R	R	R	R	R	R	R	R	R	R	-	-	-	-	R	R	R	-	R	R	R
301.3.7.3	R	-	R	R	R	R	R	R	R	R	R	R	-	-	-	-	R	R	R	-	R	R	R
301.3.7.4	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
301.3.7.5	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-
301.3.7.6	-	-	-	R	-	R	R	R	R	R	R	R	R	R	R	R	-	R	R	R	R	R	R
301.3.7.7	-	-	-	R	-	R	R	R	R	R	R	R	R	R	R	R	-	R	R	R	R	R	R
301.3.8.1	-	-	-	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
301.3.8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
301.3.9.1	R	-	R	R	R	R	R	R	R	R	-	-	R	R	R	R	R	R	R	-	R	R	R
301.3.9.2	R	-	R	R	R	R	R	R	R	R	-	-	R	R	R	R	R	R	R	-	R	R	R
301.3.10.1	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
301.3.10.2	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-
301.3.10.3	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
301.3.10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
301.3.10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
301.3.10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
301.3.10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-
301.3.10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	R	R	R	-
301.3.11	R	-	-	-	-	-	-	-	-	-	-	-	R	R	R	R	-	R	R	R	R	R	-
301.3.12.4.1	R	R	R	R	R	R	R	R	R	R	-	-	R	R	R	R	R	R	R	R	R	R	R

a. Existing buildings shall comply with the Sections identified as "Required" (R) based on occupancy classification or use, or both, whichever is applicable.
R = The building is required to comply.

303.2.2 (IF 1103.2) Emergency responder radio coverage in existing buildings. Existing buildings that do not 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, shall be equipped with such coverage according to one of the following:

1. Whenever an existing wired communication system cannot be repaired or is being replaced, or where not approved in accordance with Section 510.1, Exception 1 of the *International Fire Code*.
2. Within a time frame established by the adopting authority.

Exception: Where it is determined by the fire code official that the radio coverage system is not needed.

303.2.3 (IF) 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.

303.2.4 (IF) 1103.4 Vertical openings. Interior vertical shafts, 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 303.2.4.1 through 303.2.4.7.

303.2.4.1 (IF) 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.

303.2.4.2 (IF) 1103.4.2 Three to five stories. In other than Group I 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 of the *International Building Code*.

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 303.2.4.5, 303.2.4.6 or 303.2.4.7.

303.2.4.3 (IF) 1103.4.3 More than five stories. In other than Group I 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 303.2.4.5, 303.2.4.6 or 303.2.4.7.

303.2.4.4 (IF) 1103.4.4 Atriums and covered malls. In other than Group I 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 of the *International Building Code*.

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.

303.2.4.5 (IF) 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 of the *International Building Code* installed throughout the building, with a draft curtain and closely spaced sprinklers around the escalator opening.

303.2.4.6 (IF) 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 of the *International Building Code* shall be installed throughout the building, and a draft curtain with closely spaced sprinklers shall be installed around the escalator opening.

303.2.4.7 (IF) 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.

303.2.5 (IF) 1103.5) Sprinkler systems. An automatic sprinkler system shall be provided in existing buildings in accordance with Sections 303.2.5.1 and 303.2.5.2.

303.2.5.1 (IF) 1103.5.1) Pyroxylin plastics. An automatic sprinkler system shall be provided throughout existing buildings where cellulose nitrate film or pyroxylin plastics are manufactured, stored or handled in quantities exceeding 100 pounds (45 kg). Vaults located within buildings for the storage of raw pyroxylin shall be protected with an approved automatic sprinkler system capable of discharging 1.66 gallons per minute per square foot (68 L/min/m²) over the area of the vault.

303.2.5.2 (IF) 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.

303.2.6 (IF) 1103.6) Standpipes. Where required by Sections 303.2.6.1 or 303.2.6.2, standpipes shall be installed in accordance with Section 905 of the *International Building Code*. The 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 hose flow at the highest standpipe outlet.

303.2.6.1 (IF) 1103.6.1) Existing multiple-story buildings. Existing buildings with occupied floors located more than 50 feet (15 240 mm) above the lowest level of fire department access or more than 50 feet (15 240 mm) below the highest level of fire department access shall be equipped with standpipes.

303.2.6.2 (IF) 1103.6.2) Existing helistops and heliports. Existing buildings with a rooftop helistop or heliport located more than 30 feet (9144 mm) above the lowest level of fire department access to the roof level on which the helistop or heliport is located shall be equipped with standpipes in accordance with Section 905.3.6 of the *International Building Code*.

303.2.7 (IF) 1103.7) Fire alarm systems. An approved fire alarm system shall be installed in existing buildings and structures where required by Sections 303.2.7.1 through 303.2.7.7 and provide occupant notification in accordance with Section 907.6 of the *International Building Code* unless other requirements are provided by other Sections of this code.

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

303.2.7.1 (IF) 1103.7.1) Group E. A fire alarm system shall be installed in existing Group E occupancies in accordance with Section 907.2.3.

Exceptions:

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

303.2.7.2 (IF) 1103.7.2) Group I-1. An automatic fire alarm system shall be installed in existing Group I-1 residential care/assisted living facilities in accordance with Section 907.2.6.1 of the *International Building Code*.

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 of the *International Building Code* 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 of the *International Building Code*, and the building is not more than three stories in height.

303.2.7.3 (IF 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 of the *International Building Code*.

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 of the *International Building Code* are not exceeded.

303.2.7.4 (IF 1103.7.4) Group I-3. An automatic and manual fire alarm system shall be installed in existing Group I-3 occupancies in accordance with Section 907.2.6.3 of the *International Building Code*.

303.2.7.5 (IF 1103.7.5) Group R-1. A fire alarm system and smoke alarms shall be installed in existing Group R-1 occupancies in accordance with Sections 303.2.7.5.1 through 303.2.7.5.2.1.

303.2.7.5.1 (IF 1103.7.5.1) Group R-1 hotel and motel manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 of the *International Building Code* shall be installed in existing Group R-1 hotels and motels more than three stories or with more than 20 sleeping units.

Exceptions:

1. Buildings less than two stories in height where all sleeping units, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each sleeping unit has direct access to a public way, egress court or yard.
2. Manual fire alarm boxes are not required throughout the building when the following conditions are met:
 - 2.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code*;
 - 2.2. The notification appliances will activate upon sprinkler water flow; and
 - 2.3. At least one manual fire alarm box is installed at an approved location.

303.2.7.5.1.1 (IF 1103.7.5.1.1) Group R-1 hotel and motel automatic smoke detection system. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.6 of the *International Building Code* shall be installed in existing Group R-1 hotels and motels throughout all interior corridors serving sleeping rooms not equipped with an approved, supervised sprinkler system installed in accordance with Section 903 of the *International Building Code*.

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

303.2.7.5.2 (IF 1103.7.5.2) Group R-1 boarding and rooming houses manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 of the *International Building Code* shall be installed in existing Group R-1 boarding and rooming houses.

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

303.2.7.5.2.1 (IF 1103.7.5.2.1) Group R-1 boarding and rooming houses automatic smoke detection system. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.6 of the *International Building Code* shall be installed in existing Group R-1 boarding and rooming houses throughout all interior corridors serving sleeping units not equipped with an approved, supervised sprinkler system installed in accordance with Section 903 of the *International Building Code*.

Exception: Buildings equipped with single-station smoke alarms meeting or exceeding the requirements of Section 907.2.11.1 of the *International Building Code* and where the fire alarm system includes at least one manual fire alarm box per floor arranged to initiate the alarm.

303.2.7.6 (IF 1103.7.6) Group R-2. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 of the *International Building Code* 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 of the *International Building Code* 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 of the *International Building Code*, 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 of the *International Building Code*.

303.2.7.7 (IF 1103.7.7) Group R-4. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 of the *International Building Code* shall be installed in existing Group R-4 residential care/assisted living facilities in accordance with Section 907.2.10.1 of the *International Building Code*.

Exceptions:

1. Where there are interconnected smoke alarms meeting the requirements of Section 907.2.11 of the *International Building Code* and there is at least one manual fire alarm box per floor arranged to continuously sound the smoke alarms.
2. Other manually activated, continuously sounding alarms approved by the code official.

303.2.8 (IF 1103.8) Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be installed in existing Group I-1 and R occupancies in accordance with Sections 303.2.8.1 through 303.2.8.3.

303.2.8.1 (IF 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 in Sections 303.2.8.2 or 303.2.8.3.

Exceptions:

1. Where the code that was in effect at the time of construction required smoke alarms and smoke alarms complying with those requirements are already provided.

2. Where smoke alarms have been installed in occupancies and dwellings that were not required to have them at the time of construction, additional smoke alarms shall not be required provided that the existing smoke alarms comply with requirements that were in effect at the time of installation.
3. Where smoke detectors connected to a fire alarm system have been installed as a substitute for smoke alarms.

303.2.8.2 (IF 1103.8.2) Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

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

303.2.8.3 (IF 1103.8.3) Power source. Single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exceptions:

1. Smoke alarms are permitted to be solely battery operated in existing buildings where no construction is taking place.
2. Smoke alarms are permitted to be solely battery operated in buildings that are not served from a commercial power source.
3. Smoke 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.

303.2.9 (IF 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.

303.3 (IF 1104.1). Means of egress. Means of egress in existing buildings shall comply with the minimum egress requirements when specified in Table 303.2.1 as further enumerated in Sections 303.3.1 through 303.3.23, 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 303.2.1 as further enumerated in Sections 303.3.1 through 303.3.23.

303.3.1 (IF 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 escalators and moving walks in existing buildings.

303.3.2 (IF 1104.3) Exit sign illumination. Exit signs shall be internally or externally illuminated. The face of an exit sign illuminated from an external source shall have an intensity of not less than 5 footcandles (54 lux). Internally illuminated signs shall provide equivalent luminance and be listed for the purpose.

Exception: Approved self-luminous signs that provide evenly illuminated letters shall have a minimum luminance of 0.06 foot-lamberts (0.21 cd/m²).

303.3.3 (IF 1104.4) Power source. here emergency illumination is required in Section 303.3.4, exit signs shall be visible under emergency illumination conditions.

Exception: Approved signs that provide continuous illumination independent of external power sources are not required to be connected to an emergency electrical system.

303.3.4 (IF 1104.5) Illumination emergency power. 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:

1. Group A having 50 or more occupants.

Exception: Assembly occupancies used exclusively as a place of worship and having an occupant load of less than 300.

2. Group B buildings three or more stories in height, buildings with 100 or more occupants above or below a level of exit discharge serving the occupants or buildings with 1,000 or more total occupants.
3. Group E in interior stairs, corridors, windowless areas with student occupancy, shops and laboratories.
4. Group F having more than 100 occupants.

Exception: Buildings used only during daylight hours which are provided with windows for natural light in accordance with the International Building Code.

5. Group I.
6. Group M.

Exception: Buildings less than 3,000 square feet (279 m²) in gross sales area on one story only, excluding mezzanines.

7. Group R-1.

Exception: Where each sleeping unit has direct access to the outside of the building at grade.

8. Group R-2.

Exception: Where each dwelling unit or sleeping unit has direct access to the outside of the building at grade.

9. Group R-4.

Exception: Where each sleeping unit has direct access to the outside of the building at ground level.

303.3.4.1 (IF) 1104.5.1 Emergency power duration and installation. In other than Group I-2, 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 system shall 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 1006.3 of the *international Building Code*.

303.3.5 (IF) 1104.6) Guards. Guards complying with this Section shall be provided at the open sides of means of egress that are more than 30 inches (762 mm) above the floor or grade below.

303.3.5.1 (IF) 1104.6.1) Height of guards. Guards shall form a protective barrier not less than 42 inches (1067 mm) high.

Exceptions:

1. Existing guards on the open side of stairs shall be not less than 30 inches (760 mm) high.
2. Existing guards within dwelling units shall be not less than 36 inches (910 mm) high.
3. Existing guards in assembly seating areas.

303.3.5.2 (IF) 1104.6.2) Opening limitations. Open guards shall have balusters or ornamental patterns such that a 6-inch-diameter (152 mm) sphere cannot pass through any opening up to a height of 34 inches (864 mm).

Exceptions:

1. At elevated walking surfaces for access to, and use of, electrical, mechanical or plumbing systems or equipment, guards shall have balusters or be of solid materials such that a sphere with a diameter of 21 inches (533 mm) cannot pass through any opening.
2. In occupancies in Group I-3, F, H or S, the clear distance between intermediate rails measured at right angles to the rails shall not exceed 21 inches (533 mm).
3. Approved existing open guards.

303.3.6 (IF) 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. Means of egress doors in an occupancy in Group I-2 used for the movement of beds shall provide a clear width not less than 41.5 inches (1054 mm). The height of doors 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 m²) in area shall not be limited by the minimum width.
3. Width of door leaves 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 m²) shall be not less than 24 inches (610 mm) in door width.

303.3.7 (IF 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. 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.

303.3.8 (IF 1104.9) Revolving doors. Revolving doors shall comply with the following:

1. A revolving door shall not be located within 10 feet (3048 mm) of the foot or top of stairs or escalators. A dispersal area shall be provided between the stairs or escalators and the revolving doors.
2. The revolutions per minute for a revolving door shall not exceed those shown in Table 303.3.8.
3. Each revolving door shall have a conforming side-hinged swinging door in the same wall as the revolving door and within 10 feet (3048 mm).

Exceptions:

1. A revolving door is permitted to be used without an adjacent swinging door for street-floor elevator lobbies provided a stairway, escalator or door from other parts of the building does not discharge through the lobby and the lobby does not have any occupancy or use other than as a means of travel between elevators and a street.
2. Existing revolving doors are permitted where the number of revolving doors does not exceed the number of swinging doors within 20 feet (6096 mm).

**303.3.8 TABLE (IF 1104.9)
REVOLVING DOOR SPEEDS**

INSIDE DIAMETER (feet-inches)	POWER-DRIVEN-TYPE SPEED CONTROL (rpm)	MANUAL-TYPE SPEED CONTROL (rpm)
6-6	11	12
7-0	10	11
7-6	9	11
8-0	9	10
8-6	8	9
9-0	8	9
9-6	7	8
10-0	7	8

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

303.3.8.1 (IF 1104.9.1) Egress component. A revolving door used as a component of a means of egress shall comply with Section 1104.9 and all of the following conditions:

1. Revolving doors shall not be given credit for more than 50 percent of the required egress capacity.
2. Each revolving door shall be credited with not more than a 50-person capacity.

3. Revolving doors shall be capable of being collapsed when a force of not more than 130 pounds (578 N) is applied within 3 inches (76 mm) of the outer edge of a wing.

303.3.9 (IF 1104.10) Stair dimensions for existing stairs. Existing stairs in buildings shall be permitted to remain if the rise does not exceed 8 1/4 inches (210 mm) and the run is not less than 9 inches (229 mm). Existing stairs can be rebuilt.

Exception: Other stairs approved by the code official.

303.3.9.1 (IF 1104.10.1) Dimensions for replacement stairs. The replacement of an existing *stairway* in a structure shall not be required to comply with the new *stairway* requirements of Section 1009 of the International Building Code where the existing space and construction will not allow a reduction in pitch or slope.

303.3.10 (IF 1104.11) Winders. Existing winders shall be allowed to remain in use if they have a minimum tread depth of 6 inches (152 mm) and a minimum tread depth of 9 inches (229 mm) at a point 12 inches (305 mm) from the narrowest edge.

303.3.11 (IF 1104.12) Circular stairways. Existing circular stairs shall be allowed to continue in use provided the minimum depth of tread is 10 inches (254 mm) and the smallest radius shall not be less than twice the width of the stairway.

303.3.12 (IF 1104.13) Stairway handrails. Stairways shall have handrails on at least one side. Handrails shall be located so that all portions of the stairway width required for egress capacity are within 44 inches (1118 mm) of a handrail.

Exception: Aisle stairs provided with a center handrail are not required to have additional handrails.

303.3.12.1 (IF 1104.13.1) Height. Handrail height, measured above stair tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 42 inches (1067 mm).

303.3.13 (IF 1104.14) Slope of ramps. Ramp runs utilized as part of a means of egress shall have a running slope not steeper than one unit vertical in 10 units horizontal (10-percent slope). The slope of other ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

303.3.14 (IF 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 the *International Building Code*.

303.3.15 (IF 1104.16) Fire escape stairs. Fire escape stairs shall comply with Sections 303.3.15.1 through 303.15.7.

303.3.15.1 (IF 1104.16.1) Existing means of egress. Fire escape *stairs* shall be permitted in existing buildings but shall not constitute more than 50 percent of the required *exit* capacity.

303.3.15.2 (IF 1104.16.2) Protection of openings. Openings within 10 feet (3048 mm) of fire escape stairs shall be protected by opening protectives having a minimum 3/4-hour fire protection rating.

Exception: In buildings equipped throughout with an approved automatic sprinkler system, opening protection is not required.

303.3.15.3 (IF 1104.16.3) Dimensions. Fire escape *stairs* shall meet the minimum width, capacity, riser height and tread depth as specified in Section 303.3.9.

303.3.15.4 (IF) 1104.16.4 Access. Access to a fire escape *stair* from a *corridor* shall not be through an intervening room. Access to a fire escape *stair* shall be from a door or window meeting the criteria of Section 1005.1 of the *International Building Code*. Access to a fire escape *stair* shall be directly to a balcony, landing or platform. These shall be no higher than the floor or window sill level and no lower than 8 inches (203 mm) below the floor level or 18 inches (457 mm) below the window sill.

303.3.15.5 (IF) 1104.16.5 Materials and strength. Components of fire escape *stairs* shall be constructed of noncombustible materials. Fire escape *stairs* and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.78 kN/m²). Fire escape *stairs* and balconies shall be provided with a top and intermediate handrail on each side.

303.3.15.5.1 (IF) 1104.16.5.1 Examination. Fire escape *stairs* and balconies shall be examined for structural adequacy and safety in accordance with Section 303.15.5 by a registered design professional or others acceptable to the *fire code official* every five years, or as required by the *fire code official*. An inspection report shall be submitted to the *fire code official* after such examination.

303.3.15.6 (IF) 1104.16.6 Termination. The lowest balcony shall not be more than 18 feet (5486 mm) from the ground. Fire escape *stairs* shall extend to the ground or be provided with counterbalanced *stairs* reaching the ground.

Exception: For fire escape *stairs* serving 10 or fewer occupants, an *approved* fire escape ladder is allowed to serve as the termination.

303.3.15.7 (IF) 1104.16.7 Maintenance. Fire escapes shall be kept clear and unobstructed at all times and shall be maintained in good working order.

303.3.16 (IF) 1104.17 Corridors. 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 self-closing.

Exceptions:

1. Corridors in occupancies other than in Group H, 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. 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. Corridors that are in accordance with the *International Building Code*.

303.3.16.1 (IF) 1104.17.1 Corridor openings. Openings in corridor walls shall comply with the requirements of the *International Building Code*.

Exceptions:

1. Where 20-minute fire door assemblies are required, solid wood doors at least 1.75 inches (44 mm) thick or insulated steel doors are allowed.
2. Openings protected with fixed wire glass set in steel frames.
3. Openings covered with 0.5-inch (12.7 mm) gypsum wallboard or 0.75-inch (19.1 mm) plywood on the room side.
4. Opening protection is not required when the building is equipped throughout with an approved automatic sprinkler system.

303.3.16.2 (IF) 1104.17.2 Dead ends. 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 303.16.2.

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.

**303.3.16.2 TABLE (IFI 1104.17.2)
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 A	20/75 ^a	20/75 ^a	20 ^b	20 ^b	200	250
Group B ¹	75	100	50	50	200	300
Group E	75	100	50	50	200	300
Group F-1, S-1 ^{d,f}	75	100	50	50	200	250
Group F-2, S-2 ^{d,f}	75	100	50	50	300	400
Group H-1	25	25	0	0	75	75
Group H-2	50	100	0	0	75	100
Group H-3	50	100	20	20	100	150
Group H-4	75	75	20	20	150	175
Group H-5	75	75	20	50	150	200
Group I-1	75	75	20	50	200	250
Group I-2 (Health care)	NR ^e	NR ^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
Group M (Covered or open mall)	75	100	50	50	200	400
Group M (Mercantile)	75	100	50	50	200	250
Group R-1 (Hotels)	75	75	50	50	200	250
Group R-2 (Apartments)	75	125	50	50	200	250
Group R-3 (One- and two-family)	NR	NR	NR	NR	NR	NR
Group R-4 (Residential care/assisted living)	NR	NR	NR	NR	NR	NR
Group U	75	100	20	50	300	400

NR = No requirements.

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

- 20 feet for common path serving 50 or more persons; 75 feet for common path serving less than 50 persons.
- See Section 1028.9.5 for dead-end aisles in Group A occupancies.
- 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.
- See the International Building Code for special requirements on spacing of doors in aircraft hangars.
- 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.
- 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.

303.3.17 (IFI 1104.18) Exit access travel distance. Exits shall be located so that the maximum length of exit access travel, measured from the most remote point to an approved exit along the natural and unobstructed path of egress travel, does not exceed the distances given in Table 301.3.12.15.2.

303.3.18 ([F] 1104.19) Common path of egress travel. The common path of egress travel shall not exceed the distances given in Table 301.3.12.15.2.

303.3.19 ([F] 1104.20) Stairway discharge identification. An interior exit stairway or ramp which continues below its level of exit discharge shall be arranged and marked to make the direction of egress to a public way readily identifiable.

Exception: Stairs that continue one-half story beyond their levels of exit discharge need not be provided with barriers where the exit discharge is obvious.

303.3.20 ([F] 1104.21) Exterior stairway protection. Exterior exit stairs shall be separated from the interior of the building as required in Section 1026.6 of the *International Building Code*. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for buildings that are two stories or less above grade where the level of exit discharge serving such occupancies is the first story above grade.
2. Separation from the interior of the building is not required where the exterior stairway is served by an exterior balcony that connects two remote exterior stairways or other approved exits, with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the opening not less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the interior of the building is not required for an exterior stairway located in a building or structure that is permitted to have unenclosed interior stairways in accordance with Section 1022 of the *International Building Code*.
4. Separation from the interior 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 of the *International Building Code*.
 - 4.2. The open-ended corridors comply with Section 1018.2 of the *International Building Code*.
 - 4.3. The open-ended corridors are connected on each end to an exterior exit stairway complying with Section 1026 of the *International Building Code*.
 - 4.4. 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 m²) or an exterior stairway shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

303.3.21 ([F] 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.

303.3.22 ([F] 1104.23) Stairway floor number signs. Existing stairs shall be marked in accordance with Section 1022.8 of the *International Building Code*.

303.3.23 ([F] 1104.24) Egress path markings. Existing high-rise buildings of Group A, B, E, I, M and R-1 occupancies shall be provided with luminous egress path markings in accordance with Section 1024 of the *International Building Code*.

Exception: Open, unenclosed stairwells in historic buildings designated as historic under a state or local historic preservation program.

303.4 ([F] 1105) Requirements for outdoor operations. Outdoor operations shall be in accordance with Section 303.4.1 through 303.4.1.2.

303.4.1 ([F] 1105.1) Tire storage yards. Existing tire storage yards shall be provided with fire apparatus access roads in accordance with Sections 1105.1.1 and 1105.1.2 of the *International Building Code*.

303.4.1.1 ([F] 1105.1.1) Access to piles. Access roadways shall be within 150 feet (45 720 mm) of any point in the storage yard where storage piles are located, at least 20 feet (6096 mm) from any storage pile.

303.4.1.2 ([F] 1105.1.2) Location within piles. Fire apparatus access roads shall be located within all pile clearances identified in Section 3405.4 and within all fire breaks required in Section 3405.5 of the *International Fire Code*.

705.1 General. An area being altered within a facility that is altered shall comply with the applicable provisions in Sections 705.1.1 through 705.1.14, and Chapter 11 of the International Building Code unless it is technically infeasible. Where compliance with this Section is technically infeasible, the alteration shall provide access to the maximum extent that is technically feasible. Accessibility for existing buildings shall be determined as required by Section 302.1.1.

Add new standards to Chapter 16 as follows:

NFPA National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

NFPA 720-09 Standard for the installation of carbon monoxide(co) detection and warning equipment

UL Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062-2096

UL 2034-08 Single and Multiple Station Carbon Monoxide Alarms with revisions through February 2009

Reason: This proposal does several things which include the following:

1. Revises the chapter title to more clearly reflect the content of the chapter

2. Restructures the requirements to more clearly point out the additional code requirements and make room for the existing minimum requirements
3. Adds some clarity on the applicable accessibility provisions
4. Places the minimum existing requirements from the fire code in the IEBC.

Title Change. The new title will make it more clear that the chapter both explains applicability and provides minimum requirements that apply to all methods of compliance.

Restructuring. Currently the additional code reference is lost at the end of the chapter. This will provide more visibility to this requirement. This also provides a better structure for future requirements such as those proposed for accessibility. In addition, it is felt that the provisions from Chapter 11 of the IFC which represent minimum existing requirements for all buildings, as applicable, should stand alone for clarity.

Accessibility. Significant changes are being developed in the 2015 Edition of ANSI A117.1 Standard. No existing buildings have been designed to meet these standards and would be considered inaccessible under the new standard despite having complied with the 2003 standard. For example, Section 705.1.1 provides an exception for bringing an entrance into compliance if there is an accessible entrance elsewhere. A fully complying entrance under the older A117.1 would no longer be considered accessible under the new standard. Similarly, 705.2 requires the accessible route to conform where alterations are made to a primary function. Fully compliant access routes under the 2003 standard will not conform to the 2011 standard because of the changes to the minimum clearances reflecting the changed clear floor space.

With this change those elements that were compliant with the 2009 standard would continue to be considered compliant after the 2015 standard is made mandatory. This philosophy has been used with the changes in the new 2010 ADA Standard. Any existing building that conformed to the older standard is considered compliant under the new standard.

Existing requirements from IFC. Currently the IEBC only includes requirements for when an existing building is being repaired, altered or is undergoing a change of occupancy. The IFC includes minimum requirements for existing buildings in Chapter 11 that are applicable to all buildings. This change duplicates those requirements and moves them into the requirements for compliance in Chapter 3 of the IEBC so that owners and designers are aware of the additional minimums that may be imposed on an existing building beyond those required for the work anticipated. The intent is that these changes remain under the purview of the IFC Code Development Committee and are simply placed here to provide clarity to the code user that additional requirements may apply to the building if these minimums are not already met.

Changes from the IFC are only due to duplicate provisions that are already a part of the IEBC. For reference only we have included the original IFC Section number parenthetically.

- Fire code official has been revised to code official to address the fact that the authority enforcing this code may not be a fire code official.
- New Section 303.1.3 is based on IFC Section [F] 1101.3 that indicates that permits must be obtained per Sections 105.6 and 105.7 of the IFC and the IBC. The two referenced IFC Sections are not requiring permits for alterations necessary to conform, but for occupancies or systems in a building. A correction is made in this change to reference the IEBC permit requirements and a companion change is being submitted to make the same change to the IFC.

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

Analysis: The proposed referenced standards are already referenced in the *International Building Code*.

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.

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 907.5.2.2.5 907.2.4.4.

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.

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 sSmoke 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 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 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 eOperation 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: 4.~~

[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. Storage of Class IB and Class IC flammable and combustible liquids in closed containers not exceeding 6.5 gallons (25 L) capacity.
 - ~~4.21.1.~~ Storage areas for of Class 1 and 2 oxidizers.
 - ~~4.31.2.~~ Storage areas for of Class II, III, IV and V organic peroxides.
 - ~~4.41.3.~~ Storage, use and handling areas for of asphyxiant, irritant and radioactive gases.
 - ~~4.5.~~ 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 Mmechanical ventilation systems provided for:

1. Storage of Class IB and Class IC flammable and *combustible liquids* in closed containers not exceeding 6 1/2 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.

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~~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~~ Sections 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 eElevators, 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 in accordance with Section 2702. 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 that complies with Section 2702.

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 in accordance with Section 604. 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 that complies with Section 604.

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] 414.7.4 Emergency alarm systems. Emergency alarm systems shall be provided with emergency power in accordance with Section 2702.

[F] 2702.2.21 Emergency alarm systems. Emergency power shall be provided for emergency alarm systems as required by Section 414.7.4.

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 ~~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 909.11 and 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 IBC 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

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.

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.

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.

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.

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

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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:

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.

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 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.

F333-13

6111.2, 6111.2.1, 6111.2.2

Proponent: Bruce Swiecicki representing National Propane Gas Association (bswiewicki@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:

§ 397.7 Parking

(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.

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 1 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 (181 met 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}**

STORAGE CONFIGURATION	LIMITS		
	Segregated storage <u>Control Area Storage</u>	Cutoff storage rooms ^c Group H Occupancy Storage	Detached building <u>Storage</u>
Piles			
Maximum width	16 feet (4.9 m)	25 feet (7.6 m)	25 feet (7.6 m)
Maximum height	40 feet <u>Note a</u>	42 feet <u>Note a</u>	42 feet <u>Note a</u>
Maximum distance to aisle	8 feet (2.4 m)	12 feet (3.7)	12 feet (3.7)
Minimum distance to next pile	Note d <u>b</u>	Note d <u>b</u>	Note d <u>b</u>
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 <u>MAQ</u>	50 <u>100</u> tons (91 met ton)	200 tons (181 met tons)
Maximum quantity per building	200 tons <u>MAQ</u>	500 <u>2000</u> 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 sprinklered 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 buildings 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

STORAGE CONFIGURATION	LIMITS		
	<u>Segregated storage Control Area Storage</u>	<u>Cutoff storage rooms^e Group H Occupancy Storage</u>	<u>Detached building Storage</u>
Piles			
Maximum width	12 feet	16 feet	20 feet
Maximum height	8 feet <u>Note a</u>	40 feet <u>Note a</u>	40 feet <u>Note a</u>
<u>Maximum distance to aisle</u>	<u>8 feet (2.4 m)</u>	<u>10 feet (3 m)</u>	<u>10 feet (3 m)</u>
Minimum distance to next pile	Note d <u>b</u>	Note d <u>b</u>	Note d <u>b</u>
Minimum distance to walls	4 feet	4 feet ^c	4 feet ^c
Maximum quantity per pile	20 tons <u>NA</u>	30 tons	150 <u>100 tons</u>
Maximum quantity per building	400 tons <u>MAQ</u>	500 <u>1200 tons</u>	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 sprinklered 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 buildings 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.

6304.2 - 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.

PM12 – 13

310 (New)

Proponent: Jim Edelson, New Buildings Institute (jedelson@comcast.net)

Add new text as follows:

SECTION 310

ENERGY REQUIREMENTS

310.1 General. *Nonresidential buildings shall be maintained and operated to achieve a source energy use intensity, sEUI, less than or equal to the value from Table 310.1 based on the building type and climate zone of the building and calculated in accordance with Section 310.2. Where a building has multiple use types from Table 310.1, the maximum allowable energy use shall be based on the total gross floor area of each use type in relation to the total gross floor area of all use types within the building.*

TABLE 310.1^a
SOURCE ENERGY USE INTENSITY (sEUI) TARGETS

Climate Zone^a	1A	2A	2B	3A	3B	3B	3C	4A	4B	4C	5A	5B	6A	6B	7	8
Use Types	sEUI Target (kBtu/sf/yr)															
Administrative/professional office	<u>202</u>	<u>208</u>	<u>201</u>	<u>197</u>	<u>163</u>	<u>182</u>	<u>179</u>	<u>218</u>	<u>188</u>	<u>199</u>	<u>234</u>	<u>202</u>	<u>259</u>	<u>230</u>	<u>272</u>	<u>368</u>
Bank/other financial	<u>347</u>	<u>358</u>	<u>346</u>	<u>339</u>	<u>280</u>	<u>314</u>	<u>307</u>	<u>375</u>	<u>323</u>	<u>342</u>	<u>403</u>	<u>348</u>	<u>445</u>	<u>395</u>	<u>468</u>	<u>633</u>
Government office	<u>246</u>	<u>254</u>	<u>246</u>	<u>241</u>	<u>199</u>	<u>223</u>	<u>218</u>	<u>266</u>	<u>230</u>	<u>243</u>	<u>286</u>	<u>247</u>	<u>316</u>	<u>281</u>	<u>332</u>	<u>449</u>
Medical office (non-diagnostic)	<u>157</u>	<u>162</u>	<u>157</u>	<u>153</u>	<u>127</u>	<u>142</u>	<u>139</u>	<u>170</u>	<u>146</u>	<u>155</u>	<u>182</u>	<u>157</u>	<u>201</u>	<u>179</u>	<u>212</u>	<u>286</u>
Mixed-use office	<u>248</u>	<u>256</u>	<u>248</u>	<u>243</u>	<u>200</u>	<u>225</u>	<u>220</u>	<u>269</u>	<u>232</u>	<u>245</u>	<u>289</u>	<u>249</u>	<u>319</u>	<u>283</u>	<u>335</u>	<u>453</u>
Other office	<u>209</u>	<u>216</u>	<u>209</u>	<u>205</u>	<u>169</u>	<u>189</u>	<u>185</u>	<u>226</u>	<u>195</u>	<u>207</u>	<u>243</u>	<u>210</u>	<u>269</u>	<u>238</u>	<u>283</u>	<u>382</u>
Laboratory	<u>870</u>	<u>861</u>	<u>834</u>	<u>856</u>	<u>719</u>	<u>806</u>	<u>778</u>	<u>946</u>	<u>847</u>	<u>874</u>	<u>102</u> <u>1</u>	<u>914</u>	<u>113</u> <u>2</u>	<u>103</u> <u>1</u>	<u>121</u> <u>6</u>	<u>161</u> <u>4</u>
Distribution/shipping center	<u>151</u>	<u>97</u>	<u>100</u>	<u>95</u>	<u>74</u>	<u>92</u>	<u>79</u>	<u>107</u>	<u>100</u>	<u>94</u>	<u>125</u>	<u>117</u>	<u>149</u>	<u>137</u>	<u>171</u>	<u>268</u>
Non-refrigerated warehouse	<u>128</u>	<u>82</u>	<u>85</u>	<u>80</u>	<u>63</u>	<u>78</u>	<u>67</u>	<u>91</u>	<u>85</u>	<u>80</u>	<u>106</u>	<u>99</u>	<u>127</u>	<u>116</u>	<u>145</u>	<u>227</u>
Convenience store	<u>911</u>	<u>967</u>	<u>917</u>	<u>983</u>	<u>882</u>	<u>914</u>	<u>961</u>	<u>106</u> <u>1</u>	<u>972</u>	<u>104</u> <u>3</u>	<u>112</u> <u>4</u>	<u>103</u> <u>7</u>	<u>120</u> <u>1</u>	<u>113</u> <u>9</u>	<u>128</u> <u>6</u>	<u>153</u> <u>9</u>
Convenience store with gas station	<u>798</u>	<u>848</u>	<u>804</u>	<u>862</u>	<u>773</u>	<u>801</u>	<u>842</u>	<u>930</u>	<u>852</u>	<u>914</u>	<u>985</u>	<u>909</u>	<u>105</u> <u>3</u>	<u>998</u>	<u>112</u> <u>7</u>	<u>134</u> <u>9</u>
Grocery store/food market	<u>585</u>	<u>621</u>	<u>589</u>	<u>631</u>	<u>566</u>	<u>587</u>	<u>617</u>	<u>681</u>	<u>624</u>	<u>670</u>	<u>722</u>	<u>666</u>	<u>771</u>	<u>731</u>	<u>826</u>	<u>988</u>
Other food sales	<u>264</u>	<u>280</u>	<u>266</u>	<u>285</u>	<u>256</u>	<u>265</u>	<u>278</u>	<u>307</u>	<u>282</u>	<u>302</u>	<u>326</u>	<u>300</u>	<u>348</u>	<u>330</u>	<u>373</u>	<u>446</u>
Fire station/police station	<u>176</u>	<u>174</u>	<u>168</u>	<u>173</u>	<u>145</u>	<u>163</u>	<u>157</u>	<u>191</u>	<u>171</u>	<u>176</u>	<u>206</u>	<u>184</u>	<u>228</u>	<u>208</u>	<u>245</u>	<u>326</u>
Other public order and safety	<u>454</u>	<u>450</u>	<u>436</u>	<u>447</u>	<u>375</u>	<u>421</u>	<u>406</u>	<u>494</u>	<u>442</u>	<u>456</u>	<u>533</u>	<u>477</u>	<u>591</u>	<u>539</u>	<u>635</u>	<u>843</u>
Medical office (diagnostic)	<u>196</u>	<u>196</u>	<u>195</u>	<u>192</u>	<u>179</u>	<u>194</u>	<u>169</u>	<u>195</u>	<u>192</u>	<u>174</u>	<u>190</u>	<u>190</u>	<u>197</u>	<u>193</u>	<u>196</u>	<u>227</u>
Clinic/other outpatient health	<u>270</u>	<u>269</u>	<u>268</u>	<u>264</u>	<u>245</u>	<u>267</u>	<u>232</u>	<u>268</u>	<u>264</u>	<u>239</u>	<u>262</u>	<u>261</u>	<u>271</u>	<u>266</u>	<u>269</u>	<u>312</u>
Refrigerated warehouse	<u>601</u>	<u>595</u>	<u>577</u>	<u>591</u>	<u>497</u>	<u>557</u>	<u>538</u>	<u>654</u>	<u>585</u>	<u>604</u>	<u>706</u>	<u>632</u>	<u>782</u>	<u>713</u>	<u>840</u>	<u>111</u> <u>5</u>
Religious worship	<u>99</u>	<u>98</u>	<u>95</u>	<u>97</u>	<u>82</u>	<u>91</u>	<u>88</u>	<u>107</u>	<u>96</u>	<u>99</u>	<u>116</u>	<u>104</u>	<u>128</u>	<u>117</u>	<u>138</u>	<u>183</u>
Entertainment/culture	<u>229</u>	<u>227</u>	<u>220</u>	<u>225</u>	<u>189</u>	<u>212</u>	<u>205</u>	<u>249</u>	<u>223</u>	<u>230</u>	<u>269</u>	<u>241</u>	<u>298</u>	<u>272</u>	<u>320</u>	<u>425</u>
Library	<u>335</u>	<u>332</u>	<u>321</u>	<u>329</u>	<u>277</u>	<u>310</u>	<u>300</u>	<u>364</u>	<u>326</u>	<u>336</u>	<u>393</u>	<u>352</u>	<u>436</u>	<u>397</u>	<u>468</u>	<u>621</u>
Recreation	<u>157</u>	<u>156</u>	<u>151</u>	<u>155</u>	<u>130</u>	<u>146</u>	<u>141</u>	<u>171</u>	<u>153</u>	<u>158</u>	<u>185</u>	<u>165</u>	<u>205</u>	<u>186</u>	<u>220</u>	<u>292</u>
Social/meeting	<u>121</u>	<u>120</u>	<u>116</u>	<u>119</u>	<u>100</u>	<u>112</u>	<u>108</u>	<u>132</u>	<u>118</u>	<u>121</u>	<u>142</u>	<u>127</u>	<u>157</u>	<u>143</u>	<u>169</u>	<u>224</u>
Other public assembly	<u>149</u>	<u>147</u>	<u>143</u>	<u>146</u>	<u>123</u>	<u>138</u>	<u>133</u>	<u>162</u>	<u>145</u>	<u>149</u>	<u>175</u>	<u>156</u>	<u>194</u>	<u>176</u>	<u>208</u>	<u>276</u>
College/university	<u>325</u>	<u>332</u>	<u>320</u>	<u>332</u>	<u>241</u>	<u>309</u>	<u>287</u>	<u>395</u>	<u>333</u>	<u>353</u>	<u>438</u>	<u>371</u>	<u>517</u>	<u>445</u>	<u>564</u>	<u>816</u>
Elementary/	<u>177</u>	<u>176</u>	<u>170</u>	<u>170</u>	<u>141</u>	<u>162</u>	<u>157</u>	<u>189</u>	<u>168</u>	<u>167</u>	<u>202</u>	<u>179</u>	<u>231</u>	<u>204</u>	<u>244</u>	<u>348</u>

Climate Zone ^a	1A	2A	2B	3A	3B	3B	3C	4A	4B	4C	5A	5B	6A	6B	7	8
Use Types	sEUI Target (kBtu/sf/yr)															
middle school																
High school	166	170	163	170	123	158	147	202	170	180	224	189	264	228	288	417
Preschool/ daycare	209	207	201	200	167	191	186	223	198	197	239	211	272	240	288	411
Other classroom education	126	129	124	128	93	120	111	153	129	137	170	143	200	172	218	316
Fast food	181 7	186 4	182 7	190 5	168 5	183 7	178 1	206 9	192 5	195 5	223 2	205 1	242 3	225 1	259 9	322 3
Restaurant/ cafeteria	763	799	772	830	706	788	783	921	843	882	994	907	107 7	100 4	116 4	144 0
Other food service	716	749	724	778	662	739	734	864	791	827	933	851	101 0	941	109 2	135 1
Hospital/ inpatient health	561	568	534	548	530	523	547	572	492	536	572	503	590	530	600	716
Nursing home/assisted living	309	306	296	304	255	286	276	336	301	310	363	325	402	366	432	573
Dormitory/ fraternity/ sorority	175	176	171	173	142	164	148	192	170	173	215	188	247	219	269	345
Hotel	214	234	217	251	227	229	244	276	259	270	300	283	325	313	353	425
Motel or inn	231	231	225	230	201	220	209	245	228	226	260	240	283	260	300	366
Other lodging	229	229	224	228	200	218	207	243	226	224	259	239	281	259	298	364
Vehicle dealership/ showroom	281	282	270	277	199	250	223	323	274	294	367	310	420	375	468	655
Retail store	194	195	187	191	138	173	154	223	189	203	253	214	290	259	323	453
Other retail	392	393	378	386	278	350	312	452	383	410	512	433	587	524	653	915
Post office/postal center	164	162	157	161	135	152	147	178	160	165	192	172	213	194	229	304
Repair shop	124	123	119	122	103	115	111	135	121	125	146	131	162	147	174	231
Vehicle service/repair shop	148	147	142	146	123	137	133	161	144	149	174	156	193	176	207	275
Vehicle storage/ maintenance	112	111	107	110	93	104	100	122	109	112	131	118	146	133	157	208
Other service	315	312	302	310	260	292	282	343	307	317	370	331	410	374	441	585
Strip shopping mall	282	294	287	314	224	289	267	375	321	349	427	364	498	449	559	788
Enclosed mall	279	292	285	312	222	287	265	372	318	346	423	361	494	445	555	781

a. Climate zones as determined in accordance with Section C301 of the International Energy Conservation Code.

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310.2 Calculation of energy use. The sEUI shall be based on 12 continuous months of energy use data for the whole *building*. The annual sEUI for electric energy shall be calculated by converting energy use at the *building* to kBtu's and multiplying by the conversion factor in Table 310.2.1 based on the geographical location of the *building*. The annual sEUI for fossil fuels shall be calculated by converting energy use at the *building* to kBtu's and multiplying by the conversion factors in Table 310.2.2. The annual sEUI for district cooling shall be calculated by converting energy use at the *building* to kBtu's, multiplying by 0.33, and then multiplying by the conversion factor in Table 310.2.1 based on the geographical location of the *building*. The annual sEUI for district heating shall be calculated by converting energy use at the *building* to kBtu's and multiplying by 1.35 for hot water and 1.45 for steam. The annual sEUI for all other energy sources shall be calculated by converting energy use at the *building* to kBtu's and multiplying by 1.1.

TABLE 310.2.1^a
ELECTRICITY GENERATION ENERGY CONVERSION FACTORS BY eGRID SUB REGION^a

eGRID 2007 Sub-region Acronym	eGRID 2007 Sub-region Name	Energy Conversion Factor
<u>AKGD</u>	<u>ASCC Alaska Grid</u>	<u>2.97</u>
<u>AKMS</u>	<u>ASCC Miscellaneous</u>	<u>1.76</u>
<u>ERCT</u>	<u>ERCOT All</u>	<u>2.93</u>
<u>FRCC</u>	<u>FRCC All</u>	<u>2.97</u>
<u>HIMS</u>	<u>HICC Miscellaneous</u>	<u>3.82</u>
<u>HIOA</u>	<u>HICC Oahu</u>	<u>3.14</u>
<u>MORE</u>	<u>MRO East</u>	<u>3.40</u>
<u>MROW</u>	<u>MRO West</u>	<u>3.41</u>
<u>NYLI</u>	<u>NPCC Long Island</u>	<u>3.20</u>
<u>NEWE</u>	<u>NPCC New England</u>	<u>3.01</u>
<u>NYCW</u>	<u>NPCC NYC/Westchester</u>	<u>3.32</u>
<u>NYUP</u>	<u>NPCC Upstate NY</u>	<u>2.51</u>
<u>RFCE</u>	<u>RFC East</u>	<u>3.15</u>
<u>RFCM</u>	<u>RFC Michigan</u>	<u>3.05</u>
<u>RFCW</u>	<u>RFC West</u>	<u>3.14</u>
<u>SRMW</u>	<u>SERC Midwest</u>	<u>3.24</u>
<u>SRMV</u>	<u>SERC Mississippi Valley</u>	<u>3.00</u>
<u>SRSO</u>	<u>SERC South</u>	<u>3.08</u>
<u>SRTV</u>	<u>SERC Tennessee Valley</u>	<u>3.11</u>
<u>SRVC</u>	<u>SERC Virginia/Carolina</u>	<u>3.13</u>
<u>SPNO</u>	<u>SPP North</u>	<u>3.53</u>
<u>SPSO</u>	<u>SPP South</u>	<u>3.05</u>
<u>CAMX</u>	<u>WECC California</u>	<u>2.61</u>
<u>NWPP</u>	<u>WECC Northwest</u>	<u>2.26</u>
<u>RMPA</u>	<u>WECC Rockies</u>	<u>3.18</u>
<u>AZNM</u>	<u>WECC Southwest</u>	<u>2.95</u>

a. Sources: EPA eGrid 2007 version 1.1, 2005 data; EPA eGrid regional gross grid loss factors; EIA Table 8.4a (Sum tables 8.4 band 8.4c) and Table 8.2c (Breakout of Table 8.2b), 2005 data.

TABLE 310.2.2
U.S. AVERAGE BUILDING FUELS ENERGY CONVERSION FACTORS BY FUEL TYPE

Fuel Type	Energy Conversion Factor
<u>Natural Gas</u>	<u>1.09</u>
<u>Fuel Oil</u>	<u>1.13</u>
<u>LPG</u>	<u>1.12</u>

Reason: According to the Urban Land Institute, New Construction and Major Renovations account for only 1-2% of the building stock in a typical year. For the larger population of existing buildings, building codes' primary means of improving energy efficiency are through alterations. However, as current codes are formulated, the scope of that impact is generally limited to the scope of the alteration. Code requirements generally apply only to the alterations and not to the energy efficiency of the whole building. This highlights the inability of a jurisdiction's energy code to improve the energy efficiency of its whole building stock.

Bearing in mind the dangers of unintended consequences, it is wise to carefully target any new code requirements for existing buildings, and so this proposal is built on two principles:

- Many existing buildings perform quite well, so requirements should focus only on very poorly performing buildings rather than indiscriminately covering all buildings.
- As this represents new territory in building codes, requirements should be built upon existing code mechanisms, code language and code requirements as much as possible.

The International Property Maintenance Code provides a natural and logical home for this kind of code requirement. The IPMC is already scoped around the fundamental concept of establishing a minimum standard for the condition of a building. Energy performance falls directly within this scope. The IPMC already has the administrative mechanisms needed to set this minimum standard for energy performance. Section 104 gives the code official authority to inspect and require reports. Section 106 provides means for dealing with violations. This proposal, therefore, only sets a minimum threshold for energy performance. This leverages the existing procedures and remedies already built into the IPMC, and avoids the need to create new code enforcement mechanisms.

The performance threshold values in the table are based on the 2003 Commercial Building Energy Consumption Survey (the same dataset that serves as the basis for commercial building Energy Star Scores and the targets for existing buildings in ASHRAE Standard 100). Based on either the table of values or an Energy Star Score threshold of 26, the requirements will only kick in for a building that would have fallen in the worst performing quartile of the building stock in that building survey. This represents the worst 25% of the buildings around a decade ago, effectively making these requirements only apply to buildings that can be reasonably considered "energy hogs." CBECS is a nationwide survey conducted by the Energy Information Administration, so climate zone diversity for the table was created using the same, nationally vetted process used to create the performance targets for existing buildings proposed for ASHRAE Standard 100.

The target EUIs in the proposal are presented in source kBtu units because the only EUI metric in an I-Code, the 2012 IgCC, uses the same source kBtu metric. The calculation language and conversion factors for source energy are also taken directly from the IgCC, but the language has been slightly altered for greater clarity.

Current energy codes have a limited means of impacting the energy performance of the vast majority of buildings in the entire building stock. This proposed addition to the IPMC will address the significant energy efficiency opportunities in existing buildings, and do it in a way that simply expands upon current code mechanisms.

Cost Impact: There is no cost impact to this proposal.

Analysis: EB51-13 also proposes similar requirements for the IEBC.