

CTC Meeting #26
April 8-9, 2013
NIST Report on Charleston Sofa Fire

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

ADM38-13*

ADM43-13*

EB48-13*

F25-13

F121-13

F126-13

F165-13

F345-13*

ADM38 – 13

IFC: 106.3 (New), 113.2

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

Add new text to the International Fire Code as follows:

IFC [A] 106.3 Periodic building fire safety inspections. In addition to any other inspections required or authorized by this code, all buildings shall be subjected to periodic building fire safety inspections in compliance with the requirements of Sections 106.3.1 through 106.3.6.

Exceptions: Periodic building fire safety inspections shall not be required in any of the following:

1. Buildings classified as Group U occupancies that are associated with Group R-3 occupancies.
2. Dwelling units in Group R-2 and Group R-3 occupancies.
3. Dwelling units constructed in accordance with the *International Residential Code*.

IFC [A] 106.3.1 Scope. The scope of periodic building fire safety inspections shall include the maintenance of safeguards as required by Section 107.1; the maintenance of the means of egress, fire-resistance-rated construction, and fire protection systems; storage arrangements, including hazardous material and combustible material storage; evidence of unlawful alterations; compliance with the fire safety and evacuation plan requirements of Chapter 4; recordkeeping, housekeeping and such other requirements as determined by the *fire code official*.

IFC [A] 106.3.2 Inspecting entity. Periodic building fire safety inspections required by Section 106.3 shall be conducted by the *fire code official*.

Exception: Where the *fire code official* determines that periodic fire safety inspections shall be conducted by an *approved third party*.

IFC [A] 106.3.3 Inspector qualifications. *Fire code officials and approved third parties conducting periodic building fire safety inspections required by Section 106.3 shall, at a minimum, be certified through a recognized fire inspector certification program.*

Exception: *Where the building is subject to a building fire safety inspection program approved by the fire code official.*

IFC [A] 106.3.4 Frequency of inspection. *The minimum required frequency of periodic building fire safety inspections shall be determined by the fire code official based upon the fire code official's assessment of the risk or once every 5 years.*

IFC [A] 106.3.5 Filings. *Inspection reports for periodic building fire safety inspections conducted by an approved third party in accordance with Section 106.3.2 shall be submitted to the fire code official in accordance with the frequency of inspection schedule established by the fire code official in accordance with Section 106.3.4. The fire code official has the authority to prescribe the form and format of such report.*

IFC [A] 106.3.6 Not a limitation on inspection authority. *Periodic building fire safety inspections required by Section 106.3 shall not be construed to limit the fire code official's inspection authority pursuant to other sections of this code.*

(Renumber subsequent sections)

Revise the International Fire Code as follows:

IFC [A] SECTION 113 FEES

IFC [A] 113.2 Schedule of permit fees. *A fee for each permit, and fees associated with establishing a program to implement the requirement for periodic building fire safety inspections in accordance with Section 106.3, shall be paid as required, in accordance with the schedule as established by the applicable governing authority.*

Reason: This proposed change is a result of the CTC's investigation of the area of study entitled "NIST Charleston Sofa Store Fire Recommendations". The scope of the activity is noted as:

Review the NIST and other investigative reports on the fire that occurred on the evening of June 18, 2007 in the Sofa Super Store in Charleston, South Carolina to identify issues that can be addressed by the International Codes.

In connection with their investigation, NIST analyzed the fire ground, consulted with other experts, and performed computer simulations of fire growth alternatives. Based on these analyses, NIST concluded that the following sequence of events is likely to have occurred. A fire began in packing material and discarded furniture outside an enclosed loading dock area. The fire spread to the loading dock, then into both the retail showroom and warehouse spaces. During the early stages of the fire in the two latter locations, the fire spread was slowed by the limited supply of fresh air. This under-ventilation led to generation of a large mass of pyrolyzed and only partially oxidized effluent. The smoke and combustible gases flowed into the interstitial space below the roof and above the suspended ceiling of the main retail showroom. As this space filled with unburned fuel, the hot smoke also seeped through the suspended ceiling into the main showroom and formed a hot smoke layer below the suspended ceiling. Up to this time, the extent of fire spread into the interstitial space was not visible to fire fighters in the store. If the fire spread had been visible to the fire fighters in the store, it would have provided a direct indication of a fire hazard in the showroom. Meanwhile, the fire at the back of the main showroom and the gas mixture below the suspended ceiling were both still fuel rich. When the front windows were broken out or vented, the inflow of additional air allowed the heat release rate of the fire to intensify rapidly and added air to the layer of unburned fuel below the suspended ceiling enabling the ignition of the unburned fuel/air mixture. The fire swept from the rear to the front of the main showroom extremely quickly, and then into the west and east showrooms. Nine fire fighters were killed in the Sofa Super Store fire. NIST developed eleven recommendations to help mitigate such future losses.

Recommendation 2 of the NIST report reads as follows:

"Model Building and Fire Code Enforcement: NIST recommends that all state and local jurisdictions implement aggressive and effective fire inspection and enforcement programs that address:

- a) all aspects of the building and fire codes;
- b) adequate documentation of building permits and alterations;
- c) means of fire protection systems inspection and detailed recordkeeping;
- d) frequency and rigor of fire inspections, including follow-up and auditing procedures; and
- e) guidelines for remedial requirements when inspections identify deviations from code provisions."

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Following a review of recommendation 2 of the NIST report, a new section, 106.3, is proposed.

Section 106.3 requires that all buildings, with certain exceptions as listed in the section, be subjected to periodic building fire safety inspections in accordance with the requirements of Sections 106.3.1 through 106.3.6. The exception includes dwelling units in Group R-2 and Group R-3 occupancies, Group U occupancies associated with Group R-3 occupancies, and dwelling units constructed in accordance with the International Residential Code.

The purpose of requiring periodic building fire safety inspections is to help ensure that buildings are operated and maintained in accordance with the intent of the International Fire Code, as set forth in Section 101.3. There is little benefit to having an International Fire Code that includes periodic inspection, testing and maintenance requirements intended to ensure that a building is maintained in a safe condition unless there is a mechanism inherent in such code that provides the fire code official with reasonable assurances that they are being complied with. The 18th century phrase "a chain is only as strong as its weakest link" appropriately describes the reality of Building and Fire Codes being adopted in a jurisdiction, but not comprehensively enforced.

The NIST report offers several other recommendations that are not addressed in this proposal. The CTC has investigated all of the NIST recommendations and has, as deemed appropriate, submitted separate code changes in response. These separate code change proposals address the following: fire inspector, and fire plan examiner qualifications and certifications; detailed recordkeeping requirements; and required automatic sprinkler protection for existing Group F-1, M and S-1 occupancies that manufacture, store or sell upholstered furniture or mattresses that undergoing an Alteration 3 renovation. It is these proposals, coupled with the proposed requirement for a periodic building fire safety inspection, which will help fire code officials in their efforts to ensure that all buildings, not just buildings storing or selling upholstered furniture and mattresses, are constructed, operated and maintained in a manner that provides a prudent level of fire safety for building occupants and firefighters. The importance of fire prevention in the overall safety to building occupants and the protection of property cannot be overemphasized. It is interesting to note that the report "America Burning", a report published by the Federal Government in the early 1970's, recommended a "balance" of 50/50 between public fire department expenditures on suppression and fire prevention. This report can be found at <http://www.usfa.fema.gov/downloads/pdf/publications/fa-264.pdf>.

Section 106.3.1 defines the scope of periodic building fire safety inspections to include the maintenance of means of egress, fire-resistant-rated construction, and fire protection systems; evidence of unlawful alterations; compliance with the fire safety and evacuation plan required by Chapter 4 of the Fire Code; recordkeeping, housekeeping and such other requirements as determined by the fire code official.

Section 106.3.2 requires that periodic building fire safety inspections be conducted by the fire code official unless the fire code official determines that the inspection shall be conducted by an approved third party.

Section 106.3.2 acknowledges that the primary and preferred entity authorized to conduct periodic building fire safety inspections is the fire code official, but recognizes that certain jurisdictions may choose to require such inspection to be conducted by an approved third party. This section places no duty or liability on the fire code official to conduct periodic building fire safety inspections, it merely identifies them as the primary and preferred entity to do so.

Section 106.3.3 establishes qualifications for the inspector conducting periodic building fire safety inspections. Such inspector qualification requirement would not apply to buildings that are subjected to a building fire safety inspection program when approved by the fire code official. This section requires that inspectors conducting such inspections, at a minimum, be certified through a recognized fire inspector certification program. If the fire code officials choose to conduct periodic building fire safety inspections, they would be required to have such inspections conducted by individuals that meet this certification requirement. However, as previously stated, the fire code official has no duty or liability to conduct such inspections and therefore no obligation to employ certified inspectors. Approved third party individuals conducting such inspections, except as noted above, would be required to comply with this certification requirement. The section authorizes the fire code official to accept any recognized certification program for such fire inspectors.

Section 106.3.4 requires that the minimum frequency of periodic building fire safety inspections be determined by the fire code official based upon the fire code official's assessment of the risk or once every 5 years. As stated previously, certain buildings, as identified in Section 106.3, would not require periodic building fire safety inspections. For those buildings requiring periodic building fire safety inspections, 5 years was chosen as the maximum time to be allowed between such inspections, unless the fire code official's assessment of the building risk determines that a shorter or longer period should apply.

A building risk assessment would require that many factors be considered on a case-by-case basis, including but not limited to consideration of the building's occupancy Group; occupant load; building height and floor area; construction type and features; fire protection systems; layout and use of the building; size, type and configuration of the fuel load; vulnerability of the building occupants; history and severity of noncompliance with fire safety requirements; incidence of fire and other considerations relevant to the fire risk presented to building occupants and firefighters by such building.

Section 106.3.5 requires that inspection reports for periodic building fire safety inspections conducted by an approved third party be submitted to the fire code official in accordance with the frequency of inspection schedule established by the fire code official. This requirement would help the fire code official identify those buildings not in compliance with the periodic building fire safety inspection requirement. Fire code officials can then take appropriate enforcement action against such building owners to achieve compliance. The proposed change would also allow the fire code official to prescribe the form and format of such report, thereby facilitating its review.

Section 106.3.6 makes it clear that the periodic building fire safety inspection required by Section 106.3 does not limit the fire code official's authority to inspect a building under other provisions of the International Fire Code, including Section 104.3.

The proposed change to Section 113.2 would authorize the fire code official to establish fees associated with implementing a periodic building fire safety inspection program. Jurisdictions that act on this authority would help provide themselves with the economic resource they require to administer the program.

This proposal is submitted by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website:

<http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

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

ADM43 – 13

PART I - IFC: [A] 107.2.1, [A] 107.3 (New),

PART II – IFC: 406.2, 408.5.2, 408.10.2, 507.5.2, 507.5.3, 604.3.2, 604.5.1.1, 604.5.2.1, 606.6, 606.15, 609.3.3.3, 703.1, 703.4, 901.6.2, 901.6.2.1, 904.5, 904.6, 904.7, 904.8, 904.9, 904.10, 907.8, 907.8.2, 907.8.5, 909.20.2, 912.6, 913.5, 913.5.2, 913.5.3, 1030.8, 2006.5.3.2.2, 2006.6.4, 2305.2.1, 2306.2.1.1, 2808.6, 5003.2.9, 5003.3.1.1, 5603.2, 5704.2.11.5.1, 5706.5.4.5, 5806.4.8.2; IBC [F] 904.5, 904.6, 904.7, 904.8, 904.9, 904.10

THIS IS A 2 PART CODE CHANGE. PARTS I WILL BE HEARD BY THE ADMINISTRATIVE PROVISIONS COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

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

PART I – Administration

Revise the International Fire Code as follows:

IFC [A] 107.2 Testing and operation. Equipment requiring periodic testing or operation to ensure maintenance shall be tested or operated as specified in this code.

~~**IFC [A] 107.2.1 Testing and inspection records.** Required test and inspection records shall be available to the *fire code official* at all times or such records as the *fire code official* designates shall be filed with the *fire code official*.~~

IFC [A] 407.2.2 107.2.1 Reinspection and testing. (No change to current text)

IFC [A] 107.3 Recordkeeping. A record of the periodic inspections, tests, servicing, and other operations and maintenance shall be maintained on the premises or other *approved* location for a minimum of 3 years, or the interval where a different period of time is specified in this code or referenced standards. Records shall be made available for inspection by the *fire code official*, and a copy of the records shall be provided to the *fire code official* upon request.

The *fire code official* has the authority to prescribe the form and format of such recordkeeping. The *fire code official* has the authority to require that certain required records be filed with the *fire code official*.

(Renumber subsequent sections)

PART II – IFC

Revise the International Fire Code as follows:

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

IFC 408.5.2 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Records of instruction shall be maintained. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

IFC 408.10.2 Staff training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Records of instruction shall be maintained. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

Revise the International Fire Code as follows:

IFC 507.5.2 Inspection, testing and maintenance. Fire hydrant systems shall be subject to periodic tests as required by the *fire code official*. Fire hydrant systems shall be maintained in an operative condition at all times and shall be repaired where defective. Additions, repairs, *alterations* and servicing shall comply with *approved* standards. Records of tests and required maintenance shall be maintained.

IFC 507.5.3 Private fire service mains and water tanks. Private fire service mains and water tanks shall be periodically inspected, tested and maintained in accordance with NFPA 25 at the following intervals:

1. Private fire hydrants (all types): Inspection annually and after each operation; flow test and maintenance annually.
2. Fire service main piping: Inspection of exposed, annually; flow test every 5 years.
3. Fire service main piping strainers: Inspection and maintenance after each use.

Records of inspections, testing and maintenance shall be maintained.

Revise the International Fire Code as follows:

IFC 604.3.2 ~~Written record~~ Records. ~~Written records~~ Records of the inspection, testing and maintenance of emergency and standby power systems shall include the date of service, name of the servicing technician, a summary of conditions noted and a detailed description of any conditions requiring correction and what corrective action was taken. Such records shall be ~~kept on the premises served by the emergency or standby power system and be available for inspection by the fire code official~~ maintained.

IFC 604.5.1.1 Activation test record. Records of tests shall be maintained ~~on the premises for a minimum of three years and submitted to the fire code official upon request.~~ The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test, and the person completing the test.

IFC 604.5.2.1 Power test record. Records of tests shall be maintained ~~on the premises for a minimum of three years and submitted to the fire code official upon request.~~ The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test, and the person completing the test.

IFC 606.6 Testing of equipment. Refrigeration equipment and systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant shall be subject to periodic testing in accordance with Section 606.6.1. ~~A written record of required testing~~ Records of tests shall be maintained ~~on the premises.~~ Tests of emergency devices or systems required by this chapter shall be conducted by persons trained and qualified in refrigeration systems.

IFC 606.15 Records. ~~A written record shall be kept of refrigerant quantities brought into and removed from the premises shall be maintained.~~ Such records shall be available to the fire code official.

IFC 609.3.3.3 Records. Records for inspections shall state the individual and company performing the inspection, a description of the inspection and when the inspection took place. Records for cleanings shall state the individual and company performing the cleaning and when the cleaning took place. Such records shall be completed after each inspection or cleaning, and maintained on the premises for a minimum of three years and be copied to the fire code official upon request.

Revise the International Fire Code as follows:

IFC 703.1 Maintenance. The required *fire-resistance rating* of fire-resistance-rated construction (including walls, firestops, shaft enclosures, partitions, *smoke barriers*, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems) shall be maintained. Such elements shall be visually inspected by the *owner* annually and properly repaired, restored or replaced when damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space. Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason shall be protected with *approved* methods capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic- closing doors of *approved* construction meeting the fire protection requirements for the assembly.

IFC 703.4 Testing. Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. ~~A written record~~ Records of inspections and testing shall be maintained and be available to the fire code official.

Revise the International Fire Code as follows:

IFC 901.6.2 Records. Records of all system inspections, tests and maintenance required by the referenced standards shall be maintained ~~on the premises for a minimum of three years and shall be copied to the fire code official upon request.~~

IFC 901.6.2.1 Records information. Initial records shall include the name of the installation contractor, type of components installed, manufacturer of the components, location and number of components installed per floor. Records shall also include the manufacturers' operation and maintenance instruction manuals. Such records shall be maintained ~~on the premises~~ for the life of the installation.

IFC 904.5 (IBC [F] 904.5) Wet-chemical systems. Wet-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17A and their listing. Records of inspections and testing shall be maintained.

IFC 904.6 (IBC [F] 904.6) Dry-chemical systems. Dry-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17 and their listing. Records of inspections and testing shall be maintained.

IFC 904.7 (IBC [F] 904.7) Foam systems. Foam-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 11 and NFPA 16 and their listing. Records of inspections and testing shall be maintained.

IFC 904.8 (IBC [F] 904.8) Carbon dioxide systems. Carbon dioxide extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 12 and their listing. Records of inspections and testing shall be maintained.

IFC 904.9 (IBC [F] 904.9) Halon systems. Halogenated extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 12A and their listing. Records of inspections and testing shall be maintained.

IFC 904.10 (IBC [F] 904.10) Clean-agent systems. Clean-agent fire-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 2001 and their listing. Records of inspections and testing shall be maintained.

IFC 907.8 Inspection, testing and maintenance. The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with Sections 907.8.1 through 907.8.5 and NFPA 72. Records of inspection, testing and maintenance shall be maintained.

IFC 907.8.2 Testing. Testing shall be performed in accordance with the schedules in NFPA 72 or more frequently where required by the *fire code official*. Records of testing shall be maintained.

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where *approved* by the *fire code official*, but not less than every 18 months.

IFC 907.8.5 Inspection, testing and maintenance ~~Maintenance, inspection and testing.~~ The building *owner* shall be responsible to maintain the fire and life safety systems in an operable condition at all times. Service personnel shall meet the qualification requirements of NFPA 72 for ~~maintaining, inspecting and testing~~ inspection, testing and maintenance of such systems. ~~A written record~~ Records of inspection, testing and maintenance shall be maintained ~~and shall be made available to the fire code official.~~

IFC 909.20.2 ~~Written record~~ Records. ~~A written record~~ Records of smoke control system testing and maintenance shall be maintained ~~on the premises~~. The ~~written~~ record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

IFC 912.6 Inspection, testing and maintenance. All fire department connections shall be periodically inspected, tested and maintained in accordance with NFPA 25. Records of inspection, testing and maintenance shall be maintained.

IFC 913.5 Inspection, testing and maintenance. Fire pumps shall be inspected, tested and maintained in accordance with the requirements of this section and NFPA 25. Records of inspection, testing and maintenance shall be maintained.

IFC 913.5.2 Generator sets. Engine generator sets supplying emergency or standby power to fire pump assemblies shall be periodically tested in accordance with NFPA 110. Records of testing shall be maintained.

IFC 913.5.3 Transfer switches. Automatic transfer switches shall be periodically tested in accordance with NFPA 110. Records of testing shall be maintained.

Revise the International Fire Code as follows:

IFC 1030.8 Inspection, testing and maintenance. All two-way communication systems for *areas of refuge* shall be inspected and tested on a yearly basis to verify that all components are operational. When required, the tests shall be conducted in the presence of the *fire code official*. Records of inspection, testing and maintenance shall be maintained.

Revise the International Fire Code as follows:

IFC 2006.5.3.2.2 Documentation Records. The airport fueling-system operator shall maintain records of all training administered to its employees. ~~These records shall be made available to the fire code official on request.~~

IFC 2006.6.4 Testing. Emergency fuel shutoff devices shall be operationally tested at intervals not exceeding three months. The fueling-system operator shall maintain ~~suitable testing records of these tests.~~

Revise the International Fire Code as follows:

IFC 2305.2.1 Inspections. Flammable and *combustible liquid* fuel-dispensing and containment equipment shall be periodically inspected where required by the *fire code official* to verify that ~~it~~ the equipment is in proper working order and not subject to leakage. Records of inspections shall be maintained.

IFC 2306.2.1.1 Inventory control for underground tanks. Accurate daily inventory records shall be maintained and reconciled on underground fuel storage tanks for indication of possible leakage from tanks and piping. The records ~~shall be kept at the premises or made available for inspection by the fire code official within 24 hours of a written or verbal request~~ and shall include records for each product showing daily reconciliation between sales, use, receipts and inventory on hand. Where there is more than one system consisting of tanks serving separate pumps or dispensers for a product, the reconciliation shall be ascertained separately for each tank system. A consistent or accidental loss of product shall be immediately reported to the *fire code official*.

Revise the International Fire Code as follows:

IFC 2808.6 Static pile protection. Static piles shall be monitored by an *approved* means to measure temperatures within the static piles. Internal pile temperatures shall be monitored and recorded weekly. ~~Such records shall be kept on file at the facility and made available for inspection~~ maintained. An operational plan indicating procedures and schedules for the inspection, monitoring and restricting of excessive internal temperatures in static piles shall be submitted to the *fire code official* for review and approval.

Revise the International Fire Code as follows:

IFC 5003.2.9 Testing. The equipment, devices and systems listed in Section 5003.2.9.1 shall be tested at the time of installation and at one of the intervals listed in Section 5003.2.9.2. ~~Written~~ Records of the tests conducted or maintenance performed shall be maintained.

Exceptions:

1 through 5 (*No change to current text*)

IFC 5003.3.1.1 Records. ~~Accurate records shall be kept~~ Records of the unauthorized discharge of hazardous materials by the permittee ~~shall be maintained.~~

Revise the International Fire Code as follows:

IFC 5603.2 Transaction record. The permittee shall maintain a record of all transactions involving receipt, removal, use or disposal of *explosive materials*. ~~Such a record~~ records shall be maintained for a period of five years, ~~and shall be furnished to the fire code official for inspection upon request.~~

Exception: Where only Division 1.4G (consumer fireworks) are handled, records need only be maintained for a period of three years.

Revise the International Fire Code as follows:

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IFC 5704.2.11.5.1 Inventory control. Daily inventory records ~~shall be maintained~~ for underground storage tank systems shall be maintained.

IFC 5706.5.4.5 Commercial, industrial, governmental or manufacturing. Dispensing of Class II and III motor vehicle fuel from tank vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental or manufacturing establishments is allowed where permitted, provided such dispensing operations are conducted in accordance with the following:

1 through 13 (*No change to current text*)

14. Persons responsible for dispensing operations shall be trained in the appropriate mitigating actions in the event of a fire, leak or spill. Training records shall be maintained by the dispensing company ~~and shall be made available to the fire code official upon request.~~

15 through 25 (*No change to current text*)

Revise the International Fire Code as follows:

IFC 5806.4.8.2 Corrosion protection. The vacuum jacket shall be protected by *approved or listed* corrosion-resistant materials or an engineered cathodic protection system. Where cathodic protection is utilized, an *approved* maintenance schedule shall be established. Exposed components shall be inspected at least twice a year. ~~Maintenance Records of maintenance and inspection events shall be recorded and those records shall be maintained on the premises for a minimum of three years and made available to the fire code official upon request.~~

Reason: This proposed change is a result of the CTC's investigation of the area of study entitled "NIST Charleston Sofa Store Fire Recommendations". The scope of the activity is noted as:

Review the NIST and other investigative reports on the fire that occurred on the evening of June 18, 2007 in the Sofa Super Store in Charleston, South Carolina to identify issues that can be addressed by the International Codes.

In connection with their investigation, NIST analyzed the fire ground, consulted with other experts, and performed computer simulations of fire growth alternatives. Based on these analyses, NIST concluded that the following sequence of events is likely to have occurred. A fire began in packing material and discarded furniture outside an enclosed loading dock area. The fire spread to the loading dock, then into both the retail showroom and warehouse spaces. During the early stages of the fire in the two latter locations, the fire spread was slowed by the limited supply of fresh air. This under-ventilation led to generation of a large mass of pyrolyzed and only partially oxidized effluent. The smoke and combustible gases flowed into the interstitial space below the roof and above the suspended ceiling of the main retail showroom. As this space filled with unburned fuel, the hot smoke also seeped through the suspended ceiling into the main showroom and formed a hot smoke layer below the suspended ceiling. Up to this time, the extent of fire spread into the interstitial space was not visible to fire fighters in the store. If the fire spread had been visible to the fire fighters in the store, it would have provided a direct indication of a fire hazard in the showroom. Meanwhile, the fire at the back of the main showroom and the gas mixture below the suspended ceiling were both still fuel rich. When the front windows were broken out or vented, the inflow of additional air allowed the heat release rate of the fire to intensify rapidly and added air to the layer of unburned fuel below the suspended ceiling enabling the ignition of the unburned fuel/air mixture. The fire swept from the rear to the front of the main showroom extremely quickly, and then into the west and east showrooms. Nine fire fighters were killed in the Sofa Super Store fire. NIST developed eleven recommendations to help mitigate such future losses.

Recommendation 2(c) of the NIST report recommended that that all state and local jurisdictions implement aggressive and effective fire inspection and enforcement programs that address detailed recordkeeping.

Following a review of recommendation 2(c) of the NIST report, changes are proposed to Section 107.2 and 49 other sections of the International Fire Code that address recordkeeping.

The proposed change to Section 107.2 accomplishes several things with regard to recordkeeping. Most significantly, it standardizes recordkeeping requirements for periodic inspection, testing, servicing and other operational and maintenance requirements of the International Fire Code.

The change to Section 107.2 would now make it clear that records must be maintained on the premises or other approved location and that copies of records must be provided to the fire code official upon request. The change would also make clear that records must be maintained for a period of not less than 3 years unless a different time interval were specified in the code or a referenced standard, and that the fire code official is authorized to prescribe the form and format of such records.

The changes proposed to the other sections of the International Fire Code are intended to make clear what records must be maintained.

This proposal is submitted by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to-face meetings were held. In addition to the CTC meetings, the CTC established

Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

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

Staff analysis: Recordkeeping of maintenance and inspections is also addressed in the ICCPC, IPC and IWUIC.

EB48 – 13

904.1.3 (NEW)

Proponent: Carl Baldassarra, P.E., Chair, ICC Code Technology Committee

Revise as follows:

904.1 Automatic sprinkler systems. Automatic sprinkler systems shall be provided in all *work areas* when required by Section 804.2 or this section.

904.1.1 High-rise buildings. In high-rise buildings, work areas shall be provided with automatic sprinkler protection where the building has a sufficient municipal water supply system to the site. Where the *work area* exceeds 50 percent of floor area, sprinklers shall be provided in the specified areas where sufficient municipal water supply for design and installation of a fire sprinkler system is available at the site.

904.1.2 Rubbish and linen chutes. Rubbish and linen chutes located in the *work area* shall be provided with automatic sprinkler system protection or an approved automatic fire-extinguishing system where protection of the rubbish and linen chute would be required under the provisions of the International Building Code for new construction.

904.1.3 Upholstered furniture or mattresses. *Work areas* shall be provided with automatic sprinkler protection in accordance with the *International Building Code* where any of the following conditions exist:

1. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).
2. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).
3. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

Exception: Where an automatic sprinkler system is required by items 1, 2 or 3 and where the building does not have sufficient municipal water supply for the design and installation of an automatic sprinkler system available to the floor without installation of a new fire pump, *work areas* shall be protected by an automatic smoke detection system throughout all occupiable spaces. The automatic smoke detection system shall activate the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the International Building Code.

Reason: This proposed change is a result of the CTC's investigation of the area of study entitled "NIST Charleston Sofa Store Fire Recommendations". The scope of the activity is noted as:

"Review the NIST and other investigative reports on the fire that occurred on the evening of June 18, 2007 in the Sofa Super Store in Charleston, South Carolina to identify issues that can be addressed by the International Codes."

In connection with their investigation, NIST analyzed the fire ground, consulted with other experts, and performed computer simulations of fire growth alternatives. Based on these analyses, NIST concluded that the following sequence of events is likely to have occurred. A fire began in packing material and discarded furniture outside an enclosed loading dock area. The fire spread to the loading dock, then into both the retail showroom and warehouse spaces. During the early stages of the fire in the two latter locations, the fire spread was slowed by the limited supply of fresh air. This under-ventilation led to generation of a large mass of pyrolyzed and only partially oxidized effluent. The smoke and combustible gases flowed into the interstitial space below the roof and above the suspended ceiling of the main retail showroom. As this space filled with unburned fuel, the hot smoke also seeped through the suspended ceiling into the main showroom and formed a hot smoke layer below the suspended ceiling. Up to this time, the extent of fire spread into the interstitial space was not visible to fire fighters in the store. If the fire spread had been visible to the fire fighters in the store, it would have provided a direct indication of a fire hazard in the showroom. Meanwhile, the fire at the back of the main showroom and the gas mixture below the suspended ceiling were both still fuel rich. When the front windows were

broken out or vented, the inflow of additional air allowed the heat release rate of the fire to intensify rapidly and added air to the layer of unburned fuel below the suspended ceiling enabling the ignition of the unburned fuel/air mixture. The fire swept from the rear to the front of the main showroom extremely quickly, and then into the west and east showrooms. Nine fire fighters were killed in the Sofa Super Store fire. NIST developed eleven recommendations to help mitigate such future losses.

Recommendation 4 of the NIST report reads as follows:

“NIST recommends that model codes require sprinkler systems and that state and local authorities adopt and aggressively enforce this provision:

- a) for all new commercial retail furniture stores regardless of size; and
- b) for existing retail furniture stores with any single display area of greater than 190 m² (2000 ft²).

An installed fire sprinkler system that complied with a national standard such as NFPA 13 [3] would have activated and would have controlled the fire growth. If the showrooms had been divided into smaller areas with fire barriers, the compartmentation would have slowed the spread of the fire as well.”

Following a review of recommendation 4 of the NIST report, a new section, 904.1.3, is proposed to be added to the International Existing Building Code addressing Level 3 alterations. This new language would ensure that occupancies used for the merchandizing, storage or manufacture of upholstered furniture or mattresses have fire protection installed when the space occupied for these purposes undergo a Level 3 alteration.

Most of the targeted occupancies would already require the installation of automatic fire sprinkler systems if a Level 2 Alteration occurred, and Section 901.2 of the IEBC points to Chapters 7 and 8 as required to be complied with in such circumstance.

However, Chapter 8, specifically Section 804.2.2 as shown below, requires compliance when there are shared tenant egress paths or occupant loads of 30 or greater.

804.2.2 Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:

1. The work area is required to be provided with automatic sprinkler protection in accordance with the *International Building Code* as applicable to new construction; and
2. The work area exceeds 50 percent of the floor area.

Exceptions:

1. Work areas in Group R occupancies three stories or less in height.
2. If the building does not have sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump, work areas shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the *International Building Code*.

This proposal defers to the square footage thresholds found in Chapter 9 of the International Building Code once the work area reaches a Level 3 threshold. In reality, the impact is minimal as far as added occupancies that would be covered by this provision. What it does is eliminate a more complicated determination for identifying the requirement for providing the protection levels. The S-1 occupancies and the storage areas of the F-1 would be covered by Chapter 32 (High-Piled Combustible Storage) of the IFC, where the threshold to provide automatic sprinkler protection is currently 2500 ft².

OCCUPANT LOAD COMPARISON WITH SUGGESTED THRESHOLDS

(Section 804.2.2 applies to multitenant shared egress paths or with occupant load of 30 or greater)

Using IBC Table 1004.1.2

F-1	Factor 100 ft ² gross per person	2500 ft ² =25 person
M	Factor 30 ft ² /60 ft ² (display areas)	5000 ft ² = 167/83 persons
S-1	Factor 500 ft ² gross per person	2500 ft ² = 5* persons

***IFC TABLE 3206.2 GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS** already requires automatic sprinkler protection for high-piled storage areas over 2500 ft².

Based upon the above analysis, there will be a cost increase for only a minimal subset of the affected occupancies.

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

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

F25– 13

403, 404, 405, 406.1.1, 406.3.3, 408, 311.6

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

Revise as follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

403.7.2 ~~408.6~~ Group I-2 occupancies. Group I-2 occupancies shall comply with the requirements of Sections 403.7.2.1 through 403.7.2.3~~408.6.1 and 408.6.2 and Sections 401 through 406.~~

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

403.7.2.2 ~~408.6.4~~ Evacuation not required. (No change to current text)

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

403.7.3 ~~408.7~~ Group I-3 occupancies. Group I-3 occupancies shall comply with the requirements of Sections 403.7.3.1 through 403.7.3.4~~408.7.1 through 408.7.4 and Sections 401 through 406.~~

403.7.3.1 ~~408.7.4~~ Employee training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. Training of new ~~staff~~ employees shall be provided promptly upon entrance on duty. Refresher training shall be provided at least annually.

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

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

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

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

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

403.9 Group R occupancies.

403.9.1 ~~408.8~~ Group R-1 occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-1 occupancies. Group R-1 occupancies shall also comply with the requirements of Sections 403.9.1.1 through 403.9.1.3, 408.8.1 through 408.8.3 and Sections 401 through 406.

403.9.1.1 ~~408.8.4~~ Evacuation diagrams. (No change to current text)

403.9.1.2 ~~408.8.2~~ Emergency duties. (No change to current text)

403.9.1.3 ~~408.8.3~~ Fire safety and evacuation instructions. (No change to current text)

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

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

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

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

403.9.2.2 408-9.1 Emergency guide. Fire emergency guides shall be provided for Group R-2 occupancies. Guide contents, maintenance and distribution shall comply with Sections 403.9.2.2.1 through 403.9.2.2.3

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

403.9.2.2.2 408-9.3 Emergency guide mMaintenance. Emergency guides shall be reviewed and approved by the fire code official in accordance with Section 401.2. Evacuation diagrams shall be reviewed and updated in accordance with Section 404.4.

403.9.2.2.3 408-9.4 Emergency guide dDistribution. *(No change to current text)*

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

403.9.3 408-10 Group R-4 occupancies. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for Group R-4 occupancies. Group R-4 occupancies shall also comply with the requirements of Sections 403.9.3.1 through 403.9.3.6 408-10.1 through 408-10.5 and Sections 401 through 406.

403.9.3.1 408-10.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include special staff-employee actions, including fire protection procedures necessary for residents, and shall be amended or revised upon admission of a resident with unusual needs.

403.9.3.2 408-10.2 Staff-Employee training. Employees shall be periodically instructed and kept informed of their duties and responsibilities under the plan. Such instruction shall be reviewed by employees at intervals not exceeding the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

403.9.3.3 408-10.3 Resident training. *(No change to current text)*

403.9.3.4 408-10.4 Drill frequency. *(No change to current text)*

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

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

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

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

403.10.1 408.11 Covered and open mall buildings. Covered and open mall buildings shall comply with the provisions-requirements of Sections 403.10.1.1 through 403.10.1.6408.11.1 through 408.11.3.

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

403.10.1.2 408.11.4 Lease plan. *In addition to the requirements of Section 404.2.2, aA lease plan that includes the following information shall be prepared for each covered and open mall building:-The plan shall include the following information in addition to that required by Section 404.3.2:*

1. Each occupancy, including identification of tenant.
2. Exits from each tenant space.
3. Fire protection features, including the following:
 - 3.1. Fire department connections.
 - 3.2. Fire command center.
 - 3.3. Smoke management system controls.
 - 3.4. Elevators, elevator machine rooms and controls.
 - 3.5. Hose valve outlets.
 - 3.6. Sprinkler and standpipe control valves.
 - 3.7. Automatic fire-extinguishing system areas.
 - 3.8. Automatic fire detector zones.
 - 3.9. Fire barriers.

403.10.1.3 408.11.1.4 Lease plan approval. *(No change to current text)*

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

403.10.1.5408.11.2 Tenant identification. *Tenant identification shall be provided for secondary exits from occupied tenant spaces that lead to an exit corridor or directly to the exterior of the building. Each occupied tenant space provided with a secondary exit to the exterior or exit corridor shall be provided with tenant identification by Tenant identification shall be posted on the exterior side of the exit or exit access door and shall identify the business name and/or address. Letters and numbers shall be posted on the corridor side of the door, be using plainly legible letters and numbers that and shall contrast with their background.*

Exception: Tenant identification is not required for anchor stores.

(Section 408.11.3 Moved to new Section 311.6)

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

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

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

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

SECTION 403 PUBLIC ASSEMBLAGES AND EVENTS

403.11.1403.4 Fire watch personnel. When, in the opinion of the *fire code official*, it is essential for public safety in a place of assembly or any other place where people congregate, because of the number of persons, or the nature of the performance, exhibition, display, contest or activity, the *owner*, agent or lessee shall provide one or more fire watch personnel, as required and *approved*. Fire watch personnel shall comply with Sections 403.11.1.1 and 403.11.1.2. to remain on duty during the times such places are open to the public, or when such activity is being conducted.

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

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

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

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

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

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

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

403.11.3 403.3 Crowd managers for gatherings exceeding 1,000 people. ~~Trained crowd managers shall be provided for. Where facilities or events involve a gathering of where more than 1,000 people, crowd managers shall be provided in accordance with Section 403.11.3.1, persons congregate. The minimum number of crowd managers shall be established at a ratio of one crowd manager to every 250 persons. Where approved by the fire code official, the ratio of crowd managers shall be permitted to be reduced where the facility is equipped throughout with an approved automatic sprinkler system or based upon the nature of the event.~~

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

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

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

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

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

- ~~1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an occupant load less than 2,000.~~
- ~~2. Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~
- ~~3. Group E.~~
- ~~4. Group F buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~
- ~~5. Group H.~~
- ~~6. Group I.~~
- ~~7. Group R-1.~~
- ~~8. Group R-2 college and university buildings.~~
- ~~9. Group R-4.~~
- ~~10. High-rise buildings.~~
- ~~11. Group M buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.~~
- ~~12. Covered malls exceeding 50,000 square feet (4645 m²) in aggregate floor area.~~
- ~~13. Open mall buildings exceeding 50,000 square feet (4645 m²) in aggregate area within perimeter line.~~
- ~~14. Underground buildings.~~
- ~~15. Buildings with an atrium and having an occupancy in Group A, E or M.~~

SECTION 405 EMERGENCY EVACUATION DRILLS

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

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

405.3 Leadership. (No change to current text)

405.4 Time. (No change to current text)

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

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

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

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

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

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

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

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

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

Revise as follows:

311.1 General. Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Sections 311.1.1 through 311.5.65.

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

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

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

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

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

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

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

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

SECTION 403 EMERGENCY PREPAREDNESS REQUIREMENTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

403.9 Group R occupancies.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

403.10 Special uses.

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

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

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

1. Each occupancy, including identification of tenant.
2. *Exits* from each tenant space.
3. Fire protection features, including the following:
 - 3.1. Fire department connections.
 - 3.2. *Fire command center*.
 - 3.3. Smoke management system controls.
 - 3.4. Elevators, elevator machine rooms and controls.
 - 3.5. Hose valve outlets.
 - 3.6. Sprinkler and standpipe control valves.
 - 3.7. Automatic fire-extinguishing system areas.
 - 3.8. Automatic fire detector zones.
 - 3.9. *Fire barriers*.

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

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

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

Exception: Tenant identification is not required for anchor stores.

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

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

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

403.11 Special requirements for public safety.

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

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

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

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

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

1. Emergency vehicle ingress and egress
2. Fire protection

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

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

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

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

Revise Section 404 as follows:

SECTION 404 FIRE SAFETY, EVACUATION AND LOCKDOWN PLANS

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

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

Revise Section 405 as follows:

SECTION 405 EMERGENCY EVACUATION DRILLS

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

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

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

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

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

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

**TABLE 405.2
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION
FIRE AND EVACUATION DRILL
FREQUENCY AND PARTICIPATION**

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

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

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

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

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

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

Revise Section 406 as follows

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

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

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

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

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

(moved to Section 406.4)

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

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

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

Revise Section 311.1 as follows:

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

Add a Section 311.6 as follows:

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

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

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

F121 – 13

903.2, 102.3, 1106 (New)

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

Revise as follows:

903.2.1 Group A. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided throughout buildings and portions thereof used as Group A occupancies ~~when any one of the following conditions exists as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the *automatic sprinkler system* shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is located, and in all floors from the Group A occupancy to, and including, the nearest level of exit discharge serving the Group A occupancy. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in the spaces indicated in Section 903.2.1.5.~~

903.2.1.6 Location. When required by Sections 903.2.1.1 through 903.2.1.5, sprinkler installation shall be as follows:

1. For Group A-1, A-2, A-3 and A-4 occupancies, the *automatic sprinkler system* shall be provided throughout the floor area where the Group A-1, A-2, A-3 or A-4 occupancy is located, and in all floors from the Group A occupancy to, and including, the nearest level of exit discharge serving the Group A occupancy.
2. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in the spaces indicated in Section 903.2.1.5.
3. For a Change of Occupancy, Partial Change of Occupancy or Change of Character, compliance shall be as specified in Section 1106.

903.2.2 Ambulatory care facilities. An *automatic sprinkler system* shall be installed ~~throughout the entire floor containing in~~ an ambulatory care facility where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation, whether rendered incapable by staff or staff has accepted responsibility for care recipients already incapable.
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

903.2.2.1 Location. Where required by Section 903.2.2, sprinkler installation shall be as follows:

1. Throughout the entire floor containing an ambulatory care facility.
2. In buildings where ambulatory care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* shall be installed throughout the entire floor where such care is provided as well as all floors below, and all floors between the level of ambulatory care and the nearest *level of exit discharge*, including the *level of exit discharge*.
3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in Section 1106.

903.2.3 Group E. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided for Group E occupancies where either of the following conditions exist as follows:

1. ~~Throughout all~~ The Group E fire areas exceeds greater than 12,000 square feet (1115 m²) in area.
2. ~~Throughout every~~ Where portions of educational buildings are below the *lowest level of exit discharge* serving that portion of the building.

903.2.3.1 Location. Where required by Section 903.2.3, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout the portion of educational buildings that are below the *lowest level of exit discharge* serving that portion of the building.

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

3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.4 Group F-1. An *automatic sprinkler system* in accordance with Section 903.1.1 shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 *fire area* exceeds 12,000 square feet (1115 m²).
2. A Group F-1 *fire area* is located more than three stories above grade plane.
3. The combined area of all Group F-1 *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

903.2.4.1 Woodworking operations. An *automatic sprinkler system* in accordance with Section 903.1.1 shall be provided throughout all Group F-1 occupancy *fire areas* that contain woodworking operations in excess of 2,500 square feet in area (232 m²) which generate finely divided combustible waste or which use finely divided combustible materials.

903.2.4.2 Location. Where required by Sections 903.2.4 or 903.2.4.1, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout Group F-1 occupancies used for the manufacture of upholstered furniture or mattresses in excess of 2,500 square feet (232 m²).
3. For a Change of Occupancy, Partial Change of Occupancy or Change of Character, compliance shall be as specified in Section 1106.

903.2.5 Group H. *Automatic sprinkler systems* in accordance with Section 903.3.1.1 shall be provided in high-hazard occupancies as required in Sections 903.2.5.1 through 903.2.5.3 4.

903.2.5.1 General. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed in Group H occupancies.

903.2.5.2 Group H-5 occupancies. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed (*remainder unchanged*).

903.2.5.3 Pyroxylin plastics. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be provided (*remainder unchanged*).

903.2.5.4 Location. Where required by Sections 903.2.5, 903.2.5.1, 903.2.5.2 or 903.2.5.3, sprinkler installation shall be as follows:

1. Throughout the area containing a Group H occupancy.
2. Throughout the floor area where cellulose nitrate film or pyroxylin plastics are manufactured, stored or handled in quantities exceeding 100 pounds (45 kg).
3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.6 Group I. An *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be provided throughout all buildings with a Group I *fire area*.

Exceptions:

1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 facilities.
2. An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be allowed in Group I-1 facilities when in compliance with all of the following:
 - 2.1 A hydraulic design information sign is located on the system riser;
 - 2.2 Exception 1 of Section 903.4 is not applied; and
 - 2.3 Systems shall be maintained in accordance with the requirements of Section 903.3.1.2.
3. ~~An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior *exit door*.~~
4. ~~In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the *level of exit discharge*, all floors below the *level of exit discharge*, other than areas classified as an open parking garage.~~

903.2.6.1 Location. Where required by Section 903.2.6, sprinkler installation shall be throughout the entire building when containing a Group I occupancy.

Exceptions:

1. An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior *exit door*.
2. In buildings where Group I-4 day care is provided on levels other than the *level of exit*

discharge, an automatic sprinkler system in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the level of exit discharge, all floors below the level of exit discharge, other than areas classified as an open parking garage.

3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.7 Group M. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet (1115 m²).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).

903.2.7.1 High-piled storage. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be provided as required in Chapter 32 in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

903.2.7.2 Location. Where required by Sections 903.2.7 or 903.2.7.1, sprinkler installation shall be as follows:

1. Throughout the applicable fire areas as specified above.
2. Throughout Group M occupancies used for the display and sale of upholstered furniture or mattresses in excess of 5,000 square feet (464 m²).
3. As applicable in Chapter 32 for high-piled storage.
4. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

903.2.8.1 Group R-3 or R-4 congregate residences. An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 or R-4 congregate living facilities with 16 or fewer residents.

903.2.8.2 Care facilities. An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single-family dwelling.

903.2.8.3 Location. Where required by Section 903.2.8, sprinkler installation shall be throughout the entire building when containing a Group R occupancy.

Exception: For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds

2,500 square feet (232 m²).

903.2.9.1 Repair garages. An *automatic sprinkler system* shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the *International Building Code*, where one of the following conditions exists as shown:

1. Buildings having two or more stories above grade plane, including *basements*, with a *fire area* containing a repair garage exceeding 10,000 square feet (929 m²)
2. Buildings no more than one story above grade plane, with a *fire area* containing a repair garage exceeding 12,000 square feet (1115 m²).
3. Buildings with repair garages servicing vehicles parked in *basements*.
4. A Group S-1 *fire area* used for the repair of commercial trucks or buses where the *fire area* exceeds 5,000 square feet (464 m²).

903.2.9.2 Bulk storage of tires. Throughout all B buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m³) shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

903.2.9.3 Location. Where required by Sections 903.2.9, 903.2.9.1 or 903.2.9.2, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout Group S-1 occupancies used for the storage of upholstered furniture or mattresses in excess of 2,500 square feet (232 m²).
3. Throughout the entire building when any of the conditions of Sections 903.2.9.1 and 903.2.9.2 exists.
4. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

903.2.10 Group S-2 enclosed parking garages. An *automatic sprinkler system* shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 of the *International Building Code* where one of the following conditions exists as follows:

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

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

903.2.10.1 Commercial parking garages. An *automatic sprinkler system* shall be provided throughout buildings used storage of commercial trucks or buses where the *fire area* exceeds 5,000 square feet (464 m²).

903.2.10.2 Location. Where required by Sections 903.2.10 or 903.2.10.1, sprinkler installation shall be as follows:

1. Throughout the applicable *fire areas* as specified above.
2. Throughout the area of all floors below other groups used as an enclosed parking garage.

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

3. For a change of occupancy, partial change of occupancy or change of character, compliance shall be as specified in section 1106.

Delete and substitute as follows:

~~[A] 102.3 Change of use or occupancy. No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the *International Building Code*. Subject to the approval of the *fire code official*, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code and the *International Building Code* for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.~~

[A] 102.3 Change of use or occupancy, partial change of occupancy and change of character. No change in use or occupancy, partial change of occupancy or change of character shall be made to any structure without compliance with Section 1106.

Add new text as follows:

SECTION 1106
CHANGE OF OCCUPANCY, PARTIAL CHANGE
OF OCCUPANCY, CHANGE OF CHARACTER

1106.1 General. Buildings or portions thereof undergoing a change of occupancy, partial change of occupancy or change of character, shall comply with the provisions of Sections 1106.1.1 through 1106.4

1106.1.1 Special use. Any change of Occupancy, Partial Change of Occupancy or Change of Character that results in the creation of one of the following special use or occupancy shall comply with all of the applicable requirements of this code and the *International Building Code*.

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Ambulatory care facilities.

1106.1.2. Underground buildings. An underground building in which there is a change of occupancy, partial change of occupancy or change of character shall comply with the requirements of this code and the *International Building Code* applicable to underground buildings.

1106.2 Change of use or occupancy. No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the *International Building Code*. Subject to the approval of the *fire code official*, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be changed and is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code and the *International Building Code* for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

1106.3 Partial change of occupancy classification, In other than special uses as specified in Section 1106.1.1, where a portion of an existing building is changed to a new occupancy classification, Sections 1106.3.1 and 1106.3.2 shall apply.

1106.3.1 Fire sprinkler system. Automatic sprinkler system provisions of Section 903.2.1 through

903.2.10.1 shall only be applicable to the fire area of concern where separated from other fire areas as required by Section 707.3.10 of the International Building Code except as specifically required by Sections 1106.3.1.1 through 1106.1.8.

1106.3.1.1 Ambulatory care facilities. For ambulatory care facilities, the automatic sprinkler system provisions of Section 903.2.2 shall only be applicable to the floor where the ambulatory care facility is located where the fire area of the floor is separated from other floors in accordance with Section 707.3.10 of the International Building Code.

1106.3.1.2 Group E occupancies. Group E occupancies created over portions of educational buildings that are below the lowest level of exit discharge, an automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where:

- 1 The new Group E fire area has at least one exterior exit door at ground level; or,
- 2 All existing and new Group E fire areas above are separated from the level below in accordance with Section 707.3.10 of the International Building Code.

1106.3.1.3 Group F-1 occupancies. For Group F-1 occupancies as provided for in Sections 903.2.4 and 902.4.1, automatic sprinkler system installation shall be as required specified in Section 903.2.4.2.

1106.3.1.4 Group H occupancies. For Group H occupancies as provided for in Sections 903.2.5, 903.2.5.1, 903.2.5.2 and 903.2.5.3, automatic sprinkler system installation shall be as specified in Section 903.2.5.4.

1106.3.1.5 Group I occupancies. For Group I occupancies as provided for in Sections 903.2.6, automatic sprinkler system installation shall be in accordance with one of the following:

- 1 Throughout the building containing a Group I occupancy.
- 2 An automatic sprinkler system is not required where Group I-4 day care facilities are at the level of exit discharge and where every room where care is provided has at least one exterior exit door; or,
- 3 In buildings where a Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with Section 903.3.1.1 shall only be required to be installed on the floor where the Group I-4 day care is located and where the floor is separated from other floors in accordance with Section 707.3.10 of the International Building Code.

1106.3.1.6 Group M occupancies. For Group M as provided for in Sections 903.2.7 and 903.2.7.1, automatic sprinkler system installation shall be as specified in Section 903.2.7.2.

1106.3.1.7 Group S-1 occupancies. For Group S-1 as provided for in Sections 903.2.9, 903.2.9.1 and 903.2.9.2, automatic sprinkler system installation shall be as specified in Section 903.2.9.3.

1106.3.1.8 Group S-2 occupancies. For Group S-2 enclosed parking garages as provided for in Sections 903.2.10 and 903.2.10.1, automatic sprinkler system installation shall be as specified in Section 903.2.10.2.

1106.3.2 Fire alarm and detection system. Fire alarm and detection systems of Section 907.2 shall be provided throughout the area where the partial change of occupancy occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the partial change of occupancy occurs and shall be automatically activated.

1106.4 Change of character. A change in occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable International Codes, without approval of the fire code official. Compliance shall be only as necessary to meet the specified provisions and is not intended to require the entire building be brought into

compliance.

Reason: This bold code change is an attempt to accomplish the following:

1. Attempt to explain what areas must be sprinklered under Section 903.2. Some provisions make reference to “throughout buildings”, “throughout all buildings” or “in the occupancy.” Group R occupancies, Repair garages and bulk storage of tires makes it clear that it is throughout all buildings. The Commentary implies that Group I is the entire building, but it is not clear about other occupancies. Is it the building or just the fire area.
 And, the provisions for upholstered furniture and Group H do not use the term fire area. Therefore, the changes to 903.2 is to start discussions about clarification.
 Code change E116-12, which was approved As Modified, identifies that Group H occupancies might be sprinklered but in a non-sprinklered building as follows:

E116– 12
Table 1016.2 (IFC [B] Table 1016.2)

Proponent: Patrick A. McLaughlin, McLaughlin & Associates, representing Compressed Gas Association (pmclaugma@aol.com)

Revise as follows:

TABLE 1016.2 (IFC [B] TABLE 1016.2)
EXIT ACCESS TRAVEL DISTANCE^a

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 ^b
I-1	Not Permitted	250 ^b
B	200	300 ^c
F-2, S-2, U	300	400 ^c
H-1	Not Permitted	75 ^d
H-2	Not Permitted	100 ^d
H-3	Not Permitted	150 ^d
H-4	Not Permitted	175 ^d
H-5	Not Permitted	200 ^d

For SI: 1 foot = 304.8 mm.

- (no change)
- Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- Occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.1.

Reason: H-1 thru H-4 occupancies are required to be sprinklered, however, if the H occupancy is located within another occupancy, that occupancy may or may not be sprinklered because the sprinkler system is not required throughout. As written, the travel distance allowance would not apply and there is no guidance on what the travel distance should be. Furthermore, the current footnote has led to erroneous interpretation of the code requiring the building to be sprinklered throughout. In our opinion this was never the intent of this table. H occupancies cannot exit through a more hazardous occupancy, therefore the travel distances allowed within the H occupancy seem reasonable when exiting through another occupancy of lesser hazard.

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

E116-12

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

T1016.2-E-MCLAUGHLIN

2. Attempt to bring the IFC in line with IEBC Section 1012.2 Fire Protection systems. I don't agree with the blanket provisions provided there and believe that more detail info is needed. 2012 IEBC Section 1012.2 is as follows:

1012.2 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 1012.2.1 and 1012.2.2.

1012.2.1 Fire sprinkler system. Where a change in occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code, such system shall be provided throughout the area where the change of occupancy occurs.

1012.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the *International Building Code*, such system shall be provided throughout the area where the partial *change of occupancy* occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the partial *change of occupancy* occurs and shall be automatically activated.

3. Match the IFC with the IEBC Sections 1001, 1002 and 1012 provided below.

SECTION 1001 GENERAL

1001.1 Scope. The provisions of this chapter shall apply where a *change of occupancy* occurs, as defined in Section 202, including:

1. Where the occupancy classification is not changed; or
2. Where there is a change in occupancy classification or the occupancy group designation changes.

1001.2 Change in occupancy with no change of occupancy classification. A change in occupancy, as defined in Section 202, with no *change of occupancy* classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, including the provisions of Sections 1002 through 1011, without the approval of the *code official*. A certificate of occupancy shall be issued where it has been determined that the requirements for the change in occupancy have been met.

1001.2.1 Repair and alteration with no change of occupancy classification. Any *repair* or *alteration* work undertaken in connection with a *change of occupancy* that does not involve a *change of occupancy* classification shall conform to the applicable requirements for the work as classified in Chapter 4 and to the requirements of Sections 1002 through 1011.

Exception: As modified in Section 1205 for *historic buildings*.

1001.3 Change of occupancy classification. Where the occupancy classification of a building changes, the provisions of Sections 1002 through 1012 shall apply. This includes a *change of occupancy* classification within a group as well as a *change of occupancy* classification from one group to a different group.

1001.3.1 Partial change of occupancy classification.

Where a portion of an *existing building* is changed to a new occupancy classification, Section 1012 shall apply.

1001.4 Certificate of occupancy required. A certificate of occupancy shall be issued where a *change of occupancy* occurs that results in a different occupancy classification as determined by the *International Building Code*.

SECTION 1002 SPECIAL USE AND OCCUPANCY

1002.1 Compliance with the building code. Where the character or use of an *existing building* or part of an *existing building* is changed to one of the following special use or occupancy categories as defined in the *International Building Code*, the building shall comply with all of the applicable requirements of the *International Building Code*:

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Ambulatory care facilities.

1002.2 Underground buildings. An underground building in which there is a change of use shall comply with the requirements of the *International Building Code* applicable to underground structures.

SECTION 1012
CHANGE OF OCCUPANCY CLASSIFICATION

1012.1 General. The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification. This includes a change of occupancy classification within a group as well as a change of occu-

pancy classification from one group to a different group. Such buildings shall also comply with Sections 1002 through 1011. The application of requirements for the change of occupancy shall be as set forth in Sections 1012.1.1 through 1012.1.4. A *change of occupancy*, as defined in Section 202, without a corresponding change of occupancy classification shall comply with Section 1001.2.

1012.1.1 Compliance with Chapter 9. The requirements of Chapter 9 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 1012.1.1.1 and 1012.1.1.2.

1012.1.1.1 Change of occupancy classification without separation. Where a portion of an *existing building* is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the *International Building Code* for the separate occupancy, the entire building shall comply with all of the requirements of Chapter 9 applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this chapter.

1012.1.1.2 Change of occupancy classification with separation. Where a portion of an *existing building* that is changed to a new occupancy classification and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the *International Building Code* for the separate occupancy, that portion shall comply with all of the requirements of Chapter 9 for the new occupancy classification and with the requirements of this chapter.

1012.1.2 Fire protection and interior finish. The provisions of Sections 1012.2 and 1012.3 for fire protection and interior finish, respectively, shall apply to all buildings undergoing a change of occupancy classification.

1012.1.3 Change of occupancy classification based on hazard category. The relative degree of hazard between different occupancy classifications shall be determined in accordance with the categories specified in Tables 1012.4, 1012.5 and 1012.6. Such a determination shall be the basis for the application of Sections 1012.4 through 1012.7.

1012.1.4 Accessibility. All buildings undergoing a change of occupancy classification shall comply with Section 1012.8.

1012.2 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 1012.2.1 and 1012.2.2.

1012.2.1 Fire sprinkler system. Where a change in occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the *International Building Code*, such system shall be provided throughout the area where the *change of occupancy* occurs.

1012.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs that requires a

fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the *International Building Code*, such system shall be provided throughout the area where the *change of occupancy* occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the *change of occupancy* occurs and shall be automatically activated.

4. This is also intended to coordinate with code change G231-12 which was approved as Submitted at the Final Action hearing.

G231-12

202, 3408.1.1 (New) [IEBC [B] 202, 407.1.1 (New)]

Proposed Change as Submitted

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

Add new text as follow:

3408.1.1 (IEBC [B] 407.1.1) Change of Character. A change in occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, without approval of the *building official*. Compliance shall be only as necessary to meet the specific provisions and is not intended to require the entire building be brought into compliance.

Add new definition as follows:

CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

Reason: In the last code cycle, Code Change EB27-09/10 added "10. Ambulatory health care facilities" to IEBC Section 902.1 (now 1002.1) under the classification of "change of character. This section in the IEBC, along with The IEBC definition of Change of Use, in general verbiage, recognizes that there are changes of use that do not involve changing occupancy groups.

IEBC Section 1001.2 states:

"**1001.2 Change in occupancy with no change in occupancy classification.** A change in occupancy, as defined in Section 202, with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, including the provisions of Section 1002 through 1011, without the approval of the code official."

This proposal is to bring those provisions from IEBC Section 1001.2 over into Chapter 34 of the IBC.

As noted in the IEBC, it is possible to change a use without changing the occupancy classification. Some examples are as follows:

1. Group A-2 bar with an occupant load of 275 to a Group A-2 bar with an occupant load of 350. Increasing occupant loads is permitted under Section 1004.2.
2. Group B office to Group B Ambulatory Health Care
3. Group B office to Group B café
4. Group F-1 factory to a Group F-1 woodworking shop.
5. Group H-3 Oxidizing gases to Group H-3 Flammable solids
6. Group M retail to Group M retail of upholstered furniture
7. Group S-1 warehouse to Group S-1 tire warehouse over 20,000 cubic feet
8. Group S-1 warehouse to Group S-1 motor vehicle repair garage
9. Group R-2 apartment to Group R-2 Live/Work unit.

Each of these classifications has particular code provisions that would apply if the occupancy had been originally identified. Some items might be fire protection, alarms, fresh air, restroom facilities, accessibility, smoke barriers, etc. The IBC currently does not specifically address these changes since they do not change Groups or change Divisions within Groups.

When making a change of character, it is not necessary to totally re-evaluate the building. Only the new applicable provisions should be addressed.

For example:

Group A-2 bar with an occupant load of 275 to a Group A-2 bar with an occupant load of 350.

Items that might require review:

Means of egress – 1004.2, to the public way
Sprinklers – 903.2.1.2, only in this space
Alarms – 907.2.1, only in this space
Restrooms – Chapter 29
Fresh air – IMC

Accessibility – see Section 3411
If food – upgrade of interceptor provisions of the IPC

Items that might not require a new review:

Height and area
Exterior walls and openings

As this is a confusing issue, the code official will need to define what items of correction are appropriate. While the wording may be new, code officials have performed this service for years. This proposal just puts it in the code.

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

3408.1.1 (NEW)-G-GODWIN

Public Hearing Results

Committee Action: Disapproved

Committee Reason: The proposed language needs to be revised with terminology such as "change in the character of use." There was some discussion that the definition proposed could be beneficial in the IBC. Some committee members felt that this language was unnecessary.

Assembly Action: None

Individual Consideration Agenda

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

Public Comment:

Al Godwin, CBO, CPM, Aon Fire Protection Engineering Corporation, requests Approval as Submitted.

Commenter Reason: The Committee made the comment that the wording should be changed to "change in the character of use." Therefore the title of Section 3408.1.1 has been amended to reflect the new provision. This provision already exists in IEBC Section 1001.2. However, according to IEBC Section 301.1 compliance can be achieved by one of the three methods. The provision for Change of Character only exists in the Work Area Method of Section 301.1.2. Change of Character should also occur under the Prescriptive Compliance Method of Chapter 4 which is IBC Section 3408.1.1.

Therefore, this provision is a good change. It merely duplicates an existing IEBC provision and copies it in IEBC 407.1.1, which is also IBC 3408.1.1.

G231-12

Final Action: AS AM AMPC___ D

5. The design of this code change proposal would allow the adoption of Part I and disapproval of the remainder. As such, all references to "For a Change of Occupancy, Partial Change of Occupancy or Change of Character, compliance shall be as specified in Section 1106" would editorially drop out since that section would not exist.

Cost Impact: This should be considered as a clarification and coordination. While some provisions of Section 1106 are more intensive than currently written in the IEBC, they may be less intensive than what is currently enforced under the IFC. As such, it should be a merge of the potential costs under the IFC and the IEBC.

F126 – 13

903.2.4, 903.2.7, 903.2.9

Proponent: Steve Thomas, Colorado Code Consulting, LLC representing self
(stthomas@coloradocode.net)

Revise as follows:

903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

903.2.7 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet (1115 m²).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. ~~A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).~~

903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).
5. ~~A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).~~

Reason: The original proponent offered no technical justification in the original proposal. The fire event that was used to support the original emotional proposal was located in a building that was 59,000 square feet in area. It was not provided with fire sprinklers. The code currently requires that this size building be provided with fire sprinklers. Previous legacy codes have also required fire sprinklers in this size building. This requirement is over-restrictive and should be removed from the code.

When the provisions were revised in the 2012 IFC, the revision was not tied to FIRE AREA, but instead was based on some area of the upholstered furniture and mattresses. It is not clear how the areas are measured. Is it the area of the space, display or building that requires the fire sprinklers? This vague language makes enforcement more difficult.

The second issue is that the provisions in these sections conflicts with provision in Section 3206.2 for high piled combustible storage (HPCS). It creates a loophole because the IFC high piled combustible storage provisions set an area threshold of 500 square feet when the height of mattress storage is > 6 feet in a public-accessible area. The provision for Group M occupancies for upholstered mattresses and furniture sets an occupancy area threshold of 5,000 square feet. The committee wasn't thinking about HPCS when they considered the proposal and it was further amended on the floor.

Finally, loss history has never been presented substantiating why upholstered furniture and mattresses warrant a different threshold for sprinkler protection.

Cost Impact: This will reduce the cost of construction.

F165 – 12

907.2.12 (New) (IBC [F] 907.2.12 (New)), 907.12.1 (New) (IBC [F] 907.12.1 (New)), 907.12.2 (New) (IBC [F] 907.12.2 (New), 1103.9 (New), 1103.9.1 (New), 1103.9.2 (New), 1103.9.3 (New); IRC R314.5 (new), R314.5.1 (New), R314.5.2 (New), R314.5.3 (New)

Proponent: David Frederick Scarelli representing DBA-Sentry Signal Company

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IFC COMMITTEE. PART 2 OF THIS PROPOSAL WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IFC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES.

Part I - IFC

907.2.12 (IBC [F] 907.2.12) Line type heat detection. A line type heat detection system that activates at 475°F (246°C shall be installed in Group R Occupancies in accordance with Sections 907.2.12.1 through 907.2.12.2, NFPA 72, NFPA 70 and manufacturer's instructions.

907.2.12.1 (IBC [F] 907.2.12.1) Location. Line type heat detection shall be installed in the following locations:

1. Above all NM-B Cable
2. Above all electrical boxes
3. Above or near all raceways.

(Renumber subsequent sections)

907.2.12.2 (IBC [F] 907.2.12.2) Interconnection. The line type heat detection system shall be interconnected with the smoke alarms required by Section 907.2.11 in such a manner that when the line type heat detection activates such detection shall activate the smoke alarms in all sleeping units and dwelling units.

Add new text as follows:

1103.9 Line type heat detection. A line type heat detection system that activates at 475° F (246° C) shall be installed in existing Group R Occupancies in accordance with Sections 1103.9.1 through 1103.9.3, NFPA 72, NFPA 70 and manufacturer's instructions.

1103.9.1 Location. Line type heat detection shall be installed in the following locations:

1. Above all exposed NM-B Cable
2. Above all electrical boxes
3. Above or near all raceways.

1103.9.2 Interconnection. The line type heat detection system shall be interconnected with the smoke alarms required by Section 907.2.11 in such a manner that when the line type heat detection activates such detection shall activate the smoke alarms in all sleeping and dwelling units.

1103.9.3 Power source. In existing construction required line type heat detection shall receive primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup.

Exception: Line type heat detection is not required to be equipped with battery backup where connected to an emergency electrical system.

PART II – IRC

Add new text as follows:

R314.5 Line type heat detection. Line type heat detection that activates at 475°F (246°C) shall be installed in accordance with Sections 314.5.1 through 314.5.3, NFPA 72, NFPA 70 and manufacturer's instructions.

R314.5.1 Location. Line type heat detection shall be installed in the following locations:

1. Above all NM-B Cable
2. Above all electrical boxes
3. Above or near all raceways

R314.5.2 Interconnection. The line type heat detection shall be interconnected with the smoke alarms in such a manner that when the line type heat detection activates such detection shall activate all of the alarms in the dwelling unit. Where there are two dwelling units the line type heat detection shall be interconnected with the smoke alarms in both dwelling units.

R314.5.3 Power source. Line type heat detection shall receive primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup.

Exception: Line type heat detection is not required to be equipped with battery backup where connected to an emergency electrical system.

(Renumber subsequent sections)

Reason:

Part I According to death certificate data, 25% of fire and flame deaths in 2002 were due to smoke inhalation alone, 26% due to burns and 21% to a combination of burns and smoke inhalation. There were 517,000 structural, 3,140 civilian deaths and 17,730 civilian injuries. *(page 37).

ESCAPING – all seemed savable....; SLEEPING – 1/3 estimated as savable; RESCUING OR FIREFIGHTING – ¼ estimated savable...**

Deterioration of electrical wiring caused by time or the environment is a predominant cause of ignition. *(page 24).

Fires in electrical distribution systems contribute significantly to the U.S. fire problem, accounting for a consistent portion of the problem year after year. *(page 69).

In 2006 an estimated 71,360 injuries involving electrical distribution or lighting equipment began with the ignition of products and materials often found in structural areas, including wire or cable insulation (30%), structural members or framing (12%), insulation within the structural area (5%). *(page 6).

Three-fourths (75%) of deaths in 2002-2005 home fires involving electrical distribution or lighting equipment involved victims who were outside the area of origin when the fire began. (page 6).

Branch circuit wiring (51%) accounted for half of the 2005-2005 non-confined home structure fires involving wiring. *(page 54).

Half (52%) of 2002-2005 non-confined home structure fires involving wiring began in fire areas of origin that are all concealed or exterior spaces. *(page 55).

The majority (57%) of 2002-2005 non-confined home structure fires involving overcurrent protection devices began with ignition wire or cable insulation. *(page 89).

INTENT: THE LINE TYPE HEAT DETECTION SWITCH WILL SOUND THE ALARM AT THE ORIGIN OF FIRE IGNITION WITHIN THE HOME STRUCTURE YIELDING THE MAXIMUM TIME THAT MAY BE NECESSARY TO VACATE THE HOME THEREBY MINIMIZING THE INCIDENTS OF CIVILIAN AND FIREFIGHTER INJURIES AND DEATHS AND LOSS OF PROPERTY.

Part II . According to death certificate data, 25% of fire and flame deaths in 2002 were due to smoke inhalation alone, 26% due to burns and 21% to a combination of burns and smoke inhalation. There were 517,000 structural, 3,140 civilian deaths and 17,730 civilian injuries.

ESCAPING – all seemed savable....; SLEEPING – 1/3 estimated as savable; RESCUING OR FIREFIGHTING - ¼ estimated savable....** Reanalysis of who can be saved.

Deterioration of electrical wiring caused by time or the environment is a predominant cause of ignition.

Fires in electrical distribution systems contribute significantly to the U.S. fire problem, accounting for a consistent portion of the problem year after year.

In 2006 an estimated 71,360 injuries involving electrical distribution or lighting equipment were reported to hospital emergency rooms.

Electrical distributions and lighting equipment dwelling fires are the only type of home fires that have been shown to increase in frequency with increasing dwelling age.

The majority of 2002-2005 non-confined home structure fires involving electrical distribution or lighting equipment began with the ignition of products and materials often found in structural areas, including wire or cable insulation (30%), structural members or framing (12%), and insulation within the structural area (5%).

Three-fourths (75%) of deaths in 2002-2005 home fires involving electrical distribution or lighting equipment involved victims who were outside the area of origin when the fire began.

Branch circuit wiring (51%) accounted for half of the 2002-2005 non-confined home structure fires involving wiring.

Half (52%) of 2002-2005 non-confined home structure fires involving wiring began in fire areas of origin that are all concealed or exterior spaces.

The majority (57%) of 2002-2005 non-confined home structure fires involving overcurrent protection devices began with ignition wire or cable insulation.

SUMMARY: Electrical distribution equipment is a highly significant contributor to the high number of civilian deaths and civilian injuries resulting year after year in home fires. Many lives can be saved and injuries prevented if earlier warning can be sounded.

CONCLUSION: The line type open switch activated by heat and/or fire is designed by earliest warning to prevent death by asphyxiation and burning.

Circuitry short circuits and overloads trip the circuit breakers when the breaker rating is reached. Lower leakage causes hot spots along the line and eventually causes fires that could be detected long before they could become autocatalytic. The line type open switch is designed to detect this hazard long before life is endangered.

Bibliography:

- Characteristics of Home Fire Victims, NFPA, Fire analysis and Research Division. July 2005. Pg 59, John R., Hall Jr.

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- “How Many People Can be Saved From Home Fires If Given More Time to Escape? Fire Technology”, 40. Pgs 117-126, 2004; John R Hall Jr. Fire Analysis and Research Division, NFPA
- “Statistics from National Electronic Injury Surveillance System (NEISS)”. data obtained from the U.S. Consumer Product Safety Commission (CPSC) website, www.cpsc.gov
- Linda E. Smith and Dennis McCoskrie, “What Causes Wiring Fires in Residences?” Fire Journal, Jan/Feb 1990. Volume 84, Number 1
- “Home Structure Fires Involving Electrical Distribution and Lighting Equipment,” John R. Hall, Jr., Fire Analysis and Research Division, NFPA, March 2008.

INTENT: The line type heat detection switch will sound the alarm at the origin of fire ignition within the home structure yielding the maximum time that may be necessary to vacate the home thereby minimizing the incidents of civilian and firefighter injuries and deaths; and loss of property.

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

F345 – 13

Appendix K (new)

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

Add new text as follows:

Appendix K **Employee Qualifications**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION K101 **FIRE INSPECTOR** **AND FIRE PLAN EXAMINER QUALIFICATIONS**

K101.1. Fire inspector and fire plan examiner. *The fire code official shall appoint or hire such number of officers, fire inspectors, fire plan examiners, assistants and other employees as shall be authorized by the jurisdiction. A person shall not be appointed or hired as a fire inspector or fire plans examiner who has less than five years' experience as a contractor, engineer, architect, a member of the fire service, or a member of a fire prevention organization. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. Fire inspectors and fire plan examiners shall be certified through a recognized certification program for such position.*

Reason: This proposed change is a result of the CTC's investigation of the area of study entitled "NIST Charleston Sofa Store Fire Recommendations". The scope of the activity is noted as:

Review the NIST and other investigative reports on the fire that occurred on the evening of June 18, 2007 in the Sofa Super Store in Charleston, South Carolina to identify issues that can be addressed by the International Codes.

In connection with their investigation, NIST analyzed the fire ground, consulted with other experts, and performed computer simulations of fire growth alternatives. Based on these analyses, NIST concluded that the following sequence of events is likely to have occurred. A fire began in packing material and discarded furniture outside an enclosed loading dock area. The fire spread to the loading dock, then into both the retail showroom and warehouse spaces. During the early stages of the fire in the two latter locations, the fire spread was slowed by the limited supply of fresh air. This under-ventilation led to generation of a large mass of pyrolyzed and only partially oxidized effluent. The smoke and combustible gases flowed into the interstitial space below the roof and above the suspended ceiling of the main retail showroom. As this space filled with unburned fuel, the hot smoke also seeped through the suspended ceiling into the main showroom and formed a hot smoke layer below the suspended ceiling. Up to this time, the extent of fire spread into the interstitial space was not visible to fire fighters in the store. If the fire spread had been visible to the fire fighters in the store, it would have provided a direct indication of a fire hazard in the showroom. Meanwhile, the fire at the back of the main showroom and the gas mixture below the suspended ceiling were both still fuel rich. When the front windows were broken out or vented, the inflow of additional air allowed the heat release rate of the fire to intensify rapidly and added air to the layer of unburned fuel below the suspended ceiling enabling the ignition of the unburned fuel/air mixture. The fire swept from the rear to

the front of the main showroom extremely quickly, and then into the west and east showrooms. Nine fire fighters were killed in the Sofa Super Store fire. NIST developed eleven recommendations to help mitigate such future losses.

Recommendation 3 of the NIST report reads as follows:

“Qualified Fire Inspectors and Building Plan Examiners: NIST recommends that all state and local jurisdictions ensure that fire inspectors and building plan examiners are professionally qualified to a national standard such as NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner. Professional qualification may be demonstrated through a nationally accepted certification examination, such as the Fire Plan Examiner; Fire Inspector I and II, and Certified Fire Marshal.”

Following a review of recommendation 3 of the NIST report a new Appendix K is proposed. This proposal is similar in scope and intent to Section A101.3 of Appendix A of the International Building Code where suggested qualifications for building official, chief inspector, inspector and plan examiner are established.

The purpose of this proposal is to provide optional criteria for qualifications of employees who enforce the Fire Code through inspections and plan examinations. A jurisdiction that wants to make this appendix a mandatory part of the code would need to specifically list this appendix in its adoption ordinance. In recognition of the fact that some jurisdictions are mandated by applicable state law to employ only persons licensed by the state to perform certain duties, the proposal was drafted as an Appendix.

This proposal would not require fire inspectors or fire plan examiners to have had previous experience in Fire Code enforcement, but would merely require that they possess experience in a related job category. It is not our intent to prohibit a plan review and inspection staff from hiring and training entry level employees. The training of entry level shall be supervised by trained and certified personnel.

This proposal is submitted by the ICC Code Technology Committee. The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website:

<http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty-five meetings - all open to the public. In 2012, three of the 25 face-to face meetings were held. In addition to the CTC meetings, the CTC established Study Groups (SG) of interested parties for each of the areas of study. These SG's are responsible for reviewing the available information and making recommendations to the CTC. All totaled, the SG's held over 70 conference calls in 2012.

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