

# Top (15) Life Safety Code Deficiencies and Tips for Compliance

(10/01/2010 thru 08/05/2011)

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## 1. **K147 – Electrical** - Electrical wiring and equipment shall be in accordance with NFPA 70, National Electrical Code. 9.1.2 (*Cite Frequency-65*)

- ✓ There shall not be unacceptable use of power strips (e.g., Daisy-chained, high-current draw devices, and medical equipment);
- ✓ There shall not be missing junction boxes, light switches, or electrical outlet cover plates;
- ✓ Extension cords shall not used for more than temporary use;
- ✓ At least (3) three foot of clearance shall be maintained around all electrical service panels;
- ✓ Electrical service panels shall not be unlocked in areas that are assessable to residents. Enclosures housing electrical apparatus that are controlled by lock and key shall be considered accessible to qualified persons; and
- ✓ Electrical receptacles and fixed equipment within wet locations shall have ground-fault circuit-interrupter protection.

## 2. **K25 – Smoke Barriers – 2000 EXISTING:** Smoke barriers shall be constructed to provide at least a one half hour fire resistance rating and constructed in accordance with 8.3. Smoke barriers shall be permitted to terminate at an atrium wall. Windows shall be protected by fire-rated glazing or by wired glass panels and steel frames. A minimum of two separate compartments shall be provided on each floor. Dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air conditioning systems. 19.3.7.3, 19.3.7.5, 19.1.6.3, 19.1.6.4 **2000 NEW:** Smoke barriers shall be constructed to provide at least a one hour fire resistance rating and constructed in accordance with 8.3. Smoke barriers shall be permitted to terminate at an atrium wall. Windows shall be protected by fire-rated glazing or by wired glass panels in approved frames. A minimum of two separate compartments shall be provided on each floor. Dampers shall not be required in duct penetrations of smoke barriers in fully ducted heating, ventilating, and air conditioning systems. 18.3.7.3, 18.3.7.5, 18.1.6.3 (*Cite Frequency-49*)

- ✓ There shall be continuity of smoke barriers (outside wall to outside wall or other smoke barrier and from floor to roof/floor deck above);
- ✓ Penetrations shall be properly firestopped (Existing penetrations must resist the passage of smoke and new penetrations need an approved through penetration system);
- ✓ Smoke barrier/floor joint systems shall be properly firestopped (Flutes of corrugated metal decks shall not be left open or be filled with only insulation or other loose filled material);
- ✓ Expandable foam shall not be used (fire rated expandable foam does not contain a fire resistance rating; it only has a flame spread rating.);
- ✓ The smoke compartments shall not exceed 22,500 square feet and the travel distance to and from any point to reach a door in the required smoke barrier shall not exceed 200 feet;
- ✓ Space shall be provided on each side of smoke barriers to adequately accommodate those occupants served;

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- ✓ In existing health care facilities smoke barriers shall be provided to form at least two smoke compartments on every sleeping room floor for more than 30 patients; and
- ✓ In new health care facilities smoke barriers shall be provided to form at least two smoke compartments on every floor used by inpatients for sleeping or treatment, and on every floor with an occupant load of 50 or more persons, regardless of use. Smoke barriers shall also be provided on floors that are usable, but unoccupied.

3. **K72 – Furnishings and Decorations - Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency. No furnishings, decorations, or other objects shall obstruct exits, access thereto, egress there from, or visibility thereof shall be in accordance with 7.1.10 (*Cite Frequency-42*)**

- ✓ Exit accesses shall be arranged so that exits are readily accessible at all times and that the means of egress is continuously maintained free of all obstructions or impediments to full instant use;
- ✓ Furniture placement shall not narrow means of egress and or impede evacuation;
- ✓ Decorations shall not block the view of exit signage, door hardware, and/or means of egress; and
- ✓ Linen carts, soiled utility carts, wheelchairs and lifts shall not be stored in hallways. Isolation carts and crash carts are allowed in the corridors. (Storage occurs when an item is left in place or not in use for over 30 minutes. If the appropriate staff is around and using the item every 30 minutes the item is not considered to be stored.).

4. **K62 – Automatic Sprinkler Systems - Automatic sprinkler systems are continuously maintained in reliable operating condition and are inspected and tested periodically. 18.7.6, 19.7.6, 4.6.12, NFPA 13, NFPA 25, 9.7.5 (*Cite Frequency-41*)**

- ✓ Sprinklers shall not be painted, corroded/oxidized, loaded, or have other impediment;
- ✓ The spare sprinkler cabinet shall contain at least two spare sprinkler heads for each type of sprinkler head used in the facility. (Note: more than two sprinkler heads may be required depending on the number of sprinkler heads used in the facility.) Also, there shall be a special sprinkler wrench for each type of sprinkler head in use;
- ✓ Sprinkler system shall be inspected and maintained in accordance with NFPA 25, 1998 Edition. (See Table 2-1 Summary of Sprinkler System Inspection, Testing, and Maintenance and Table 9-1 Summary of Valves, Valve Components, and Trim Inspection, Testing, and Maintenance of NFPA 25, 1998 Edition for component to be inspected and frequency);
- ✓ Records of inspections, tests, and maintenance of the system and its components shall be available for inspector to review upon request;
- ✓ Sprinkler valve rooms shall be heated with a permanently installed heat source; and
- ✓ Storage shall be kept at least 18 inches below and away from any sprinkler heads.

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5. **K18 – Corridor Doors – 2000 EXISTING:** Doors protecting corridor openings in other than required enclosures of vertical openings, exits, or hazardous areas shall be substantial doors, such as those constructed of 1-3/4 inch solid-bonded core wood or capable of resisting fire for at least 20 minutes. Doors in fully sprinklered smoke compartments are only required to resist the passage of smoke. There is no impediment to the closing of the doors. Doors shall be provided with a means suitable for keeping the door closed. Dutch doors meeting 19.3.6.3.6 are permitted. 19.3.6.3 Roller latches are prohibited by CMS regulations in all health care facilities. **2000 NEW:** Doors protecting corridor openings shall be constructed to resist the passage of smoke. Doors shall be provided with positive latching hardware. Dutch doors meeting 18.3.6.3.6 are permitted. Roller latches shall be prohibited. 18.3.6.3 (*Cite Frequency-41*)

- ✓ Corridor doors can be held open with a device that releases with a push or pull of the door, if the door is not required to be self-closing or automatically releases upon activation of the fire alarm system if required to be self-closing;
- ✓ Corridor doors shall be checked for obstructions that may prevent the door from closing. (Obstructions such as privacy curtains in resident rooms, furniture, vending machines, and **trash cans**);
- ✓ Automatic or self closing devices shall be properly installed and functioning;
- ✓ Corridor doors in sprinklered buildings shall be smoke resisting (gap between the face of door and the stop on the frame cannot exceed 1/2 inch). Corridor doors in nonsprinklered buildings shall be 20 minute fire resistance rated or be 1-3/4 inch solid-bonded wood core and shall be smoke resisting (gap between the face of the door and the stop on the frame cannot exceed 3/4 inch (See CMS Survey and Certification Letter 07-18 for clarification and guidance related to door gaps);
- ✓ Corridor doors shall have automatic positive latches with no impediments; and
- ✓ Doors with magnetic latches shall be checked after system problems or maintenance to assure system is working properly.

6. **K38 – Exits and Egress - Exit access is so arranged that exits are readily accessible at all times in accordance with 7.1. 18.2.1, 19.2.1** (*Cite Frequency-37*)

- ✓ The floor level on each side of the door must be level (In existing buildings there can be a grade change if the change is equal to that of one step);
- ✓ Delayed-egress devices can only be installed in a building that has either a complete sprinkler system or complete fire detection system. Also, there must be an instruction sign on the door with a delayed-egress device. Delayed-egress devices must release upon activation of the fire alarm or within 15 seconds of an acceptable amount of force being applied to the door for no more than three seconds. Also, there can only be one delayed-egress device in a means of egress;
- ✓ Doors shall be open with only one releasing operation;
- ✓ Means of egress must be clear and unobstructed at all times and useable in all weather conditions;

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- ✓ Exit discharges outside the building shall have a hard surface to the public way and the exit discharge is usable during inclement weather and is without impediments;
- ✓ Locked gates shall not block outside exit discharges;
- ✓ Exit discharges outside of the building shall be illuminated along the path to the public way (minimum of one foot candle of illumination at floor level); and
- ✓ Mini blinds and curtains shall not be on exit doors in accordance with NFPA 101 Life Safety Code, 2000 Edition, 7.5.2.2.

**7. K73 – Furnishings and Decorations - No furnishings or decorations of highly flammable character shall be used. 18.7.5.2, 18.7.5.3, 18.7.5.4, 19.7.5.2, 19.7.5.3, 19.7.5.4 (*Cite Frequency-30*)**

- ✓ The facility shall be monitored to ensure that it does not have combustible decorations unless they are flame-retardant. Exception: Combustible decorations, such as photographs and paintings, in such limited quantities that a hazard of fire development spread is not present; and
- ✓ The facility shall be monitored to ensure that furnishings or decorations of an explosive or highly flammable character are not used. Examples of explosive or highly flammable decorations include live or cut Christmas trees and pine branches/roping/garland; not effectively flame-retardant treated crepe paper decorations; finely divided tinsel-like material, garland; pyrozylin plastic decorations.

**8. K29 – Hazardous Areas - 2000 *EXISTING*: One hour fire rated construction (with 3/4 hour fire-rated doors) or an approved automatic fire extinguishing system in accordance with 8.4.1 and/or 19.3.5.4 protects hazardous areas. When the approved automatic fire extinguishing system option is used, the areas shall be separated from other spaces by smoke resisting partitions and doors. Doors shall be self-closing and non-rated or field-applied protective plates that do not exceed 48 inches from the bottom of the door are permitted. 19.3.2.1 2000 *NEW*: Hazardous areas are protected in accordance with 8.4 The areas shall be enclosed with a one hour fire-rated barrier, with a ¾ hour fire-rated door, without windows )in accordance with 8.4). Doors shall be self-closing or automatic closing in accordance with 7.2.1.8. 18.3.2.2 (*Cite Frequency-25*)**

- ✓ A hazardous area is defined as an area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure, such as areas used for the storage or use of combustibles or flammables; toxic, noxious or corrosive materials; or heat-producing appliance. (Change in use of a room can create a hazardous area.);
- ✓ Doors for nonsprinklered hazardous areas in existing healthcare facilities must have at least a 45 minute fire resistance rating;
- ✓ The door rating label shall not be painted over;
- ✓ Hazardous areas shall be separated by a one-hour fire construction or completely sprinklered. If area is sprinklered, maintain a solid wood core door with automatic self closing device equipped with positive latching hardware that resists the passage of smoke;

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- ✓ Doors for all hazardous areas shall fully self-close (All hazardous room doors will be tested on a survey);
- ✓ Soiled utility bins shall be stored in a hazardous room when unattended;
- ✓ Doors can only be held open by a device that releases upon activation of the fire alarm system, local smoke detectors, and/or the sprinkler system;
- ✓ Mechanical rooms shall be monitored to ensure that the rooms are clean and orderly; and
- ✓ A minimum of a 3 foot clearance shall be maintained around all electrical panels and heat producing equipment such as a gas furnace.

**9. K50 – Emergency Plan and Fire Drills - Fire drills are held at unexpected times under varying conditions, at least quarterly on each shift. The staff is familiar with procedures and is aware that drills are part of established routine. Responsibility for planning and conducting drills is assigned only to competent persons who are qualified to exercise leadership. Where drills are conducted between 9:00 PM and 6:00 AM a coded announcement may be used instead of audible alarms. 18.7.1.2, 19.7.1.2 (Cite Frequency-23)**

- ✓ Fire drills must be documented (time, date, transmission of alarm, etc.);
- ✓ Fire drills must be conducted at a frequency of one per shift per quarter;
- ✓ Fire drills must be conducted under varying conditions (time during shift, location, type of fire, etc.);
- ✓ Record of equipment functioning must be documented such as release of doors and alarm sounding; and
- ✓ A silent alarm may be used instead of the audible alarm between the hours of 9:00 PM to 6:00 AM.

**10. K56 – Automatic Sprinkler Systems - 2000 EXISTING: Where required by section 19.1.6, Health care facilities shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with section 9.7. Required sprinkler systems are equipped with water flow and tamper switches which are electrically interconnected to the building fire alarm. 19.3.5, NPFA 13 2000 NEW: There is an automatic sprinkler system installed in accordance with NFPA13, Standard for the Installation of Sprinkler Systems, with approved components, device and equipment, to provide complete coverage of all portions of the facility. Systems are equipped with water flow and tamper switches, which are connected to the fire alarm system. 18.3.5. (Cite Frequency-22)**

- ✓ Sprinklers shall not be obstructed by other objects (e.g., light fixtures, ducts, cubicle curtains, storage);
- ✓ Sprinklers must be properly spaced from other sprinklers (distance between two sprinklers should be between 6 feet and 15 feet);
- ✓ Unsupported sprinkler pipe arm-overs shall not exceed 24 inches for steel pipe (12 inches for copper pipe);
- ✓ Sprinkler pipes must be properly supported off the building structure (hangers must be properly spaced for size and type of pipe and all installed hangers must be maintained in their installed locations);

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- ✓ Activation of the sprinkler system shall be verified to cause the fire alarm to sound.
- ✓ Sprinklers shall be verified that they are installed under exterior roofs or canopies exceeding 4 feet. 1.2m in width. Exception: Sprinklers are permitted to be omitted where the canopy or roof is of noncombustible or limited combustible construction; and
- ✓ All areas of a building must be sprinkler protected for a building to be considered fully sprinklered (Combustible overhangs greater than 4 feet, elevator machine rooms, electrical rooms, walk-in coolers/freezers, and closets are the most commonly omitted areas).

**11. K76 – Medical Gases and Anesthetizing Areas - Medical gas storage and administration areas shall be protected in accordance with NFPA 99, Standard for Health Care Facilities. (a) Oxygen storage locations of greater than 3,000 cu. ft. are enclosed by a one-hour separation. (b) Locations for supply systems of greater than 3,000 cu. ft. are vented to the outside. NFPA 99, 4.3.1.1.2, 18.3.2.4, 19.3.2.4 (*Cite Frequency-19*)**

- ✓ The facility shall be monitored to ensure appropriate storage of oxygen including:
  - Doors are secured against unauthorized entry.
  - Interior doors of storage locations are equipped with self-closing devices and positive latching hardware to establish the required separation.
  - Door must have at least a 3/4 hour fire rating when transferring of liquid oxygen occurs within the storage location.
  - Oxygen cylinders are separated from combustible materials by a minimum distance of 5 feet if the entire storage location is protected by an automatic sprinkler system.
  - Liquefied gas container storage is mechanically ventilated or has natural ventilation to the outside.
  - Cylinder and container storage locations meet temperature limitations.
  - Where enclosures (interior or exterior) for supply systems are located near sources of heat, such as furnaces, incinerators, or boiler rooms, they shall be of construction that protects cylinders from reaching temperatures exceeding 130°F (54°C).
  - Ordinary electrical wall fixtures in oxygen supply rooms are installed in fixed locations not less than 5 feet (1.5m) above the floor to avoid physical damage.
- ✓ The facility shall be monitored to ensure that oxygen cylinders are protected to avoid damage to the cylinder, valve, or safety device. Such cylinders shall not be stored near elevators, gangways, or in locations where heavy moving objects will strike them or fall on them;
- ✓ The facility shall be monitored to ensure that freestanding cylinders are properly chained or supported in a proper cylinder stand or cart;

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- ✓ Oxygen storage areas shall be monitored to ensure the separation of full and empty oxygen cylinders;
- ✓ The facility shall be monitored to ensure that smoking, open flames, electric heating elements, and other sources of ignition do not occur within storage locations or within 20 feet of outside storage locations;
- ✓ Non-smoking and no smoking signs shall be maintained in areas where oxygen is used or stored;
- ✓ A precautionary sign shall be maintained, which is readable from a distance of 5 feet that is conspicuously displayed on each door or gate of the storage room or enclosure;

The sign shall include the following wording as a minimum:

**CAUTION  
OXIDIZING GAS (ES) STORED WITHIN  
NO SMOKING**

- ✓ Liquid oxygen is transferred in an area in a separate portion of the facility away from where residents reside and separated by 1-hour fire resistive construction;
- ✓ A transfer area shall be maintained that is mechanically ventilated, sprinklered and has a ceramic or concrete floor; and
- ✓ The facility shall be monitored to ensure that the area is posted with signs indicating transferring is occurring and that smoking in the immediate area is prohibited.

**12. K52 – Fire Alarm Systems - A fire alarm system required for life safety shall be installed, tested, and maintained in accordance with NFPA 70 National Electrical Code and NFPA 72. The system shall have an approved maintenance and testing program complying with applicable requirement of NFPA 70 and 72. 9.6.1.4 (*Cite Frequency-16*)**

- ✓ A fire alarm panel must be installed in a supervised location that is staffed around the clock;
- ✓ Annual fire alarm system test documentation must be complete, accurate, and show test results for all initiating and supervisory devices;
- ✓ Facilities are still required to maintain and provide all required documentation of maintenance and testing for self monitoring fire alarm systems;
- ✓ The fire alarm system shall be installed and maintained in accordance with NFPA 72, National Fire Alarm Code, 1999 Edition;
- ✓ Verify that the fire alarm system transmits to the local fire department or supervised alarm receiving station;
- ✓ The fire alarm system shall be provided with an alternative power supply in accordance with NFPA 72, 1999 Edition; and



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- ✓ The fire alarm system shall be inspected to determine if the sprinkler system is connected to alarm system water flow devices. Verify that activation of the sprinkler system causes the fire alarm to sound.

**13. K27 – Smoke Compartmentation and Control - 2000 EXISTING:** Door openings in smoke barriers have at least a 20 minute fire protection rating or are at least 1-3/4 inch thick solid bonded core wood. Non-rated protective plates that do not exceed 48 inches from the bottom of the door are permitted. Horizontal sliding doors comply with 7.2.1.14. Doors shall be self-closing or automatic-closing in accordance with 19.2.2.2.6. Swinging doors are not required to swing with egress and positive latching is not required. 19.3.7.5, 19.3.7.6, 19.3.7.7 **2000 NEW:** Door openings in smoke barriers have at least a 20 minute fire protection rating or are at least 1-3/4 inch thick solid bonded core wood. Non-rated protective plates that do not exceed 48 inches from the bottom of the door are permitted. Horizontal sliding doors comply with 7.2.1.14. Swinging doors shall be arranged so that each door swings in an opposite direction. Doors shall be self-closing and rabbets, bevels or astragals are required at the meeting edges. Positive latching is not required. 18.3.7.5, 18.3.7.6, 18.3.7.8 (*Cite Frequency-13*)

- ✓ Smoke doors and doors opening into the corridor close properly and resist the passage of smoke;
- ✓ Large door gaps (See CMS Survey and Certification letter 07-18 for clarification and guidance related to door gaps.);
- ✓ Door openings in smoke barriers (Including attics) must have at least a 20 minute fire protection rating or are at least 1-3/4 inch thick solid bonded core wood;
- ✓ Automatic or self closing devices are properly installed and functioning;
- ✓ Doors are unobstructed and not blocked in any manner;
- ✓ There shall not be missing through-bolts that leave penetrations through the door;
- ✓ Smoke barrier doors that swing in the same direction shall be required to have a coordinator to ensure doors close properly which allows one door to close first preventing the doors from hitting; and
- ✓ Doors with magnetic locking devices shall unlock upon activation of the complete fire alarm system and during loss of power. (Doors may not reactivate if the fire alarm system is placed in silent mode and the doors should not relock without the system being reset.).



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## 14. **K144 – Electrical - Generators inspected weekly and exercised under load for 30 minutes per month and shall be in accordance with NFPA 99, 3.4.4.1, NFPA 110, 8.4.2 (Cite Frequency-12)**

- ✓ The room where the emergency generator transfer switch is located must have battery-powered emergency lighting;
- ✓ Weekly visual inspections must be conducted and documented (Manufacturer's recommendation list or list of applicable items from NFPA 110 Standard for Emergency and Standby Power Systems, 1999 Edition, Appendix-A);
- ✓ Electrical power shall be transferred within 10 seconds of interruption;
- ✓ Monthly load test shall be performed for a minimum of 30 minutes under load (cool down without load must not be included in the 30 minute test);
- ✓ Monthly load test for all generators must meet one of the requirements of NFPA 110 Standard for Emergency and Standby Power Systems, 1999 Edition, Section 6-4.2 (There must be sufficient documentation to show how the load test meets the requirement);
- ✓ A remote annunciator panel must be installed where it can be monitored by staff around the clock. (Remote panel trouble indicators should at a minimum mirror the trouble indicators on the generator. If there are no trouble indicators on the generator the remote panel should consist of a general audible and visual trouble alarm); and
- ✓ If generator is located indoors there must be at a battery-powered emergency light in the generator room. (A flashlight at the generator location does not meet this requirement).

## 15. **K70 – Building Service Equipment - Portable space heating devices shall be prohibited in all health care occupancies. Except it shall be permitted to be used in non-sleeping staff and employee areas where the heating elements of such devices do not exceed 212oF (100oC). 18.7.8, 19.7.8 (Cite Frequency-12)**

- ✓ Portable space heating devices are prohibited in health care occupancies. (Exception: portable space heating devices shall be permitted to be used in non-sleeping staff and employee areas where the heating elements of such devices do not exceed 212 Degrees.); and
- ✓ If a facility is utilizing space heaters, then the facility must maintain documentation/policies consistent with the Life Safety Code.

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**16. K130 – Miscellaneous - Miscellaneous List in the REMARKS sections, any items that are not listed previously, but are deficient. This information, along with the applicable Life Safety Code or NFPA standard citation, should be included on Form CMS-2567.**

- ✓ Doors within a required means of egress shall not be equipped with a latch or lock that requires the use of a tool or key from the egress side (e.g., slide bolts/deadbolts , hook and eye latches, hasp with lock, key locks);
- ✓ Health care emergency preparedness drills and plans if applicable to facility (NFPA 99, Health Care Facilities, 1990 Edition, Chapter 11 Health Care Emergency Preparedness);
- ✓ Chute discharge doors (Gravity chutes) have approved automatic closing or self closing 1-hour fire rated door;
- ✓ Unsupervised use of candles;
- ✓ Dryers maintained according to manufacturers recommendations;
- ✓ Single station smoke detectors (Batter operated) shall be maintained and have documentation of testing and maintenance;
- ✓ Properly label delayed egress doors according to NFPA 101, 2000 Edition, 7.2.1.6.1., Delayed-Egress Locks. (PUSH UNTIL ALARM SOUNDS DOOR CAN BE OPENED IN 15 SECONDS); and
- ✓ During construction, repair and improvement operations maintain protection systems (Fire alarm, sprinkler system) and keep egress areas clear of obstructions.