

Life Safety Code Training and Reference Guide

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Section for Long Term Care Regulation

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LSC INSPECTION PROCEDURES

PREINSPECTION PROCEDURES

Review the file for previous fire safety reports, building floor plans, plans of correction, correspondence and other information, which may provide an orientation of the facility. QI reports should show the history of compliance related to the life safety code and which edition of the life safety code was used in the past.

Assemble the necessary equipment and forms. A flashlight, tape measure, the LSC NFPA 101 manual, the "FIRE SAFETY REPORT 2000 CODE – HEALTH CARE" booklet HCFA-2768R (version 11/05) other standards and state regulations and note taking materials should be taken. You may want to consider coveralls for crawling into attics and concealed spaces

FACILITY INSPECTION

Introduce yourself to the administrator and provide him/her with a copy of the "Facility Life Safety Code Check-off Sheet" and explain what information will be needed as part of your LSC review. At this time, you should request to meet the maintenance or staff person who is usually responsible for the upkeep of the building and fire protection equipment. Asking this person to tour with you will assure that he/she will also be aware of any problems you encounter. The precise location of some problem in a remote area, such as an attic, may be difficult to describe in a statement of deficiencies. The responsible person should be shown the problem.

Survey the premises to determine the general shape and arrangement of the facility and develop a general ideal as to the construction type or types. If you researched the construction types and plan approval dates during your pre-inspection procedures, you will know some of the structural elements, which cannot easily be seen. A general survey of the facility will also give you a good idea of the status of maintenance.

The inspector should always consider personal safety when making an inspection. Certain areas may present special hazards, such as low hanging beams, etc.

Be systematic and complete each floor/wing before going on to the next. Document any areas that are locked or you cannot inspect at the time, and gain access later. All unassociated areas, which are not separated by a two-hour rated construction from the facility, must also be inspected. The "General Inspection Checklist" will remind you of the various areas of concern you should review as you continue through the LSC inspection. Refer to the "LSC Reference Guide for Surveyors" for insight into how you should evaluate different LSC issues. This guide is concordant with the CMS 2768R booklet.

Take adequate time to make thorough notes. Note the location of detection and suppression equipment, separation walls, special locking devices, dampers, hazardous areas, etc., for each floor/unit. Develop a technique or a written checklist, which will ensure that you have enough information to complete the Fire Safety Survey Report. Marking the location of and writing the type of problem on the floor plan, provided by the facility, will assist you when writing a statement of deficiencies later on. Also, be sure to include the dates and times of your observations and interviews and recorded dates of any documentation reviewed.

Review the Fire Safety Survey Report HCFA-2786 to ensure you have not forgotten something.

Conduct an exit interview. Since some problems noted may be technical in nature, please take the time and provide the technical assistance necessary to ensure the facility understands the deficient practice or problem. Express thanks for any courtesies extended.

Prepare your report. Review all the data from notes, floor plans, drawings, etc. Write a clear and concise report, making notation on the Fire Safety Survey Report. Refer to sections of NFPA 101 and other NFPA manuals and references to ensure you have a complete understanding of the nature of a deficient practice. Write the statement of deficiencies using the *Principles of Documentation*.

Life Safety Code Guide for Surveyors

Abbreviations used:

- AHJ – Authority Having Jurisdiction
- AASS – approved automatic sprinkler system
- FRR – fire resistance rating
- FRRA – fire resistance rated assembly
- FRRS – fire resistance rated separation
- FSR -- flame spread rating
- > - greater than
- ≥ - greater than or equal to
- < - less than
- ≤ - less than or equal to

Definitions used:

- ❑ Class A = flame spread 0 – 25
- ❑ Class B = flame spread 26 – 75
- ❑ Class C = flame spread 76 – 200
- ❑ Class D = flame spread > 200

◆◆ *Regarding CMS frequent citations or interpretations.*

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BUILDING CONSTRUCTION

K11

If the building has a common wall with a nonconforming building, the common wall is a fire barrier having at least a two-hour fire resistance rating constructed of materials as required for the addition. Communicating openings occur only in corridors and shall be protected by approved self-closing fire doors. 18.1.1.4.1, 18.1.1.4.2, 19.1.1.4.1, 19.1.1.4.2

K12

2000 EXISTING

Building construction type and height meets one of the following:
19.1.6.2, 19.1.6.3, 19.1.6.4, 19.3.5.1

2000 NEW

Building construction type and height meets one of the following:
18.1.1.6.2, 18, 18.1.6.3, 18.2.5.1

Building contains fire treated wood.

Give a brief description, in REMARKS, of the construction, the number of stories, including basements, floors on which patients are located, location of smoke or fire barriers and dates of approval. Complete sketch or attach small floor plan of the building as appropriate.

See table 3A on next page. *It will help you define the construction type.*

K11

If the building does not have a common wall with a non-conforming building, mark: **N/A**
Where 2-hr. FRRS are required at a common wall:

1. Do the separations extend from the floor slab below to the floor or roof slab above?
2. Does each section extend from exterior wall to exterior wall?
3. Are openings therein protected by a $\geq 1 \frac{1}{2}$ hr. FRRA? Approved damper?
4. Are doors in 2-hr. common wall FRRS:
 - a. $\geq 1 \frac{1}{2}$ -hr. FRRA, AND
 - b. provided with positive latching, AND
 - c. self-closing or automatic closing, AND
 - d. provided with $\leq 1/8$ in. gaps between meeting edges of door pairs, AND
 - e. provided with $\leq 3/4$ in. undercuts?

Problems: *New construction or remodeling problems:* **19 CSR 30-85.012 (1), (2) & (3)**

K12

For each building type you list (we have several facilities with more than one type of construction)

1. Is the building an allowable type of construction? Is the type of construction permitted based upon number of Stories?
2. Is an AASS provided throughout the building, where required?
3. Are the following assemblies constructed of materials with the minimum FRR based upon the type of construction?
 - Exterior bearing wall
 - Structural frame
 - Floor construction
 - Roof construction
 - Ceiling assemblies - check FRRA (hour rating) and flame spread rating

Reference NFPA 220 ◆◆

Problems:

**Non-conforming structural remodeling. Non-conforming canopy ceilings composed of lay-in tile not maintained to a UL design number.*

19 CSR 30-85.012 (79) & (80)

State Only - Non-conforming structure built too close to the facility. < 30 ft

19 CSR 30-85.032 (1)

FSES example:

- The facility failed to provide a permitted building type for a building without full AASS coverage.*

TABLE 3A-1: Construction Types and Requirements							TABLE 3A-2: Assessment of Construction Type				
(A) Types	Exterior Bearing Walls	Structural Frame	Floor Construction	Roof Construction	Max. Floors	Sprinklers		(B) Building Name	(C) Construction Type	(D) Stories above grade	(E) AASS
							1.				Y/N
I (443)	4	4	3	2	N.R.	--	3.				Y/N
I (332)	3	3	2	1 ½	N.R.	--	4.				Y/N
II (222)	2	2	2	1	N.R.	--	5.				Y/N
II (111)	1	1	1	1	3	>1*	6.				Y/N
II (000)	0	0	0	0	2	*	7.				Y/N
III (211)	2	1	1	1	2	*	8.				Y/N
III (200)	2	0	0	0	1	*	9.				Y/N
IV (2HH)	2	H	H	H	2	*	10.				Y/N
V (111)	1	1	1	1	2	*	11.				Y/N
V (000)	0	0	0	0	1	*	12.				Y/N
Key: > - indicates greater than * - requires automatic sprinkler protection throughout H - indicates heavy timber N.R. - not restricted							13.				Y/N
							14.				Y/N
							15.				Y/N
Column Notes A. Typesselect the type of construction that corresponds to each building listed in Table 3A-2, column (B) and enter in column (C). B. Building Name.....enter building names from each Part 2 - Basic Building Information, question 2. List only those buildings classified as Existing Health Care Occupancies. C. Construction Type.....enter the type of construction. Select from Table 3A-1, column (A) in accordance with note A above. D. Number of Stories.....enter the number of stories above and including the level of exit discharge from each Part 2 - Basic Building Information, question 8. E. AASS.....circle Y for yes or N for no to indicate if the building is protected throughout by an approved automatic sprinkler system.											

BUILDING CONSTRUCTION

K103

Interior walls and partitions in buildings of Type I or Type II construction shall be noncombustible or limited-combustible materials. 18.1.6.3, 19.1.6.3

(Indicate N/A for existing buildings using listed fire retardant treated wood studs within non-load bearing one-hour rated partitions.)

Note:

The construction of corridor walls is best covered at K17. The construction of smoke partition walls is best covered at K25.

INTERIOR FINISH

K14

2000 EXISTING

Interior finish for corridors and exit ways, including exposed interior surfaces of buildings such as fixed or movable walls, partitions, columns, and ceilings has a flame spread rating of Class A or Class B. 19.3.3.1, 19.3.3.2

Indicate flame spread rating/s _____

2000 NEW

Interior finish for corridors and exit ways, including exposed interior surfaces of buildings such as fixed or movable walls, partitions, columns, and ceilings has a flame spread rating of Class A or Class B. Lower portion of corridor walls can be Class C. 18.3.3.1, 18.3.3.2

Indicate flame spread rating/s _____

K103

Most of the buildings we inspect are Type V (111) with a complete AASS. If this is the case, K103 would be marked: N/A

In Type I and Type II buildings, are interior walls and partitions (such as the walls between residents' rooms and other occupancy separation walls) fire resistant rated assemblies (FRRA)?

Are there penetrations or openings in the walls or partitions, which corrupt the FRRA?

Problems might be with non-conforming structural remodeling or holes in the walls or partitions.

- 19 CSR 30-85.012 (79) & (80)
- 19 CSR 30-85.032 (1)

K14

Is the interior finish of corridors and exit ways (walls and ceilings) Class A or Class B?

Problems:

- *Use and documentation of flame retardant liquids. Specifications & application methods*
- *Application of wood paneling or other non-rated material to a corridor wall or ceiling*
- *Replacement of rated ceiling tile, in the corridor, with non-rated ceiling tile. ◆◆*
- *Water damaged ceiling tile, (assembly) which has lost its FSR due to water damage.*

19 CSR 30-85.022 (48)

19 CSR 30-85.032 (1)

Reference NFPA 255, 265 & 286 regarding methods of determining flame spread rating class.

Note: 5/8-inch FR gypsum wallboard has a FSR of Class A (< 25) and a FRR of ½ hour

Kemlite, the rough textured material that looks like hard plastic used in kitchens, especially dish washing areas, has a FSR of < 25.

Cleaning or maintenance issues that really do not affect the flame spread rating (FSR), should be cited at 19 CSR 30-87.020 (15) or (16) and F465 or F252. A K tag citation would not be appropriate.

INTERIOR FINISH

K15

2000 EXISTING

Interior finish for rooms and spaces not used for corridors or exit ways, including exposed interior surfaces of buildings such as fixed or movable walls, partitions, columns, and ceilings has a flame spread rating of Class A or Class B. (In fully-sprinklered buildings, flame spread rating of Class A, Class B, or Class C may be continued in use within rooms separated in accordance with 19.3.6 from the access corridors.) 19.3.3.1, 19.3.3.2
Indicate flame spread rating/s_____

2000 NEW

Interior finish for rooms and spaces not used for corridors or exit ways, including exposed interior surfaces of buildings such as fixed or movable walls, partitions, columns, and ceilings has a flame spread rating of Class A or Class B. (Rooms not over 4 persons in capacity may have a flame spread rating of Class A, Class B, or Class C). 18.3.3.1, 18.3.3.2
Indicate flame spread rating/s_____

K16

Newly installed interior floor finish complying with 10.2.7 shall be permitted in corridors and exits if Class I. 18.3.3.3, 19.3.3.3
(Indicate N/A for existing interior floor finish.)

In smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.2, no interior floor finish requirements shall apply.

Definitions used:

- **Class I interior floor finish** = critical radiant flux, minimum of 0.45 watts per square centimeter.

K15

Is the interior finish of rooms and spaces not used for corridors or exit ways (resident rooms and other auxiliary area walls and ceilings) Class A, B or C?

Problems:

- *Use and documentation of flame retardant liquids. Specifications & application methods*
- *Application of wood paneling or other non-rated material to a wall or ceiling*
- *Replacement of rated ceiling tiles, with non-rated ceiling tiles.*
- *Water damaged ceiling tile, (assembly) which has lost its FSR due to water damage.*

19 CSR 30-85.022 (48)

19 CSR 30-85.032 (1)

Reference NFPA 101(2000) sections 10.2.4 regarding specific wall and ceiling coverings and section 10.2.6 regarding fire-retardant coatings or treatments (NFPA 703).

Note: *Cleaning or maintenance issues that really don't affect the flame spread rating (FSR), should be cited at 19 CSR 30-87.020 (15) or (16) and F465 or F252. A K tag citation would not be appropriate.*

K16

Are newly installed (since adoption of 2000 LSC) floor coverings in corridors and exit ways, Class I, if the building does not have an AASS? *(State requires at least a Class II rating for facilities with an AASS)*
Most facilities we inspect, will not have installed new floor coverings since adoption of the 2000 LSC. In this case mark K16: N/A In facilities with an AASS mark K16: N/A

In facilities with newly installed floor covering and in facilities, which do not have an AASS, K16 will have to be marked: **Met or Not Met** as appropriate

Problem: ** Installation of a floor covering, which is not Class I*

19 CSR 30-85.022 (50) *May have to cite state regulation only, regarding floor covering!*

Note:

Cleaning or maintenance issues related to floor coverings, should be cited at 19 CSR 30-87.020 (16) and F465 or F252

Reference NFPA 101(2000) section 10.2.7 and NFPA 253 (1995)

Page revised 1/11/2007

CORRIDOR WALLS AND DOORS

K17

2000 EXISTING

Corridors are separated from use areas by walls constructed with at least 1/2 hour fire resistance rating. In sprinklered buildings, partitions are only required to resist the passage of smoke. In non-sprinklered buildings, walls properly extend above the ceiling. (Corridor walls may terminate at the underside of ceilings where specifically permitted by Code. Charting and clerical stations, waiting areas, dining rooms, and activity spaces may be open to corridor under certain conditions specified in the Code. Gift shops may be separated from corridors by non-fire rated walls if the gift shop is fully sprinklered.) 19.3.6.1, 19.3.6.2.1

If the walls have a fire resistance rating, give rating_____ if the walls terminate at the underside of a ceiling, give a brief description in REMARKS, of the ceiling, describing the ceiling throughout the floor area.

2000 NEW

Corridor walls shall form a barrier to limit the transfer of smoke. Such walls shall be permitted to terminate at the ceiling where the ceiling is constructed to limit the transfer of smoke. No fire resistance rating is required for the corridor walls.
18.3.6.1, 18.3.6.2

K17

Are corridors separated from use areas by partitions that are:

1. 1/2-hr FRR (non-rated if sprinklered throughout)?
2. continuous from floor slab to the underside of the floor or roof slab above, through concealed spaces, such as those above suspended ceiling and including interstitial spaces?
3. constructed to limit the transfer of smoke with all penetrations properly sealed?

Are areas open to the corridor: (waiting rooms, small dining rooms, etc.)

1. equipped with an automatic smoke detection system?
2. arranged to not obstruct access to required exits?

Problems:

- *Tiles that are not clipped down may corrupt the FRR of the ceiling assembly and non-FRR ceiling tiles may have been used to replace FRR tiles, in buildings without a complete AASS.*
- *Holes, penetrations or non-approved openings in corridor walls and ceilings.*
- *Walls with < the equivalent of one layer of 5/8 inch gypsum wall board on each side of the wall stud if the building does not have a complete AASS.*

19 CSR 30-85.012 (79) & (80)

19 CSR 30-85.032 (1)

FSES example:

- *The corridor wall(s) over the (location or throughout the facility) was/were observed unsealed between the top of the wall and the roof deck assembly above in this building which is a non-approved building type without an or complete AASS. The required 1/2-hr FRR was not provided.*

Note:

Cleaning and maintenance issues: i.e. scrapes, mars, gouges, etc. related to corridor walls and ceilings should be cited at 19 CSR 30-87.020 (15) or (16) and F465. A K tag would not be cited unless the damage is severe enough to change the fire rating (e.g. penetrations through a ceiling tile).

Spaces or penetrations of the FRR wall assemblies should be filled with an appropriate FRR material. Penetrations may include; pipes, conduits, bus ducts, cables/wires, air ducts or pneumatic tubes. Unsealed spaces ≤ 1/8 inch in width around pipes, conduits, ducts and wires above the ceiling are permitted.

CORRIDOR WALLS AND DOORS

K18

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 ¼ inch solid-bonded core wood, or capable of resisting fire for at least 20 minutes. Doors in sprinklered buildings 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 19.3.6.3.3 are permitted. 19.3.6.3 Roller latches are prohibited by CMS regulations in all health care facilities.

Show **in REMARKS**, details of doors, such as fire protection ratings, automatic closing devices, etc.

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

Show **in REMARKS**, details of doors, such as fire protection ratings, automatic closing devices, etc.

K18

Are corridor doors:

1. of a swinging type with no impediments to the closing of the door?
2. $\geq 1 \frac{3}{4}$ inch solid bonded wood core or equivalent (nonrated if sprinklered)?
3. fitted with positive latching hardware?
4. arranged to restrict the movement of smoke?
5. free of louvers or transoms (except doors for bathrooms, toilets, and sink closets not containing flammable or combustible materials)? (Exception No. 1)
6. free of nonrated protective plates > 48 inches above the bottom of the door?

Reference NFPA 80 regarding standards for doors

Problems:

**Roller latches*

**Doors do not close freely. Wedged open or obstructions to closing.*

**Warped, out of alignment and not closing properly to latch in frames.*

**There is a large gap between the door and doorframe.*

**Doors and/or frames not of proper FRR.*

**Non-compliant Dutch doors. No astragal between upper and lower sections. Do both upper and lower halves latch?*

19 CSR 30-85.032 (1)

Note:

Certified facilities must replace all existing roller latches on corridor doors with positive latching devices by March 11, 2006.

To resist the passage of smoke, doors should have ≤ 1 -inch undercuts and $\leq 1/4$ -inch gaps between meeting edges of door pairs.

*Give a brief description **in REMARKS** about special closing devices on corridor doors.*

Example: The resident room doors in the special care unit have automatic closing devices that close the doors when the fire alarm system is activated.

CORRIDOR WALLS AND DOORS

K19

Vision panels in corridor walls or doors shall be fixed window assemblies in approved frames. (In fully sprinklered buildings, there are no restrictions in the area and fire resistance of glass and frames.) 18.3.6.5 18.3.6.3.1, 19.3.6.2.3, 19.3.6.3.8

K22

Access to exits shall be marked by approved, readily visible signs in all cases where the exit or way to reach exit is not readily apparent to the occupants. 7.10.1.4



K19

Are fixed fire window assemblies in corridor walls and doors in facilities without an AASS:

1. ≥ 20 minute FRRA?
2. < 25 % of the size of the fire barrier in which they are used?

Reference NFPA 101 (2000) section 8.2.3.2.2 and NFPA 80

Problems:

**Vision panels of a non-approved type used in a non-sprinklered building or to replace approved panels.*

19 CSR 30-85.032 (1)

Note:

If the facility does not have any of these type assemblies, mark the LSC booklet; N/A

K22

Are all areas that provide access to exits marked by approved, readily visible signs in all cases where the exit or way to reach the exit is not readily apparent to the residents?

Problem: ** No exit sign where needed or directional arrows if needed to show the route of exit access.
Exit or directional signs have been removed.

19 CSR 30-85.022 (35)

Note:

K22 in the 2000 LSC booklet does not reference the same information as K22 in the 1985 LSC booklet. Be sure you understand the difference. The 1985 LSC booklet, K22 referenced enclosure doors without self-closing devices, which should be kept closed at all times and have proper signage.

*K47 in the 2000LSC booklet now references the whole of **Section 7.10 MARKING OF MEANS OF EGRESS** is the best place to cite issues related to exit signs, their illumination and other special signs.*

VERTICAL OPENINGS

K20

2000 EXISTING

Stairways, elevator shafts, light and ventilation shafts, chutes, and other vertical openings between floors are enclosed with construction having a fire resistance rating of at least one hour. An atrium may be used in accordance with 8.2.5.6, 19.3.1.1.

If all vertical openings are properly enclosed with construction providing at least a two-hour fire resistance rating, also check this box. ■

*If enclosures are less than required, give a brief description and specific location in **REMARKS**.*

2000 NEW

Stairways, elevator shafts, light and ventilation shafts, chutes, and other vertical openings between floors are enclosed with construction having a fire resistance rating of at least two hours connecting four stories or more. (One hour for single story building and sprinklered buildings up to three stories in height.) 18.3.1.1. An atrium may be used in accordance with 8.2.2.3.5.

*If enclosures are less than required, give a brief description and specific location in **REMARKS**.*

K20

Vertical openings are openings between resident floors or between a resident floor and an attic area. Some of the types of vertical openings we encounter are; stairways, elevator shafts, laundry chutes, trash chutes, light and utility shafts, such as ventilation ductwork or shafts for pipes or conduit. The barriers between floors, and floor and attic are considered to be fire barriers rather than smoke barriers and should be one or two hour rated depending on the construction type of the facility, number of floors and whether or not the facility is sprinklered. Vertical openings must be enclosed by a two-hour fire-resistance rating, unless they are one story only or are up to three stories and sprinklered, in which case they can have only a one-hour rating.

Problems:

**Holes in the walls of vertical opening enclosures*

**Vertical ductwork going through the ceiling from a furnace to attic and ventilation ductwork does not have a fire damper.*

**Doors to laundry or trash chutes are not of the proper type or do not have a self-closing device attached. Doors blocked open.*

**Holes in ceilings or through floors. (Normally you would cite this at K15 or K17)*

**Fire dampers not functional or maintained.*

**Areas where pipes or conduits extend through ceilings or floors are not properly sealed with a rated material.*

19 CSR 30-85.022 (1), (37), (38), and (39)

19CSR 30-85.032 (1)

Note:

Problems related to the enclosure of the vertical stairwell openings should be cited at K – 33.

VERTICAL OPENINGS

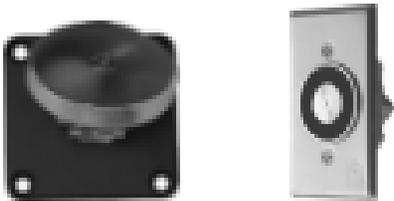
K 21

Any door in an exit passageway, stairway enclosure, horizontal exit, smoke barrier or hazardous area enclosure shall be permitted to be held open only by devices arranged to automatically close all such doors by zone or throughout the facility upon activation of:

- ❑ (a) The required manual fire alarm system and
- ❑ (b) Local smoke detectors designed to detect smoke passing through the opening or a required smoke
- ❑ (c) The automatic sprinkler system, if installed

18.2.2.2.6, 19.2.2.2.6, 7.2.1.8.2

Describe methods used **in REMARKS**.



K 21

Are all doors “held open” in exit passageways, stairway enclosures, horizontal exits, smoke barriers and hazardous area enclosures, held open only by approved devices which release when activated?

Problems:

**Doors in these areas, which are held open by wedges or other devices, which prevent the door from self-closing.*

**Electromagnetic hold-open devices, which do not function (release) when the fire alarm system or smoke detector is activated.*

19 CSR 30-85.022 (32)

Reference NFPA 72 Section 2-10.6, 3-9.6 regarding local smoke detector use.

VERTICAL OPENINGS

K33

2000 EXISTING

Exit components (such as stairways) are enclosed with construction having a fire resistance rating of at least one hour, are arranged to provide a continuous path of escape, and provide protection against fire or smoke from other parts of the building.

8.2.5.2, 19.3.11

If all vertical openings are properly enclosed with construction providing at least a two-hour fire resistance rating, also check this box.

*If enclosures are less than required, give a brief description and specific location in **REMARKS**.*

2000 NEW

Exit components (such as stairways) in buildings four stories or more are enclosed with construction having a fire resistance rating of at least two hours, are arranged to provide a continuous path of escape, and provide a protection against fire and smoke from other parts of the building. In all buildings less than four stories, the enclosure is at least one hour. 8.2.5.4, 18.3.1.1

*If enclosures are less than required, give a brief description and specific location in **REMARKS**.*

K33

Do the walls, separating the exit stairway from the interior of the building, meet the FRR required?

1. \geq 1-hr for existing buildings (2-hr if 4 or more stories)
2. \geq 2-hr for new buildings

Are penetrations into and openings through the stairway enclosures, such as conduits, ductwork piping, etc. properly sealed with a rated material? (a FRR caulking material)

Note:

See K34 regarding problems with doors in stairways and smoke proof towers.

Problems:

**Holes in the walls or ceilings of the stairway enclosure.*

**Penetrations of the enclosure walls and ceilings by pipes, conduit, etc. are not properly sealed.*

19 CSR 30-85.022 (1), (25), (37), (38) and (39)

19 CSR 30-85.032 (1)



SMOKE COMPARTMENT & CONTROL

K23

2000 EXISTING

Smoke barriers shall be provided to form at least two smoke compartments on every sleeping room floor for more than 30 patients. 19.3.7.1, 19.3.7.2

2000 NEW

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. 18.3.7.1, 18.3.7.2

K24

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. 18.3.7.1, 19.3.7.1

Detail **in REMARKS** zone dimensions including length of zones and dead end corridors.

K23

Do smoke barriers divide any story used for sleeping rooms accommodating > 30 residents into ≥ 2 smoke compartments?

Problems:

**A smoke barrier is not constructed were needed when the facility has done some remodeling. The capacity of a floor goes over 30.*

19 CSR 30-85.012 (79) and (80)

19 CSR 30-85.032 (1)

Note:

Normally a problem addressed during the design and construction phases of new facility construction. You would not normally encounter this problem on a survey.

K24

Do smoke barriers limit the:

1. maximum area of each smoke compartment to $\leq 22,500$ sq. ft. and
2. travel distance from any point to a smoke barrier or an exit door to ≤ 200 ft.

Problems:

**A smoke barrier is not constructed were needed when the facility has done some remodeling.*

**The facility did not provide an exit door, where required, when remodeling extended the distance required to reach and exit in excess of 200 ft*

19 CSR 30-85.012 (79) and (80)

19 CSR 30-85.032 (1)

Note:

Normally a problem addressed during the design and construction phases of new facility construction. You would not normally encounter this problem on a survey.

SMOKE COMPARTMENT & CONTROL

K25

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

K26

Space shall be provided on each side of smoke barriers to adequately accommodate those occupants served. 18.3.7.4, 19.3.7.4

K25

Are smoke barriers:

1. continuous from outside wall to outside wall with all penetrations properly sealed; AND
2. continuous from floor slab to the floor or roof slab above, through any concealed spaces, such as those above suspended ceilings and including interstitial spaces; AND
3. existing facilities constructed of materials that have $\geq \frac{1}{2}$ -hr FRR?
4. new facilities constructed of materials that have ≥ 1 - hr FRR?

Problems:

**A smoke barrier wall is not maintained. A vendor or facility staff have punched or cut holes in the wall corrupting the FRR. Usually a problem in attics but can occur on occupied floors. Also, check concealed spaces above a lay-in ceiling.*

**Openings for the passage of pipes, wires or conduits are not sealed or properly protected. Foam type spray insulation is not a proper material. The fill material should be a fire rated caulking or dry wall compound.*

19 CSR 30-85.032 (1)



K26

Normally a problem addressed during the design and construction phases of new facility construction. You would not normally encounter this problem on a survey.

SMOKE COMPARTMENT & CONTROL

K27

2000 EXISTING

Door openings in smoke barriers have at least a 20-minute fire protection rating or are at least 13/4-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 13/4-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

K27

Are doors in smoke barriers:

1. fitted to limit the spread of smoke; AND
2. \geq a 20-minute FRR or are 1 3/4 inch thick, solid core doors
3. self-closing or automatic closing; AND
4. free of nonrated protective plates $>$ 48 in. above the bottom of the door; AND
5. (new only) have rabbets, bevels, or astragals at meeting edges?

Problems: *If the placard with the rating is not on the door, this may be a citation.*

**Smoke separation barrier (SSB) doors were replaced with inappropriate or non-rated doors that do not meet FRR specifications.*

**SSB doors are warped or misaligned and the clearances between the paired doors are too large.*

**SSB doors do not close properly. The self-closing device is missing or does not work or the door drags on the floor not closing.*

**Coordinating devices or latching devices on independent bi-folding doors do not function properly, not allowing the doors(s) to close.*

19 CSR 30-85.012 (79) and (80)

19 CSR 30-85.022 (32)

19 CSR 30-85.032 (1)

Note:

To restrict the passage of smoke, doors should have \leq 3/4 in. undercuts and \leq 1/8 in. gaps between meeting edges of door pairs.

Many smoke barrier doors will have latches, however, the failure to latch is not a citation. It may however be an indication of a misalignment of the door.

*If automatic hold open devices do not deactivate when the fire alarm is tested and doors do not close cite **K21**.*

*Tag K27 deals with the "separation" issues. Very often the SSB doors (when on resident hallways) are also considered to be horizontal exits and within the exit access. When there are problems with the special locking arrangements or panic hardware on these SSB doors, which obstruct the exit access, cite deficiencies at **K38**.*

SMOKE COMPARTMENT & CONTROL

K28

2000 EXISTING

Door openings in smoke barriers shall provide a minimum clear width of 32 inches (81 cm) for swinging or horizontal doors. Vision panels are of fire-rated glazing or wired glass panels and steel frames. 19.3.7.5, 19.3.7.7

2000 NEW

Door openings in smoke barriers are installed as swinging or horizontal doors, shall provide a minimum clear width as follows:

Provider Type	Swinging Doors	Horizontal Sliding Doors
Hospitals and Nursing Facilities	41.5 inches (105 cm)	83 inches (211 cm)
Psychiatric Hospitals and Limited Care Facilities	32 inches (81 cm)	64 inches (163 cm)

Vision panels of fire-rated glazing or wired panels in approved frames are provided for each door. 18.3.7.5, 18.3.7.7

K104

Penetrations of smoke barriers by ducts are protected in accordance with 8.3.5.

Describe any mechanical smoke control system **in REMARKS**.

K28

Are doors in smoke barriers:

1. (existing) a minimum width of 32 in;
2. (new) a minimum width of 41 in. for swinging doors or 83 in. for horizontal sliding doors; AND

Are fixed fire window assemblies in smoke barrier walls and doors:

1. \geq 20-min FRRA
2. \leq 25 % of the size of the fire barrier in which they are used?

Problems:

**Door replacement of improper width or improper vision panel*

**Window assembly without the proper FRR.*

19 CSR 30-85.012 (62)

19 CSR 30-85.032 (1)

Note:

Existing window installation that conform to the following previously accepted LSC criteria are permitted:

1. *fixed wire glass < 1,296 sq. in. set in approved metal frames*
2. *fixed rated glazing, set in approved frames.*

Normally a problem addressed during the design and construction phases of new facility construction. You would not normally encounter this problem on a survey, but you never know what someone will do during remodeling.

K104

Are duct penetrations of smoke barriers protected by approved smoke dampers?

Do the required dampers in duct penetrations of smoke barriers close upon activation of a local smoke detector that is located either within the duct system or in the corridor or activation of the fire alarm system?

Problems:

**The interconnection between the damper and activating device, does not function*

**The automatic smoke damper has burnt out, is stuck or does not function properly*

**You cannot determine if a damper is or is not functioning, and there is no access panel to view or repair the damper*

Note: *These dampers are not required if the facility has a sprinkler system with quick response sprinkler heads provided throughout each smoke section on both sides of the barrier wall.*

HAZARDOUS AREAS

K29

2000 EXISTING

One-hour fire rated construction (with $\frac{3}{4}$ 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 $\frac{3}{4}$ 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. 18.3.2.1

Describe the floor and zone locations of hazardous areas that are deficient **in**

REMARKS.

Area	Automatic Sprinkler	Separation	N/A
a. Boiler and Fuel-Fired Heater Rooms			
c. Laundries (greater than 100 sq feet)			
d. Repair Shops and Paint Shops			
e. Laboratories (if classified a Severe Hazard - see K31)			
f. Combustible Storage Rooms/Spaces (over 50 sq feet)			
g. Trash Collection Rooms			
i. Soiled Linen Rooms			

K29

Are hazardous areas?

- (1) constructed with a 1-hour FRRA, **OR**
- (2) a non-rated smoke resistive construction with a sprinkler system?

Are doors to hazardous areas:

1. fitted to limit the spread of smoke; AND
2. self-closing or automatic closing; AND free of non-rated protective plates > 48 in. above the bottom of the door
3. have $\geq \frac{3}{4}$ - hr. FRRA doors
4. never held open by any means

Does the hazardous area have a sprinkler?

For severe hazards, see K31.

FSES Note: Severe hazards are laboratories with combustibles and areas storing highly combustible items. Reference NFPA 99 10-3.1.1

Note:

To restrict the passage of smoke, doors should have $\leq \frac{3}{4}$ in. undercuts and $\leq 1/8$ in. open gaps at edges.

Problems:

- *Smoke separation barrier (SSB) doors were replaced with inappropriate or non-rated doors that do not meet FRR specifications.
- *SSB doors are warped or misaligned and the clearances between the paired doors are too large.
- *SSB doors do not close properly. The self-closing device is missing or does not work or the door drags on the floor not closing.
- *A smoke barrier wall is not maintained. A vendor or facility staff have punched or cut holes in the wall corrupting the FRR. .
- *Openings for the passage of pipes, ducts, wires or conduits are not sealed or properly protected. Foam type spray insulation is not a proper material. The fill material should be a fire rated caulking or dry wall compound.
- *Rooms (newly) converted to combustible storage, which are over 50 square feet

Note:

The state definition of hazardous area includes kitchens while LSC guidelines do not.

TABLE 3A-3 - Required Fire Protection of Hazardous Areas				TABLE 3A-4 - Deficient Hazardous Area			
Type of Hazardous Area	Minimum Fire Protection Required	2 hr FRRRA *	1 hr FRRRA **	1 hr FRRRA ** or non-rated smoke resisting & Sprinklers		Type of Hazardous Area	Location
	a. Boiler/fuel fired heater rooms						
b. Central/bulk laundries (> 100 sq ft)				X	2.		
c. Flammable gas storage rooms (NFPA 99: 10-10.2.2)	X				3.		
d. Flammable liquid storage rooms (NFPA 30: 4-4.2.1, 4-4.4.2)	X				4.		
e. Laboratories:					5.		
(1) less than severe hazard				X	6.		
(2) severe hazard (NFPA 99: 10-3.1.1)	X ¹				7.		
f. Maintenance repair shops				X	8.		
g. Piped oxygen tank supply rooms (NFPA 99:4-3.1.1.2)			X		9.		
h. Paint shops (less than severe hazard)				X	10.		
i. Soiled linen rooms				X	11.		
j. Storage rooms for combustibile materials (> 50 sq ft)				X	12.		
k. Trash collection rooms				X	13.		
					14.		

The tables on this page are to be used to assess protection of hazardous areas and identify any deficient areas in conjunction with question 2K.

1 1 hr FRRRA walls and ¾ hr FRRRA doors if sprinklered
* with ≥ 1 ½ hr FRRRA doors
** with ≥ ¾ hr FRRRA doors

HAZARDOUS AREAS

K30

Gift shops shall be protected as hazardous areas when used for storage or display of combustibles in quantities considered hazardous. Non-rated walls may separate gift shops that are not considered hazardous, have separate protected storage and that are completely sprinkled. Gift shops may be open to the corridor if they are not considered hazardous, have separate protected storage, are completely sprinkled and do not exceed 500 square feet.
18.3.2.5, 19.3.2.5

K211

2000 EXISTING

Where Alcohol Based Hand Rub (ABHR) dispensers are installed in a corridor:

- the corridor is at least 6 feet wide
- the maximum individual fluid dispenser capacity shall be 1.2 liters (2 liters in suites of rooms)
- the dispensers shall have a minimum spacing of 4 ft from each other
- not more than 10 gallons are used in a single smoke compartment outside a storage cabinet.
- Dispensers are not installed over or adjacent to an ignition source.
- If the floor is carpeted, the building is fully sprinklered.

19.3.2.7, CFR 403.744, 418.100, 460.72, 482.41, 483.70, 483.623, 485.623

K30

Are gift shops, which are:

- used for storage or display of combustibles considered hazardous, separated by \geq 1-hr FRRR; **OR**
- not considered hazardous and having separately protected storage
 - a. \leq 500 sq ft when open to the lobby: **OR**
 - b. separated from the corridor or lobby by non-rated walls?

Note:

Gift shops are not as common as they used to be, however they still occur in some larger facilities.

K211

Do the capacities of Alcohol Based Hand Rub (ABHR) dispensers meet the parameters defined at the right of this page?

Does the storage of quantities of ABHRs, greater than (18.9 L) 5 gal in a single smoke compartment, meet the requirements of NFPA 30, *Flammable and Combustible Liquids Code*?
Are dispensers installed so they are not directly adjacent to, directly above or below an electrical receptacle, switch, appliance, device or other ignition source?

Problems:

- *Dispensers that leak or release their contents, except when the dispenser is manually activated*
- *Improperly placed dispensers (e.g. above electrical outlets or light switches).*

K211 (continued)

2000 NEW

Where Alcohol Based Hand Rub (ABHR) dispensers are installed in a corridor:

- the corridor is at least 6 feet wide
- the maximum individual fluid dispenser capacity shall be 1.2 liters (2 liters in suites of rooms)
- the dispensers shall have a minimum spacing of 4 ft from each other
- not more than 10 gallons are used in a single smoke compartment outside a storage cabinet.
- Dispensers are not installed over or adjacent to an ignition source.
- If the floor is carpeted, the building is fully sprinklered.

18.3.2.7, CFR 403.744, 418.100, 460.72, 482.41, 483.70, 483.623, 485.623

EXIT AND EXIT ACCESS

K32

Not less than two exits, remote from each other, are provided for each floor or fire section of the building. Only one of these two exits may be a horizontal exit. 18.2.4.1, 18.2.4.2, 19.2.4.1, 19.2.4.2

K32

Do all floors or fire sections of the building have ≥ 2 approved remote exits?

Note:

Normally a problem addressed during the design and construction phases of new facility construction. You would not normally encounter this problem on a survey, but you never know what someone will do during remodeling

EXITS AND EGRESS

SECTION 7.2 "MEANS OF EGRESS COMPONENTS" is a substantial section of NFPA 101. Pages 44 through 60 of your green LSC manual.

- 7.2.1 Doors (*SEE K38 & K40)
- 7.2.2 Stairs (*SEE K34)
- 7.2.3 Smoke proof enclosures (*SEE K34)
- 7.2.4 *Horizontal exits (*SEE K44)
- 7.2.5 Ramps (*SEE K34)
- 7.2.6 Exit Passages (SEE K39)
- 7.2.7 Escalators and moving walls (*SEE K161)
- 7.2.8 Fire escape stairs (*SEE K34)
- 7.2.9 Fire escape ladders
- 7.2.10 Slide escape
- 7.2.11 Alternating tread devices (*SEE K161)
- 7.2.12 Areas of refuge
- 7.2.13 Elevators (*SEE K160)

Form CMS-2786R does not well define were to cite specific example related to Section 7.2

K34

Stairways and smoke proof towers used as exits are in accordance with 7.2
18.2.2.4, 19.2.2.3, 19.2.2.4

K34

Do exit stairs and ramps serving as a required means of egress have handrails on both sides?

- Are handrails and guards maintained?

Do exit stairs discharge:

- To the outside at grade; OR
- Through an approved exit passageway that is continuous to the building exterior?

Are stairways and ramp surfaces maintained, including landings, treads, etc?

- Are tread, landing or ramp surfaces worn away, not maintained?
- Does there need to be a slip-resistant surface?

Does an exit ramp serving as a means of egress have a slope of no more than;

- 1 in 10 for existing structures
- 1 in 12 for new structures

Are exit stair **doors** in stairways and smoke proof towers?

- 1-hr FRRA ($\geq 1 \frac{1}{2}$ -hr if 4 or more stories); AND
- provided with positive latching; AND
- self-closing or automatic closing; AND
- doors serving more than one floor allow for re-entry from the stair enclosure
- fixed glass windows are approved in approved frame & ≤ 100 sq in

Are stairwells (exit discharge) free of stored items and obstructions?

Problems:

- *Guards or handrails not maintained, loose or missing*
- *Worn away tread surfaces or ramp surfaces*
- *The integrity of the stairway or ramp is questionable. The components have weather damage or are in need of repair.*
- *Improper remodeling or repair of stairway or ramp. Does not meet the required specifications.*
- *Improper slope of a ramp or ramp without a slip resistant surface.*
- *Landings are not constructed to meet specifications*
- *Cannot re-enter a floor from the stairway*
- *Doors that are not self-closing and that do not latch in frame.*
- *Storage of items in the stairwell*

19CSR 30-85.012 (61), (66) & (68)

19 CSR 30-85.022 (25), (26) & (27)

19 CSR 30-85.032 (1)

EXITS AND EGRESS

K35

Capacity of exits in number of persons per unit of exit width is in accordance with 7.3. 18.2.3.1, 19.2.3.1

K36

Travel distance (exit access) to exits is in accordance with 7.6. 18.2.6, 19.2.6

K37

2000 EXISTING

Existing dead-end corridors shall be permitted to be continued to be used if it is impractical and unfeasible to alter them so that exists are accessible in not less than two different directions from all points in aisles, passageways, and corridors

2000 NEW

Every exit and exit access shall be arranged so that no corridor, aisle or passageway has a pocket or dead-end exceeding 30 feet. 18.2.5.10, 19.2.5.10

K35

Note:

The capacity should not be a problem since this was evaluated on initial acceptance of the facility into the program; however, you never know what someone will do during remodeling

19 CSR 30-85.032 (1)

K36

Are exits (exit access) arranged so that:

- travel distance to a room from any point in a resident sleeping room is ≤ 50 ft: **AND**
- travel distance between any room door and an exit is ≤ 100 ft (150 ft if (AASS)); **AND**
- travel distance between any point in a room and an exit is ≤ 150 ft (200 ft if AASS)?

Note:

These travel distances should not be a problem since this was evaluated on initial acceptance of the facility into the program; however, you never know what someone will do during remodeling

Problem:

19CSR 30-85.012 (79) & (80) 19 CSR 30-85.032 (1)

**Travel distance was extended past tolerances due to remodeling*

K37

Are dead end corridors ≤ 30 ft?

Note:

Normally a problem addressed during the design and construction phases of new facility construction. You would not normally encounter this problem on a survey, but you never know what someone will do during remodeling

Problem:

19CSR 30-85.012 (79) & (80) 19 CSR 30-85.032 (1)

**A corridor was sealed off during remodeling creating dead end corridors > 30 ft.*

K38

Exit access is so arranged that exits are readily accessible at all times in accordance with 7.1. 18.2.1, 19.2.1

Most citations related to any kind of design problem(s) or malfunction of equipment, which causes a blockage or impediment to an aisle, passageway, corridor, exit discharge (door) and access to them are cited at this tag.

Special Locking Arrangements:

- delayed-egress locks**
 - wander guard locks**
- access-controlled egress door**
- use of keys**
- panic hardware**
- other latching and fastening devices**
- door signage**
- inappropriate locks**

Door operation:

- swing**
- opening**

Definition:

Means of egress – A continuous and unobstructed way of travel from any point in the building to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge.

K72 refers to the whole “means of egress” while K38 only refers to the “exit access” so it is difficult to know which place is the most appropriate to cite, however, since K72 specifically references section 7.1.10, cite furnishings, decorations or other objects obstructing exits, access thereto, egress there from or visibility thereof at K72.

Storage or obstruction in a stairwell or smoke proof tower should be cited at K34.

K38

Are doors in a means of egress:

- always set to swing in the direction of egress travel; **AND**
- open with a force not to exceed 15 lbf to release the latch and 30 lbf to set the door in motion; **AND**
- have latches and opening hardware wherein the method of release is obvious; **AND**
- can be open without the use of a key or special tool from the egress side; **AND**
- free of non-approved locks; (dead-bolts & chain & latch locks); **AND**
- always unlocked; **OR,**
- if equipped with special locking devices, latches and alarming devices, the equipment works appropriately?
 - if a keyed device, all staff on the unit carry keys to unlock

Do doors with delayed egress locks: *(Facility must be sprinklered or have complete smoke detection)*

- release within 15 seconds (30 seconds if approved by AHJ) of applying constant pressure to the door release device; **AND**
- release automatically upon fire alarm activation or AASS activation: **AND**
- release upon the loss of power controlling the locking mechanism; **AND**
- have a sign reading “Push Until Alarm Sounds, Door Can Be Open in 15 Seconds”; **AND**
- relock by manual means only; **AND**
- no more than one in any egress path?

Do other special locking device types function properly? Are they approved by the AHJ?

Are means of egress (stoops & sidewalks) maintained to be free from accumulations of ice and snow?

Are areas leading from the exit discharge to the public way traversable?

Are doors met to be neither an exit nor a way to an exit access, and could be mistaken as such, marked “NO EXIT”?

Is panic hardware of doors in the means of egress maintained in proper working order?

Are exterior yard gates designed to allow access to the public way without the use of a key?

Is the facility designed such that one does not have to travel through a hazardous area to reach and exit access?

**19 CSR 30-012 (34), (60), & 63) 19 CSR 30-85.022 (25, (28), (31) & (33)
19 CSR 30-85.032 (1)**

Problems:

- *Doors to the exit access corridor from resident use areas are locked*
- *Doors in exit access do not swing in direction of travel.*
- *Doors in the exit access do not open easily, within defined tolerances. This would include exterior exit doors, corridor doors and other doors in the exit access, such as doors to a special care unit.*
- *Special locking devices do not function properly or have the proper signage.*
- *Doors in the exit access do not have the proper panic hardware and they latch.*
- *Exterior means of exit access; i.e., stoops, ramps, stairways and sidewalks are not maintained free of ice and snow and are not traversable (e.g. low areas holding water).*
- *Exterior yard gates are locked with a key type lock and staffs do not carry keys.*

EXITS AND EGRESS

K39

2000 EXISTING

Width of aisles or corridors (clear and unobstructed) serving as exit access shall be at least 4 feet. 19.2.3.3

2000 NEW

Width of aisles or corridors (clear and unobstructed) serving as exit access in hospitals and nursing homes shall be at least 8 feet. In limited care facility and psychiatric hospitals, width of aisles or corridors shall be at least 6 feet. 18.2.3.3, 18.2.3.4

K40

2000 EXISTING

Exit access doors and exit doors used by health care occupants are of the swinging type and are at least 32 inches in clear width. 19.2.3.5

2000 NEW

Exit access doors and exit doors used by health care occupants are of the swinging type, with openings of at least 41.5 inches wide. Doors in exit stairway enclosures shall be no less than 32 inches in clear width. In ICFs/MR, doors are at least 32 inches wide. 18.2.3.5

K39

Corridors serving as a means of egress are not < 4 feet, **OR** not < the originally approved width of the LSC edition in effect at the time approved?

Note:

Corridor width will normally not be a problem since they should have been evaluated on initial acceptance of the facility into the program and no new plans would be approved with less than required specifications. All facilities built to the New1967 edition of the LSC and subsequent editions have 8 ft corridors.

19 CSR 30-85.032 (1)

K40

Is the minimum clear width of doors in the means of egress not \leq 32 inches **OR** not \leq the originally approved width of the LSC edition in effect at the time approved?

Note:

Door widths will not normally be a problem since this was evaluated on initial acceptance of the facility into the program; however, you never know what someone will do during remodeling. All facilities built to the New1967 edition of the LSC and subsequent editions have doors \geq 44 inches. Facilities previously surveyed under the Existing 1967 code should have had doors \geq 34 inches.

Problems:

- *Door replacement of improper width*
- *Previous non-resident area opened up to access for residents and the door(s) are not of proper width.*

19 CSR 30-85.032 (1)

EXITS AND EGRESS

K41

All sleeping rooms have a door leading to a corridor providing access to an exit or have a door leading directly to grade. One room may intervene in accordance with 18.2.5.1, 19.2.5.1, 18.2.5.9, 19.2.5.9 - *If doors lead directly to grade from each room, check this box.*

K42

Any room or suite of rooms of more than 1,000 sq. ft. has at least 2 exit access doors remote from each other. 18.2.5.2, 19.2.5.2

K43

Patient room doors are arranged such that the patients can open the door from inside without using a key.

Special door locking arrangements are permitted in facilities. 18.2.2.2.4, 18.2.2.2.5

If door-locking arrangement without delay egress is used, indicate in REMARKS.

18.2.2.2.2, 19.2.2.2.2

K41

Do all resident sleeping rooms or suites have a door opening directly onto an exit access corridor?

Note:

This will normally not be a problem since this was evaluated on initial acceptance of the facility into the program and no new plans would be approved without this exit access.

19CSR 30-85.012 (79) & (80)

K42

Are all rooms or suite of rooms ≥ 1000 sq ft provided with ≥ 2 exit access doors remotely located from each other?

Note:

This will normally not be a problem since this was evaluated on initial acceptance of the facility into the program. No new plans would be approved without assuring the adequate number of exit access doors.

19CSR 30-85.012 (79) & (80)

K43

Can the exit access door, leading from a resident sleeping room, be opened from the room side of the door without the use of a key?

Note:

Locks are not permitted on resident sleeping rooms.

An exception is permitted where the clinical needs of the residents requires specialized security measures for their safety. If this is permitted, all staff must carry keys at all times. This is not usually the case in skilled LTC facilities and I would not expect to see any. The AHJ would have to approve.

Problems:

**Slide bolt locks or other kinds of locks on the corridor side of the resident room door.*

**Inappropriate locking of resident bathroom doors.*

19CSR 30-85.022 (28)

EXITS AND EGRESS

K44

Horizontal exits, if used, are in accordance with 7.2.4, 18.2.2.5, 19.2.2.5

Definition:

Horizontal Exit – A way of passage from one building to an area of refuge in another building on approximately the same level, or a way of passage through or around a fire barrier to an area of refuge on approximately the same level in the same building that affords safety from fire and smoke originating from the area of incidence and areas communicating therewith.

ILLUMINATION AND EMERGENCY POWER

K45

Illumination of means of egress, including exit discharge, is arranged so that failure of any single lighting fixture (bulb) will not leave the area in darkness. (This does not refer to emergency lighting in accordance with 7.8.) 18.2.8, 19.2.8

K44

Does the facility maintain fire barriers that limit the spread of fire and restrict the movement of smoke from one side of the barrier to the other?

Does the facility maintain door hardware on the fire/smoke doors in the horizontal exit?

Note:

This is the best place to cite separation issues related to horizontal exits between two facilities and the interceding 2-hr FRR door assembly separating the two facilities, since these hallways usually don't have resident rooms adjacent. An example would be a corridor connection between a hospital and a nursing home. We can also address the hallways between SNF & RCFs here.

Smoke barrier walls – Refer to K25

Smoke barrier doors – Refer to K27

19 CSR 30-85.032 (1)

K45

Are means of egress adequately illuminated at all points, including angles and intersections of corridors and passageways, stairways, landings of stairs and exit doors?

Problems:

**The stairwell of a fireproof tower is left in darkness because all of the electrical lighting has burnt out.*

**There is not sufficient lighting to provide for illumination of the means of egress from the exit discharge to the public way. Lighting exterior to the building.*

19 CSR 30-85.032 (32) & (33)

ILLUMINATION AND EMERGENCY POWER

K46

Emergency lighting of at least 1 ½ hour duration is provided in accordance with 7.9.18.2.9.1, 19.2.9.1.

◆◆ *CMS has been citing no emergency lighting at medication rooms and generator set points here, however, there is no reference to this at 7.9. Cite these issues at K146, which references NFPA 99 3.6.3 that does reference emergency lighting for “task” illumination*

K47

2000 EXISTING

Exit and directional signs are displayed in accordance with 7.10 with continuous illumination also served by the emergency lighting system. 19.2.10.1 (Indicate N/A in one story buildings with less than 30 occupants where the line of exit travel is obvious.)

2000 NEW

Exit and directional signs are displayed with continuous illumination also served by the emergency lighting, system in accordance with 7.10. 18.2.10.1

K46

Does the facility provide for emergency lighting of the means of egress if the primary lighting fails?

- By the use of individually placed battery units, **OR**
 - Are battery-operated units inspected and tested at least every 30 days and also tested for 1-1/2 hours annually?
 - Does the facility kept a record of these tests?
 - Do the battery-operated units operate for at least 1-½ hours in the event of failure of the normal lighting?
- By the use of an emergency generator.
 - A delay of not more than 10 seconds shall be permitted for the generator to operate.

Problems:

- *A battery operated emergency lighting unit does not work.*
- *A battery operated emergency lighting unit is missing.*
- *The emergency generator does not work to provide emergency lighting.*
- *It takes longer than 10 seconds for the emergency generator to kick on or the generator has to be started by a manual operation.*

19CSR 30-85.022 (40)

19 CSR 30-85.032 (1)

K47

Are exit signs, both externally and internally illuminated, legible by both the normal and emergency lighting?
Are exit signs of the required size?

- Letters are not > 6 inches high or > ¾ inch wide)

Does the facility maintain internally illuminated exit lights?

- Inspected and tested at intervals not to exceed 30 days
- Exit signs with battery back up **OR** connected to the emergency generator, are tested and maintained in accordance with 7.9.3.

Problems:

19CSR 30-85.022 (34), (35) & (36)

- *Light bulbs are burnt out of internally illuminated exit/directional signs.*
- *The exit/directional sign(s) do not illuminate when the battery back-up system or emergency generator are tested.*
- *Exit/directional signs are missing.*
- *Exit signs of the wrong size are used.*
- *If an emergency light is missing an exit sign may not be illuminated.*

ILLUMINATION AND EMERGENCY POWER

K105

2000 NEW (INDICATE N/A FOR EXISTING)

Buildings equipped with or requiring the use of life support systems (electro-mechanical or inhalation anesthetics) have illumination of means of egress, emergency lighting equipment, exit, and directional signs supplied by the Life Safety Branch of the electrical system described in NFPA 99. 18.2.9.2, 18.2.10.2, 18.5.1.1, 18.5.1.2

(Indicate N/A if life support equipment is for emergency purposes only).

You must determine if the emergency generator is part of a “life support system” or for emergency purposes only and you must determine if the facility has residents who require the use of life support equipment.

Life support equipment that might be found in a nursing home might include respirators, resuscitators, and defibrillators, etc. Suction machines are only considered life support when it is determined the failure of the equipment would cause loss of life. This does not apply to oxygen concentrators if the facility has oxygen in canisters as a back up.

Also, see K106, K144, K145 and K146

K105

Does the facility have residents who require the use of life support systems, without which the resident will have a likelihood of dying?

Does the facility have an emergency electrical power system tied to a generator?

- **If NO;**
 - Does the facility maintain admitting and discharge policies that preclude the provisions of care for any resident who may need to be “sustained” by electrical life supporting equipment?
 - Mark K105 N/A
- **If YES;**
 - Is the emergency electrical power system, including the generator set up to meet the requirements of NFPA 99 section 3-4.2.2, supplying power for lighting to illuminate the means of egress and exit and directional signs? IF so;
 - Do emergency lighting systems and exit lights function?
 - Is the emergency electrical power system, including the generator, set up for emergency electrical outages only, and not set up to support emergency lighting and exit and directional signs? IF so;
 - Mark K105 N/A

Note:

Few facilities have complete emergency electrical power systems and generators meeting all the requirements of NFPA 99 section 3-4.2.2 with separate Life Safety and Critical Branch circuits. Only those emergency branch circuits may function when normal electrical power is loss and the system kicks in.

Some facilities equip their electrical systems with a large generator capable of carrying the full electrical load of the facility during power outages. The Life Safety Branch and the Critical Branch circuits in the facility may not be separated as the above systems but still it is considered to be a Type III system were Life Support systems are allowed (Refer to NFPA 70 section 517-40)

Still other facilities may have a small generator only capable of supporting a small electrical load only, such as one or two standard branch circuits. Facilities with these types of emergency electrical systems and generators cannot have residents requiring life support.

If a facility’s generator does not meet a Type I or II as defined in NPFA 99, battery powered emergency power must be provided and the generator must be maintained operational and good repair.

Problems:

19CSR 30-85.012 (128)

19 CSR 30-85.032 (1)

** The facility removed old battery operated emergency lighting units after installing a new generator, but failed to tie branch circuits controlling the lighting of the means of egress and exit lighting into the emergency electrical system, to supply illumination during power outages.*

ILLUMINATION AND EMERGENCY POWER

K107

2000 NEW (INDICATE N/A FOR EXISTING)

Required alarm and detection systems are provided with an alternative power supply in accordance with NFPA 72, 9.6.1, 18.3.4.1.3.

Refer to NFPA 70 section 517-44 regarding two independent sources of power.

K108

2000 NEW (INDICATE N/A FOR EXISTING)

Alarms, emergency communication systems, and illumination of generator set locations are in accordance with NFPA 70. 9.1.2

Refer to NFPA 70 517-31 and 517-80 thru 517-82

K107

Does the facility have two independent sources of power to the fire alarm and detection system?

- A normal source usually supplying the entire facility's electrical system. Normal the local electrical utility company.
- An alternate source of power. (e.g. generator or batteries meeting 1-5.2.6, NPFA 72)

Note:

New facilities may have fire alarm systems with self-contained battery back up systems integral with the equipment, in accordance with the exception at NFPA 70 section 517-40 (a) (c) if the facility precludes having residents in their facilities which need electrical-life support.

K108

Are alarm and alerting systems, communication systems used for issuing instructions during emergency conditions, and emergency battery-powered lighting units and receptacles located at the generator, wired in accordance with NFPA 70 to the Life Safety Branch or emergency electrical system, which is tied to the alternate power supply?

EMERGENCY PLAN AND FIRE DRILLS

K48

There is a written plan for the protection of all patients and for their evacuation in the event of an emergency. 18.7.1.1, 19.7.1.1

You can review in conjunction with the survey guidelines for evaluating F517 and F518 during the health care survey.

Review also NFPA 99 Chapter 11 and Appendix A and C of NFPA 99 for further information regarding emergency preparedness.

K50

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

K48

Does the written fire safety plan provide for the following?

- Use of alarms
- Transmission of alarm to fire department
- Response to alarms
- Isolation of fire
- Evacuation of immediate area
- Evacuation of smoke compartment
- Preparation of floors and building for evacuation
- Extinguishment of fire

Are evacuation diagrams and instruction posted at appropriate locations?

Does the facility have written policies and procedures for the complete evacuation and relocation of residents from the facility?

Problems: **19CSR 30-85.022 (43)**

**Fire emergency procedures and/or floor plan diagrams are not posted. This is sometimes the case after remodeling or painting.*

**Plans or procedures do not contain the above provisions or, are not specific to the needs of the facility, including local phone numbers, etc.*

**The facility does not have written relocation & transfer agreements for evacuation.*

**The facility fails to have fire watch policies and procedures for when the fire alarm system or sprinkler system is out of service.*

K50

- Does the facility conduct quarterly fire drills on each shift to familiarize facility personnel with the signals and emergency actions required under varied conditions?
- Are staff familiar with fire drill procedures?
- Is a responsible person assigned the responsibility of planning and conducting the fire drills?
- Does the facility maintain records of fire drill activities?

Problems: **19CSR 30-85.022 (44) & (45)**

**Fire drills are not being conducted as required*

**A written record of fire drills is not being maintained*

**Staff interviews reveal facility staff persons have not been trained on life safety procedures or how to respond in the event of fire.*

FIRE ALARM SYSTEMS

K51

2000 EXISTING

A fire alarm system with approved component, devices or equipment installed according to NFPA 72, National Fire Alarm Code to provide effective warning of fire in any part of the building. Activation of the complete fire alarm system shall be by manual fire alarm initiation, automatic detection or extinguishing system operation. Pull stations in patient sleeping areas, may be omitted provided that manual pull stations are within 200 ft of nurse's stations. Pull stations are located in the path of egress. Electronic or written records of tests shall be available. A reliable second source of power must be provided. Fire alarm systems shall be in accordance with NFPA72, and records of maintenance kept readily available. There shall be annunciation of the fire alarm system to an approved central station. 19.3.4, 9.6

2000 NEW

A fire alarm system with approved component, devices or equipment installed according to NFPA 72, to provide effective warning of fire in any part of the building. Activation of the complete fire alarm system shall be by manual fire alarm initiation, automatic detection or extinguishing system operation. Pull stations are located in the path of egress. Electronic or written records of tests shall be available. A reliable second source of power must be provided. Fire alarm systems shall be maintained in accordance with NFPA72, and records of maintenance kept readily available. There shall be remote annunciation of the fire alarm system to an approved central station. 18.3.4, 9.6

K51

Is the fire alarm system functioning, as it should?

Is the fire alarm system equipped to automatically transmit the fire alarm signal to the fire department or monitoring agency?

Do auto-dialers have at least 2 phone lines?

Is the fire alarm hooked up to a secondary power supply? (Refer to K107 for NEW)

- If secondary is battery, evaluate battery, charger, and trouble light.

Does the alarm system have the appropriate zone indicators at the panel (Reference 1999 NFPA K72 1-5.7.1.2 and A-1-5.7.1.2) = 1 indicator per smoke zone, not to exceed 20,000 sq. ft.) ♦♦ Cite

Observe the following things during the fire alarm test:

- Audible and visual alarms
- Electrical hold open devices should allow the closure of doors (Refer to K21)
- Electric locks on doors within the exit access should be deactivated or unlocked. (Refer to K 38)
- Activation devices (pull station, smoke detector, sprinkler by-pass or drain valve) work properly to activate the alarm. Activation should not take more than 20 seconds.
- Fire alarm panel warning lights showed proper activation and re-set of system during the test. Zone warning lights if available worked properly. The panel shows no system faults or trouble signals, before or after testing.
- Transmission of alarm signal to fire department or monitoring agency
 - Warning light for fault in transmission signal or line out.
- There is a separate zone indication for range hood activation (Reference 1999 NFPA 72 3-8.3.3.3 & 3-8.3.4)

Are initiating devices, pull stations and smoke detectors, properly located?

Problems: 19CSR 30-85.022 (15), (16), (17) and (20)

**The fire alarm system does not work. (Class I)*

**Specific components of the fire alarm system do not work, or are improperly installed or are missing.*

**The facility failed to maintain the system so it would automatically transmit a signal to a central station-monitoring unit.*

**The fire alarm panel shows trouble lights or faults that have not been addressed by the facility.*

**Wiring not in compliance with NFPA 70, Article 760. (Frayed wiring, surface wiring which needs to be protected, etc.)*

**Ceiling fans installed to close to smoke detectors.*

FIRE ALARM SYSTEMS

K52

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 issues related to the lack of annual and monthly testing of the fire alarm system and documentation thereof at this tag

K155

Where a required fire alarm system is out of service for more than 4 hours in a 24-hour period, the authority having jurisdiction shall be notified, and the building shall be evacuated or an approved fire watch shall be provided for all parties left unprotected by the shutdown until the fire alarm system has been returned to service. 9.6.1.8

If the facility does not have a fire watch policy related to what they would do if the fire alarm system was shut down, cite this at K48.

If the facility did not initiate a fire watch when the fire alarm system was shut down for more than four hours cite here at K155.

K52

Does the facility insure operational integrity of the fire alarm system with an approved maintenance and testing program, to include:

- An annual system acceptance testing in accordance with the requirements of NFPA 72 section 7-2
- Reacceptance testing when ever there are added or deleted system components, any modification, repair or adjustment to system hardware and wiring and any changes to site-specific software.
- More often testing as required by the AHJ. (Reference NFPA 72 section 7-3.1) The state of Missouri requires a function system test monthly.
- Does the facility maintain maintenance, inspection and testing records in accordance with NFPA 7-5.2? This includes documentation of all devices tested.

Problems:

- *An annual acceptance test has not been completed in the last 12 months.*
- *The facility failed to have reacceptance testing done after repairs were made.*
- *Monthly functional testing was not done.*
- *The facility failed to maintain documentation of testing.*
- *Pull stations greater than five feet from the floor*

19CSR 30-85.022 (18), (19) & (21)

K155

Does the facility implement a fire watch, which involves some special action beyond normal staffing, such as assigning an additional security person(s) to walk the areas affected, when the fire alarm system is out of service for more than 4 hours?

Does the person assigned the fire watch have special training in fire prevention and fire department notification?

Problem: ♦♦ *Cite*

**The fire alarm system has been/is out of service and the facility has not implemented a fire watch.*

FIRE ALARM SYSTEMS

K53

2000 EXISTING

In an existing nursing home, not fully sprinklered, the resident sleeping rooms and public areas (dining rooms, activity rooms, resident meeting rooms, etc) are to be equipped with single station battery-operated smoke detectors. There will be a testing, maintenance and battery replacement program to ensure proper operation. CFR 483.70

2000 NEW (INDICATE N/A FOR EXISTING BUILDINGS AND ALL HOSPITALS)

An automatic smoke detection system is installed in all corridors with detector spacing not further apart than 30 ft on center, nor more than 15 ft from any wall. (As an alternative to the corridor smoke detection system on patient sleeping room floors, smoke detectors may be installed in each patient sleeping room and at smoke barrier or horizontal exit doors in the corridor.) Such detectors are electrically interconnected to the fire alarm system. 18.3.4.5.3

K53

Effective 5/24/2006 (Reference CMS S&C-05-25)

Do all non-sprinklered facilities have battery-powered smoke detectors (or smoke detectors tied into the automatic fire alarm system), in resident rooms and common areas such as dining, activity and other meeting rooms where residents gather?

Does the facility have a maintenance program for testing, maintenance and battery replacement to ensure the reliability of the smoke detectors?

Problem:

** Facility has not installed or maintained single station smoke detectors*

Note:

By 12/31/2012, all SNF/ICF facilities will be required to have a complete NFPA 13 sprinkler system.

When new fire alarm systems are installed, is the spacing of corridor smoke detectors not more than 30 feet on center, nor more than 15 feet from any wall, as required in 2000 NFPA 101, 18.3.4.5.3 and 1999 NFPA 72, 2-3.4.5.1.1?

Are room or spaces open to the corridor properly equipped with smoke detectors?

Problem:

**A newly installed (after September 11th, 2003) fire alarm system does not meet the above requirements of the 2000 Life Safety Code NFPA 101.*

It will be important to document and retain a record of when new fire alarm systems are installed.

19 CSR 30-85.022 (15 & (16)

FIRE ALARM SYSTEMS

K109

2000 EXISTING LIMITED CARE FACILITIES
(INDICATE N/A FOR HOSPITALS OR
NURSING HOMES)

An automatic smoke detection system is installed in all corridors. (As an alternative to the corridor smoke detection system on patient sleeping room floors, smoke detectors may be installed in each patient sleeping room and at smoke barrier or horizontal exit doors in the corridors.) Such detectors are electrically interconnected to the fire alarm system. 19.3.4.5.1

Smoke Detection System

- Corridors
- Rooms
- Bath

K54

All required smoke detectors, including those activating door hold-open devices, are approved, maintained, inspected and tested in accordance with the manufacturer's specifications. 9.6.1.3

Give a brief description, **in REMARKS**, of any smoke detection system, which may be installed.

K109 N/A to Long Term Care Facilities

K54

Are fire alarm system component smoke detectors tested as part of the annual inspection of the system?
Are all smoke detector checked for sensitivity at least every two years?
Are smoke detectors properly maintained?
Does the facility have specific documentation verifying the sensitivity testing of smoke detectors and records of all alarm activating devices?
Does the facility keep a log of false alarms?

Problems:

- *Smoke detectors are loose or not properly attached to the ceiling.*
- *Interview indicate some smoke detectors are not functional or not within the proper sensitivity.
(Frequent activations of the fire alarm system, which are false alarms)*
- *When tested by facility staff, a smoke detector does not activate the fire alarm or battery operated smoke detectors do not work when tested.*
- *The facility fails to ensure the detectors are tested as required.*

19CSR 30-85.022 (15), (16), (17), and (20)

FIRE ALARM SYSTEMS

K55

2000 EXISTING

Every patient sleeping room shall have an outside window or outside door. Except for newborn nurseries and rooms intended for occupancy for less than 24 hours. 19.3.8

2000 NEW

Every patient sleeping room shall have an outside window or outside door. The allowable sill height shall not exceed 36 inches (91 cm) above the floor. Windows are not required for recovery rooms, newborn nurseries, emergency rooms, and similar rooms intended for occupancy for less than 24 hours. Windowsill height for limited care facilities shall not exceed 44 inches (112 cm) above the floor. 18.3.8

K55

Is every resident sleeping room provided with an outside window or outside door arranged and located so that it can be opened from the inside to permit the venting of products of combustion and to permit any resident direct access to fresh air in case of an emergency. This does not preclude the use of stops or blocks to limit the amount the window opens due to security issues.

Problems:

**The outside windows cannot be opened to provide fresh air.*

19 CSR 30-85.032 (8)

AUTOMATIC SPRINKLER SYSTEMS

K56

2000 EXISTING

If there is an automatic sprinkler system it shall be installed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, by an approved supervised to provide complete coverage for all portions of the building. If partial system, indicate location of sprinklers. The systems shall be properly maintained in accordance with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. It shall be fully supervised. There shall be a reliable, adequate water supply for the system. Required sprinkler systems are equipped with water flow and tamper switches, which are electrically connected to the building fire alarm system. 19.3.5

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. The systems shall be maintained in accordance with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. It shall be a reliable, adequate water supply for the systems. Systems are equipped with water flow and tamper switches, which are connected to the fire alarm system. 18.3.5.

K56

Are AASS, other than limited area sprinkler systems, provided in accordance with NFPA 101 Section 9.7.1, and include:

- A local alarm unit, both audible and visual at a constantly attended location, AND
- A water flow alarm connected to the fire alarm system, AND
- Supervisory signals that monitor; AND
 - Control valves (*Reference NFPA 13 section 5-14.1.1.3 & NFPA 101 section 9.7.2.1*) **Cite at K61**
 - Fire pumps (were required)
 - Water tank (where provided)
 - Tank level
 - Tank temperatures
 - Tank pressure
- Alarm transmission to a receiving facility or the fire department. (may be through the fire alarm), AND
- A clear space \geq 18 inches below standard pendent sprinkler heads to top of storage? (*Reference NFPA 13 sections 5.6.5 & 5.6.6*) **Cite at K62**

Limited sprinkler system connected to the domestic water to protect isolated hazardous areas, in accordance with NFPA 101 Section 9.7.1.2, as follows:

- Provided with an indicating shut off valve, AND
- Limited to \leq 6 sprinkler heads?

Are sprinklers installed under exterior roofs or canopies exceeding 4 feet? (*Reference NFPA 13 section 5-13.8*)

- Dry pendent sprinklers extended through the wall from a wet sprinkler piping heated area to cover an area not exceeding 7 ½ feet in width is permitted. (*Reference NFPA 13 Appendix A-5-13.8*)
- Sprinklers may be omitted where the canopy or roof is of noncombustible or limited combustible construction. (*Reference Exception at NFPA 13 section 5-13.8.2*)

Is there sprinkler coverage in built in closets?

- Not required if doors to closets are louvered.
- Not required for portable wardrobes. (*Reference NFPA 13 Appendix A-5-13.9.2*)

Problems:

- The AASS is not functional. Class I*
- The main valve(s) to the AASS is closed. Class I*
- Combustible canopy or roof overhang extending more than 4 feet from building and which is not sprinklered*
- There are specific problems with the AASS not covered by K tags K60 through K63.*

19 CSR 30-85.022 (22) (23) & (24)

AUTOMATIC SPRINKLER SYSTEMS

K154

Where a required automatic sprinkler system is out of service for more than 4 hours in a 24-hour period, the authority having jurisdiction shall be notified, and the building shall be evacuated or an approved fire watch system be provided for all parties left unprotected by the shutdown until the sprinkler system has been returned to service. 9.7.6.1.

A. Date sprinkler system last checked and necessary maintenance provided.

B. Show who provided the service.

C. Note the source of water supply for the automatic sprinkler system.

(Provide, **in REMARKS**, information on coverage for any non-required or partial automatic sprinkler system.)

If the facility does not have a fire watch policy related to what they would do if the AASS is shut down, cite this at K48.

If the facility did not initiate a fire watch when the AASS was shut down for more than four hours cite here at K154

K154

Does the facility implement a fire watch, which involves some special action beyond normal staffing, such as assigning an additional security person(s) to walk the areas affected, when the AASS is out of service for more than 4 hours?

- Was DHSS notified?
- Was the local fire department notified?

Does the person assigned the fire watch have special training in fire prevention and fire department notification?

(Reference NFPA 13 Appendix A-12-1 and NFPA 25 Chapter 11)

Problem: ◆◆ *Cite*

**The AASS has been/is out of service and the facility has not implemented a fire watch.*

Specific elements of what should be contained in the fire watch policy related to an AASS shutdown are defined in NFPA 25 section 11-5 and Appendix sections A-11-3 and A-11-5

AUTOMATIC SPRINKLER SYSTEMS

K60

Initiation of the required fire alarm systems shall be by manual means in accordance with 9.6.2 and by means of any required sprinkler system water flow alarms, detection devices, or detection systems. 18.3.4.2, 19.3.4.2, 9.6.2.1



flow alarm

os&y valve alarm

K61

Required automatic sprinkler systems shall have valves supervised so that at least a local alarm will sound when the valves are closed. 9.7.2.1, NFPA 72



K60

Is there an electrical connection between the AASS sensing devices and the fire alarm system?

Do sensing devices connected to the AASS, initiate a facility fire alarm system response when the sensing devices monitoring the AASS status are activated?

- Is the flapper valve/ flow switch defective?
- Is/are the sensing alarm(s) on OS & Y valves defective?
- Has electrical wiring to the sensing devices been disconnected or by-passed?

Does the fire alarm system panel warning light indicate there is a fault in the sprinkler system or electrical interconnection? Has the audible alarm been silenced?

Problems:

- *Sensing devices are not wired properly or have been disconnected or by-passed.*
- *Sensing devices or switches are defective*
- *There is no connection between the fire alarm system and AASS sensing devices.*
- *Warning lights indicated a fault with the AASS or electrical connection.*

19 CSR 30-85.022 (22) (23) & (24)

K61

Are all valves (OS & Y and other types), which can be used to close off water to the AASS, electronically supervised and electronically connected to the fire alarm system?

Problem:

- *There are no sensing devices on shut-off valves to warn if the valves are left closed or tampered with*
- *If missing cite at K61 if present but defective cite at K60.*
- *If a shut-off valve is closed, cite at K56 (Class I) because the AASS is not functional.*
- *No sensing device on outside shut-off valves*

In the picture to the left the OS & Y valve on the right is open (spindle out) the valve on the left is closed (spindle in). Note the sensing device at each valve.

19 CSR 30-85.022 (22) (23) & (24)

AUTOMATIC SPRINKLER SYSTEMS

K62

Required 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



K62

Does the facility comply with requirements to continuously maintain the sprinkler system in proper operating condition and performed routine maintenance and testing as indicated in 1999 NFPA 25, 2-2 & Table 2-1?

Problems:

- *Sprinkler heads are not clear of obstructions. Storage is stacked to within less than 18 inches of the sprinkler head or insulation laying on attic sprinkler heads, etc.*
- *Part or all of a sprinkler head has been painted or a sprinkler head has been damaged.*
- *Observations or interview indicated there are air leaks or water leaks in the sprinkler system.*
- *Exterior pumper truck hook-up connections have not been maintained or are blocked. Safety caps are missing.*
- *Heavy corrosion of sprinkler heads or lint and dirt build-up on sprinkler heads. This can be a particular problem in laundry rooms where there is both excessive moisture and lint.*
- *State - There has not been a thorough inspection and certification of the sprinkler system in the last year.*
- *Test records do not indicate the vendor has completed extensive annual and specific multi-year inspection test as required by NFPA 25.*
- *Facility records of monthly and quarterly visual inspection and test records are incomplete or indicated the facility did not do.*
- *Internal pipe inspections not performed every 5 years*

19 CSR 30-85.022 (22) (23) & (24)

Note: Specifically for sprinkler (head) operation, how will the paint, corrosion, or damage effect the operation of the sprinkler as designed?

AUTOMATIC SPRINKLER SYSTEMS

K63

Required automatic sprinkler systems have an adequate and reliable water supply, which provides continuous and automatic pressure. 9.7.1.1, NFPA 13

The facility should have an adequate and reliable water supply, which will provide adequate pressure for the sprinkler system to work. If for some reason the facility's water supply to the sprinkler is cut off (municipal or county district water lines are shut down) check to see what procedures the facility has implemented to deal with the situation.

Appendix A section A-1-5.1 of NFPA 13 describes what a facility should do during impairments to sprinkler systems: such as when the water supply of the system is shut off. For example the facility should have "additional fire pails and extinguishers and maintain extra watch services in the areas affected.

If a facility has not established procedures to address a loss of water supply to the sprinkler, cite at F466.

K63

Is the automatic sprinkler system connected to a reliable water supply system, such as a municipal or county district water supply?

Is there adequate water pressure from the water supply system?

Problems:

- *The water pressure is less than 20 psi.*
- *For large sprinkler systems, the water pressure is lower than required for operation. (There should be an inspection label near the sprinkler main stating what the minimum pressure should be)*
- *There is no water pressure.*
- *The water supply is out and the facility does not have an action plan to deal with the situation. (See K154)*

19 CSR 30-85.022 (22) (23) & (24)

Reference F466

FIRE EXTINGUISHERS

K64

Portable fire extinguishers shall be provided in all health care occupancies in accordance with 9.7.4.1, NFPA 10. 18.3.5.6, 19.3.5.6



Class A, B or C
Dry Chemical Type



Class K Type

A **Class K** fire extinguisher is used on fires involving cooking media (fats, grease, and oils) in commercial cooking such as restaurants. These fire extinguishers work on the principal of saponification. Saponification takes place when alkaline mixtures such as potassium acetate, potassium citrate or potassium carbonate are applied to burning cooking oil or fat. The alkaline mixture combines with the fatty acid create soapy foam on the surface, which holds in the vapors and steam and extinguishes the fire.

K64

Is the travel distance from any point to the nearest fire extinguisher ≤ 75 feet (state ≤ 100 ft.) for light hazard areas and ≤ 30 feet for moderate (furnace/laundry rooms) hazard areas?

Is the hazard protection provided by fire extinguishers suitable for such Class A, B, or C potentials as might be expected?

Are Class K fire extinguishers provided where there is a potential for fires involving combustible cooking oils?

Are fire extinguishers conspicuously located where they will be readily accessible?

Are fire extinguishers maintained in a fully charged and operable condition?

Are clearly visible operating instructions located on the front of the extinguishers?

Are fire extinguishers inspected when initially placed in service and thereafter at approximately 30-day intervals?

Is there a monthly record of the date and initials of the person performing the inspection?

Are there an annual maintenance inspection of the fire extinguishers and a record of the same?

Problems:

- *Fire extinguishers in light and moderate hazard areas are not ABC type.*
- *There is no K type fire extinguisher in the kitchen area.*
- *Fire extinguishers are not of proper size.*
- *The facility is not checking/inspecting fire extinguishers monthly.*
- *The facility failed to have an annual inspection and maintenance check of the fire extinguishers by a qualified vendor.*
- *Monthly or annual inspections of the fire extinguishers are not documented.*
- *Damage or lack of maintenance of a fire extinguisher.*
- *Fire extinguisher located more than five feet from the floor*

Any fire extinguisher that has been recharged should have a "Verification of Service" collar. (NFPA 10 4-4.4.2) If you cited a low-pressure or discharged fire extinguisher, remember this when verifying correction.

The use of halon type extinguishers in electrical rooms and rooms with automation equipment are allowed.

19 CSR 30-85.022 (8), (9), (10), (11) & (12)

SMOKING REGULATIONS

K66

Smoking regulations shall be adopted and shall include not less than the following provisions: 18.7.4, 19.7.4

1. Smoking shall be prohibited in any room, ward, or compartment where flammable liquids, combustible gases, or oxygen is used or stored in any other hazardous location, and such area shall be posted with signs that read NO SMOKING or shall be posted with the international symbol for no smoking.
2. Smoking by patients classified as not responsible shall be prohibited, except when under direct supervision.
3. Ashtrays of noncombustible material and safe design shall be provided in all areas where smoking is permitted.
4. Metal containers with self-closing cover devices into which ashtrays can be emptied shall be readily available to all areas where smoking is permitted.



K66

Does the facility have policies and procedures regarding the prohibition of smoking in the facility?

Does the facility prohibit smoking in areas where flammable liquids, combustible gases or oxygen are stored or used, **AND** does the facility ensure that NO SMOKING signs are posted in the same areas?

Does the facility supervise areas where non-responsible residents smoke? (State: Does the facility supervise "all" designated smoking areas?)

Does the facility supply noncombustible ashtrays, of appropriate design, in areas where smoking is permitted?

Does the facility provide metal containers with self-closing covers where ashtrays can be emptied in smoking areas? (These containers may also be made of a rated non-combustible material)

Problems: ◆◆ *Cite*

- *The facility fails to have metal or non-combustible self-closing containers for disposing of cigarette butts and ashes from ashtrays.*
- *Ashtrays were not made of non-combustible material or were not of safe design.*
- *Smoking by residents is not supervised.*
- *The facility has not adopted procedures to control smoking.*
- *Areas where canisters of oxygen are used and areas where oxygen concentrators are used are not posted with "NO SMOKING" signs.*
- *Areas where oxygen is stored are not posted with "NO SMOKING" signs.*
- *Smoking is observed in or close to areas where oxygen is store.*
- *An excessive amount of smoking materials was observed discarded on the ground, indicating ashtrays and receptacles not provided.*

19 CSR 30-85.022 (3) and (42)

BUILDING SERVICE EQUIPMENT

K67

Heating, ventilating, and air conditioning shall comply with 9.2 and shall be installed in accordance with the manufacturer's specifications. 18.5.2.1, 19.5.2.1, 9.2, NFPA 90A, 18.5.2.2, 19.5.2.2

K67

Are heating, air conditioning and ventilation (HVAC) equipment installed and maintained in accordance with NFPA 90A and 90B? (*Check NFPA 90A Appendix B*)

Do heating devices have automatic fuel shut-off switches/valves in case of excessive temperature or ignition failure?

Are gas and fuel furnaces installed and maintained in accordance with NFPA 54 and manufacture recommendations?

Are non-portable individual heaters provided with safety features to stop the flow of fuel or shut down the equipment in the case of excessive temperatures (thermostats) or ignition failure?

Problems:

- *HAVC equipment is not properly installed or maintained.*
 - *Air filters not cleaned (B-3.1)*
 - *Safety guards and electrical cover plates not in place*
 - *Lack of clearance of heating appliances (Ref. NFPA 90B Table 5.1.2.1)*
 - *Combustible materials stored in areas of heating appliances*
 - *Improper or exposed wiring*
 - *Combustible lint/dust build-up on heating appliances*
- *Ductwork not properly maintained or is damaged*
- *Dust and waste materials in ductwork represents an excessive build-up of combustible materials*
- *Fans, fan motors and controls of HVAC equipment are not inspected and cleaned at routine intervals*
- *Air intakes are not protected from excessive quantities and concentrations of noxious and hazardous vapors*
- *The corridors in the facility the facility serves as a return air plenum to the air-handling units.*
- *Non-portable individual heaters do not have thermostats or shut off switches.*
- *Approved non-portable individual heating units have not been installed properly.*

19 CSR 30-85.012 (89), (90), (93) & (94)

19 CSR 30-85.022 (3) & 52)

19 CSR 30-85.032 (1), (13), (28), (31), (36) & (38)

19 CSR 30-87.020 (8) & (9)

BUILDING SERVICE EQUIPMENT

K68

Combustion and ventilation air for boiler, incinerator and heater rooms is taken from and discharged to the outside air. 18.5.2.2, 19.5.2.2.

“furnace venting”



“drop down combustion air duct from the outside”



K68

Are rooms where fuel fired heating appliances are located, designed to have a source of intake air, for combustion, directly from the outside of the facility?

Are fuel fired heating appliances properly vented to the outside by connection to a chimney or vent that leads directly to the outside?

Problems:

- *The furnace is not vented to the outside or the vent piping has come loose*
- *There is no source of outside combustion air in the fuel fired furnace room*

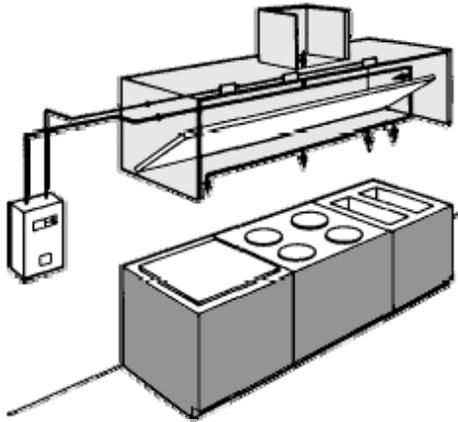
19 CSR 30-85.012)

19 CSR 30-85.022)

BUILDING SERVICE EQUIPMENT

K69

Cooking facilities shall be protected in accordance with 9.2.3, 18.3.2.6, 19.3.2.6, NFPA 96



All new or newly installed range hoods from 2003 to present must have a UL-300 complaint system. Existing installations may be continued in service as long as the extinguishment system is certified semi-annually and the exhaust hood meets NFPA 96, 1998 or later edition.

K69

Is the range hood compliant with UL 300 standards? (1998 NFPA 96 7-2.2, NFPA 17A 3-1.1)

Is the range hood and ducts constructed of heavy weight corrosive resistant materials?

Are grease removal equipment, filters and drip trays, in place, cleaned frequently, and maintained? (“Mesh filters shall not be used” NFPA 96: 3-1) Use baffled type only. □□Cite

Is the hood and associated devices cleaned at frequent intervals to prevent heavy contamination with grease and oily sludge?

Are all sources of grease ignition under the hood and extinguishing system?

If the facility has a deep fat fryer, is there at least 18 inches between the fryer and other ignition sources?

OR, is there a solid separation between the fryer and other ignition source? (NFPA 96: 9.1.2.3)

Is the fire extinguishing system inspected and serviced by a properly trained and qualified person at least every six months? (NFPA 96: 8-2)

Is the extinguishing system inspected monthly by the facility?

Are fusible links and automatic sprinkler heads replaced at least annually?

When the extinguishing system is activated is the fire alarm system activated, fuel source deactivated, and exhaust fans controlled as designed? (NFPA 96: 10.6.2, 10.7.1)

Does the fire alarm panel have a separate indicating (warning) light to show the extinguish system has been activated? (NFPA 96: 10.6.1)

Has the facility ensured hydrostatic testing of the wet chemical extinguishment cylinder within the last 12 years? (1998 NFPA 17A, 5-5) Has it been 12 years, since the original installation?

Problems: 19 CSR 30-85.022 (14) ◆◆ Cite

- The range hood was replaced with a hood of lightweight corrosive material.
- Grease filters and drip trays are not in place and being used during cooking operations
- Grease filters, drip pans, range hood surfaces and/or the surfaces of extinguishing equipment are not cleaned at frequent enough intervals to remove the build up of grease, oily sludge and/or greasy lint.
- New grease producing equipment has not been installed properly
 - Not under the exhaust hood and extinguishing system
 - Fuel shut off valves not attached to the extinguishing system covered appliances
 - Deep fat fryer too close to an open flame
- Fuse links and/or extinguisher heads appear to be corroded or damaged and do not appear to have been replaced in some time. Check further.
- A qualified person has not inspected the range hood within the last six months.
- The facility failed to complete or document monthly visual inspection of the system.
- The pull station for the extinguishing system is blocked or obstructed.

BUILDING SERVICE EQUIPMENT

K70

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 212 °F (100°C). 18.7.8, 19.7.8



Non-portable individual heating devices may be used provided they have safety features to stop the flow of fuel or shut down the equipment in case of either excessive temperatures (thermostats) or ignition failure. These type units are like the suspended individual units you see in attics and baseboard electrical units you might see in a resident's room. They should be directly wired to a circuit. No plug-ins.

Cite problems with suspended attic non-portable heaters at K67.

If you have problems related to the use or maintenance of fireplaces, cite at K130.

See comments at K130.

K70

Does the facility prohibit the use of portable space heater in all areas of the facility, except employee areas?
Do portable heaters used in employee areas, meet UL and NEC standards?
Are portable heaters used in employee areas of the type where the heating elements do not exceed 212 degrees F?

Problems:

- *The facility is using a portable heater for supplemental heat in non-employee areas.*
- *The facility has wired a portable heater, not approved for permanent installation into a branch circuit or by other means not recommended by the manufacture or by NFPA 70 (National Electrical Code)*

19 CSR 30-85.032 (28) *****State regulation prohibits the use of portable heaters in any location.***

BUILDING SERVICE EQUIPMENT

K71

Rubbish Chutes, Incinerators and Laundry Chutes. 18.5.4, 19.5.4, 9.5, 8.4, NFPA 82

■ (1) Any existing linen and trash chute, including pneumatic rubbish and linen systems, that opens directly onto any corridor shall be sealed by fire resistive construction to prevent further use or shall be provided with a fire door assembly having a fire protection rating of 1 hour. All new chutes shall comply with 9.5.

■ (2) Any rubbish chute or linen chute, including pneumatic rubbish and linen systems, shall be provided with automatic extinguishing protection in accordance with 9.7.

■ (3) Any trash chute shall discharge into a trash collection room used for no other purpose and protected in accordance with 8.4

■ (4) Existing flue-fed incinerators shall be sealed by fire resistive construction to prevent further use.

K71

Are rubbish chutes and linen chutes installed and maintained in accordance with NFPA 82?

Are rubbish and linen chutes enclosed by construction of the proper rating? (**Buildings less than four floors in height require a one-hour fire resistance rating. Buildings four stories or more, require a two-hour fire resistance rating**)

Are the rubbish and laundry chutes protected by a sprinkler system? (**Usually a sprinkler head at the top of the chute**)

Are doors to rubbish and laundry chutes?

- Gasketed
- Self-closing
- Positive latching
- A properly rated door assembly

Are rooms to which the laundry chutes discharge, separated by one-hour construction and separated from the chute by a one hour rated self-closing door?

Are rooms to which the rubbish chutes discharge, separated from the chute by a one and one half hour rated self-closing door?

Is the trash/rubbish collection room separated by one hour rated construction?

Problems:

- *The facility failed to maintain the laundry chute door.*
- *The facility failed to maintain bottom of the chute slide doors or fuse links.*



BUILDING SERVICE EQUIPMENT

K160

2000 EXISTING

All existing elevators, having a travel distance of 25 ft or more above or below the level that best serves the needs of emergency personnel for fire fighting purposes, conform to Firefighter's Service Requirements of ASME/ ANSI A17.3, *Safety Code for Existing Elevators and Escalators*. 19.5.3, 9.4.3.2 ANSI A17.1 states 25 ft or more above or below the designated level and defines "designated level" as the main floor or other floor level that best serves the needs of emergency personnel for fire fighting purposes or rescue purposes identified by the building code or fire authority. Depending on floor slab thickness and heights this would generally apply to a three-story building, and almost certainly to a four-story building. Includes firefighters service **phase I** key recall and smoke detector automatic recall, firefighters service **phase II** emergency in-car key operation, machine room smoke detectors, and elevator lobby smoke detectors. 19.5.3, 9.4.3.2



K160

Does the elevator function properly?

- Doors close properly
- Is the elevator car floor level with the building floor when the doors open?
- Are elevator doors provided with interlocks to prevent the car from moving if the doors are not closed?
- Is electrical wiring in the hoistway enclosed in a metal conduit or raceway?
- Does the elevator car have guarded lighting?
- Does the elevator have a capacity plate, which list its capacity in pounds?
- Is the elevator equipped with an alarm bell or two-way communication device?

Is the elevator maintained in accordance with ASME A17.1?

Is the machine room clean and free of grease and oil, materials not necessary for the maintenance of the elevator and flammable liquids?

Do elevators operating on three or more floors have the appropriate key recall and emergency in-car key operation systems?

If the elevators are programmed to automatically return to the ground floor when the fire alarm is trigger, does this happen when the alarm is activated?

Is there documentation the elevator and related equipment have been inspected on an annual basis by a Missouri State Licensed Inspector?

Problems:

- *The facility does not have documentation of annual inspection and testing.*
- *The machine room is not maintained clean and hazard free.*
- *The elevator is not functioning properly or is out of order.*

Statutory enforcement and the responsibility of elevator safety in Missouri are under the Department of Public Safety. If you have serious concerns about the operation of a facility elevator, you should contact this agency, through your supervisor.

**Division of Fire Safety
Elevator Safety Unit
2401 East McCarty Street, PO Box 844
Jefferson City, MO 65101
(573) 751-2930**

19CSR 30-85.032 (36)

Fails to meet state elevator regulations contained in 11 CSR Division 40 Chapter 5.

BUILDING SERVICE EQUIPMENT

K161

2000 EXISTING

All existing escalators, dumbwaiters, and moving walks conform to the requirements of ASME/ ANSI A17.3, *Safety Code for Existing Elevators and Escalators*. 19.5.3, 9.4.2.2

Includes escalator emergency stop buttons and automatic skirt obstruction stop. For power dumbwaiters includes hoist way door locking to keep doors closed except for floor where car is being loaded or unloaded.

2000 NEW

All elevators, escalators, and conveyors comply with ASME/ ANSI A17.1, *Safety Code for Elevators and Escalators* (Includes car emergency signaling, firefighters service phase I key and smoke detector automatic recall, firefighters service phase II emergency in-car operation, machine room smoke detectors, elevator lobby smoke detectors). 18.5.3, 9.4

K161

Mark K161 N/A for existing homes that do not have escalators, dumbwaiters and moving walks.

Is the dumbwaiter maintained in accordance with ASME/ ANSI A17.1 standards?

Are doors to dumbwaiters maintained?

- A one-hour rated self-closing latching door for facilities with three or fewer floors
- A two-hour rated self-closing latching door for facilities with four or more floors.

Problems: **19CSR 30-85.032 (36)**

- *Doors to dumbwaiters are not of the proper rating or the self-closing device has been removed.*

See questions in K160. All also apply to new facilities. In addition:

Is the elevators programmed to automatically return to the ground floor when the fire alarm is trigger, does this happen when the alarm is activated?

Are there smoke detectors located in the machine room and lobby or corridor next to the elevator?

Problems: **19CSR 30-85.032 (36)**

- *See problems identified in K160, all also relate to new.*
- *No smoke detector in the machine room*
- *Smoke detectors not located near elevators*

FURNISHINGS & DECORATIONS

K72

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

K73

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

K72

Is the means of egress arranged so that exits are readily accessible at all times?

Are furnishings, or other objects placed to not obstruct access, egress or visibility of exits?

Are exit access doors and exit doors free of mirrors, hangings, or draperies, or are they painted in a way that might conceal, obscure, or confuse the direction of travel?

Is headroom in the means of egress no less than 7-½ feet?

Are projections into the means of egress limited to no more than 3-½ inches on each side of the corridor?

Problems: **19CSR 30-85.022 (25) & (33)**

- *The exit door and area adjacent has been painted with a mural or in such a way as to conceal the exit to a reasonable person.*
- *Furniture or equipment has been placed directly in front of or near the exit doorway.*
- *Drapes have been hung across an exit obstructing the visibility of the exit*
- *A safety gate has been placed on a stairway or ramp entrance for safety reasons, but is not easy to open due to latching or other problems.*

K73

19CSR 30-85.022 (3)

Are combustible decorations and furnishings prohibited from use in the facility?

Shredders exceeding 32 gallons in capacity and are not located in a hazardous area. (See K29)

Problems:

- *Excessive amounts of washed egg grate mattresses found in storage.*
- *Flammable holiday decorations or real Christmas trees in use.*
- *Excessive amounts of combustible materials in resident rooms or use areas.*

FURNISHINGS & DECORATIONS

K74

Draperies, curtains, including cubicle curtains, and other loosely hanging fabrics and films serving as furnishings or decorations in health care occupancies shall be in accordance with provisions of 10.3.1 and NFPA 13 Standard for the Installation of Sprinkler Systems. Except shower curtains shall be in accordance with NFPA 701.

- Newly introduced upholstered furniture shall meet the criteria specified when tested in accordance with the methods cited in 10.3.2 (2) and 10.3.1. 18.3.5.3 and NFPA 13
- Newly introduced mattresses shall meet the criteria specified when tested in accordance with the method cited in 10.3.2 (3) and 10.3.4. 18.7.5.3, 19.7.5.3

Newly introduced upholstered furniture and mattresses means purchased since March 2003.

K75

Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity. The average density of container capacity in a room or space shall not exceed .5 gal/ft² (20.4 L/m²). A capacity of 32 gal (121 L) shall not be exceeded within any 64-ft² (5.9-m²) area. Mobile soiled linen or trash collection receptacles with capacities greater than 32 gal (121 L) shall be located in a room protected as a hazardous area when not attended. 18.7.5.5, 19.7.5.5

K74

Are draperies and curtains flame resistant rated in compliance with NFPA 701?
Are privacy (cubicle) curtains flame resistant rated in compliance with NFPA 701 and constructed to meet NFPA 13 standards?
Do ceiling suspended privacy curtains have a 18 inch mesh area along the top with the mesh openings being $\geq \frac{1}{2}$ inch across the diagonal?
Are non-rated draperies and curtains properly treated with a flame retarding chemical treatment that meets NFPA 701?
Does the facility have verification of the flame resistance rating of draperies and curtains **and/or** documentation regarding the use and application of a chemical fire retardant used on fabrics?
Does the documentation indicate the fabric's ability to retain fire-resistance after laundering?
What is the facility's procedure with regard to laundering draperies, curtains and privacy curtains and assuring fire-retardancy after laundering?
Are newly introduced upholstered furniture and mattresses flame-retardant?

Problems: **19CSR 30-85.022 (49)** ◆◆ *Cite – new furniture & mattress documentation*

- *Non-rated draperies and/or curtains in use.*
- *No documentation of fire-resistance ratings of fabrics.*
- *Mesh along tops of privacy curtains is $< \frac{1}{2}$ inch.*

K75

Are linen and trash receptacles stored in the corridor in use every 30 minutes?
Do linen or trash receptacles have a capacity \leq 32 gallons?
Are multiple soiled linen containers stored in a shower room or other room not protected as a hazardous area?
Does the total capacity of linen and trash collection receptacles not exceed 32 gallons per area equal to 64 square feet (**an eight by eight foot area**)?

Problems: **19CSR 30-85.022 (3) & (33)**

- *Linen or trash receptacles stored in corridor, which are not in use.*
- *The allowable capacity of receptacles has been exceeded*

*For LSC purposes, waste receptacles in residents' rooms no longer have to be metal or non-combustible. This is a state only violation, however, and should be cited at **19 CSR 30 – 85.022 (51)***

LABORATORIES

K31

Laboratories employing quantities of flammable, combustible, or hazardous materials that are considered a severe hazard shall be protected in accordance with NFPA 99. (Laboratories that are not considered severe hazard shall meet the provision of K29.) Laboratories in Health Care occupancies and medical and dental offices shall be in accordance with NFPA 99, Standard for Health Care Facilities 10.5.1.

K136

Procedures for laboratory emergencies shall be developed. Such procedures shall include alarm actuation, evacuation, and equipment shutdown procedures, and provisions for control of emergencies that could occur in the laboratory, including specific detailed plans for control operations by an emergency control group within the organization or a public fire department in accordance with NFPA 99, 10.2.1.3.1, 18.3.2.2, 19.3.2.1.

K131

Emergency procedures shall be established for controlling chemical spills in accordance with NFPA 99. 10.2.1.3.2

K132

Continuing safety education and supervision shall be provided, incidents shall be reviewed monthly, and procedures reviewed annually shall be in accordance with NFPA 99. 10.2.1.4.2

K31

K136

K131

K131 relates to emergency procedures in a laboratory.

K132

K132 relates to safety education and supervision in a laboratory.

LABORATORIES

K133

Fume hoods shall be in accordance with NFPA 99, 5.4.3, 5.6.2

K134

Emergency Shower:

Where the eyes or body of any person can be exposed to injurious corrosive materials, suitable fixed facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. Fixed eye baths designed and installed to avoid injurious water pressure shall be in accordance with NFPA 99, 10.6.

K135

Flammable and combustible liquids shall be used from and stored in approved containers in accordance with NFPA 30, Flammable and Combustible Liquids Code, and NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals. Storage cabinets for flammable and combustible liquids shall be constructed in accordance with NFPA 30, Flammable and Combustible liquids Code NFPA 99, 4.3, 10.7.2.1.

K133

K133 relates to fume hoods in a laboratory.

K134

K134 relates to emergency procedures in a laboratory.

K135

K135 relates to the use of piped in gas and other chemicals in the laboratory.

Refer to K76 and K77 regarding the use of these gases in nursing homes.

MEDICAL GASES AND

ANESTHETIZING AREAS

K76

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

Gas canisters

B tanks = 3 ½ X 13 inches 5.3 cf

D tanks = 4 ½ X 17 inches 12.6 cf

**E tanks = 4 ½ X 26 inches 22 cf*

H tank = 9 X 51 inches 197-265 cf

Conversion factor:

1 liter = .03531 cubic feet

Liquid Oxygen Units

<u>COMPANION</u> <u>MODEL #</u>	<u>Cu. Ft. Gas</u> <u>when full</u>
500/550	19.14
1000/T	37.36
21	610.52
* 31	901.24
* 41	1191.95

<u>LIBERATOR</u> <u>MODEL #</u>	<u>Cu. Ft. Gas</u> <u>when full</u>
20	627.7
30	905.7
37	1110.9
*45	1352.4
60	1737.3

** Most common models used*

K76

Are gases in cylinders and liquefied gases in containers store, maintained and used in the appropriate manner in the facility?

Are cylinders in service and in storage: (Reference NFPA 99; 4-3.1.1. * & 4-3.5.2.2)

- Individually secured and located to prevent falling or being knocked over?
- Identified by label or stencil and color (green/white for oxygen)
- Stored in a separate enclosure serving no other purpose
 - Outside storage shall be enclosed and in accordance with NFPA 50
- Stored with no combustible materials
- Equipped with appropriate valves, fittings, protective caps, etc.
- Freestanding cylinders are properly supported by a base collar, chained or in a stand or cart.
- No cylinders should be chained to movable apparatus or beds.
- Empty and full cylinders are segregated
- Cylinders stored outside are protected from the weather (4-3.5.5.5 paragraph 3)
 - Protection against accumulations of ice and snow
 - Protection where extreme temperatures prevail

Does the facility have policies regarding the use of gas in cylinders and liquefied gas in containers? (Reference NFPA 99: 4-3.5.2.1 with regard to what should be in policy.)

Are rooms, where greater than 3000 cu. Ft. of oxygen are store, separated by one-hour rated construction and are they vented to the outside?

Problems:

- *Oxygen storage area is not labeled to caution about the storage of oxygen.*
- *Cylinders are not stored in a secure manner. (Chained or in a stand or collar).*
- *Valve protection caps are not in place*
- *Outside storage is not enclosed or protected from weather*
- *Too many oxygen cylinders stored in an un-separated, un-vented area.*

19 CSR 30-85.022 (5), (6) & (7)

Up to 300 cubic feet (12 E size cylinders) of nonflammable medical gas may be accessible as operational supply rather than storage, when properly secured. Reference CMS – S&C-07-10 dated 1/12/2007.

Page revised 3/01/07

MEDICAL GASES AND ANESTHETIZING AREAS

K77

Piped in medical gas systems comply with NFPA 99, Chapter 4.



K78

Anesthetizing locations shall be protected in accordance with NFPA 99, Standard for Health Care Facilities.

(a) Shutoff valves are located outside each anesthetizing location and arranged so that shutting off one room or location will not affect others.

(b) Relative humidity is maintained equal to or greater than 35%

NFPA 99 4.3.1.2.3(n) and 5.4.1.1, 18.3.2.3, 19.3.2.3

K77

Is the gas content (OXYGEN) and operating pressure of the medical gas piping system labeled?
Are shutoff valves accessible and installed in valve boxes?

Is there a shutoff valve at the immediate source of supply, which permits the entire system to be shut down?

Are shutoff valves labeled as to area that line supplies?

Has a master alarm system been provided to monitor the operation of the system, the supply, reserve and pressure in the main line?

Is this warning system connected to the life safety branch of the emergency system and is the alarm audible?

Are bulk storage areas separated from other areas, with no storage of combustibles and maintained in a manner not to create damage hazards?

Problems:

- *Piped systems are not labeled as appropriate*
- *The piped oxygen warning system and alarms are not functional*
- *Bulk oxygen storage areas are not maintained in a safe manner.*

K78

MEDICAL GASES AND ANESTHETIZING AREAS

K140

(a) Master alarm panels are in two separate locations and have audible and visible signals.

(b) There are high/low alarms for +/- 20% operating pressure. This section shall be in accordance with NFPA 99, 4.3.1.2.2

c) Where a level 2 gas system is used, one alarm panel that complies with 4.3.1.2.2(b) 3 a, b, c and d and with 4.3.1.2.2(c) 2 and 5 shall be permitted. (4.4.1 exception No. 4).

K141

Non-smoking and no smoking signs in areas where oxygen is used or stored shall be in accordance with 18.3.2.4, 19.3.2.4, NFPA 99, 8.6.4.2



K140

K141

Are precautionary no smoking signs conspicuously displayed in the corridor adjacent to the door where oxygen is in use or stored?

Are outside oxygen storage areas labeled with precautionary no smoking signs?

Exception: Health care facilities where all smoking is prohibited may prominently place signs at all major entrances, and then secondary signs are not required. If smoking is permitted in any way or location in the facility, this exception does not apply, even if there is a no smoking policy.

Problems:

- *NO SMOKING signs not in place where oxygen is used or stored.*

19 CSR 30-85.022 (3)

MEDICAL GASES AND ANESTHETIZING AREAS

K143

Transferring of oxygen shall be:

- (a) separated from any portion of a facility wherein patients are housed, examined, or treated by a separation of a fire barrier of 1-hour fire-resistive construction; and
- (b) the area that is mechanically ventilated, sprinklered, and has ceramic or concrete flooring; and
- (c) in an area that is posted with signs indicating that transferring is occurring, and that smoking in the immediate area is not permitted in accordance with NFPA 99 and Compressed Gas Association. 8.6.2.5.2



K143

Are rooms where the transfilling of liquid oxygen take's place:

- Separated by a fire barrier equal to a 1-hour fire resistance construction, **AND**
- Provided with door assembly having a minimum fire resistance rating of 45 minutes, self closing and positive latching hardware, **AND**
- Provides with sprinkler(s), **AND**
- Provided with concrete or ceramic tile floors, **AND**
- Provided with mechanically ventilation at a minimum rate of one CFM of exhaust for each square foot of floor area with a minimum 36 CFM of exhaust ventilation?

Are electrical wall fixtures, switches and receptacles at least five (5) feet above the floor?

Are precautionary signs posted in the immediate area clearly indicating that transfilling of liquid oxygen is taking place and that smoking is prohibited?

Is the staff person performing the transferring of the oxygen properly trained and qualified in the precautions necessary to avoid the hazards listed above?

Does the facility have written operating instructions for the safe transfilling of liquid oxygen?

Problems:

- *Improper transfilling of liquid oxygen units.*
- *No cautionary signs where liquid oxygen is transferred or stored.*
- *Storage of liquid in an area not separated or designed for that storage*

19 CSR 30-85.022 (3)



ELECTRICAL

K106

The hospital and all nursing homes and hospices with life support equipment have a Type I Essential Electrical System powered by a generator with a transfer switch and separate power supply. The EES is in accordance with NFPA 99, 3.4.2.2, 3.4.2.1.4.

K144

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



K106

Does the facility have life support equipment and a Type 1 Essential Electrical System (EES) system tied to a generator?

- **If NO;**
 - Does the facility maintain admitting and discharge policies that preclude the provisions of care for any resident who may need to be “sustained” by electrical life supporting equipment?
 - Mark K106 N/A
- **If YES;**
 - Is the generator functioning?
 - Is the EES including the generator set up to meet the requirements of NFPA 99 section 3-4.2.2?
 - Are there appropriate transfer switches connecting the EES to the generator and separate transfer switches for each branch of the EES system?
 - The two systems are the **emergency system** and the **equipment system**. The emergency system is further divided into two mandatory branches, the **life safety branch** and the **critical branch**. Each of these two branches (life safety and critical) must be on separate automatic transfer switches

Problems:

19CSR 30-85.012 (128)

19 CSR 30-85.032 (1)

- *The facility does not maintain the EES system*
- *The facility has admitted a resident requiring life support, but does not have a Type I EES system*

K144

Does the facility have a generator?

- **If NO;**
 - Mark K144 N/A
- **If YES;**
 - Is the generator inspected weekly?
 - Is the generator exercised monthly under load for 30 minutes?
 - Does the facility maintain documentation of inspections testing and servicing?

Problems:

19CSR 30-85.012 (128)

19 CSR 30-85.032 (1)

- *The facility is not inspecting or testing the generator as required*
- *The facility fails to maintain a record of the generator inspections, test and service.*

ELECTRICAL

K145

The Type I EES is divided into the critical branch, life safety branch and the emergency system and shall be in accordance with NFPA 99, 3.4.2.2.2

K145

Does the facility have a Type 1 Essential Electrical System (EES) system?

- If NO**, mark K146 N/A
- If YES**, is the Type 1 EES comprised of two separate systems as required by NFPA 99 section 3-4.2.2?

A Type 1 EES is comprised of two separate systems. The two systems are the *emergency system* and the *equipment system*. The emergency system is further divided into two mandatory branches, the *life safety branch* and the *critical branch*. Each of these two branches (life safety and critical) must be on separate automatic transfer switches.

The *life safety branch* supplies power for lighting, receptacles and equipment as follows:

- Illumination of means of egress, nurse stations, medication rooms, dining and living rooms and areas immediately outside of exit doors, exit signs and exit directional signs.
- Alarm systems, including fire alarms activated by manual stations, water flow alarms of sprinkler systems, fire and smoke detecting systems, and alarms for required nonflammable medical gas systems if installed.
- Task illumination and selected receptacles at generation set location
- Selected duplex receptacles in resident corridors, at each resident bed location where life-support equipment is used, nurse stations, medication rooms, refrigeration for biologicals.
- Facility intercom system used for giving instruction during emergencies
- Elevator cab lighting, control and communication
- No other function other than those listed above should be connected to the life safety branch.

The *critical branch*, in a nursing home, may supply power for special purpose rooms, task illumination, selected receptacles and fixed equipment, in the following areas:

- In patient care areas such as;
 - Medication preparation and dispensing areas
 - Special acute nursing areas
 - Nurses' stations
 - Task illumination at patients' bed and receptacles where needed
- Nurse call systems
- Telephone equipment and rooms
- Dialysis rooms

The *Equipment System*, in a nursing home, should be connected to the following equipment:

- Smoke control and stair pressurization systems
- Kitchen hood supply and/or exhaust systems, if required to operate during a fire in or under the hood (in most systems the exhaust shuts down)
- Automatic or manual connection of heating equipment to provide heating for infection/isolation rooms, patient rooms and for water-based fire protection systems.
- Supply, return and exhaust ventilation systems.

ELECTRICAL

K145 (continued)

K146

The nursing home/hospice with no life support equipment shall have an alternate source of power separate and independent from the normal source that will be effective for minimum of 1½ hour after loss of the normal source NFPA 99, 3.6.3.1.1



K145 (continued)

Problems: **19CSR 30-85.012 (128)** **19 CSR 30-85.032 (1)**

- *The branches of the Type I EES are not set up and maintained as defined above.*

K146

Does a facility that does not have life support equipment have an alternative source of power that:

- Lasts a minimum of 1 ½ hour after the loss of normal electrical power?
- Provides power for emergency lighting for life safety purposes (exit egress)? **(Cite at K46)**
- Provides for task lighting that is necessary for safe cessation of procedures in process?
(1999 NFPA 70 517-40 Exception [c] and 700-12)
 - Medication preparation and dispensing area? **◆◆ Cite**
 - Nursing station?

Does the facility maintain a written record of inspection, performance, exercising period and repairs for this power source?

Is the alternative source of power maintained and working?

- Individual emergency lights
- A back-up generator

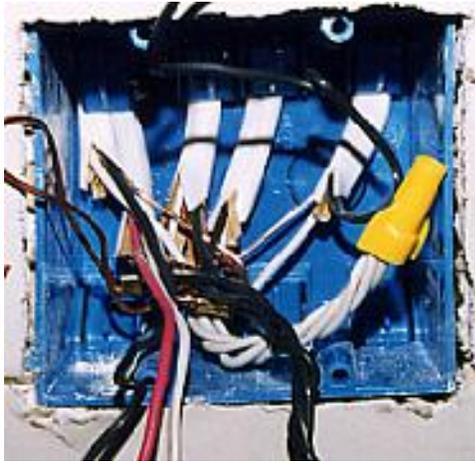
Problems: **19CSR 30-85.022 (40)** **19 CSR 30-85.032 (1)**

- *No task lighting in the medication room.*
- *Emergency task lighting not maintained*
- *No documentation of testing or maintenance.*

ELECTRICAL

K147

Electrical wiring and equipment shall be in accordance with NFPA 70, National Electrical Code. 9.1.2



K147

Does the facility install and maintained in good repair all electrical wiring and appliances, in accordance with NFPA 70?

Are extension cords used in lieu of permanent wiring? ◆◆

Do all extension cords have over current/ground fault protection? (1999 NFPA 70 305-6(a)) ◆

Are all flexible electrical cords free of splices, fraying and exposed non-shielded wire **AND** are the cords protected from damage? (1999 NFPA 70 305)

Are motor driven appliances, such as refrigerators, air conditioners, etc., attached by a single plug to a receptacle? (1999 NFPA 700 400-7, 400-8, 430 & 440)

Are electrical outlet, receptacle and junction boxes covered? (1999 NFPA 70 370-25 & 410-12)

Is there an appropriate clearance in front of electrical service panels? (See Table 110-26(a) in NFPA 70)

Does the facility allow for the use of electric blankets? What is there policy with regard to the use?

Does the facility prohibit the use of hanging or corded light fixtures and appliances within 8 feet of bathroom fixtures? (1999 NFPA 70 410-4 & 410-57)

Are electrical appliances, required to be grounded, grounded? (1999 NFPA 70 250)

Does the facility prohibit the use of high heat lamps and lighting fixtures?

Problems:

19 CSR 30-85.032 (13), (18) & (22)

- *Inappropriate electrical wiring installation*
- *Uncovered outlet boxes.*
- *Improper use of electric blanket with an incontinent resident*
- *Frayed or worn electrical cords*
- *Improper use or lack of protection of extension cord.*
- *Wiring not inspected by a qualified electrician at least every two (2) years. (State)*

Flexible cords and cord set assemblies are allowed for Information Technology Equipment NFPA 70-645

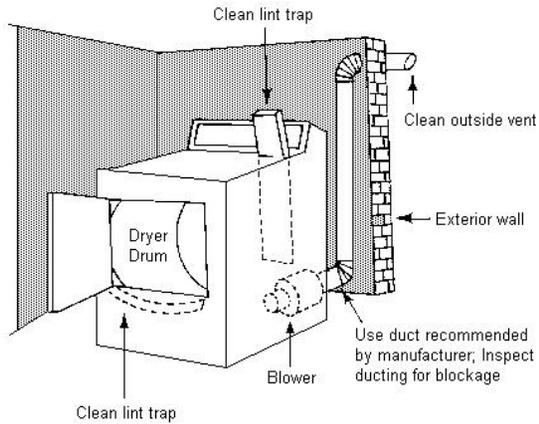
Chapter 9 of NFPA 99 has additional guidance with regard to the use of power cords & electrical appliance in health care facilities.

Page revised 12/11/06

K130

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.



K130

Are “means of egress” areas under construction, repair, or improvements, inspected daily in compliance with 7.1.10.1, 19.7.9, and NFPA 241, *Standards for Safeguarding Construction, Alteration and Demolition Operations*?

Are fireplaces used appropriately? (NFPA 101 9.2.2 and 18.5.22 Exception No.2)

Are exterior areas immediately adjacent to the facility free of excess combustible materials or excessive dried vegetation, which would present a fire hazard?

Are laundry dryers free of accumulations of lint and combustible materials?