

Reference Codes

- NFPA 10 – Fire Extinguisher – 2010
- NFPA 13 – Sprinklers – 2010
- NFPA 25 – Sprinkler Testing – 2010
- NFPA 70 – Electrical – 2009
- NFPA 72 – Fire Alarm – 2010
- NFPA 80 – Fire Doors – 2010
- NFPA 96 – Range Hood – 2011
- NFPA 101A – FSES – 2013
- NFPA 110 – Generators – 2011
- NFPA 220 – Construction – 2010



NFPA 99 Health Care Facilities Code

- Standard become a Code
- The code is intended for professionals involved in the design, construction, maintenance, and inspection of health care facilities, in addition to the design, manufacture, and testing of appliances and equipment used in patient care rooms of the health care facilities
- Unique because the code is based on Risk Assessment as determined by the facility



NFPA 99 Chapters

- | | |
|-------------------------------|---|
| 1. Administration | 9. HVAC |
| 2. Referenced Publications | 10. Electrical Equipment |
| 3. Definitions | 11. Gas Equipment – calculate storage of medical gases/ protections |
| 4. Fundamentals | |
| 5. Gas and Vacuum Systems | 12. Emergency Management |
| 6. Electrical Systems | 13. Security Management |
| 7. IT & Communication Systems | 14. Hyperbaric Facilities |
| 8. Plumbing System | 15. Features of Fire Protection |

Fundamentals Levels of Risk

- Code section applied to facility determined by level of risk determined by risk assessment:
 - **Category 1:** equipment failure likely to cause major injury or death of patients or caregivers
 - **Category 2:** equipment failure likely to cause minor injury (*not serious or at risk life*) to patients or caregivers
 - **Category 3:** equipment failure not likely to cause injury to patients or caregivers; can cause patient discomfort
 - **Category 4:** equipment failure would have no impact on patient care

How it Works



- Determine what the room or equipment is used for.
- Determine the risk to the patient.
- Select the appropriate risk category.
- Select the systems or procedures in the code that are prescribed by that level of risk category.
- Assessment tool

HCFC - K901

- Fundamentals – Building System Categories Building systems are designed to meet Category 1 through 4 requirements as detailed in NFPA 99. Categories are determined by a formal and documented risk assessment procedure performed by qualified personnel. Chapter 4 (NFPA 99)



NFPA 99 Risk Assessment


Facility Name: _____
Address: _____
Administrator: _____
Name(s)/Title(s) of Risk Team: _____
Date Assessment Completed: _____

This risk assessment has been developed to comply with NFPA 99 (2012 Edition) risk-based process. NFPA 99 (2012) requires facilities to be designed to meet system risk categories 1 through 4 as described in the code. Existing a facility's risk assessment being completed the facility would follow the requirements of each chapter. Each chapter is also divided into the four risk categories based on either New or EXISTING and instructs facility of the requirements.



**So what is
NEW....**

**Discharge from Exits
K 271**



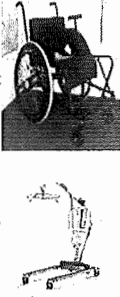
Exit discharge is arranged and provides a level walking surface with respect to changes in elevation and shall be maintained free of obstructions. Additionally, the exit discharge shall be a hard packed all-weather travel surface in accordance with CMS Survey and Certification Letter 05-38, 18.2.7, 19.2.7, S&C 05-38

NEW

New Corridor Width Requirements

Projections for wheeled equipment, provided that all of the following conditions are met:

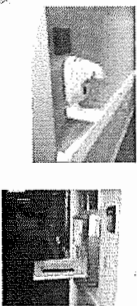
- (a) The wheeled equipment does not reduce the clear unobstructed corridor width to less than 60 in.
- (b) The health care occupancy fire safety plan and training program address the relocation of the wheeled equipment during a fire or similar emergency.
- (c) The wheeled equipment is limited to the following:
 - i. Equipment- carts in use
 - ii. Medical emergency equipment
 - iii. Patient lift and transport equipment



NEW

Means of Egress K 211

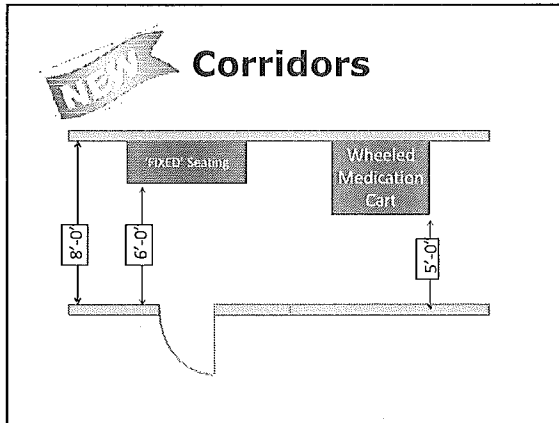
- Where corridor is at least 6', projections not greater than 6" (though ADA reduces to 4")
- Projection is less than 36" wide
- Projection must be above 34"-80" from floor
- 18/19.2.3.4



NEW

Fixed Furniture in Corridors

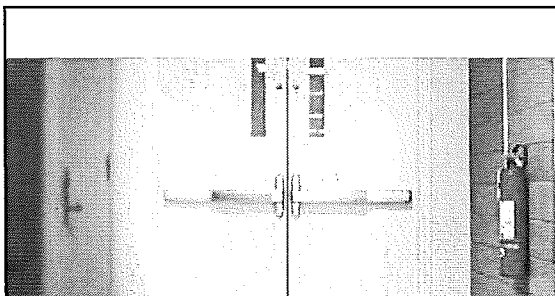
- Where the corridor width is at least 8'
 - Securely attached to the floor or to the wall with
 - Clear unobstructed corridor width to less than 6'
 - One side of the corridor.
 - Groupings does not exceed an area of 50 ft².
 - Separated by a distance of at least 10 ft.
 - Does not obstruct access to fire protection equipment.
- Corridors are protected by automatic smoke detection system or the spaces are arranged and located to allow direct supervision
- The smoke compartment is protected throughout by an approved, supervised automatic sprinkler system



Corridor Doors K363

- 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 1¾ inch solid-bonded core wood, or capable of resisting fire for at least 20 minutes.
- Doors in fully sprinklered smoke compartments are only required to resist the passage of smoke.
- There is no impediment to the closing of the doors.
- Clearance between bottom of door and floor covering is not exceeding 1"





Fire and Smoke Door Inspections Qualified Training

02/03/1



Doors Testing K 211

- K211 Means of Egress – General
Aisles, passageways, corridors, exit discharges, exit locations, and accesses are in accordance with Chapter 7, and the means of egress is continuously maintained free of all obstructions to full use in case of emergency, unless modified by 18/19.2.2 through 18/19.2.11.
- Inspection and testing requirements for fire-rated door assemblies in accordance with NFPA 80. Inspection and testing requirements for smoke door assemblies in accordance with NFPA 105
 - Applies to new and existing installations
 - Inspected and tested not less than annually
 - Written record shall be signed and kept for inspection
 - Repairs shall be made "without delay"



Door Inspection Requirement

- This packet has been developed to provide guidance and training to ensure that individuals inspecting and testing door are prepared and qualified.
- Door assemblies shall be inspected by a QUALIFIED INDIVIDUAL annually
 - Reviews operation, door clearance, coordinator, latch and closer
- Record kept for AHJ inspection





Door Inspection

- Fire-rated door assemblies
- A visual inspection includes the following:
 - Labels are present and legible
 - No holes or breaks of door or frame
 - No signs of damage to the door, frame, hinges, and hardware
 - No parts are missing or broken
 - Door clearances are appropriate
 - Self-closing device operating properly
 - If installed, the coordinator is working
 - Latching hardware operates
 - No auxiliary hardware installed that would interfere with operation
 - No field modifications that would void the label
 - Gasketing and edge seals, if required, are inspected


NEW **SPECIAL NEEDS LOCKING ARRANGEMENTS K 363**

- Lock on doors in the path of egress is not permitted unless complies with:
 - Clinical needs locks where individuals pose a security risk provided staff can unlock doors (dementia and psychiatric units)
 - Delay egress locks permitted the facility is fully sprinklered or smoke detected

NEW **Corridor Door Locking Devices**

- Provisions must exist for rapid removal
 - Remote control locks
 - Keys carried by staff
 - Other reliable means
- Smoke and/or sprinkler activation will release the locks
- Locks release with loss of power

18/19.2.2.2.5 and 18/19.2.2.2.6



Delayed Egress Locks

- Permitted provided:
 - Releases with/in 15 seconds or 30 seconds per AHJ
 - ≤15 lb. for ≤ 3 seconds to initiate
 - Unlocks with the loss of power
 - Unlocks with the initiation of fire alarm and/or smoke detector
 - Emergency lighting at door
 - Instructional sign @ door

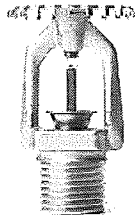
PUSH UNTIL ALARM SOUNDS
DOOR CAN BE OPENED IN 15 SECONDS

Sprinkler System K351

- Sprinklers must be installed throughout a facility in accordance with NFPA 13
 - Complete sprinkler system required for all new construction
 - Complete sprinkler system required for certain existing construction types
 - Complete sprinkler system required for all nursing homes, regardless of construction type by Aug. 13, 2013
 - S&C Memo 09-04
 - Waivers and FSEs for lack of sprinklers in certain areas will no longer be permitted after that date
 - There will be no extensions to complete sprinkler installation

Common Sprinkler Issues

- Weekly Gauges – Dry - (2-2.4.2) record air pressures.
- Monthly Gauges – Wet - (2-2.4.1) record air pressures
- Gauges replaced or tested every 5 years
- Annually - Sprinklers shall be inspected /floor level
- Annually - (2-3.4) The freezing point of solutions in antifreeze shall be tested annually by measuring the specific gravity with a hydrometer or refractometer





Sprinklers

- Once every 5 years an internal inspection must be conducted of the sprinkler piping at two locations
 - At one end of the main (drain system and remove the end cap)
 - Remove one sprinkler head at the end of branch
 - If there is presence of foreign materials further testing may be required

Sprinkler Fire Watch



- NFPA 25 formerly required evacuation or fire watch of facilities if a sprinkler system was out of service for more than 4 hours in a 24-hour period.
This has been changed to 10 hours in 24-hour period
- Developed to accommodate a "work day" but can be at anytime

Generator

- Type I and Type II EES (essential electrical system) must use a Level I generator in accordance with NFPA 110
- Level I generators must be visually inspected weekly and exercised under load monthly
- Specified by manufacturer or can use NFPA 110 Appendix as guide



Weekly Generator Inspection

- Checked with the unit stopped or running
 - Fuel levels, day tank float switch; piping, hoses
 - Connectors; operating fuel pressure; and for any obstructions to tank vents and overflow piping
 - Oil (check for proper oil level and oil operating pressure; lube oil heater)
 - Cooling system
 - Exhaust system
 - Electrical
 - Prime Mover/Generator

Generator Monthly Exercise K918



- Generator sets exercised under load 30 minutes 12 times a year in 20-40 day intervals
 - Run at a minimum of 30% of name plate rating (diesel)
 - If run at less than 30% must have annual load bank test
 - Load that maintains the exhaust temperature as recommended by manufacturer
 - Ensure that the startup and or cool down times are not included in the 30 minute load test.



Generator Compliance

- NFPA 110 8.4.2.4
- Spark-ignited generator sets shall be exercised at least once a month with the available EPSS load for 30 minutes or until the water temperature and the oil pressure have stabilized.
- NFPA 110 (8.4.2)(2) ...whereas it doesn't specify a minimum load for spark ignited engine sets (8.4.2.4), thus there is no minimum load for natural gas generators



Fuel Testing




- NFPA 110 requires a fuel quality test to be performed annually using the approved ASTM standards.

Fire Safety Plan K 711

A written health care occupancy fire safety plan shall provide for all of the following:

- (1) Use of alarms
- (2) Transmission of alarms to fire dept.
- (3) Emergency phone call to fire dept.
- (4) Response to alarms
- (5) Isolation of fire
- (6) Evacuation of immediate area
- (7) Evacuation of smoke compartment
- (8) Preparation of floors/building for evacuation
- (9) Extinguishment of fire



Fire Drills K712

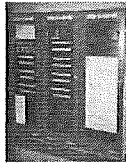
- Fire drills include the transmission of a fire alarm signal
- Simulation of emergency fire conditions.
- Fire drills are held at unexpected times under varying conditions, at least quarterly on each shift.
- The staff is familiar with procedures and is aware that drills are part of established routine.
- Responsibility for planning and conducting drills competent persons who exercise leadership.
- Where drills are conducted between 9:00 PM and 6:00 AM, a coded announcement may be used instead of audible alarms.
- 18/19.7.1.4 through 18/19.7.1.7

Compliance

- Review facility records for the preceding 12 months (quarterly) to determine frequency and staff participation by staff and disposition of problems discovered during the drills.
 - One drill per shift per quarter.
 - Differing time of drills on each shift.
 - Differing days of the week including weekends.
 - All departments are involved.
 - Documented observations of staff response.
 - Equipment functioning, doors released, alarms sounding, etc.
 - Residents are not evacuated during the drill.
 - Transmission to fire station

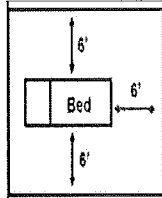
Fire Alarm System K 341

- A fire alarm system is installed with systems and components in accordance with NFPA 70 and NFPA 72
- Effective warning of fire in any part of the building.
- In areas not continuously occupied, detection is installed at each fire alarm control unit. Basic Components
 - Panel
 - Detection
 - Manual Alarm
 - Notification
 - Off-Premises Connection for Supervision

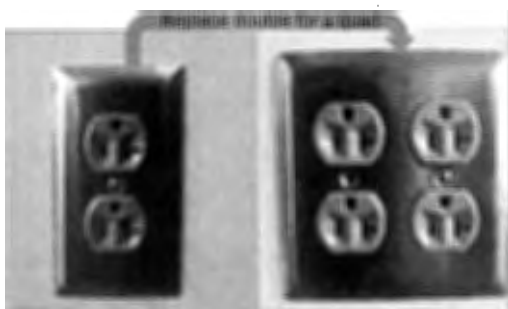


Power Taps – Electrical K920

- Power strips in a patient care vicinity are only used for components of movable patient-care-related electrical equipment (PCREE) assemblies that have been assembled by qualified personnel and meet the conditions of 10.2.3.6.
- Power strips in the patient care vicinity may not be used for non-PCREE (e.g., personal electronics), except in long-term care resident rooms that do not use PCREE.
- Power strips for PCREE meet UL 1363A or UL 60601-1.
- Power strips for non-PCREE in the patient care rooms (outside of vicinity) meet UL 1363.



Reasonable Fix Non- Patient Care Equipment





Electrical Equipment – Testing K921

- All PCREE (portable patient-care related electrical equipment) is inspected annually for physical integrity, resistance, leakage current, and touch current tests
- All PCREE used in patient care rooms is tested before being put into service and after any repair or modification.
- Electrical equipment instructions and maintenance manuals are readily available, and safety labels and condensed operating instructions on the appliance are legible.
- A record of electrical equipment tests, repairs, and modifications is maintained 10.3, 10.5.2.1, 10.5.2.1.2, 10.5.2.5, 10.5.3, 10.5.6, 10.5.8



Testing & Inspection- Receptacles – K 914

- Receptacles not listed as hospital-grade at these locations are tested at intervals not exceeding 12 months.
- 6.3.4 (NFPA 99)
 - The physical integrity of each receptacle must be confirmed by visual inspection;
 - The continuity of the grounding circuit in each electrical receptacle must be verified;
 - The correct polarity of the hot and neutral connections in each electrical receptacle must be confirmed;
 - The retention force of the ground blade of each electrical receptacle (except locking-type receptacles), must be not less than 4 oz.



Combustible Decorations K 753

- Combustible decorations shall be prohibited unless one of the following is met:
 - Flame retardant or treated with approved fire-retardant coating that is listed and labeled for product.
 - Decorations meet NFPA 701
 - Decorations exhibit heat release less than 100 kilowatts in accordance with NFPA 289.
 - Decorations, such as photographs, paintings and other art are attached to the walls, ceilings and non-fire-rated doors in accordance with 18.7.5.6 or 19.7.5.6.
 - The decorations in existing occupancies are in such limited quantities that a hazard of fire is not present. 18.7.5.6, 19.7.5.6

New Decoration Standard

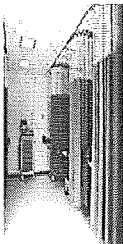
NEW

- New requirement
 - Photographs, paintings and 'other art' may not interfere with the operation
- Increases the amount of wall/ceiling space that may be covered:
 - 50% Sprinklered in patient room (less than 4) per wall or ceiling and not aggregated
 - Combustible decorations may not exceed 30 percent of the wall area in a sprinklered smoke compartment

Draperies, Curtains, and Loosely Hanging Fabrics K 751

- Draperies, Curtains, and Loosely Hanging Fabrics exempt at locations:
 - Showers and baths
 - On windows in patient sleeping room located in sprinklered compartments
 - Non-patient sleeping rooms in sprinklered compartments
 - Do not exceed 48 square feet
 - Total area does not exceed 20% of the wall.
- 18.7.5.1, 18.3.5.11, 19.7.5.1, 19.3.5.11, 10.3.1



Upholstered Furniture and Mattresses K752

- Newly introduced upholstered furniture and mattresses meets Class I or char length, and heat release unless the building is fully sprinklered.
- Upholstered furniture and mattresses belonging to nursing home residents do not have to meet these requirements as all nursing homes are required to be fully sprinklered.

18.7.5.2, 18.7.5.4, 19.7.5.2, 19.7.5.4

Survey Prep

- LSC Note book – everything in one place
- Current survey cycle only
 - Archive older records
- Review past surveys and ensure that prior deficiencies are corrected
- Evacuation plans – correct, posted and staff familiar
- Audit vendor record keeping
 - Remind them that we must follow 2012 code (not subsequent ones yet)
 - Complete any recommended repairs or updates
- Ladders available surveyor use?
- Flashlights ready surveyors use?

Survey Documentation (TABs)

- | | |
|--|---|
| <p>Facility Layout</p> <p>NFPA 99 Risk Assessment</p> <p>Emergency Battery Lighting</p> <ul style="list-style-type: none"> – Monthly 30 sec. test – Annual 90 min. test <p>Fire Alarm</p> <ul style="list-style-type: none"> – Monthly <p>Fire Alarm Inspection</p> <ul style="list-style-type: none"> – Quarterly, semi-annual and annual testing – Batteries every 4 yrs. <p>Fire/Smoke Dampers</p> <ul style="list-style-type: none"> – Test and lube every 4yrs. | <p>Sprinkler System</p> <ul style="list-style-type: none"> – Pressure gauges readings recorded weekly/dry – Pressure gauges readings monthly/wet – Quarterly and Annual Inspections – Annual head Inspection – 5yr. Internal Inspection <p>Smoke detectors</p> <ul style="list-style-type: none"> – At install and every 2 years <p>Fire/ Smoke Door Inspection</p> <ul style="list-style-type: none"> – Annual |
|--|---|

Survey Notebook

- | | |
|--|--|
| <p>Fire Drills</p> <ul style="list-style-type: none"> • Monthly (one/month, per shift, per quarter) <p>Fire Pump</p> <ul style="list-style-type: none"> – Weekly, Monthly, Annual <p>Generator</p> <ul style="list-style-type: none"> – Weekly – Monthly – Load Bank (if necessary) – 36 month exercise <p>Hood Suppression</p> <ul style="list-style-type: none"> – Monthly inspection – Semi-annual <p>Non-Hospital Grade - Electrical Plug Inspection</p> <ul style="list-style-type: none"> – Annual | <p>Exit Signs</p> <ul style="list-style-type: none"> – Monthly inspection <p>Misc. Items</p> <ul style="list-style-type: none"> – Elevator maintenance, state certificate and state inspection – Medical gas certificate – Boiler certificate (annual) – Fire hydrant <p>Facility Policies</p> <ul style="list-style-type: none"> • Fire - Evacuation • Fire Drill - Procedures • Fire Watch • Smoking • Portable space heaters |
|--|--|
