

## Code Updates: A Road Map to Compliance with AHCA Requirements

FHEA Spring Meeting  
May 15, 2015  
Coral Springs, Florida

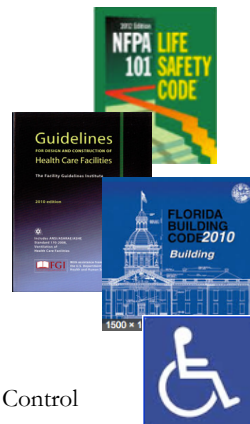
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## Code Effective Dates :

- For Certification: 2000 edition of NFPA 101 Life Safety Code: Effective Date, March 11, 2003, Compliance Date: September 11, 2003
- For Licensure: Florida Fire Prevention Code: 2012 editions of *NFPA 101 Life Safety Code* and *NFPA 1, Fire Code* : Effective Date, December 31, 2014,
- For New Construction: 2010 edition of the *Guidelines for the Design and Construction of Health Care Facilities*: Effective Date, March 12, 2012
- For New Construction: 2010 edition of the *Florida Building Code*, Design Requirements: Chapter 4, Sections 419. 420, 421: Effective Date, March 12, 2012
- For New Construction: 5<sup>th</sup> edition of the Florida Building Code: Effective Date: June 30, 2015

## Some Major Codes that Influence Design

- **State Operations Manual**  
CMS - Center for Medicare and Medicaid Services
- **Life Safety Code (LSC)**  
NFPA - National Fire Protection Association
- **Building Codes**  
International Code Council, Florida Building Code
- **ADAAG - ADA Accessibility Guidelines**  
ADA - Americans with Disabilities Act
- **Food Code & Infection Control Guidelines**  
Food and Drug Administration & Center for Disease Control  
U.S. Department of Health and Human Services
- **State & Local Health Department Regulations**
- **Guidelines for Design & Construction of Health Care Facilities**



## Codes for Everyone and Everything

- Municipal Codes: Zoning, Drainage, Water, Sewage
- Local Codes: Building and Fire Regulations
- State Codes: Building, Fire and Design Codes for Licensure
- Federal Codes: Fire Codes for Certification

## Codes Enforced by Many Authorities Having Jurisdiction

- Building Official
- Fire Inspector
- State Licensing Surveyor
- Federal Certification Surveyor
- Design and Building Professionals
- Insurance Carrier
- Certifying Agencies
- Manufacturers and Suppliers

## 5<sup>th</sup> Edition of FBC

- Chapter 4 has been completely Revised and Renumbered to make way for additional stuff added to the IBC.
  - Hospitals are now found in Section 469
  - Nursing Homes are found in Section 470
  - ASCs are found in Section 471
- 401.2.2 General. Where in any specific case, Sections 449 through 468 specify different materials, methods of construction, design criteria or other requirements than found in this code, the requirements of Sections 449 through 468 shall be applicable

## 2010 Guidelines Referenced

- Required by Chapter 4, Section, 419, 420 and 421, FBC
- For Hospitals: (419) Parts 1, 2, 3, 5 and 6
- For ASCs: (421) Parts 1, Chapter 3.7 (with Chapter 3.1 references), and Part 6
- Part 6: Ventilation of Health Care Facilities, ASHRAE 170 (And All Subsequent Addenda)

## 5<sup>th</sup> Edition of FBC

- Section 422 Ambulatory Care Facilities: Must be fully sprinklered
- New sections of storm shelters and children's play structure

Section 449.4.2.9.7 Quick Connect: Can supply normal only. Level I Generator may continue to run.

Section 449.4.2.6.2: Misinterpretation by some AHCA reviewers. HVAC (except for fans) is "... as determined by the facility..."

## Some Hints on How to Use the NFPA Codes and Standards

- **Code:** A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards. (Regulations, 3.3.6.1)
- **Standard:** A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix, footnote, or fine-print note and are not to be considered a part of the requirements of a standard. (Regulations, 3.3.6.1)
- NFPA 1, 101, and 70 are Codes
- NFPA 13, 110, 90A, 96, 72 are Standards

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## Some Hints on How to Use the NFPA Codes and Standards

- Start with the **Correct Occupancy Chapter**
- Connect the dots to the Referenced Code or Standard
- Difference between “**New**” and “**Existing**” Occupancy
- **Existing:** A building erected or officially authorized prior to the effective date of the adoption of this (**current**) edition of the Code by the agency or jurisdiction. (From NFPA Glossary of Terms)

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## Exceptions Deleted

### 2000 Edition:

**19.3.4.3.2 Emergency Forces Notification.** Fire department notification shall be accomplished in accordance with 9.6.4

*Exception: Smoke detection devices or smoke detection systems equipped with reconfirmation features shall not be required to automatically notify the fire department unless the alarm condition is reconfirmed after a period not exceeding 120 seconds.*

### 2012 Edition:

#### **19.3.4.3.2 Emergency Forces Notification.**

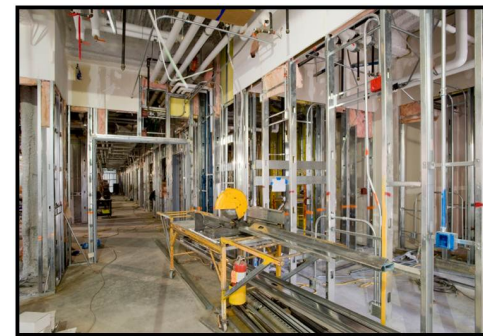
**19.3.4.3.2.1** Fire department notification shall be accomplished in accordance with 9.6.4.

**19.3.4.3.2.2** Smoke detection devices or smoke detection systems equipped with reconfirmation features shall not be required to automatically notify the fire department, unless the alarm condition is reconfirmed after a period not exceeding 120 seconds.

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## Building Rehabilitation 2012 LSC

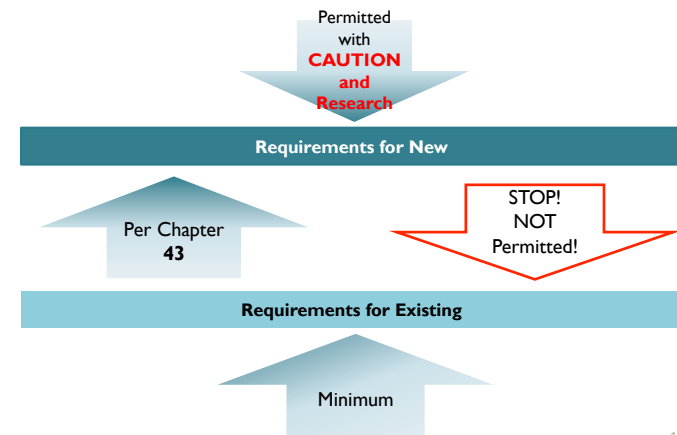
- New Chapter 43
- Categories
  - Repair
  - Renovation
  - Modification
  - Reconstruction
  - Change of use or change of occupancy
  - Addition



## Chapter 2 – Referenced Documents

- 2.1(1)\* Referenced documents applicable only to the extent called for within the *Code*
- 2.1(2) Where requirements of referenced document differ from the *Code*, the *Code* governs
- 2.1(3) Existing installations permitted to be continued in use provided lack of conformity with referenced documents does not present a serious hazard to occupants

## Reducing Life Safety Features



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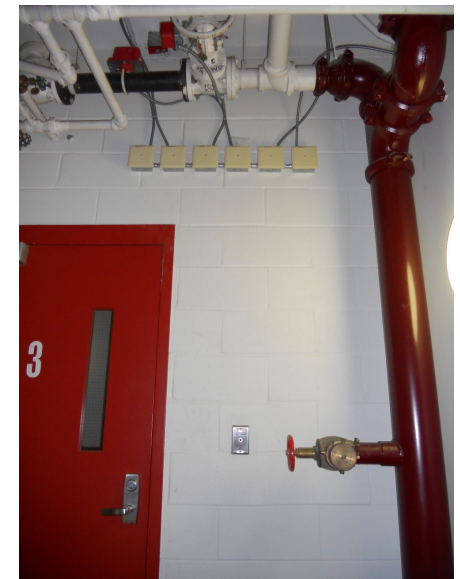
## Vertical Openings

8.5.6 Penetrations and T ratings... solid grout the area around the piping is acceptable



## Sprinkler System Impairments

- 10 Hours (not 4) hours in a 24-hour period
- Per NFPA 25



## Required Reviewed by AHCA

- If a Local Building Permit is required then an AHCA review is required.
- Projects Required to have a Building Permit:
  - 105.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any required impact-resistant coverings, electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit. FBC

**NOTE: This includes Fire Alarm replacements, Nurse Call replacements, Emergency Generator replacements, HVAC replacements...even like kind for like kind...All Must be submitted to AHCA for review. Required Review does not depend on a Dollar Amount.**

## CMS S&C Letter Interpretation

- **CMS- S&C: 13-58-LSC Dated: 08/30/2013**
- *Several Categorical LSC Waivers Permitted:* The Centers for Medicare & Medicaid Services (CMS) has identified several areas of the 2000 edition of the LSC and 1999 edition of NFPA 99 that may result in unreasonable hardship on a large number of certified providers/suppliers and for which there are alternative approaches that provide an equal level of protection

## Further Review Determination

### Desk Reviews:

- To determine whether or not a project needs a full AHCA review, submit the following for a “desk review”
  - Complete Description of the Scope of Work
  - A simple floor plan of the area of work
  - An Infection Control Risk Assessment to protect the residents while the work is being completed

### No Reviews Required for:

- Painting
- Removing or installing flooring, ceiling tile, wall coverings
- **Still must have an ICRA to protect the residents and your facility**

## CMS and Categorical Waivers

AHCA has already adopted the 2012 LSC that allows these revisions.

CMS has stated you can use the process of Categorical Waivers to implement the revisions to the 2012 edition NFPA 101 Life Safety Code before CMS adopts it.

**A categorical waiver does not need prior approval and is written by the facility**

**It is provided to the surveyor before the survey takes place**



## Steps to Gain Approval CMS

- Decide which Categorical Waivers you wish to implement.
- (See CMS S&C-13-58 LSC and S&C-2-21-LSC)
- Using the 2012 edition of the NFPA 101 Life Safety Code, make a list of all the requirements to implement this waiver.
- Write a description of what you have done and quote the requirements of the 2012 Edition.
- Place in File. When AHCA surveyors come to the facility, show them the Categorical Waiver before the survey begins.

## Medical Gas Master Alarms

- Permits a waiver to allow a centralized computer system to substitute for one of the Category 1 medical gas master alarms, but only if the provider/supplier is in compliance with all other applicable 1999 NFPA medical gas master alarm provisions, as well as with section 5.1.9.4 of the 2012 NFPA 99.

## CMS S&C Letter 13-58 Categorical LSC W Permitted

Basically a way for CMS to use some 2012 revisions to the LSC before adoption:

- **Medical Gas Master Alarms**
- **Openings in Exit Enclosures**
- **Emergency Generators:**
- **Doors:**
- **Suites:**
- **Extinguishing Requirements**
- **Clean Waste & Patient Record Recycling Container:**
- **The 4 revisions for “Culture Change”**
- 

## Service Equipment Support Areas

- **3.3.21.6\* Normally Unoccupied Building Service Equipment Support Area.** A building service equipment support area in which people are not expected to be present on a regular basis.
- **A.3.3.21.6** [detailed annex]
- **7.13 Normally Unoccupied Building Service Equipment Support Areas.**



## Openings in Exit Enclosures

- Permits a waiver to allow existing openings in exit enclosures to mechanical equipment spaces that are protected by fire-rated door assemblies. These mechanical equipment spaces **must be used only for non-fuel-fired mechanical equipment, must contain no storage of combustible materials, and must be located in sprinkled buildings**. This waiver allowance will be permitted only if the provider/supplier is in compliance with all other applicable 2000 LSC exit provisions, as well as with section 7.1.3.2.1(9)(c) of the 2012 LSC.

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## Emergency Generators and Standby Power Systems

- Permits a waiver to allow for a reduction in the annual diesel-powered generator exercising requirement from two (2) continuous hours to one hour and 30 minutes (1-1/2 continuous hours), but only if the provider is in compliance with all other applicable 1999 NFPA 110 operational inspection and testing provisions, as well as with section 8.4.2.3 of the 2010 NFPA 110.

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## Doors

- Permits a waiver to allow door locking arrangements where there are clinical needs justifying them, patients pose a security risk, or where patients require specialized protective measures for their safety, but only if the provider/supplier is in compliance with all other applicable 2000 LSC door provisions, as well as with sections 18/19.2.2.2.2 through 18/19.2.2.2.6 of the 2012 LSC. (Will review in detail later in this presentation)
- Waiver to allow more than one delayed-egress lock in the egress path, but only if the provider/supplier is in compliance with all other applicable 2000 LSC door provisions, as well as with sections 18/19.2.2.2.4 of the 2012 LSC.

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## Suites

- Permits a waiver to further accommodate the use of suites by allowing:
  - (1) one of the required means of egress from sleeping and non-sleeping suites to be through another suite, provided adequate separation exists between suites;
  - (2) one of the two required exit access doors from sleeping and non-sleeping suites to be into an exit stair, exit passageway, or exit door to the exterior; and
  - (3) an increase in sleeping room suite size up to 10,000 ft<sup>2</sup>. This waiver allowance will be permitted only if the provider/supplier is in compliance with all other applicable 2000 LSC suite provisions, as well as with sections 18/19.2.5.7 of the 2012 LSC.

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## Extinguishing Requirements

- Permits a waiver to allow for the reduction in the testing frequencies for sprinkler system vane-type and pressure switch type water flow alarm devices to semiannual, and electric motor-driven pump assemblies to monthly. This waiver allowance will be permitted only if the provider/supplier is in compliance with all other applicable 1998 NFPA 25 (as referenced in section 9.7.5 of the 2000 LSC) testing provisions, as well as with sections 5.3 and 8.3 of the 2011 NFPA 25.

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## Clean Waste & Patient Record Recycling Containers

- Permits a waiver to allow the increase in size of containers used solely for recycling clean waste or for patient records awaiting destruction outside of a hazardous storage area to be a maximum of 96-gallons, but only if the provider/supplier is in compliance with sections 18/19.7.5.7.2 of the 2012 LSC (2000 LSC 32-gallons)

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## Things in the Corridors

- 18/19.2.3.4 Required Corridor Width
- (4) Projections into the required width shall be permitted 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.**(1525 mm).
  - (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 in use and carts in use
    - ii. Medical emergency equipment not in use
    - iii. Patient lift and transport equipment

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## Things in the Corridors

A.19.2.3.4(4)(c) Wheeled equipment and carts **in use include** food service carts, housekeeping carts, medication carts, isolation carts, and similar items. Isolation carts should be permitted in the corridor only where patients require isolation precautions.

Unattended wheeled crash carts and other similar wheeled emergency equipment are permitted to be located in the corridor when “not in use,” because they need to be immediately accessible during a clinical emergency.

Note that “not in use” is not the same as “in storage.” **Storage is not permitted to be open to the corridor**, unless it meets one of the provisions permitted in 19.3.6.1 and is not a hazardous area.

Wheeled portable **patient lift or transport equipment** needs to be readily available to clinical staff for moving, transferring, toileting, or relocating patients. These devices are used daily for safe handling of patients and to provide for worker safety. This equipment might not be defined as “in use” but needs to be convenient for the use of caregivers at all times.

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## High-Rise Buildings



## High Rise Sprinklering

- NFPA 1, 2012 Edition, Florida Fire Prevention Code Changed to the Code under pressure from high rise condos
- 13.3.2.24 High-Rise Buildings. (Any building over 80 feet)

Note: Includes ALF buildings

13.3.2.26.2.3 The entire building shall be required to be protected by an approved automatic sprinkler system by

**December 31, 2019 Unless...**

Every apartment has exit access to the outside balcony

Or...

An “Engineered Life Safety System” is designed into the building.

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## Outside Windows

No Longer Required by LSC



## Penetrations



Now that's just plain UGLY...

## Existing Wall Penetrations

- Existing penetrations through existing wall may remain in place as long as they have not been removed, or damaged. (See AHCA Details at [www.healthfacilityconsulting.com](http://www.healthfacilityconsulting.com) )
- New installations or renovated or replaced installation must meet the current requirements of a tested assembly.
- For information on current accepted fire stop details see: Fire Resistance Design Manual Gypsum Association, 19<sup>th</sup> edition or [www.hiltifirestopsubmittals.com](http://www.hiltifirestopsubmittals.com) or Fire Stop Systems <http://www.usg.com/rc/system-catalogs/fire-stop-systems-en-SA727.pdf>

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## Power Strips or Extension Cords

- CMS Pub. 100-07 August 17, 2007
- Not to be used to take the place of adequate wiring
- Properly secured and not be placed overhead, under carpets or rugs, or anywhere that the cord can cause trips, falls, or overheating.
- Connected to only one device to prevent overloading of the circuit and have proper grounding
- May be used for a computer, monitor, and printer. Power strips are **not** designed to be used with medical devices in patient care areas

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## Special Purpose Relocatable Power Taps (SPRPT)

- Question for NFPA: Background: Some manufacturers advertise multiple outlet connections of two or more power receptacles conforming to UL 60601-1, UL 60950-1 and UL 1363A. Their product information states this product, Easily accommodates surface mounting.

Question 1: Does the term permanently attached to the equipment assembly mean the multiple outlet connection must be an integral part of the cart as part of the UL Classification and attached only by the manufacturer of the rack, table, pedestal or cart?

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## Special Purpose Relocatable Power Taps (SPRPT)

Question 2: Does 10.2.3.6 (1) permit a 3rd party, such as a hospital engineer, to permanently attach the multiple outlet connection, with mechanical attachments such as screws, to the rack, table, pedestal, or cart?

### **Answer from NFPA Staff:**

Section 10.2.3.6(1) of NFPA 99 (2012 and 2015) intentionally uses the term "permanently attached" as opposed to "integral". This allows for attachment to be made on site and after the fact rather than only by the manufacturer. This interpretation therefore allows for a 3<sup>rd</sup> party, possibly the hospital engineer to "permanently attach" the device by a variety of different means.

DOES AHCA ACCEPT THIS?

**NOT NECESSARILY**

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## Canopies (Not Overhangs) Wider than Four Feet

- Some surveyors are citing canopies wider than 4 feet and attached to the building for not being protected by sprinkler coverage.
- NFPA 13 **does** require *combustible overhangs* to be sprinklered. Any part of the canopy is combustible.
- Later editions of NFPA 13 that allow containment of combustibles are not recognized by CMS. No waiver is possible.

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## Canopies Wider than Four Feet (Cont.)

- CMS says: Canopies are not required to be sprinklered if:
- Can show they have been constructed to be *fire-retardant material*. Will require a certificate from the installer/vendor referencing the testing criteria such as ASTM 703.
- No items are stored under the canopy...furniture is permitted by NFPA 13

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## Facility Documentation

Some facilities have been cited for not having complete documentation.

### Fire Alarm System, NFPA 72:

**NFPA Staff Question:** Is it the intent to require the facility to procure an owner's manual and installing instructions for an existing fire alarm system or to engage the services of an engineer to produce a new set of record drawings. ?

**Answer:** It is not a requirement of NFPA 72 that any missing or non-available documentation be procured or be recreated. A7.5.6.6.3 It is not the intent of this section to require an in-depth evaluation of an existing system solely for the purpose of completing a system-wide record of completion.

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## Facility Documentation

Some facilities have been cited for not having complete documentation.

### Hood Suppression System: NFPA 96

**NFPA Staff Question:** Is it the intent of this section to require the facility to engage the services of a licensed mechanical engineer to produce a new set of drawings, operating instructions, and electrical schematics for this existing system?

**Answer:** No it is not the intent. This requirement was removed in the 2001 edition for that very reason.

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## Facility Documentation

Some facilities have been cited for not having complete documentation.

### Sprinkler Systems: NFPA 25

**NFPA Staff Question:** Is it the intent of these sections to require the facility to engage the services of a licensed engineer to produce a new set of as-built system installation drawings on this existing system?

**Answer:** No, NFPA 25 does not require the owner to re-construct the as built drawings and related hydraulic calculations to satisfy the requirement for the owner to have maintained them. However, if a hydraulic data nameplate is missing on a hydraulically calculated system - the data nameplate must be replaced and to do that, some level of survey and calculation would likely have to be performed.

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## Generator Operational Testing

- 8.4.1\* EPSSs, including all appurtenant components, shall be **inspected weekly** and exercised under load at least monthly.
- 8.4.2\* Diesel generator sets in service shall be exercised at least **once monthly, for a minimum of 30 minutes**, using one of the following methods:
  - (1) Loading that maintains the minimum exhaust gas temperatures as recommended by the manufacturer.
  - (2) Under operating temperature conditions and at not less than 30 percent of the EPS nameplate kW rating.
  - (3) If the engine cannot be loaded as required in (2), the engine shall be operated until the water temperature and the oil pressure have stabilized and then the test shall be terminated before the 30 minute time period expires

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## Generator Operational Testing

### Transfer switch testing

- 8.4.6 Transfer switches shall be operated monthly.
- 8.4.6.1 The monthly test of a transfer switch shall consist of electrically operating the transfer switch from the standard position to the alternate position and then a return to the standard position.
- **Fuel Testing:**
- Annual Fuel testing is required. AHCA may require ASTM D975 Modified with only a Cetane Index...NOT a Cetane number to meet this testing requirement.
- Some ASTM D975 have shown high sulfur content. EPA requirements of low sulfur should not be an issue with AHCA.

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## Testing Main Breakers

NFPA 99, 2005 Edition and 2012 edition:

- 4.4.4.1.2.1\* Circuit Breakers. Main and feeder circuit breakers shall be **inspected** annually and a program for **periodically** exercising the components shall be established according to manufacturer's recommendations.
- A.4.4.4.1.2.1 Main and feeder circuit breakers should be periodically tested under simulated overload trip conditions to ensure reliability (see C.4.2).

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## Testing Main Breakers

- 4.4.4.2 Recordkeeping. A written record of inspection, performance, exercising period, and repairs shall be regularly maintained and available for inspection by the authority having jurisdiction.

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## Testing Main Breakers

- **NFPA Staff Question:** When a facility conducts annual inspection and periodic infrared testing, as recommended by the manufacturer, does NFPA 99 still require the facility to “exercise” all of the breakers annually- i.e.: turn them off then back on?
- **Answer:** “Annual inspection is required, but **annual** operation of the breaker is no longer mandatory.” Section 4.4.4.1.2.1 still requires that a program for periodically exercising the equipment be established according to the manufacturer’s recommendations. This simply allows for longer periods between exercising the components, which was required on an annual basis up until the 1996 edition of NFPA 99.

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## Gas Cylinders



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## Oxygen Storage

- CMS S&C Letter 07-10 Jan. 12. 2007
- Up to 300 cubic feet of nonflammable medical gas may be accessible as operational supply rather than storage, when properly secured. (per Smoke Compartment)
- This amount of medical gas is in addition to those cylinders contained in “crash carts” and in use on wheelchairs or gurneys
- An individual container of medical gas placed in a patient room for “as needed” (but regular) individual use is not required to be stored in an enclosure, when properly secured.
- If the resident does not need the use of oxygen for an extended period of time, such as several days, then the medical gas container should be removed from the room and properly secured in an approved storage room.

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## Oxygen Storage

- How much is stored in a Tank?
- D cylinders - 15 cubic feet
- E cylinders- 24 cubic feet (12 of these is still under 300 cu ft (Can have 124 E Cylinders before need enhanced storage)
- M cylinders - 122 cubic feet
- G cylinders - 244 cubic feet
- H or K cylinders - 250 cubic feet (12 of these is about 3,000 cu ft.

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## Oxygen Storage

- Storage Requirements from NFPA 99, 1999 edition
- 8-3.1.11.2 Storage **less than 3,000 cu ft**
- Out door enclosure or Indoor inside a room of non combustible or limited combustible (dry wall) with doors...Can be non rated room
- Minimum distance of 5 feet from combustible or incompatible materials when fully sprinklered
- No smoking, or open flames are electrical heating
- Electrical wall fixtures at 5 ft above the floor to avoid physical damage
- Cylinder valve protection caps
- Cylinders chained and supported in stand or cart

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## Oxygen Storage

- Storage Requirements from NFPA 99, 1999 edition
- Section 8-3.1.11.1 Storage **More than 3,000 cu ft**
- Comply with 4-3.1.1.2 Storage requirements for Level I Gas System...no other storage in this room
- Comply with 4-3.5.2.2 Storage of Cylinders and Containers for a Level 1.
- Whenever you store more than 3,000 cu ft of O2 cylinders (12 H tanks or 124 E tanks) there are many more conditions that must be met.
- **It is NOT a function of room size. Challenge the Surveyor if cited. NOT dependent of Room Size**

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## Oxygen Transfilling vs Transferring

- Do it **OUTSIDE** the Building if at all possible!
- Transfilling Cylinders: Not permitted in patient care areas (this means the entire smoke compartment)
- Permitted in 1 hour rooms enclosure with 45 minute door
- Continuous direct exhaust vent 12 inches from the floor connected to the equipment branch
- Concrete or ceramic flooring
- Supply or Outside air connected to the equipment branch
- Lighting with light switch outside the room or at 5 feet above the floor

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## When Renovation must Meet Hurricane Requirements

Renovations or Equipment changes must meet the requirements of section 419.4 for the specific area or item being altered.

- If a window is changed, it meets current code.
- If a generator is changed, it meets current code.
- If a HVAC unit is changed, it meets current code.

But this does not go beyond what is changed.  
(changing the HVAC does not mean adding a generator to run the fans of the HVAC)

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## Wireless Nurse Call System

- **420.3.25 Nurse call systems. (Now also a part of NFPA 99 2012)**
- Wired or wireless type nurse call systems shall be permitted if they have been tested and approved by a national recognized testing laboratory (NRTL) to meet the requirements of UL 1069, 7th edition published October 12, 2007.
- All wireless systems shall be been tested and approved by a national recognized testing laboratory (NRTL) to meet the requirements of Section 49, Wireless Systems of UL 1069, 7th edition
- All nurse call systems whether wired or wireless shall be supervised in accordance with the requirements of UL 1069, 7th edition

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## Door Locking Permissions Explained

- **19.2.2.2.5** Door-locking arrangements shall be permitted in accordance with **either** [19.2.2.2.5.1](#) or [19.2.2.2.5.2](#).

### Option 1

**19.2.2.2.5.1\*** Door-locking arrangements shall be permitted where the clinical needs of patients require specialized security measures or where patients pose a security threat, provided that **one** of the following criteria is met:

- (1) Staff can readily unlock doors at all times in accordance with 19.2.2.2.6.
- (2) The provisions of 19.2.2.2.5.2 are met.

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## Specialized Locking Arrangements



## Door Locking Permissions Explained

**19.2.2.2.6** Doors that are located in the means of egress and are permitted to be locked under other provisions of 19.2.2.2.5 shall comply with the following:

- (1) Provisions shall be made for the rapid removal of occupants by means of one of the following:
  - (a) Remote control of locks
  - (b) Keying of all locks to keys carried by staff at all times
  - (c) Other such reliable means available to the staff at all times
- (2) Only one locking device shall be permitted on each door.
- (3) More than one lock shall be permitted on each door, subject to approval of the authority having jurisdiction.

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## Door Locking Permissions Explained

- So now we have ALL of the requirements to meet **Option 1 (19.2.2.2.5.1)** rapid removal of occupants by EITHER remote control of locks OR my keying all locks to keys carried by staff at all times
- Notice there is no requirement for these locks to be connected to the fire alarm system or to have to prove staff can open the door within any certain time frame. These types of requirements are invented by various inspecting authorities but have no basis in code requirements.
- Some inspectors think the occupants of a nursing home are all fully cognizant and evacuate themselves. This is a misunderstanding of health care occupancies where the staff is trained to manage the evacuations but that is the reality for most fire inspectors.

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## Door Locking Permissions Explained

- A.19.2.2.2.5.1 ...Alzheimer or dementia patients in nursing homes are not housed in specialized units, the provisions of 19.2.2.2.5.1 **should** not apply. **(See 19.2.2.2.5.2.)**
- That sentence allows you to mix dementia with other non-dementia patients. The Annex note is saying, “Well, if you have a mixed population, you ought to not use Option 1 and you *should* use Option 2.” This is a “should” and is not a requirement, so the idea of giving others the key code is still acceptable when using Option 1 as described above. But you could use Option 2:

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## Door Locking Permissions Explained

- [Option 2](#)
- 19.2.2.2.5.2\*** Door-locking arrangements shall be permitted where patient **special needs** require specialized protective measures for their safety, provided that all of the following are met:
- (1) Staff can readily unlock doors at all times in accordance with 19.2.2.2.6.
  - (2) A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, **OR** locked doors can be remotely unlocked at an approved, constantly attended location within the locked space.
- (Some surveyors and reviewers are trying to require a remote camera and/or two way voice communication at the exit doors. This is not the intent of the code but can be added by the AHJ)

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## Door Locking Permissions Explained

- [Option 2](#)
- (3)\*The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.1.
- (4) The locks are electrical locks that fail safely so as to release upon loss of power to the device.
- (5) The locks release by independent activation of each of the following:
  - (a) Activation of the smoke detection system required by 19.2.2.2.5.2(2)
  - (b) Waterflow in the automatic sprinkler system required by 19.2.2.2.5.2(3)

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## Door Locking Permissions Explained

- As you can see [Option 2](#) is much more complicated than Option 1 because the “patient special needs require specialized protective measures for their safety” could mean a lot of things to a lot of people. (See annex note below)
- So the code making committee added some more safety features such as that kill switch, release of locks on fire alarm by smoke or waterflow (NOT pull station) and release on power failure...can relock on generator activation after 10 seconds of power failure. Not a lot of difference in most of the locks you see today, but there are more requirements for this option.

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## Door Locking Permissions Explained

- Note: 2000 LSC does not have Option 2 but there is no requirement to connect these locks to the fire alarm because they could be mechanical locks with an actual key device.
- No one uses mechanical locks anymore for a lot of reasons such as handicapped accessibility restrictions of “squeezing and turning”, but they could use a “key and lock” such as you have at your home if they could meet those accessibility requirements. The older code simply has two paragraphs.
- For all of these special locking arrangements “clinical needs” is determined by the facility and or the doctor... NOT by the fire safety inspector.

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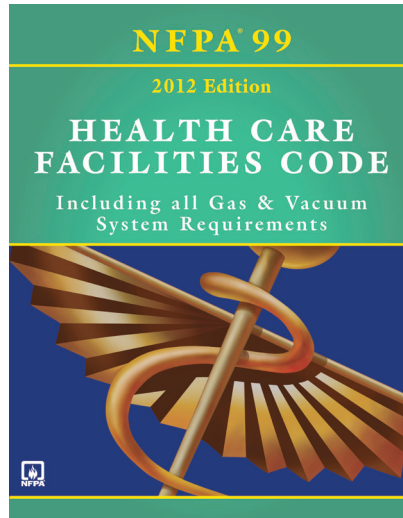
## Door Locking Submission Requirements for Desk Reviews

- Note: AHCA now only permitting desk reviews of locking if the facility has been cited by the annual surveyor. In that case a desk review can be done because the surveyor will go out to recheck the system. **New systems are subject to full review.**
- Clinical or Special Needs of the residents
- Identify by plan all locked doors
- Provide cut sheet specifications on all locks
- **System** must be UL Certified
- Verify connection to essential electrical system with one line electrical riser diagrams

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## NFPA 99 2012 Edition

Over view of  
some of the  
Major Changes



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## Health Care Facilities Handbook

- 2012 Edition now available
- Co-edited by Rich Bielen and Jim Lathrop
- Over 600 pages
- Now in color (all NFPA handbooks now in color)

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## Overview Only

- Not all changes to NFPA 99 are reflected here
- Slides do not contain full code text – only general intent – always go to the code for the full text
- Exceptions may apply
- We will NOT cover all the slides
  - They are provided for your reference

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## Chapters Deleted for 2012

- **ALL Occupancy chapters**
  - Means Nursing Homes and ASCS must meet the entire Code.
- Chapter 6 Environmental Systems
- Chapter 7 Materials
- Chapter 10 Manufacturers Requirements
- Chapter 11 Laboratories
- Chapter 21 Freestanding Birthing Centers

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## Annexes Deleted

- Annex B Nature of Hazards
- Annex D Safe Use of High-Frequency Electricity
- Annex F Flammable Anesthetizing Locations

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## New Chapters for 2012

- Chapter 4 Fundamentals
  - Establishes “Categories” based on risk assessment
- Chapter 7 Information Technology and Communications Systems
- Chapter 8 Plumbing & Chapter 9 HVAC
- Chapter 13 Security Management
- Chapter 15 Features of Fire Protection

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## Chapter 12 Emergency Management

- Totally rewritten
  - Coordinate with requirements of The Joint Commission
  - Lessons learned from recent disasters
  - Better integration with NFPA 1600 *Standard on Disaster/ Emergency Management and Business Continuity Programs*.
- CODE CREEP...NFPA 99 has now become the Health Care Design Manual for all things Electrical including number of receptacles in patient care areas, and nurse call requirements...This is confusing and contradictory to state and national design codes.

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## Inspection, Maintenance & Testing

- VIRTUALLY all ITM procedures and schedules now based on risk assessment
- Gas & Vacuum Systems
- Electrical Systems
  - Non-hospital grade receptacles still yearly
  - Generators still per NFPA 110
- Electrical Equipment
- Gas Equipment

76

## Chapter 1 Administration

- 1.3 Application
  - Construction and Equipment requirements NEW only
  - Alterations, renovations and modernization meet new
  - An existing system not in compliance SHALL BE PERMITTED to be continued in use, unless the AHJ determines that such use is a DISTINCT hazard to life.

77

## Patient Bed Location

- Definition is Poorly Written.
- 3.3.136 Patient Bed Location. The location of a patient sleeping bed, or the bed or procedure table of a critical care area.
- No one knows what this might mean when required to locate receptacles.

78

## Chapter 4 – Fundamentals

- Building system categories
  - Category 1 – major injury or death
  - Category 2 – minor injury: Systems are expected to provide a high level of reliability; however, limited short durations of equipment downtime can be tolerated without significant impact on patient care. Category 2 systems support patient needs but are not critical for life support.

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## Chapter 4 – Fundamentals

- Category 3 – no injury but can cause discomfort Normal building system reliabilities are expected. Such systems support patient needs, but failure of such equipment would not immediately affect patient care. Such equipment is not critical for life support.
- Category 4 – no impact on patient care

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## Annex Material for Chapter 4

- Examples of each Category
- Discussion of major injury
- Risk assessment must be completed
  - ISO/IEC 31010 *Risk Management – Risk Assessment Techniques*
  - NFPA 551 *Guid for the Evaluation of Fire Risk Assessments*
  - SEMI S10-0307E *Safety Guideline for Risk Assessment and Risk Evaluation*

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## Chapter 6 Electrical Systems Maintenance and Testing

- Hospital grade at patient bed locations
- Additional testing at patient care areas performed at intervals defined by documented performance data

82

## Wet Procedure Locations

New to the 2012 Edition of NFPA 99

- 6.3.2.2.8.4\* Operating rooms shall be considered to be a wet procedure location, unless a risk assessment conducted by the health care governing body determines otherwise.
- A.6.3.2.2.8.4 In conducting a risk assessment, the health care governing body should consult with all relevant parties, including, but not limited to, clinicians, biomedical engineering staff, and facility safety engineering staff.

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## Wet Procedure Locations

All existing ORs are considered “wet locations.”

The hospital must either add isolated power or GFCI or conduct a “risk assessment”.

NFPA 99 does not mention “mitigation procedures” such as “catch pockets” scavenger systems or other such procedures to mitigate a wet procedure.

However, AHCA has approved risk assessments that employ mitigations.

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## Type 1 Essential Electrical System

- Generator use
  - Dedicated for EES, or
  - Other uses (cogeneration, peak demand control, load relief) *require two or more sets*
- Optional loads are allowed if:
  - Own transfer switch...load shedding
  - Does not overload generator

85

## Type 1 Essential Electrical System

- Administration
  - Maintenance and testing
    - Alternate source maintained, supply power within 10 seconds, in accordance with NFPA 110, *Standard for Emergency and Standby Power Systems*
    - 10-second criteria does not apply during the monthly test. If not met a process shall be provided to annually confirm the capability to meet the 10 second requirement.

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## Type 1 Essential Electrical System

- Administration
  - Inspection and Testing
    - Test Criteria
      - Generator sets tested 12 times per year
      - Test interval between not less than 20 days or exceeding 40 days
      - In accordance with NFPA 110

87

## Type 1 Essential Electrical System

- Administration
  - Maintenance and Testing of Circuitry
    - Circuit breaker-inspected annually, periodically exercised
    - Measure main feeder insulation resistance whenever damage is suspected
    - Maintain batteries per NFPA 110
    - Recordkeeping-written records available for AHJ

88

## Generator Batteries



## Chapter 7 Information Technology and Communication Systems

- Brand new chapter – still some coordination issues
- Acronyms:
  - Entrance Facility (EF)
  - Telecommunications Equipment Room (TER)
  - Telecommunications Room (TR)
  - Outside Plant (OSP) Infrastructure

**Nothing may pass through the TR...  
NOTHING...This is a big problem in design  
and construction...**

90

## Category 1 – Nurse Call Systems

- **This is DESIGN and has taken over the other design codes such as the FGI Guidelines!**
- Audiovisual and listed
- Supplemental features (alphanumeric pagers, or other wireless devices) permitted
- Patient Area Call Station
- Emergency Call
- Staff Emergency Assistance Call
- Emergency Resuscitation Alarm

91

## Chapter 8 Plumbing

- New Chapter
- No risk categories
- Primarily references to plumbing code
- Some limited information on
  - Grease interceptors
  - Gray waste and clear waste water

92



## Chapter 9 New HVAC - General

- Many of the provisions are a simple reference to another Document
  - ASHRAE
  - NFPA
  - Plumbing code

93

## Medical Gas Storage & Transfilling

- All gases other than medical gases – ventilation per NFPA 55
- Outdoor storage/installations of medical gases and cryogenic fluids – Ventilation per NFPA 55
- Chapter 11 medical gases – no requirements
- Transfilling – ventilation per NFPA 55

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## Medical Gas Storage & Transfilling

- Indoor storage or manifold areas; storage or manifold buildings, for medical gases and cryogenic fluids shall be provided with natural OR mechanical exhaust ventilation.

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## EPS Room

- HVAC – NFPA 110
- Extracted from NFPA 110
  - Maintaining engine water jacket temperature
  - Ventilation for cooling room
  - Ventilation for cooling engine
  - Ventilation for combustion

96

## Chapter 10 Electrical Equipment

- Patient Care Electrical Appliances and Equipment
  - Permanently connected - Fixed equipment
  - Cord and plug - Portable equipment
  - Definition:

3.3.137 Patient-Care-Related Electrical Equipment. Electrical equipment appliance that is intended to be used for diagnostic, therapeutic, or monitoring purposes in a patient care vicinity.
- Is the resident bed considered a medical equipment?

97

## Chapter 10 Electrical Equipment

- NFPA Staff Question:
- Section 10 Electrical Equipment contains Section 10.2 Performance Criteria and Testing for Patient Care-Related Electrical Appliances and Equipment and another Section 10.4 for Nonpatient Electrical Appliances and Equipment.
- Question: Which section applies to an electric resident sleeping bed supplied by the facility, Section 10.2 or Section 10.4?
- Question: If Section 10.2 is applicable, must the testing required by Section 10.5 for the electric patient sleeping bed be completed annually?

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## Chapter 10 Electrical Equipment

- NFPA Staff Answer:
- The definition of patient-care-related electrical equipment is provided in Section 3.3.137 of NFPA 99 (2012 edition) and is as follows:
- *3.3.137 Patient-Care-Related Electrical Equipment. Electrical equipment appliance that is intended to be used for diagnostic, therapeutic, or monitoring purposes in a patient care vicinity.*
- Based on this definition, I do not believe a bed would fall under the requirements of 10.2 for patient-care-related electrical equipment. Therefore the requirements of 10.4 would need to be applied.
- The facility may want to take extra caution since the bed is guaranteed to come into contact with the patient, but that is decision outside of the code.

99

## Chapter 10 Electrical Equipment

- What You Should Do:
- Determine whether the electric bed meets the definition of 3.3.137. This should be a determination of the nursing home and the nursing home's care staff...NOT the surveyor.
- Provide a log of inspection of the bed either for 10.4 or for 10.5
- Section 10.4 Nonpatient Electrical Appliances and Equipment
- 10.4.2.1 Nonpatient care-related electrical equipment, including facility- or patient-owned appliances that are used in the patient care vicinity and will, in normal use, contact patients, shall be visually inspected by the patient's care staff or other personnel. 10.4.2.2 Any equipment that appears not to be in proper working order or in a worn condition shall be removed from service or reported to the appropriate maintenance staff.

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## Chapter 10

# Electrical Equipment

- What You Should Do if determined to be Patient care related equipment:
- 10.5 Administration.
- 10.5.1 Responsibilities of Governing Body. (Reserved)
- 10.5.2 Policies.
- 10.5.2.1 Testing Intervals.
- 10.5.2.1.1 The facility shall establish policies and protocols for the type of test and intervals of testing for patient care–related electrical equipment.
- 10.5.2.1.2 All patient care–related electrical equipment used in patient care rooms shall be tested in accordance with 10.3.5.4 or 10.3.6 before being put into service for the first time and after any repair or modification that might have compromised electrical safety.

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# Electrical Equipment

- Administration
- Testing intervals
  - The facility shall establish the type of test and intervals for testing patient care related electrical equipment
  - Testing before being put in service or after any repair or modification

102

# Electrical Equipment

- Policies
  - Establish a policy for control of appliances not supplied by the facility
    - Laptop computers
    - Christmas trees
    - Radios
    - Entertainment devices

103

# Electrical Equipment

- Record Keeping
  - Permanent file of instruction and maintenance manuals
  - Records of all tests and maintenance
- Qualifications and Training of Personnel
  - Training
  - Continuing education

104

## Chapter 11- Gas Equipment

- Storage of gases and cylinders
- Performance criteria and testing
- Administration

105

## Chapter 12 -Emergency Management

- Total rewrite of the chapter
- Coordination with The Joint Commission
- Coordination with NFPA 1600 *Standard on Disaster/Emergency Management and Business Continuity Programs*
- NFPA 1620 *Recommended Practice for Pre-Incident Planning*
- Extensive annex notes

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## Critical Function Strategies

- Communications
- Resources and Assets.
- Safety and Security
- Clinical Support Activities
- Essential Utilities
- Exterior Connections
- Staff rolls
- 12.5.3.3.6.8 !!!!!

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## Emergency Management – Program Elements (Cont'd)

- Staff education
- Testing
  - Twice annually
  - Based on HVA
- Scope of exercises
- Response
- Recovery

108

## Administration

- Update program yearly
  - Update the HVA
  - Update the EOP
- Maintain records for three years

109

## Chapter 13 – Security Management

- New Chapter
- Facility shall have a security management plan
- Security vulnerability analysis (SVA)
- Responsible person
  - Over 30 item listed in the responsibilities!!!

110

## Security Management

- Security sensitive areas
- Access and egress security measure
- Media control
- Crowd control

111

## Security Management

- Security equipment
- Employment practices
- Security operations
- Program evaluation

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## Fire Protection Features

- NFPA Staff Question:
- Question for NFPA: An existing facility has an existing fire alarm system with occupant notification in accordance with 19.3.4.3.1 and the reference 9.6.3. However, the existing visible signals that are part of that system are not synchronized in accordance with NFPA 72.
- Question: Does Exception No.3 of 9.6.3.6 permit these visible signals to not be synchronized?
- Question: Because this existing fire alarm system is equipped with visible signals, must these visible signals now comply with all the provisions for visible signals as required by 9.6.3.6 regardless of exception No.3?

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## Fire Protection Features

- NFPA Staff Answer:
- Exception No. 3 to 9.6.3.6 is applicable to existing installations. See also the third paragraph of 2.1 on mandatory references.

114

## Fire Protection Features

- NFPA Staff Question:
- The fire alarm system of a facility is connected to the Life Safety Branch of the EPSS and a Level I, Type 10, Class 48 emergency generator. The Fire Alarm Control Panel also has a battery back up.
- The facility is equipped with magnetic locking on some of the required exit doors in accordance with Chapter 18 of NFPA 101 LSC. The magnetic locks derive their power supply from the critical branch of the essential electrical system, not from the Fire Alarm Control Panel. The magnetic locks unlock upon the activation of the fire alarm system of the facility by any smoke or heat detector or sprinkler flow.
- If normal power is interrupted to the building, the magnetic locks will fail safe in the unlocked position until the emergency generator restores emergency power to the building (including the magnetic locks and the Fire Alarm Control Panel) within 10 seconds.

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## Fire Protection Features

- NFPA Staff Question Continued:
- However if the locked breaker of the Fire Alarm Control Panel is unlocked and the breaker is thrown so that the Fire Alarm Control Panel no longer has primary power to it, the magnetic locks on the exit doors do not unlock since their power supply has not been interrupted and the fire alarm in the building is still active via the battery back up power source of the fire alarm.
- Question 1:
- In this situation, is it the intent of NFPA 72, Section 3-9.7.3 to require the magnetic locking devices on exit doors to unlock when the breaker that controls the Fire Alarm Control Panel is turned off?
- Question 2:
- If the answer to Question 1 is “No”, in this situation, is there any other section of NFPA 72 that would require the magnetic locking devices on exit doors to unlock when the breaker that controls the Fire Alarm Control Panel is turned off?

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## Fire Protection Features

- NFPA Staff Answer:
- The requirements in 3-9.7.3 of the 1999 edition of NFPA 72 were revised in the 2007 and subsequent editions. The original concern was if the fire alarm system batteries were used for the door locks, the batteries would be drained and affect the capacity required for the fire alarm system. The revisions in the 2007 and later editions no longer require doors to unlock on the loss of primary power to the fire alarm system.
- Those still using the 1999 edition of NFPA 72 should consider the changes made in these requirements in the later editions. These changes clarify the requirements and reflect the latest consensus of the committee.

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## Credits

The following people contributed technical information for some of the slides in this presentation:

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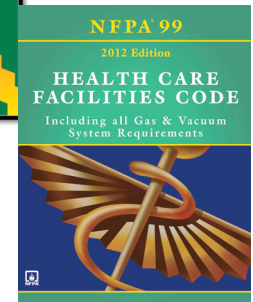
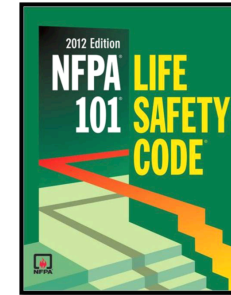
Gary Furdell for NFPA 99

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## Thank You

- NFPA Customer Advisory Group
- 800-344-3555, Option 3
- [www.nfpa.org](http://www.nfpa.org)



## Questions?

THANKS FOR ALL YOU DO!

For more Life Safety Information, Check Lists, Code Interpretations, Tables, Details, and More, please visit [www.healthfacilityconsulting.com](http://www.healthfacilityconsulting.com)

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