### Top 10 K-Tag State Life Safety Deficiency Citations (Licensure 2012 LSC)
**January 1, 2015 Through December 31, 2015**

1. **K0062**  AFSS & Standpipe-inspection, Test, & Maintenance (177)
2. **K0147**  Electrical Safety (170)
3. **K0076**  Medical Gas (118)
4. **K0018**  Corridor Doors (109)
5. **K0069**  Cooking Equipment (0069)
6. **K0052**  Fire Alarm Testing (67)
7. **K0038**  Exit Accessibility (54)
8. **K0067**  HVAC Equipment (53)
9. **K0144**  Generator Maintenance & Testing (44)
10. **K0064**  Fire Extinguishers (43)

### Top 10 K-Tag Florida CMS Deficiencies (2000 LSC)
**January 1, 2015 Through December 31, 2015**

1. **K062**  Automatic Sprinkler System Maintenance (171)
2. **K147**  Electrical Safety (161)
3. **K076**  Medical Gas Storage (115)
4. **K018**  Corridor Doors (101)
5. **K069**  Commercial Cooking Equipment (93)
6. **K052**  Fire Alarm Maintenance & Testing (66)
7. **K067**  HVAC Equipment (53)
8. **K064**  Fire Extinguishers (41)
9. **K021**  Doors (39)
10. **K046**  Emergency Lighting (39)
Florida Codes & Standards

CSM- 2012 Life Safety Code, NFPA101
2012 Health Care Facilities Code, NFPA 99
(Effective date July 1, 2010; survey date November 1, 2016)

2012 Health Care Facilities Code, NFPA 99

Florida Building Code- Chapter 450
AHCA-OPC Plan Review 59A.4.133

The Facility Guidelines- 2010 — 2014
Guidelines for Design and Construction of Health Care Facilities (ICRA & Functional Program)
NFPA. ORG Phone 1-800-344-3555

AGENDA

• Identify the major code changes from 2000 until 2012 (four revisions of NFPA 101)
• Adopted TIA’s

NFPA 101 – LIFE SAFETY CODE

NURSING HOMES
• NFPA 101 Background
• Classified as a Health Care Occupancy
• New facilities regulated under Chapter 18
• Existing facilities regulated under Chapter 19

ASSISTED LIVING FACILITIES (ICF-IID)
• NFPA 101 Background
• Typically classified as a Residential Board and Care Occupancy
• New facilities regulated under Chapter 32
• Existing facilities regulated under Chapter 33
• Existing requirements based on evacuation capability (prompt, slow, impractical) and whether the facility is small or large
**NEW VS EXISTING**

- **NEW**
  - Approval after July 5, 2016
  - Must meet new occupancy requirements

- **EXISTING**
  - Approval prior to July 5, 2016
  - Can meet existing occupancy requirements
  - Cannot reduce existing features below new requirements

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**APPLICATION OF CMS-3277-F**

- Only changes to regulatory language identified in Federal Register (Vol. 81, No. 86)
- Approvals after July 5, 2016 must follow the requirements for new occupancies
- Approvals obtained prior to July 5, 2016 must at least comply with existing occupancies
- Renovations to an existing facility must comply with LSC Chapter 43 as a minimum
- Compliance with LSC does not mean compliance with ADA.

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**MAJOR CODE CHANGES IMPACTING NFPA 101 - 2003 TO 2012**

- Editorial Changes
- Definitions
- Suite Arrangement
- Exiting
- Corridor Obstructions
- Special Hazards
DEFINITION - NEW 2012

- Normally Unoccupied Building Service Equipment Support Area
- Examples include:
  - Interstitial Spaces
  - Crawl Spaces
  - Chases
  - Tunnels
  - Attics
  - Service Vaults

IMPACT OF NEW 2012 DEFINITION

- New Section 7.13 for Normally Unoccupied Building Service Equipment Support Areas
- Unless prohibited by Chapters 11 to 43
- Areas less than 45,000 sq ft non-sprinklered and 90,000 sq ft sprinklered buildings have little change
- Larger areas will have:
  - Head room 6 feet 8 inches minimum
  - Width 28 inches minimum
  - Exit signage required
  - Exit lighting required
  - Minimum two (2) exits from the space

SPRINKLER OUTAGE

- Building evacuation or fire watch required when sprinkler system out of service for 10 hours within a 24 hour period
- Increase over previous requirement
STAIR SIGNAGE

LSC 7.2.2.5.4

STAIR STRUCTURE PROTECTION

Section 7.1.3.2.1(6) requires the structure supporting a stair within a rated wall to have the full fire resistive rating of the enclosure.

HEALTH CARE OCCUPANCIES

- Major changes to Chapters 18 and 19
- Includes hospitals and nursing homes
CMS AMENDMENTS

- Outside Window
  - All new resident sleeping rooms
  - Max sill height of 36 inches (some exceptions)

- Roller Latches
  - Prohibited on corridor doors and doors to rooms containing flammable and combustible materials for existing buildings
  - Only permitted for acute psychiatric settings where patient special clinical needs require specialized protective measures in new buildings
  - LSC 18.3.6.3.6/19.3.6.3.5

SPECIAL HAZARDS & CLARIFICATIONS

TRASH CONTAINERS

- LSC 18.7.5.7.1 / 19.7.5.7.1
- Mobile soiled linen and trash collection containers larger than 32 gallons must be in a room protected as a hazardous area.
SPECIAL HAZARDS & CLARIFICATIONS

RECYCLING CONTAINERS

- LSC 18.7.5.7.2 / 19.7.5.7.2
- Recycling Only
- 96 Gallon Max Size
- Unlimited in Protected Hazardous Area

EXITING – SECURITY LOCKING

- Sections 18.2.2.2.5, 18.2.2.2.6, 19.2.2.2.5 & 19.2.2.2.6:
  - Staff must be able to unlock at all times
  - Smoke detection throughout the secured area OR remote unlocking at constantly attended location
  - Building is fully sprinklered
  - Locks fail-safe (release)
  - Smoke detection or sprinkler activation will release the locks
  - Based on special needs of residents
  - Includes elevator lobby exit access doors

EXITING - LOCKS

- Does not address disguising of doors (LSC 2015)
EXITING - DELAYED EGRESS DEVICES

- LSC 18.2.2.4 / 19.2.2.4
- The code deleted the limitation of one (1) delayed egress device in the means of egress for health care.

EXITING - SLIDING DOORS

MANUAL SLIDING DOORS

- LSC 18.2.2.10 / 19.2.2.10
- Horizontal sliding doors permitted in Health Care occupancies provided that the low to ordinary hazard room that these doors serve has an occupant load fewer than 10 persons.
- Relieves requirement for breakaway operation.
- Does not relieve positive latching a requirements of corridor doors.
- Easily operable from either side

CORRIDOR OBSTRUCTIONS

MINIMUM CORRIDOR WIDTH

- LSC 18.2.3.4 / 19.2.3.4
- Corridors must be a minimum of 8 feet wide in treatment areas and 44 inches in non-treatment areas.
- Where minimum corridor width is 6 feet, projections not more than 6 inches from the corridor wall above the handrail height shall be permitted for hand-rub dispensers.
Minimum corridor width (cont.)
- Where minimum corridor width is 6 feet, projections shall be permitted in corridor provided:
  - Each projection has a depth of 6 inches or less
  - Each projection has a length of 36 inches or less
  - Each projection must be at least 38 inches above the floor
  - Each projection must be at least 48 inches away from each other horizontally

CORRIDOR OBSTRUCTIONS

New

Existing

CORRIDOR OBSTRUCTIONS

- Added allowances in 8 foot corridors:
  - Wheeled carts and equipment can reduce the corridor to not less than 5 feet
  - Mobile equipment is limited to:
    - Equipment in use and carts in use
    - Medical emergency equipment not in use
    - Resident lifts and transport equipment
    - Fire plan and training to relocate mobile equipment
8 foot corridor shall be permitted to have fixed furniture provided:
- Furniture is secured to the floor or wall
- Corridor width is not less than 6 feet
- Area of furniture is less than 50 sq ft
- Furniture grouping is separated by 10 feet
**CORRIDOR OBSTRUCTIONS**

- Fixed furniture does not block access to building services or fire protection equipment
- Direct supervision of the staff or corridor smoke detection

**DEAD-END CORRIDORS**

- LSC 19.2.5.2
  - Existing dead-end corridors exceeding 30 ft are permitted if impractical and unfeasible to alter them

**ALCOHOL BASED HAND RUBS (ABHR)**

- 18.3.2.6 / 19.3.2.6
  - Permits aerosol and gel hand rub dispensers
  - Automatic dispensers permitted
  - If placed in corridor, the corridor must be a minimum of 6 feet in width
  - Protect against inappropriate access
  - Maximum sizes:
    - 0.32 gallon dispensers in rooms, corridors, and areas open to corridors
    - 0.53 gallon dispensers in suites of rooms
  - Dispensers must be separated from each other by a minimum horizontal distance of 48 inches
Alcohol-Based Hand-Rub Dispensers (cont.)

- No more than an aggregate of 10 gallons, outside of the storage cabinet, shall be in any single smoke compartment.
- Storage of more than 5 gallons in a single smoke compartment must meet the requirements of NFPA 30, Flammable and Combustible Liquids Code.
- Dispensers shall not be installed over or directly adjacent to an ignition source.
- Dispensers installed directly over carpeted floors only permitted in sprinklered smoke compartments.

Aerosol containers of Alcohol Based Hand Rubs are limited to 18 oz. and shall be Level 1 aerosols per NFPA 30B.
- Not more than 1,135 oz. shall be in a smoke zone outside storage cabinets.

Cooking Facilities

Domestic Cooking
18.3.2.5.3 / 19.3.2.5.3

- Domestic or commercial cooking equipment for 30 or fewer will be allowed open to the corridor provided:
  - Cook top has a suppression system, grease collection, and 500 cfm minimum exhaust
  - Interlocks to shut down fuel and electrical power
  - Smoke zone limited to 30 beds
  - Two smoke alarms located 20 – 25 feet away
  - Smoke detectors not located within 20 ft

Domestic cooking (continued):

- No solid fuel
- No deep fat frying
- A locked switch to deactivate the cook top
- Timer to deactivate cook top in 120 minutes or less
- Fire extinguishers
- Cook tops can be in a separate room
- TIA 12-2 provides additional information
**COMBUSTIBLE DECORATIONS**

LSC 18.7.5.6 / 19.7.5.6
New fire test options
Permitted amounts given
- 30% - Sprinklers
- 50% - Sprinklers, resident room with 4 or fewer persons

**COMBUSTIBLE DECORATIONS**

Direct vent gas fireplaces are permitted open to the corridor.
- Not allowed in resident rooms
- Smoke zone sprinklered
- Controls are restricted access or locked
- Carbon Monoxide monitors are required

**FIREPLACES**

- LSC 18.5.2.3 / 19.5.2.3
- Direct vent gas fireplaces are permitted open to the corridor.
**FIREPLACES**

- Solid Fuel fireplaces shall be permitted in other than resident sleeping areas provided:
  - 1 hour separation to sleeping areas
  - Complies with Section 9.2.2
  - Enclosure temperature rated
  - CO monitoring
  - AHJ approval for locked enclosure or other safety issues

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**SUITE ARRANGEMENTS**

**SUITE SEPARATION**

- LSC 18.2.5.7 / 19.2.5.7
- Suites are to be separated from the remainder of the building the same as corridors (Figure 1)
- Suite separation must include partitions that limit the transfer of smoke, and doors that positively latch and limit the transfer of smoke
- Specifically permits egress from one suite to another

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**SUITE ARRANGEMENTS**

**SUITE EXIT ACCESS DOORS**

- Where one exit access door is required (based on size and use of suite), the door must open directly into a corridor.
- Where two exit access doors are required (based on size and use of suite), one door must open directly into a corridor. The other door is permitted to exit into an adjacent suite provided that separation between suites complies with the corridor requirements.
SUITE ARRANGEMENTS

SUITE TRAVEL DISTANCE

- Travel distance within a sleeping suite to an exit access door must not exceed 100 feet (Figure 2) without passing through more than one intervening room.

FIGURE 2 - SLEEPING SUITE & NON-SLEEPING

Limitations

- A₁ → D₁ ≤ 100 feet (1 intervening room)
- A₂ → D₂ ≤ 100 feet (0 intervening rooms)
- A₁ → D₁ → EX ≤ 200 feet

SUITE ARRANGEMENT

- Travel distance within non-sleeping suites will be 100 ft; NO reduction for multiple room or intervening rooms.
**SUITE ARRANGEMENT**

- Suite sizes increase:
  - 7,500 sq ft maximum sleeping
  - 10,000 sq ft maximum sleeping with direct supervision and smoke detection

**EXITING - TRAVEL DISTANCE**

**NEW CONSTRUCTION**
- Maximum 200 feet from any point in the building
- Maximum 50 feet in a resident room

**EXISTING**
- Maximum 200 feet
- Maximum 50 feet in a resident room

**SPECIAL HAZARDS & CLARIFICATIONS**

- LSC 18.3.6.3.7 / 19.3.6.3.7
- Power doors complying with 7.2.1.9 are not required to latch provided the doors can be kept closed if a force of 5 pounds is applied in the direction to open the door (swinging or sliding).
FIRE ALARM NOTIFICATION

- LSC 18.3.4.3 / 19.3.4.3
- Positive alarm sequence permitted
  - Trained personnel have 15 seconds to acknowledge alarm
  - 180 seconds then provided to investigate the alarm and reset the system
  - If alarm not acknowledged in 15 seconds, system not reset within 180 seconds or another alarm signal comes in, building notification will activate

RESIDENTIAL BOARD AND CARE

- Major changes to Chapters 32 and 33
- Includes ICF-IID

EVACUATION CAPABILITY

- No longer used for new construction
- Still applicable to existing
SPRINKLERS

32.2.3.5.3.2
- New construction only
- NFPA 13D & 13R systems now require protection throughout all:
  - Habitable areas
  - Closets
  - Roofed porches
  - Roofed decks
  - Roofed balconies

SMOKE ALARMS

32.3.3.4.7
- Requirements below for new construction only
- Large Facilities - Provide smoke alarms: Inside every sleeping room
  - Outside every sleeping room
  - On each level
- Small Facilities - Provide smoke alarms:
  - Inside every sleeping room
  - In all living areas
  - On each level

EVAC. CAPABILITY RECLASSIFICATION

33.1.8
- Existing occupancies only
- Comply with NEW requirements
- Comply with EXISTING where sprinklered throughout
DOOR ITM

32.7.7 / 33.7.7
• Applies to door leaves required to swing in the direction of egress
• Inspect and test annually in accordance with LSC 7.2.1.15
• Criteria include:
  • Opening force
  • Latching/locking
  • Door closers
  • Door encroachment
  • Special locking arrangements (if provided)

ATTIC PROTECTION

32.2.3.5.7 / 33.2.3.5.7
• Attics used for living purposes, storage or fuel-fired equipment require sprinklers
• All other attics options:
  • Protect attics with heat detection
  • Sprinkler attic
  • Non-combustible or limited-combustible construction
  • Use of FRT in accordance with NFPA 703

SPRINKLER ITM

32.2.3.5.8 / 33.2.3.5.8
• Small Facilities
• NFPA 13D systems require regular inspection and testing in accordance with NFPA 25 for:
  • Control valves
  • Gages
  • Alarm devices
  • Visible components
  • Sprinkler testing
  • Freeze protection
**EMERGENCY LIGHTING**

33.3.2.9
- Existing large facilities
- Required for
  - Impractical evacuation
  - Prompt/Slow evacuation with more than 25 rooms

**FIRE DEPT NOTIFICATION**

33.3.3.4.6
- Existing large facilities
- New or replaced fire alarm systems shall provide emergency forces notification

**SPRINKLER PROTECTION**

33.3.3.5.2
- Existing large facilities
- Sprinkler protection required throughout for impractical evacuation facilities
CHAPTER 43 - REHABILITATION

• Classifications:
  • Repair
  • Renovation
  • Modification
  • Reconstruction
  • Change of Use / Change of Occupancy
  • Addition

• Similar to IEBC classifications

Multiple classifications are permitted for a single work project

REPAIR
• The patching, restoration, or painting of materials, elements, equipment, or fixtures for the purpose of maintaining such materials, elements, equipment, or fixtures in good or sound condition.
• Follow EXISTING requirements
CHAPTER 43 - REHABILITATION

RENOVATION
- The replacement in kind, strengthening, or upgrading of building elements, materials, equipment, or fixtures, that does not result in a reconfiguration of the building spaces within.
- New work to comply with EXISTING requirements
- New interior finishes meet NEW requirements

CHAPTER 43 - REHABILITATION

RENOVATION
- Means of egress capacity conforms to occupant load
- Minor reductions in the clear opening dimensions of replacement doors and windows that result from the use of different materials shall be permitted, unless otherwise prohibited.
- Reconfiguration or extension of any system, or the installation of any additional equipment will meet MODIFICATION requirements

CHAPTER 43 - REHABILITATION

MODIFICATION
- The reconfiguration of any space; the addition, relocation, or elimination of any door or window; the addition or elimination of load-bearing elements; the reconfiguration or extension of any system; or the installation of any additional equipment.
- Newly constructed elements/systems shall comply with NEW requirements
CHAPTER 43 - REHABILITATION

EXTENSIVE MODIFICATION
• Modification of entire building or occupancy = RECONSTRUCTION
• Total area of work > 50% of building area then RECONSTRUCTION
• Does not apply to work exclusively on plumbing, electrical, mechanical, fire protection or structural

CHAPTER 43 - REHABILITATION

RECONSTRUCTION
• The reconfiguration of a space that affects an exit or a corridor shared by more than one occupant space; or the reconfiguration of a space such that the rehabilitation work area is not permitted to be occupied because existing means of egress and fire protection systems, or their equivalent, are not in place or continuously maintained.

CHAPTER 43 - REHABILITATION

RECONSTRUCTION
• Means of egress to comply with EXISTING requirements
  • Illumination, Emergency Lighting and Exit Signage to comply with NEW throughout work area
  • Comply with NEW throughout floor where work area >50% of the floor area
CHAPTER 43 - REHABILITATION

RECONSTRUCTION
- Standpipes
  - Provide standpipe to highest work area floor where required by NEW requirements
  - Fire pump not required where fire department can supply required water pressure

CHANGE OF OCCUPANCY CLASSIFICATION
- The change in the occupancy classification of a structure or portion of a structure.
- Based on hazard category

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Occupancy Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (highest hazard)</td>
<td>Industrial or storage occupations with high hazard conditions</td>
</tr>
<tr>
<td>2</td>
<td>Banks, savings and loan institutions, institutional board and care</td>
</tr>
<tr>
<td>3</td>
<td>Assisted, educational, dormitory, detention, treatment, prison, correctional institutions, ordinary boarding school, educational, ordinary boarding school</td>
</tr>
<tr>
<td>4</td>
<td>Education facilities, low hazard education</td>
</tr>
</tbody>
</table>

- Repair & renovation – follow EXISTING
- Modification – all new elements follow NEW
- Reconstruction – work area meets NEW
- Addition – work area meets NEW
- Change of use – comply with EXISTING except where hazardous area created
- Change of occupancy (lesser hazard) – comply with EXISTING except for sprinkler, fire alarm and hazardous areas
- Change of occupancy (greater hazard) – comply with NEW
ADOPTED TIAs

TIA 12-2
• Applies to cooking facilities in new and existing healthcare occ. (Ch. 18/19)
• Permits smoke alarm to be located outside of kitchen area to meet distance requirements
• Smoke detector permitted to be used in lieu of smoke alarm
• Can emit local signal without activating building fire alarm
• Local silencing of the audible notification is permitted

CHAPTER 43 - REHABILITATION

• Classifications:
  • Repair
  • Renovation
  • Modification
  • Reconstruction
  • Change of Use / Change of Occupancy
  • Addition
  • Similar to IEBC classifications

CORRIDOR OBSTRUCTIONS

Minimum corridor width (cont.)
• Where minimum corridor width is 6 feet, projections shall be permitted in corridor provided:
  • Each projection has a depth of 6 inches or less
  • Each projection has a length of 36 inches or less
  • Each projection must be at least 38 inches above the floor
  • Each projection must be at least 48 inches away from each other horizontally
MAJOR CODE CHANGES IMPACTING NFPA 101 - 2003 TO 2012

- Editorial Changes
- Definitions
- Suite Arrangement
- Exiting
- Corridor Obstructions
- Special Hazards

APPLICATION OF CMS-3277-F

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AGENDA

- Application of NFPA 99
- Application of risk assessment methodology
- Adopted TIAs
WHAT IS NFPA 99?

- Upgraded in 2012 edition from standard to a code
- Applies to all health care facilities other than home care
- Specifically
  - Design, construction, maintenance, and inspection of health care facilities
  - Design, manufacture, and testing of appliances and equipment used in health care facilities

NFPA 99 CHAPTERS

Chapter 1 – Administration
Chapter 2 – Referenced Publications
Chapter 3 – Definitions
Chapter 4 – Fundamentals
Chapter 5 – Gas and Vacuum Systems
Chapter 6 – Electrical Systems
Chapter 7 – IT and Communications Systems
Chapter 8 – Plumbing
Chapter 9 – HVAC

Chapter 10 – Electrical Equipment
Chapter 11 – Gas Equipment
Chapter 12 – Emergency Management
Chapter 13 – Security Management
Chapter 14 – Hyperbaric Facilities
Chapter 15 – Features of Fire Protection
EXEMPT CHAPTERS

NFPA 99 – HEALTH CARE FACILITIES CODE

- Several chapters not adopted
  - Chapter 7 – IT & Comm. Systems
  - Chapter 8 – Plumbing
  - Chapter 12 – Emergency Management
  - Chapter 13 – Security Management

APPLICATION OF NFPA 99

CHAPTER 1 - ADMINISTRATION

- 1.3.2 Requirements only apply to new construction and equipment, except as modified in individual chapters
- 1.3.2.1 Only altered, renovated, or modernized portion of existing system or individual component must meet installation and equipment requirements
- 1.3.2.2 If alteration, renovation, or modernization adversely impacts existing performance requirements of a system or component, additional upgrading required
- 1.3.2.3 Existing systems not in compliance may remain unless AHJ believes there is a distinct hazard to life

APPLICATION OF NFPA 99

CHAPTER 2 – REFERENCED PUBLICATIONS

- NFPA 25 – standard for the inspection, testing, and maintenance of water-based fire protection systems
- NFPA 90A – standard for the installation of air-conditioning and ventilating systems
CHAPTER 3 – DEFINITIONS

3.3.107 Medical Gas – A patient/resident medical gas or medical support gas
3.3.108 Medical Gas System – An assembly of equipment for the distribution of nonflammable medical gases
3.3.109 Medical Support Gas – Gas used for any medical support purpose

APPLICATION OF NFPA 99

CHAPTER 4 – FUNDAMENTALS

Applies to new and existing
Building System Category determined through risk assessment (4.2)

Category 1: Systems in which failure likely to cause significant injury or death (4.1.1)
Category 2: Systems in which failure likely to cause minor injury (4.1.2)
Category 3: Systems in which failure not likely to cause injury (4.1.3)
Category 4: Systems with no impact on residents (4.1.4)

Submission of risk assessment to CMS not required

Building System Categories expected reliability

Category 1: Available at all times
Category 2: Provide high level of reliability
Category 3: Normal building level reliabilities
Category 4: Systems with no impact on residents
APPLICATION OF NFPA 99

In a Nursing Home

- What uses are Category 1?
- What uses are Category 2?

EXAMPLES

- Category 1
  - Medical gas systems
  - Ventilators
- Category 2
  - Task or procedure lighting in resident rooms
  - Potable water in resident areas

EXAMPLES

- Category 3: Normal building level reliabilities
  - Heating systems in southern US
  - Humidity control
  - Motorized bed adjustments
  - Cooling tower makeup water in the northwest US
- Category 4: Systems with no impact on residents
  - Gray water lawn sprinkler systems
  - Seasonal lighting systems
  - Public address systems
  - Pneumatic tube systems
Risk Assessment used to define Building System Category Classification
Facilities required to complete but no submission required
Results of the assessment procedure should be documented and records retained
CMS currently developing guidance
Facility concerns/guidance?

ISO/IEC 31010, Risk Management—Risk Assessment Techniques
NFPA 551, Guide for the Evaluation of Fire Risk Assessments
SEMI S10-0307E, Safety Guideline for Risk Assessment and Risk Evaluation Process
Other formal process

RISK ASSESSMENT PROCEDURES

RISK ASSESSMENT METHODOLOGY

NFPA 551 RISK MATRIX
CHAPTER 5 – GAS & VACUUM SYSTEMS

- Requirements for existing facilities specifically referenced in chapter
- 5.1.1.4 Existing systems not in strict compliance are permitted to remain unless it is determined that the condition poses a distinct hazard to life, such as
  - Zone valve without a pressure gauge
  - No Master Alarm Warning System

CHAPTER 5 – GAS & VACUUM SYSTEMS

- Addresses oxygen and nitrous oxide hazards, storage and use of pressurized gas, and reliance on medical gas and vacuum systems for resident care
- Additional requirements for existing facilities from TIA
  - Cylinder and container marking and location requirements
  - Testing and maintenance program required
  - Interconnections between systems
  - Emergency plans

TESTING AND MAINTENANCE

- Maintenance program based on system inventory
- Inspection schedule based on risk assessment
- Maintain records
- Review bulk system capacity annually
- Inspect central supply annually
- Test audible and visual alarms
CHAPTER 6 – ELECTRICAL SYSTEMS

- Requirements for existing facilities specifically referenced in chapter
- Addresses hazards related to electrical power distribution systems
- Covers performance, maintenance and testing
  - Receptacle testing
  - Line isolation monitor testing
  - Ground fault circuit interrupters shall be listed

RECEPTACLES

EACH RECEPTACLE SHALL PROVIDE AT LEAST ONE GROUNDING POLE

Special receptacles permitted
- Four-pole for redundant grounding
- Locking-type
- Sound insulated

RECEPTACLE TESTING

- Resident rooms
  - Testing intervals determined by documented performance data
- Resident bed locations
  - Hospital grade tested at new installation, replacement, or servicing
  - Non-hospital grade tested every 12 months
- Keep records
### RECEPTACLE TESTING

- Visually inspect physical integrity
- Verify continuity of grounding circuit
- Confirm correct polarity of hot and neutral connections
- Retention force of grounding blade shall be at least 4 oz

### LINE ISOLATION MONITOR TESTING

- Tested monthly by actuating LIM test switch
- LIM circuit with self-test and self-calibration tested annually
- Test switch shall activate visual and audible alarm indicators
- Test after repair, renovation or system

### CHAPTER 9 - HVAC

- Applies to new systems
- Added by TIA 12-2
- Requires compliance standards that facilities may already follow
  - ASHRAE 170, Ventilation of Health Care Facilities, as amended by this code
  - ASHRAE 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings, or another locally adopted energy code
  - NFPA 95A, Standard for the Installation of Air-Conditioning and Ventilating Systems, or applicable mechanical codes
Chapter 9 - HVAC

- 9.3.1 Heating, Cooling, Ventilation, and Process Systems
- 9.3.2 Energy Conservation
- 9.3.3 Commissioning
- 9.3.4 Piping
- 9.3.5 Ductwork
- 9.3.6 Acoustics
- 9.3.7 Medical Gas Storage or Transfilling
- 9.3.8 Waste Gas
- 9.3.9 Medical Plume Evacuation
- 9.3.10 Emergency Power System Room
- 9.3.11 Ventilation During Construction

SAMPLE HVAC RISK CATEGORIES

CHAPTER 10 – ELECTRICAL EQUIPMENT

- Applies to new and existing
- Performance, maintenance, and testing of electrical equipment.
- Primarily applies to portable equipment
- Allows relocatable power taps
CMS RULE MODIFICATIONS TO CODES

RELOCATABLE POWER TAPS (RPT) ARE ALLOWED PER NFPA 99 – 2012 EDITION

CHAPTER 11 – GAS EQUIPMENT

• Applies to the use of nonflammable medical gas, vapors and aerosols, and equipment required for both in new and existing facilities
  • 11.1 Applicability
  • 11.2 Cylinder and Container Source
  • 11.3 Cylinder and Container Storage Requirements
  • 11.3 Performance Criteria and Testing
  • 11.5 Administration
  • 11.6 Policies
  • 11.7 Liquid Oxygen Equipment

CYLINDER AND CONTAINER STORAGE

• Storage ≥3,000 cf (11.3.1)
  • In accordance with requirements for piped systems
• 300 cf < Storage < 3,000 cf (11.3.2)
  • Stored in protected enclosure
  • Oxidizing gases – not stored with flammables
  • Oxidizing gases – Minimum 5 ft from combustibles (sprinklered) or ½ hour cabinet
Signage

- Precautionary sign, readable from a distance of 1.5 m (5 ft), must be displayed on each door of the storage room
- Minimum wording

CAUTION:
OXIDIZING GAS(ES) STORED WITHIN
NO SMOKING

CHAPTER 14 – HYPERBARIC FACILITIES

- Applies only to new or altered, renovated, or modernized portions of existing systems

CHAPTER 15 – FEATURES OF FIRE PROTECTION

- Applies to new and existing facilities
- Addresses performance, maintenance and testing
TIA12-3

- Clarifies critical branch not required for Type 3 Essential Electrical Systems (EES)
- 6.6.3.1 Source.
- 6.6.3.1.1 The life safety branch shall have an alternate source of power separate and independent from the normal source that will be effective for a minimum of 1 1/2 hours after loss of the normal source.
- 6.6.3.1.2 The life safety branch shall be so arranged that, in the event of failure of the normal power source, the alternate source of power shall be automatically connected to the load within 10 seconds.

ADOPTED TIAs

TIA 12-4

- Addresses cross-reference & omission errors for medical gas and vacuum systems in existing facilities

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ADOPTED TIAs

TIA 12-5

- Deletes undue restriction for extension cords
ADOPTED TIAs

TIA12-6
- Address presence of open flames in the vicinity of nasal cannula oxygen delivery equipment
- Addresses presence of ignition sources for other types of oxygen delivery equipment and resident rooms
- Home-like environment
- Open kitchens
- Fireplaces
- Candles for religious ceremonies

Thank You!
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