Life Safety Code Compliance

Life Safety 101 and New CMS Requirements

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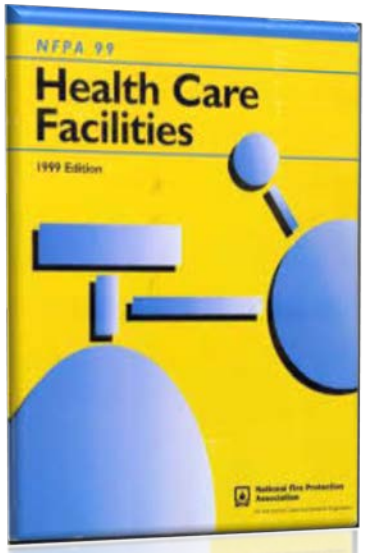
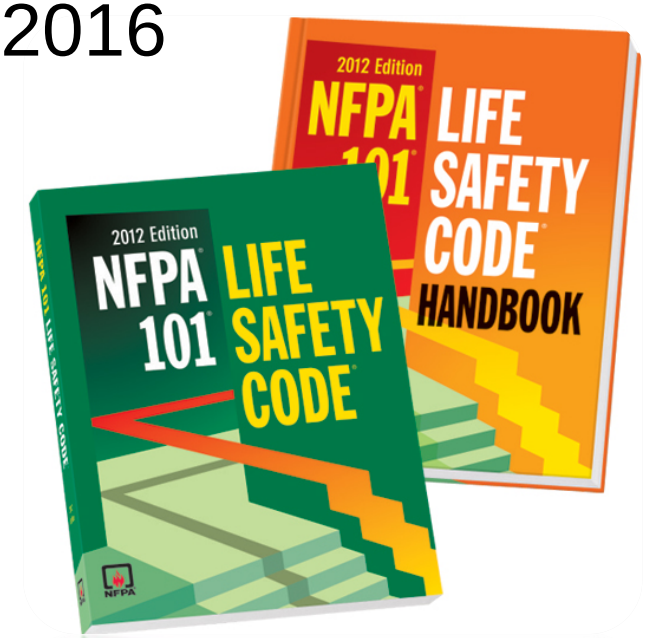
Life Safety Code (LSC) Requirements

- New Edition – 2012
- Effective – July 5, 2016
- Enforcement – November 1, 2016





LSC Requirements

- NFPA 101-2012 (LSC)
- NFPA 99-2012 (Healthcare Facilities Code)
- NFPA 13-2010 (Sprinkler Code)
- NFPA 25-2011 (Insp./Test/Maintenance)
- NFPA 72-2010 (Fire Alarms)
- NFPA 14-2010 (Standpipes & Hose)
- NFPA 96-2010 (Commercial Cooking)
- NFPA 10-2010 (Fire Extinguishers)
- NFPA 80-2010 (Fire Doors)
- NFPA 105-2010 (Smoke Doors)

Source: twitter.com

LSC Changes

- Fire Watch – Fire Sprinkler System Down
  - NEW: 10 hours or more
- Fire Watch – Fire Alarm System Down
  - UNCHANGED: 4 hours or more
- ABHR
  - NEW: Auto Dispensers
  - NEW: In-room dispensers not part of aggregate

LSC Changes

- Waste Containers – Clean/Recyclables
  - NEW: 96-gallon limit
- Waste Containers – Soiled Linen/Trash
  - UNCHANGED: 36-gallon limit
- Corridor Projections
  - NFPA: 6 inches
  - CONFLICT: ADA - 4 inches

LSC Changes

- Door Locking
  - NEW – Unlimited Delayed Egress
  - NEW – Special Locking Arrangements
    - Safety Needs vs. Clinical Needs
- Stairwell Signage
  - NEW – Required for 3 or more stories
  - Code cites specific descriptive requirements
- Fire Door Assembly Inspection
  - NEW- Documented annually

LSC Changes

- NEW (2012) Fire Door Testing
  - Inspection process
    - Visual – damage/missing parts
    - Operate door fully
    - Inspect hardware and replace defective parts
    - Inspect tin-clad doors for evidence of dry rot
    - No holes or breaks in door
    - Glazing and beds are intact
    - Door undercut is no more than ¾ inch
    - Positive latch secures door
    - No field modifications to door or frame
    - Labels visible and legible

Qualifications of Inspectors

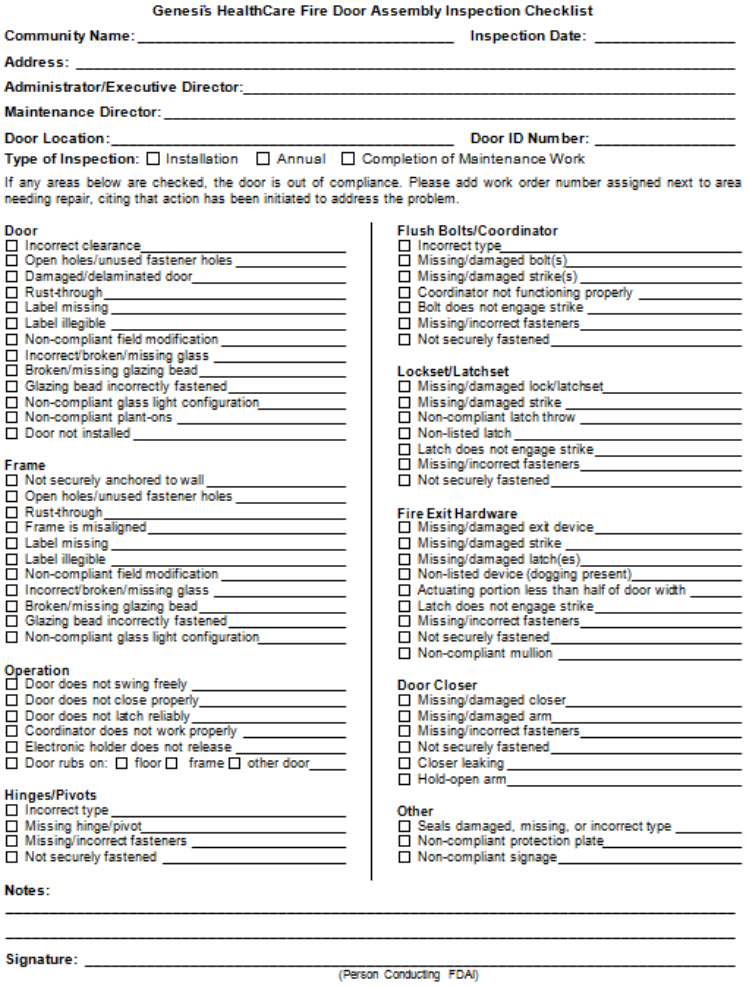
- No specific qualifications for Fire Door Assembly Inspection individual other than being “knowledgeable”
- Specifically, NFPA 80 states the following:

  Functional testing of fire doors and window assemblies shall be performed by individuals with knowledge and understanding of the operating components of the type of door being subject to testing”

- CMS stated that SNF maintenance workers generally possess the skills and knowledge needed

FDAI Checklist

- Clearly itemizes all of the different aspects of the inspection
- A check mark indicates non-compliance
- No check marks is considered a compliant Fire Door Assembly



Genesi's HealthCare Fire Door Assembly Inspection Checklist

Community Name: _____ **Inspection Date:** _____

Address: _____

Administrator/Executive Director: _____

Maintenance Director: _____

Door Location: _____ **Door ID Number:** _____

Type of Inspection: ☐ Installation ☐ Annual ☐ Completion of Maintenance Work

If any areas below are checked, the door is out of compliance. Please add work order number assigned next to area needing repair, citing that action has been initiated to address the problem.

Door
- ☐ Incorrect clearance _____
- ☐ Open holes/unused fastener holes _____
- ☐ Damaged/delaminated door _____
- ☐ Rust-through _____
- ☐ Label missing _____
- ☐ Label illegible _____
- ☐ Non-compliant field modification _____
- ☐ Incorrect/broken/missing glass _____
- ☐ Broken/missing glazing bead _____
- ☐ Glazing bead incorrectly fastened _____
- ☐ Non-compliant glass light configuration _____
- ☐ Non-compliant plant-ons _____
- ☐ Door not installed _____

Frame
- ☐ Not securely anchored to wall _____
- ☐ Open holes/unused fastener holes _____
- ☐ Rust-through _____
- ☐ Frame is misaligned _____
- ☐ Label missing _____
- ☐ Label illegible _____
- ☐ Non-compliant field modification _____
- ☐ Incorrect/broken/missing glass _____
- ☐ Broken/missing glazing bead _____
- ☐ Glazing bead incorrectly fastened _____
- ☐ Non-compliant glass light configuration _____

Operation
- ☐ Door does not swing freely _____
- ☐ Door does not close properly _____
- ☐ Door does not latch reliably _____
- ☐ Coordinator does not work properly _____
- ☐ Electronic holder does not release _____
- ☐ Door rubs on: ☐ floor ☐ frame ☐ other door _____

Hinges/Pivots
- ☐ Incorrect type _____
- ☐ Missing hinge/pivot _____
- ☐ Missing/incorrect fasteners _____
- ☐ Not securely fastened _____

Flush Bolts/Coordinator
- ☐ Incorrect type _____
- ☐ Missing/damaged bolt(s) _____
- ☐ Missing/damaged strike(s) _____
- ☐ Coordinator not functioning properly _____
- ☐ Bolt does not engage strike _____
- ☐ Missing/incorrect fasteners _____
- ☐ Not securely fastened _____

Lockset/Latchset
- ☐ Missing/damaged lock/latchset _____
- ☐ Missing/damaged strike _____
- ☐ Non-compliant latch throw _____
- ☐ Non-listed latch _____
- ☐ Latch does not engage strike _____
- ☐ Missing/incorrect fasteners _____
- ☐ Not securely fastened _____

Fire Exit Hardware
- ☐ Missing/damaged exit device _____
- ☐ Missing/damaged strike _____
- ☐ Missing/damaged latch(es) _____
- ☐ Non-listed device (dogging present) _____
- ☐ Actuating portion less than half of door width _____
- ☐ Latch does not engage strike _____
- ☐ Missing/incorrect fasteners _____
- ☐ Not securely fastened _____
- ☐ Non-compliant mullion _____

Door Closer
- ☐ Missing/damaged closer _____
- ☐ Missing/damaged arm _____
- ☐ Missing/incorrect fasteners _____
- ☐ Not securely fastened _____
- ☐ Closer leaking _____
- ☐ Hold-open arm _____

Other
- ☐ Seals damaged, missing, or incorrect type _____
- ☐ Non-compliant protection plate _____
- ☐ Non-compliant signage _____

Notes:

_____

_____

Signature: _____
(Person Conducting FDAI)

FDAI Master Inventory List

- Name inserted at the top
- Includes a line for each Fire Door Assembly that is inspected with columns that itemize the following information:
  - Door ID Number
  - Location of Door
  - Date of FDAI
  - Pass
  - Fail
  - Work Order Number(s) Assigned
  - Name of Person Conducting FDAI

Genesis Fire Door Assembly Inspection (FDAI) Master Inventory List for (INSERT COMMUNITY NAME)

Door ID Number	Door Location	Date of FDAI	Pass	Fail	Work Order Number(s) Assigned	Date of Correction	Name of Person Conducting FDAI
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			
			☐	☐			

LSC Changes

- Corridor Clutter
  - NEW: Carts/Equipment Allowed
    - In use/not in storage
    - Part of fire plan to remove during emergency
    - 8-ft. corridor must provide 5-ft. clear width
  - NEW: Furniture
    - Fixed (attached)
    - Groupings no larger than 50 sq. ft.
    - No closer than 10 ft.
    - One side on hallway only
    - Cannot obstruct access to critical areas
    - 8-ft. corridor must provide 6-ft. clear width

LSC Changes

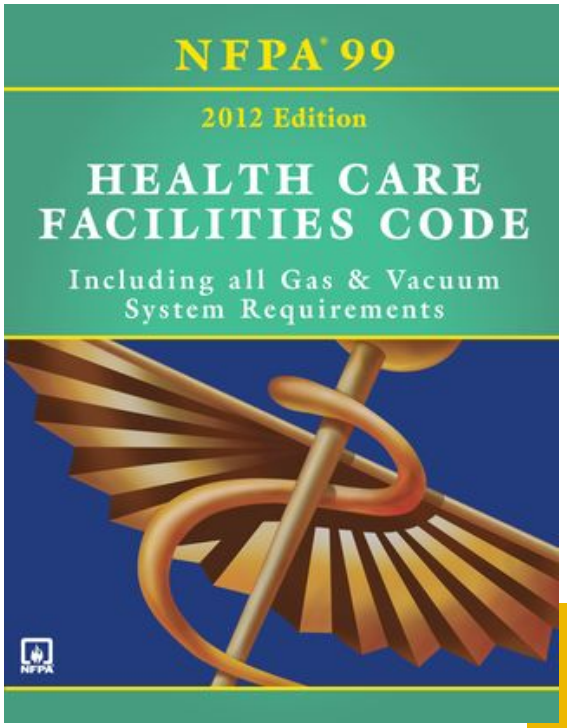
- Cooking Facilities
  - Allowed in resident areas under certain conditions
- Fireplaces
  - Allowed in resident smoke compartments under certain conditions
- Combustible Decorations
  - Increased allowances

LSC Changes

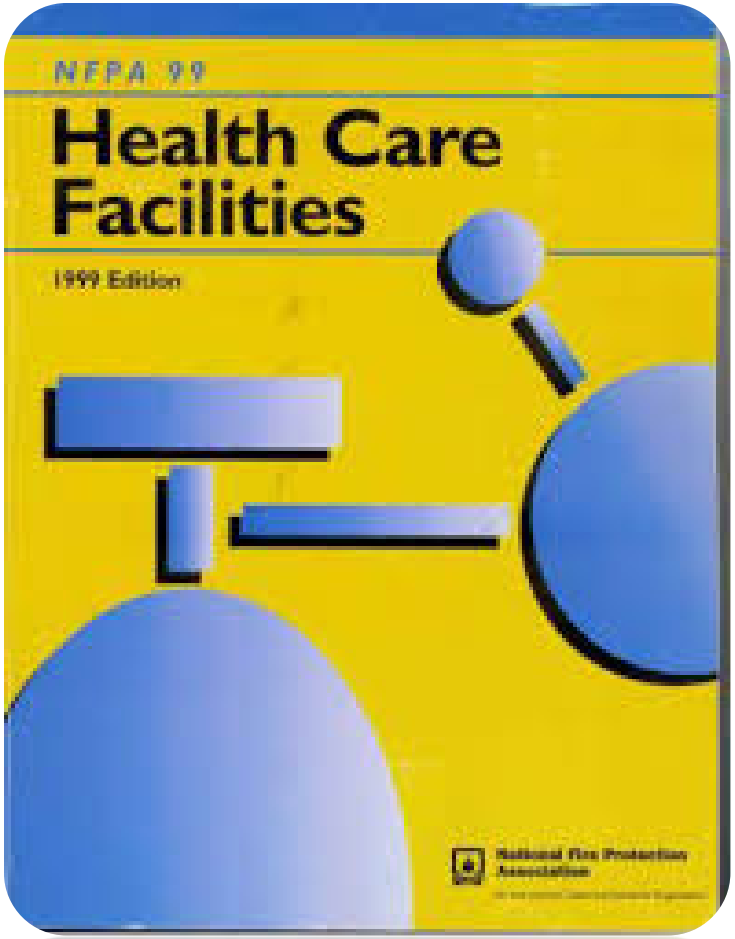
- NEW CHAPTER!
- Chapter 43 – Building Rehabilitations
  - General
  - Special Definitions
  - Repairs
  - Renovations
  - Modifications
  - Reconstruction
  - Change of Occupancy Use Classification
  - Additions
  - Historic Buildings

NFPA 99: The Health Care Facilities Code (2012 edition)

- Officially adopted by CMS on May 4, 2016
- Effective date: July 5, 2016
- Enforcement date: November 1, 2016
- The extra time allows accreditation organizations and local jurisdictions to address changes



PREVIOUS EDITION- 1999

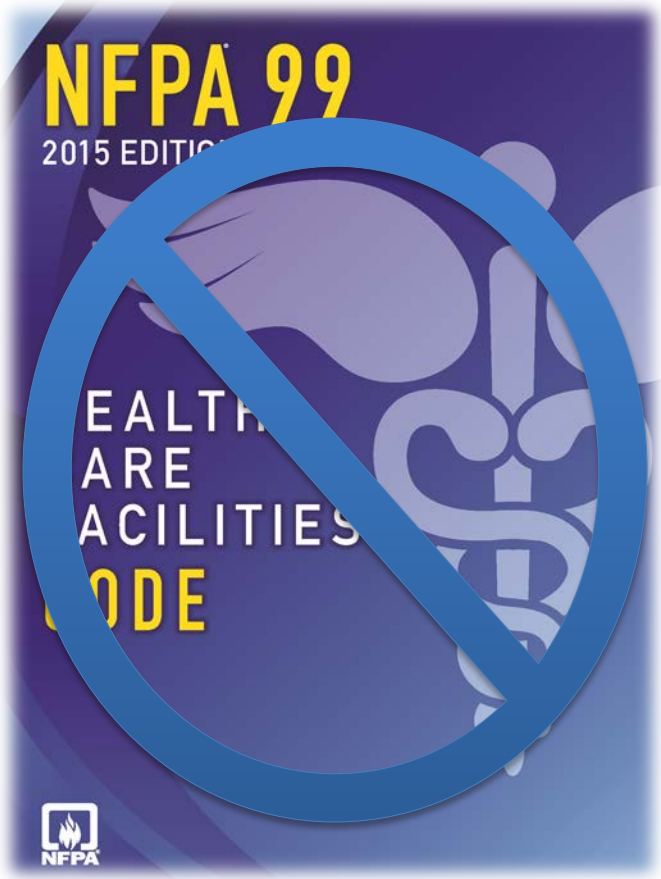


Source: whea.com

NEWER EDITION- 2015

- There is also a newer edition of this code (the 2015 edition) published by the National Fire Protection Association

- This newer edition, as well as future editions, should not be referenced in CMS-regulated facilities until a newer edition is formally adopted

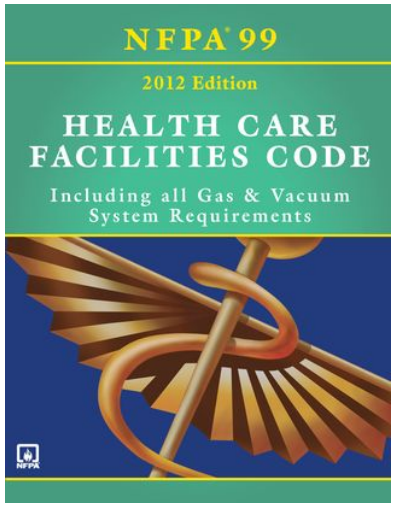


1999 Edition vs. 2012 Edition

- 1999 edition is a “standard”
  - “Occupancy-based standard”
  - Applied to <u>all</u> healthcare facilities, regardless of whether or not there was a need to provide higher levels of safety within the facility

1999 Edition vs. 2012 Edition

- 2012 edition has been completely written
- Considered a **“risk-based”** code
- Providers will need to comply with applicable sections of the code based on identified “risk”
- Providers required to evaluate which elements of the code will apply
  - Four specific “risk categories”



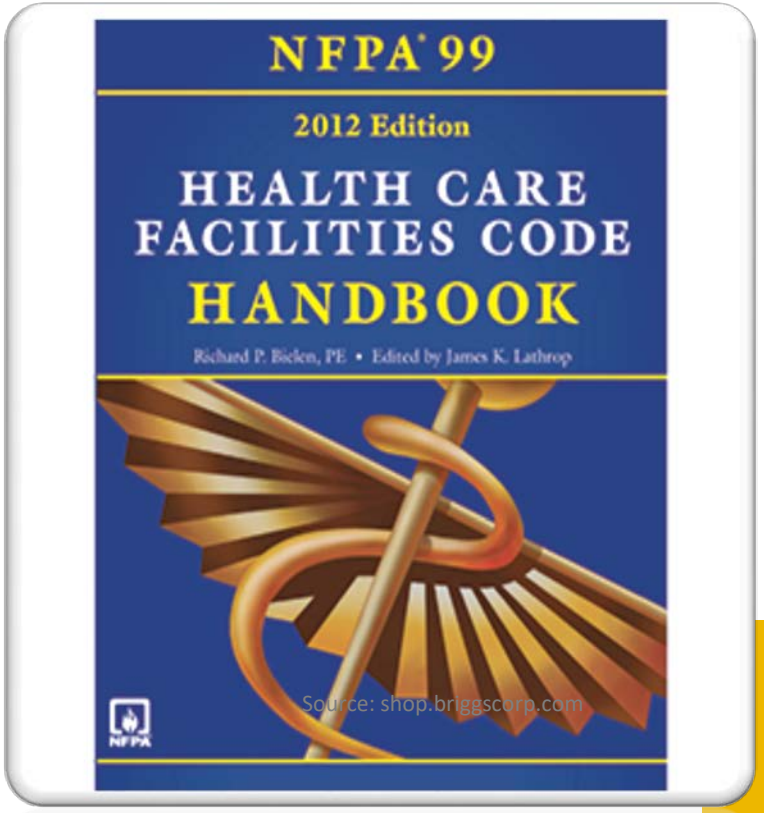
Newly Organized Chapters

1. **Administration**
2. **Referenced Publications**
3. **Definitions**
4. **Fundamentals**
5. **Gas and Vacuum Systems**
6. **Electrical Systems**
7. **Information Technology and Communications Systems for Health Care Facilities**
8. **Plumbing**
9. **Heating, Ventilation and Air Conditioning (HVAC)**
10. **Electrical Equipment**
11. **Gas Equipment**
12. **Emergency Management**
13. **Security Management**
14. **Hyperbaric Facilities**
15. **Features of Fire Protection**

HANDBOOK

- It is recommended that individual facilities obtain a copy of ***The Health Care Facilities Code Handbook***

- Provides the complete text of the code along with excellent explanatory information that benefits the user when interpreting and applying appropriate sections of the code



Risk Assessment Process

- Establish an Assessment Team within the facility to review all aspects of facility operations
  - Comprehensive risk assessment process
  - multiple perspectives on physical plant infrastructure, patient care, and occupant safety
- Familiarize all team members with NFPA 99, Health Care Facilities Code
  - Specifically sections 4.1 on Building Systems Categories and 4.2 on Risk Assessment
- Ensure team members understand the importance of system reliability and the consequences of system failure

Risk Assessment

- Should be conducted on systems and equipment within a SNF to evaluate the consequences of failure and associated risk to patients and caregivers

- Chapter 4.2 of the code suggests that the risk assessment should follow procedures like those outlined in these publications:

  - ISO/IED 31010, *Risk Management – Risk Assessment Techniques*
  - NFPA 551, *Guide for the Evaluation of Fire Risk Assessments*
  - SEMI S10-0307E, *Safety Guidelines for Risk Assessment and Risk Evaluation Process*

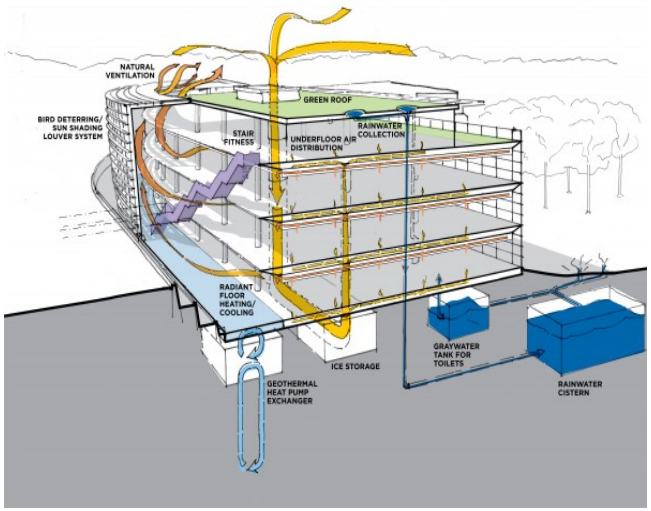
Risk Assessment

- Should evaluate systems and equipment based on their individual operating features and should not factor in “human intervention”
- The worst-outcome scenario pertaining to failure should be considered when evaluating systems and equipment

Risk Assessment

- The assessment goal is to categorize the system or equipment into one of the following categories:

1. Failure may cause death or serious injury
2. Failure may cause minor injury
3. Failure may cause discomfort
4. Failure will cause no impact on patients or caregivers



Category 1

- **Facility systems or equipment in which failure is likely to cause major injury or death of patients or caregivers**
- **These types of systems and equipment are expected to work or be available at all times to support patient needs**
- **Major injury can include any of the following:**
  - Any amputation
  - Loss of sight of an eye (whether temporary or permanent)
  - Chemical or hot metal burns to the eye or any penetrating injury to the eye
  - Any injuries that result from electrical shock or electrical burns leading to unconsciousness and that require resuscitation or admittance to a hospital for 24 hours or more
  - Any other injury that leads to hypothermia, heat-induced illness or unconsciousness and that requires resuscitation or admittance to a hospital for 24 hours or more
  - Loss of consciousness caused by asphyxia or lack of oxygen or exposure to biological agent or harmful substance
  - Absorption of any substance by inhalation, skin, or ingestion, causing loss of consciousness or acute illness requiring medical treatment
  - Acute illness requiring medical treatment where there is reason to believe the exposure was to biological agents, txins, or infected material

Category 2

- Facility systems or equipment in which failure is likely to cause minor injury to patients or caregivers

- The code defines a minor injury as *“not serious or involving risk of life”*
- Expected to provide a high level of reliability; however, limited to short durations of equipment downtime can be tolerated without significant impact on patient care
- Such equipment or systems support patient needs but are not critical for life support
- Examples include the following in a SNF:
  - Task or procedure lighting in patient rooms
  - Potable water in patient care areas

Category 3

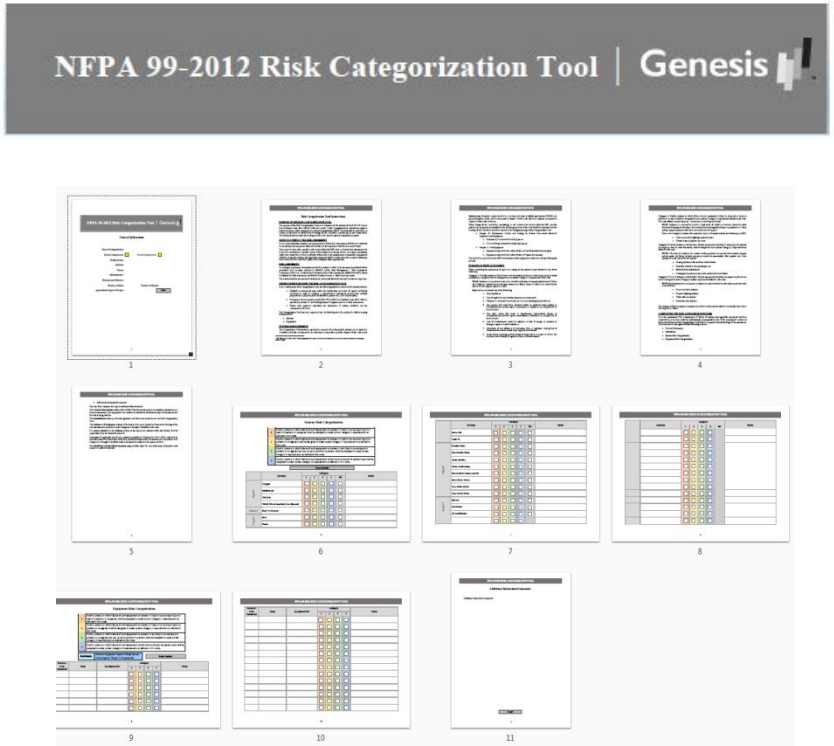
- Facility systems or equipment in which failure is not likely to cause injury to patients of caregivers but can cause discomfort
- The level of reliability of a normal building system or piece of equipment is expected
- These types of systems and equipment are not critical for life support.
- Examples include:
  - Heating systems in the southern United States
  - Motorized bed adjustments
  - Cooling tower makeup water in the northwest United States

Category 4

- Facility systems or equipment in which failure of such equipment would have no impact on patient care
- Such systems or equipment have no impact on patient care and would not be noticeable to patients in the event of failure
- Examples include:
  - Gray water lawn systems
  - Seasonal lighting systems
  - Public address systems
  - Pneumatic tube systems

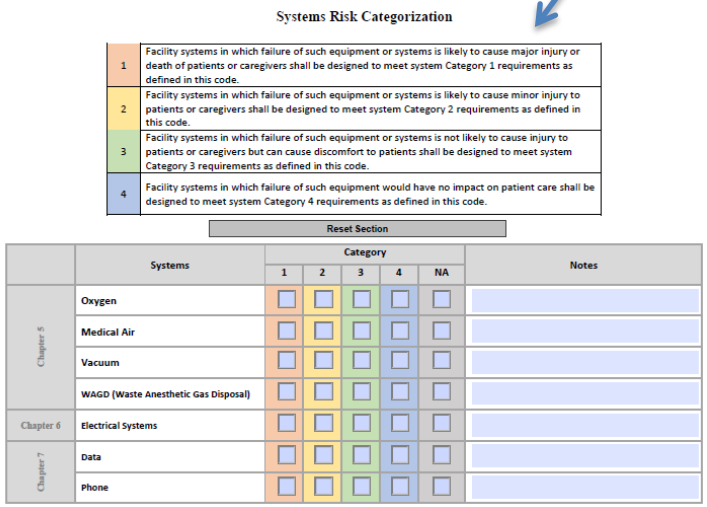
Risk Categorization Tool

- The Risk Assessment Tool (RAT) should be used to record the risk categories identified in a baseline risk assessment of systems—as well as for a focused risk assessment of individual systems and equipment in a specific area



Systems and Equipment Sections

- Checkbox fields are provided to illustrate the findings of the risk assessment in accordance with Categories 1 through 4 identified in the code
- The values associated with each category are listed at the top of these sections of the tool



Systems Risk Categorization

1	Facility systems in which failure of such equipment or systems is likely to cause major injury or death of patients or caregivers shall be designed to meet system Category 1 requirements as defined in this code.
2	Facility systems in which failure of such equipment or systems is likely to cause minor injury to patients or caregivers shall be designed to meet system Category 2 requirements as defined in this code.
3	Facility systems in which failure of such equipment or systems is not likely to cause injury to patients or caregivers but can cause discomfort to patients shall be designed to meet system Category 3 requirements as defined in this code.
4	Facility systems in which failure of such equipment would have no impact on patient care shall be designed to meet system Category 4 requirements as defined in this code.

Reset Section

	Systems	Category 1	2	3	4	NA	Notes
Chapter 5	Oxygen	☐	☐	☐	☐	☐	
	Medical Air	☐	☐	☐	☐	☐	
	Vacuum	☐	☐	☐	☐	☐	
	WAGD (Waste Anesthetic Gas Disposal)	☐	☐	☐	☐	☐	
Chapter 6	Electrical Systems	☐	☐	☐	☐	☐	
Chapter 7	Data	☐	☐	☐	☐	☐	
	Phone	☐	☐	☐	☐	☐	

Equipment Risk Categorization

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4	Facility systems in which failure of such equipment would have no impact on patient care shall be designed to meet system Category 4 requirements as defined in this code.

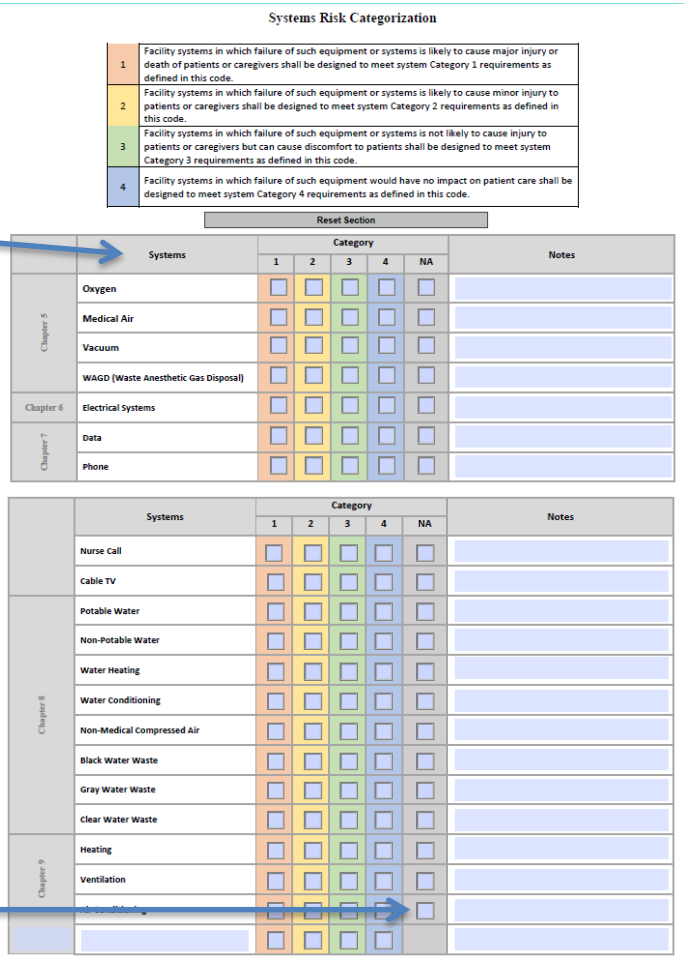
Equipment: Electrical Equipment: Chapter 10 Requirements; Gas Equipment: Chapter 11 Requirements

Reset Section

Room or Area Evaluated	Item	Equipment ID#	Category 1	2	3	4	Notes
			☐	☐	☐	☐	
			☐	☐	☐	☐	
			☐	☐	☐	☐	
			☐	☐	☐	☐	
			☐	☐	☐	☐	
			☐	☐	☐	☐	

Systems Section

- Itemizes all of the systems that need to be assessed in accordance with the corresponding chapters of the code
- If a system illustrated in the systems section of the tool is not installed within the facility, the “Not Applicable” (NA) box should be checked



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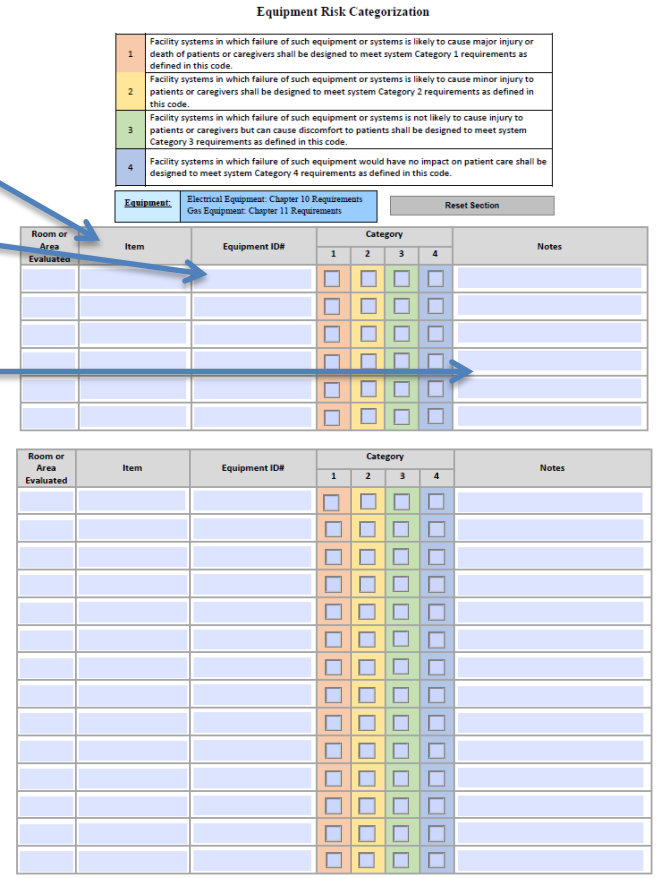
Reset Section

	Systems	Category 1	2	3	4	NA	Notes
Chapter 5	Oxygen	☐	☐	☐	☐	☐	
	Medical Air	☐	☐	☐	☐	☐	
	Vacuum	☐	☐	☐	☐	☐	
	WAGD (Waste Anesthetic Gas Disposal)	☐	☐	☐	☐	☐	
Chapter 6	Electrical Systems	☐	☐	☐	☐	☐	
Chapter 7	Data	☐	☐	☐	☐	☐	
	Phone	☐	☐	☐	☐	☐	

	Systems	Category 1	2	3	4	NA	Notes
	Nurse Call	☐	☐	☐	☐	☐	
	Cable TV	☐	☐	☐	☐	☐	
Chapter 8	Potable Water	☐	☐	☐	☐	☐	
	Non-Potable Water	☐	☐	☐	☐	☐	
	Water Heating	☐	☐	☐	☐	☐	
	Water Conditioning	☐	☐	☐	☐	☐	
	Non-Medical Compressed Air	☐	☐	☐	☐	☐	
	Black Water Waste	☐	☐	☐	☐	☐	
	Gray Water Waste	☐	☐	☐	☐	☐	
	Clear Water Waste	☐	☐	☐	☐	☐	
Chapter 9	Heating	☐	☐	☐	☐	☐	
	Ventilation	☐	☐	☐	☐	☐	
	[illegible]	☐	☐	☐	☐	☐	
		☐	☐	☐	☐		

Equipment Section

- Provides multiple blank spaces to manually insert the name of a piece of equipment that needs to be assessed, along with a space for the equipment's ID number
- Additionally, a "Notes" section is provided for each piece of equipment to add explanatory information
- Only equipment that is regulated by chapters 10 and 11 of the code is required to be assessed
- Equipment will need to be assessed when present during a focused risk assessment
  - If there is no applicable equipment in the space being assessed, this section can be left blank



After Completion

- After completion, the RAT should be maintained on file within the facility and be used as a reference when applying the code
- This form should also be available for all applicable Authorities Having Jurisdiction (AHJ), architects, engineers, contractors, vendors and others regulating or working with the SNF to help ensure and illustrate compliance

Progress

- 1966–1975
  - 15.8 Deaths per Year
- 2002–2011
  - 3.1 Deaths per Year
- 80% Reduction

Mission

- Safe and Compliant Environment of Care

Code Issues

- Different Codes
- Multiple Jurisdictions
- Different Surveyors
- Different Inspectors
- Conflicting Information

Local Authority Having Jurisdiction (AHJ)

Code Interpretations

- Regulators
- Responders
- Architects
- Engineers
- Vendors
- Consultants
- Ownership/Management
- **FRUSTRATION!!**

Common Findings

- Poor Documentation
  - Maintenance, Testing, and Inspection
  - Fire Drills
- Subpar/Minimal Training
- Same Types of Physical Hazards
- Same Types of Unsafe Practices
- Complacency
- Lack of Culture

Doors

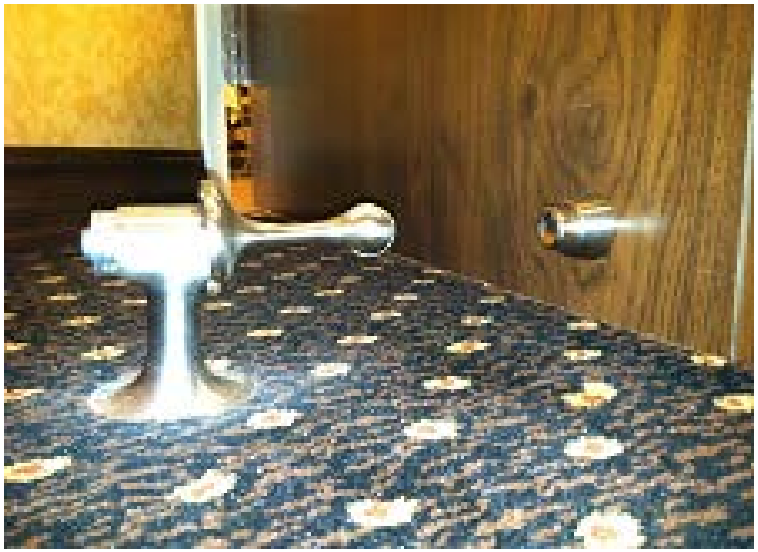
Doors protecting corridor openings in other than required enclosures of vertical openings, exits, or hazardous areas shall be substantial doors, such as those constructed of 1¾ inch solid-bonded core wood, or capable of resisting fire for at least 20 minutes. Doors in fully sprinklered smoke compartments are only required to resist the passage of smoke. There is no impediment to the closing of the doors. Doors shall be provided with a means suitable for keeping the door closed. Dutch doors meeting certain requirements are permitted. Roller latches are prohibited by CMS regulations in all healthcare facilities.

Doors protecting corridor openings shall be constructed to resist the passage of smoke. Doors shall be provided with positive latching hardware. Dutch doors meeting certain requirements are permitted.

Roller latches shall be prohibited.

Compliant Device

- Single Action
- Push or Pull



What's the Problem?

Hazardous Areas

One hour fire-rated construction (with 3/4 hour fire-rated doors) or an approved automatic fire extinguishing system protects hazardous areas. When the approved automatic fire extinguishing system option is used, the areas shall be separated from other spaces by smoke resisting partitions and doors. Doors shall be self-closing and non-rated or field-applied protective plates that do not exceed 48 inches from the bottom of the door are permitted.

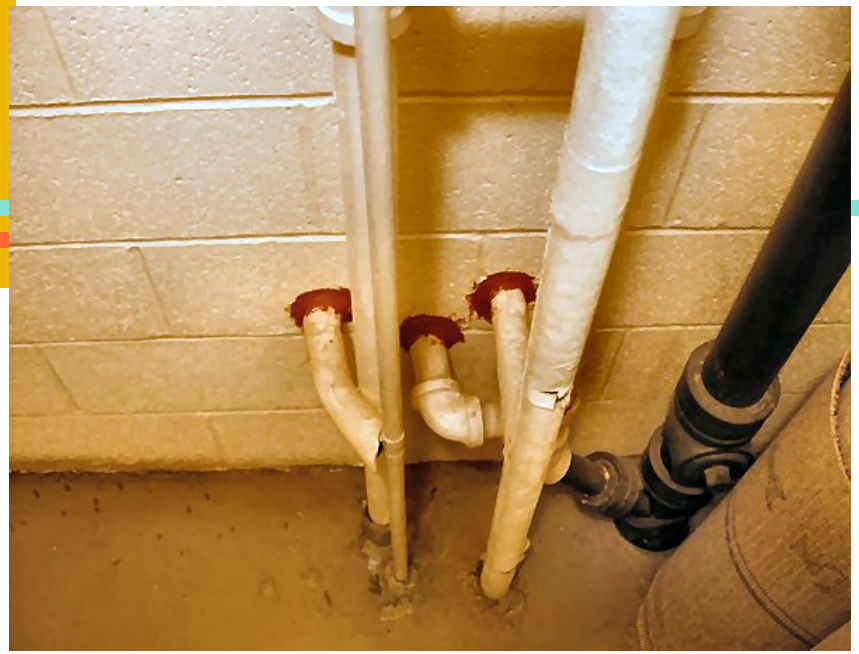
Hazardous areas shall be enclosed with a one hour fire-rated barrier, with a 3/4 hour fire-rated door, without windows. Doors shall be self-closing or automatic closing in accordance with the Life Safety Code.

Smoke Barriers

- Smoke barriers shall be constructed to provide at least a one half hour fire resistance rating.

General Building Construction and Fire-Resistance Rating Requirements

Scientific Atlanta



Sprinkler Systems

- Automatic sprinkler systems are continuously maintained in reliable operating condition and are inspected and tested periodically.

Look Back!!!


2-NW62506


NEW

Sidewall Clearance Requirement: 4”

Proper Signage

Medical Gas Storage and Administration Areas

- Medical gas storage and administration areas shall be protected in accordance with NFPA 99, Standard for Health Care Facilities

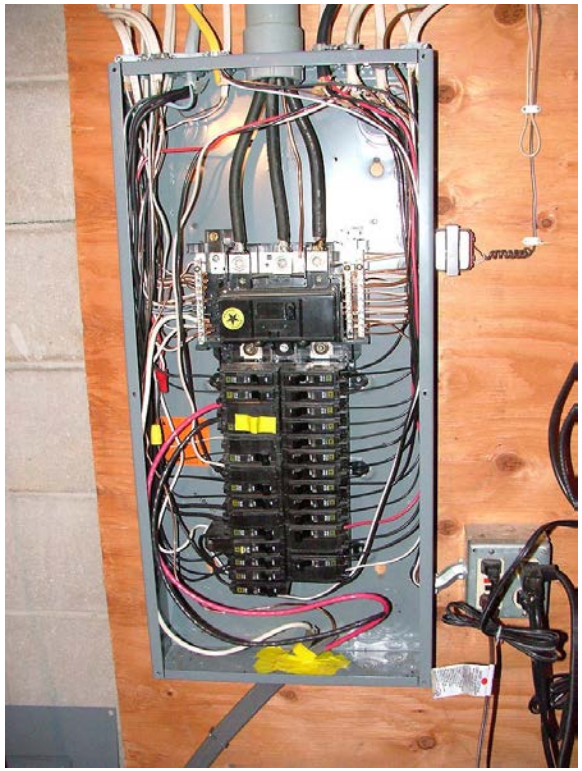
(a) Oxygen storage locations of grea than 3,000 cubic feet are enclosed by a one-hour separation

(b) Locations for supply systems of greater than 3,000 cubic feet are vented to the outside.


MEDICAL GAS
OXYGEN

Electrical Wiring and Equipment

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

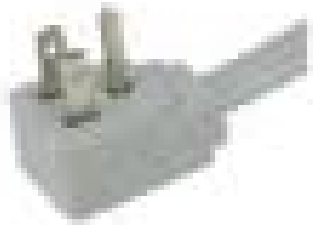



Shurtape

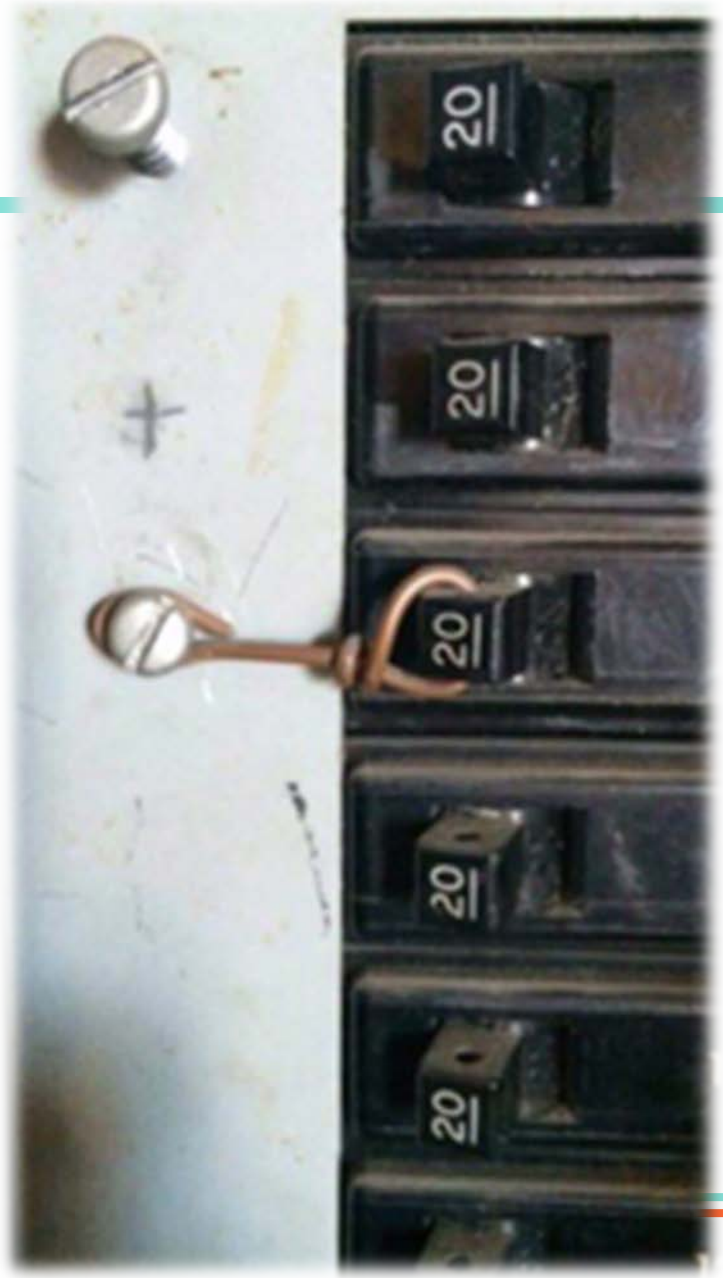

LEVITON

PENDULUM, LLC

Balancing Risk and Defensibility



DOH !!



Power Strips


EDB3
EDB3
E3C
E3C
DELTA

CLEARANCE !!

Fire Alarm Systems


Certificate of Occupancy
FIRE
PULL DOWN


STOP
CAUTION CAUTION CAUTION

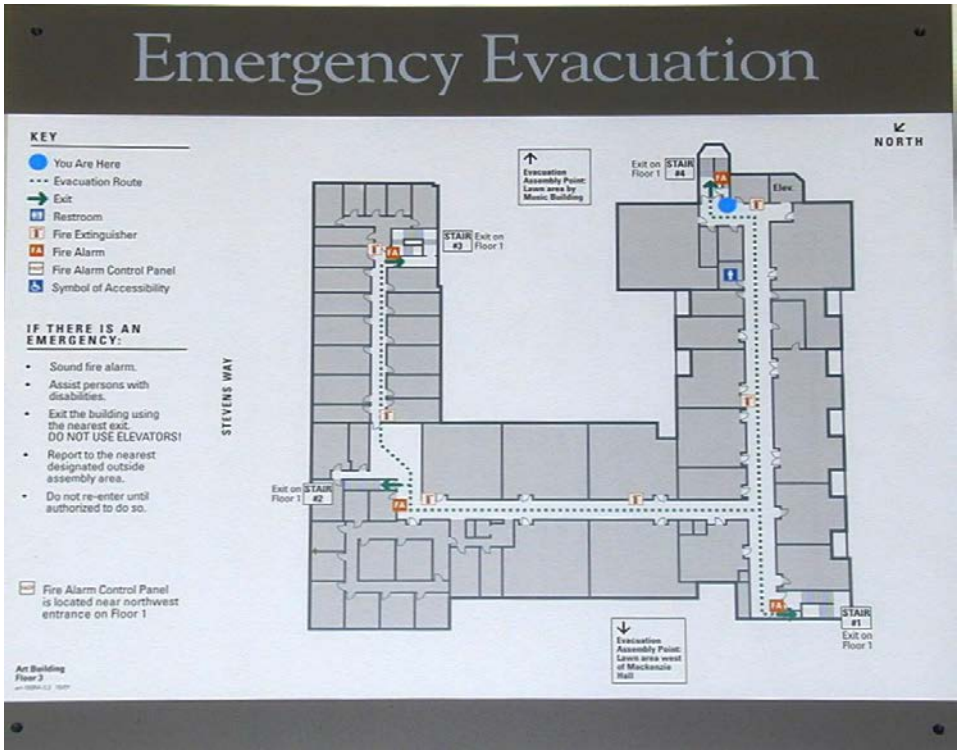
Fire Extinguishers


HEALTH
FLAMMABILITY
REACTIVITY

Storage


Ukrop's
Ukrop's
Ukrop's

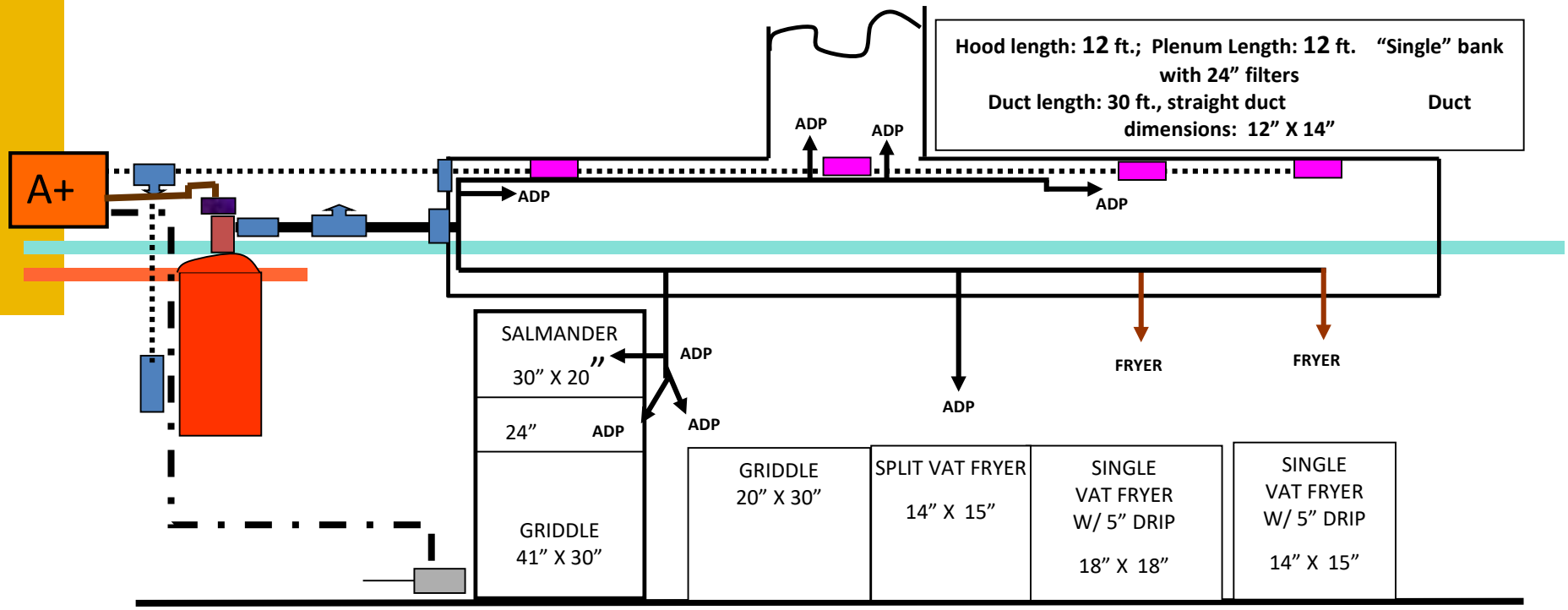
Means of Egress




EMERGENCY EXIT ONLY

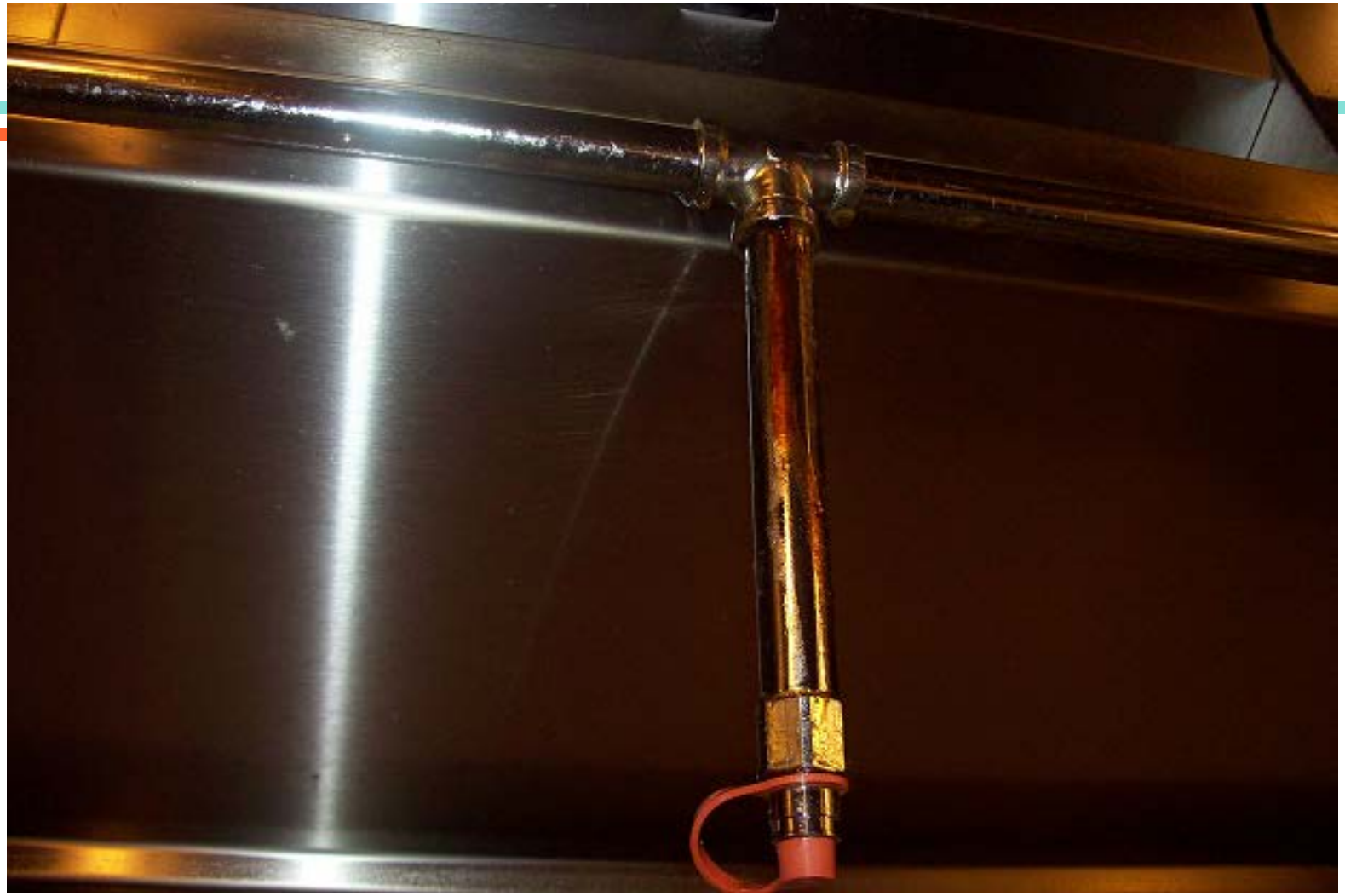

XIT

Cooking Facilities



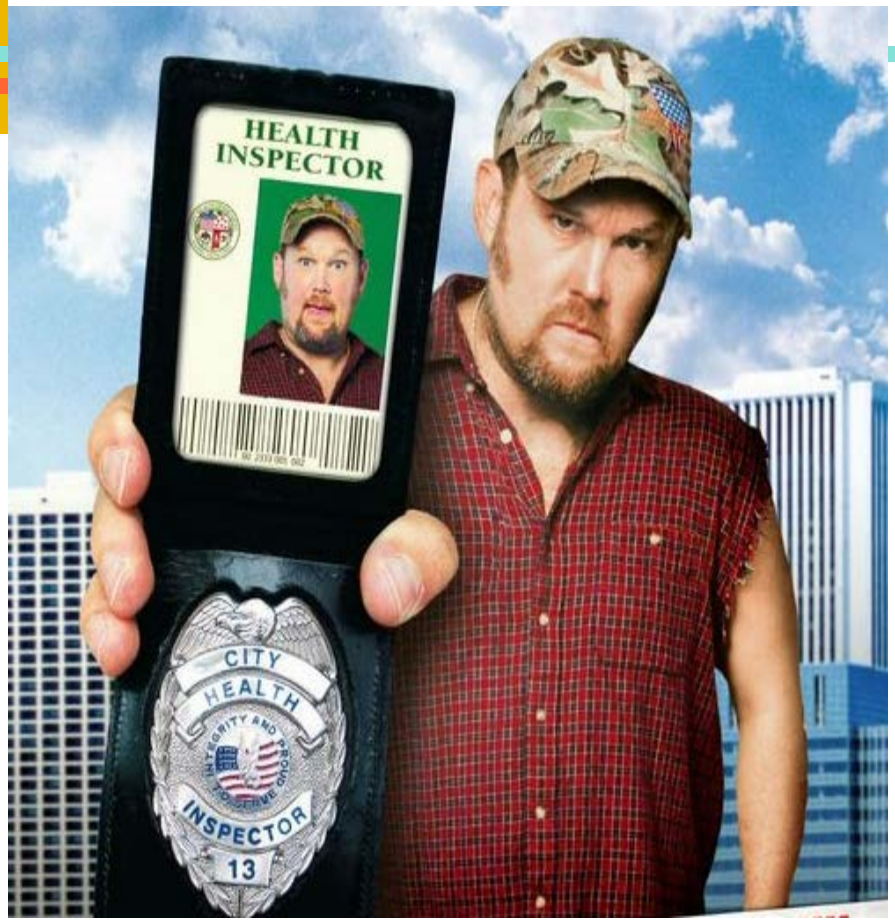
HAZARD	TYPE OF NOZZLE	# OF NOZS.	# OF FLOW PTS.	DISTANCE FROM APPL.	LOCATED
SALMANDER	ADP	1	1	ATTACHED TO FRT OF BROILER	TOP 4" OF CHAMBER
GRIDDLE	ADP	1	1	13" -- 24"	ON PERIMETER AIMED 3" OFF CENTER
GRIDDLE	ADP	1	1	13" -- 48"	ON PERIMETER AIMED 3" OFF CENTER
SPLIT VAT	ADP	1	1	16" -- 27"	WITHIN PERIMETER AIMED AT CEN
SINGLE VAT	F	1	2	27" -- 45"	45 TO 90 DEGREE AIMED AT CENTER
SINGLE VAT	F	1	2	27" -- 45"	45 TO 90 DEGREE AIMED AT CENTER
				Distance from end of Hood	
PLENUM	ADP	2	2	0" -- 4" ; 7 FEET	CENTERED AIMED AT OPP. END DUCT
	ADP	2	2	0" -- 6" INTO DUCT	CENTERED AIMED INTO DUCT

Total number of flow points for Hazard: **12** Size of Cylinder: **RG-4GAL** Number of Cylinders: **1**



Compliance

Survey – Inspection


HEALTH
INSPECTOR
CITY
HEALTH
INSPECTOR
13


Be part of the solution
Not part of the problem

THANK YOU!

Stan Szpytek

California Association of Health Facilities

Fire and Life Safety, Inc.

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