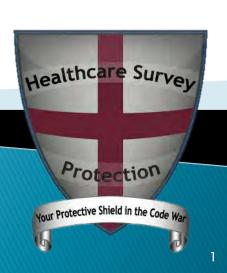


#### WISCONSIN HEALTHCARE ENGINEERING ASSOCIATION Dedicated to Excellence in Healthcare Engineering

## "Lunch & Learn" 2014 Webinar Series

Hosted by Bill Lauzon, PE

Lauzon Life Safety Consulting, LLC 262-945-4567
Lauzon.LSC@gmail.com



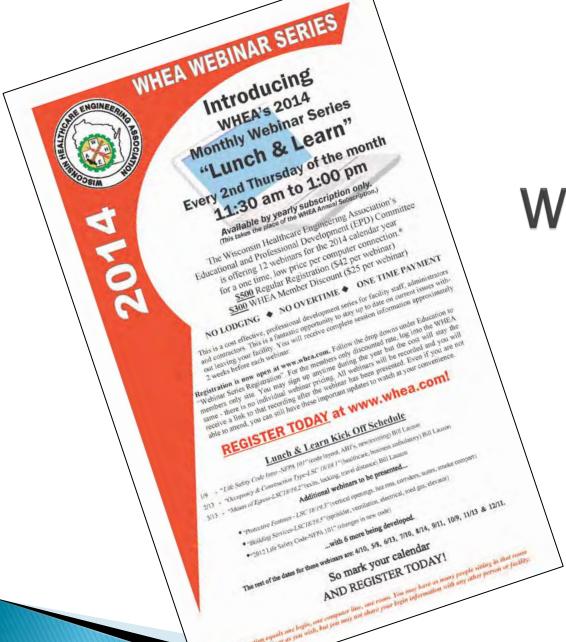


#### WISCONSIN HEALTHCARE ENGINEERING ASSOCIATION Dedicated to Excellence in Healthcare Engineering

## "Lunch & Learn" 2014 Webinar Series

INTRODUCTION TO THE LIFE SAFETY CODE





## WHEA Flyer



### WHEA Flyer

#### Lunch & Learn Kick Off Schedule

- 1/9 "Life Safety Code Intro -NFPA 101" (code layout, AHJ's, new/existing) Bill Lauzon
- 2/13 "Occupancy & Construction Type-LSC 18/19.1" (healthcare, business ambulatory) Bill Lauzon
- 3/13 "Means of Egress-LSC18/19.2" (exits, locking, travel distance) Bill Lauzon

#### Additional webinars to be presented...

- "Protective Features LSC 18/19.3" (vertical openings, haz rms, corridors, suites, smoke compart)
- "Building Services-LSC18/19.5" (sprinkler, ventilation, electrical, med gas, elevator)
- •"2012 Life Safety Code-NFPA 101" (changes in new code)

...with 6 more being developed.

#### **Unofficial Schedule**

Month & Date	Subject	LSC Chapter	Presenter	Topics Covered
01/09/14	LSC Intro	NFPA 101 (LSC)	Bill Lauzon, PE	Code layout, AHJs, New/Existing
02/13/14	Occupancy & Construction Type	LSC 18/19.1	Bill Lauzon, PE	Health care, Business, Ambulatory
03/13/14	Means of Egress	LSC 18/19.2	Bill Lauzon, PE	Exits, Locking, Travel Distance
04/10/14	Fire Doors	LSC 7.2.1, NFPA 80	TBD	Fire Door Codes, Installation, Inspection
05/08/14	Protective Features	LSC 18/19.3	Bill Lauzon, PE	Vertical Openings, Haz Rms, Corridors, Suites Smoke Compart.
06/12/14	Fire Stopping	LSC 8.2.3.2.4	TBD	Fire Stop Methods & Inspection
07/10/14	Building Services	LSC 18/19.5	Bill Lauzon, PE	Sprinkler, Ventilation, Electrical, Med Gas, Elevator
08/14/14	Ventilation	NFPA 90A, IMC, FGI	TBD	Healthcare Ventilation Basics
09/11/14	Electrical	NFPA 99, Chap 3	TBD	Essential Electrical Sys, Generator Install & Testing
10/09/14	Med Gas	NFPA 99, Chap 4	TBD	Med Gas Install & Maintenance
11/13/14	Operating Features	LSC 18/19.7	TBD	Drills, Policies, Furnishings, Misc
12/11/14	2012 LSC	NFPA 101	Bill Lauzon, PE	Changes in the New Code

Subject to revision

### "Lunch & Learn" 2014 Webinar Series

# VERY BASIC!

### "Lunch & Learn" 2014 Webinar Series

# Audience:

- 1. Those with Limited knowledge of LSC
- 2. Those who want to confirm their understanding of the LSC

#### "Lunch & Learn"

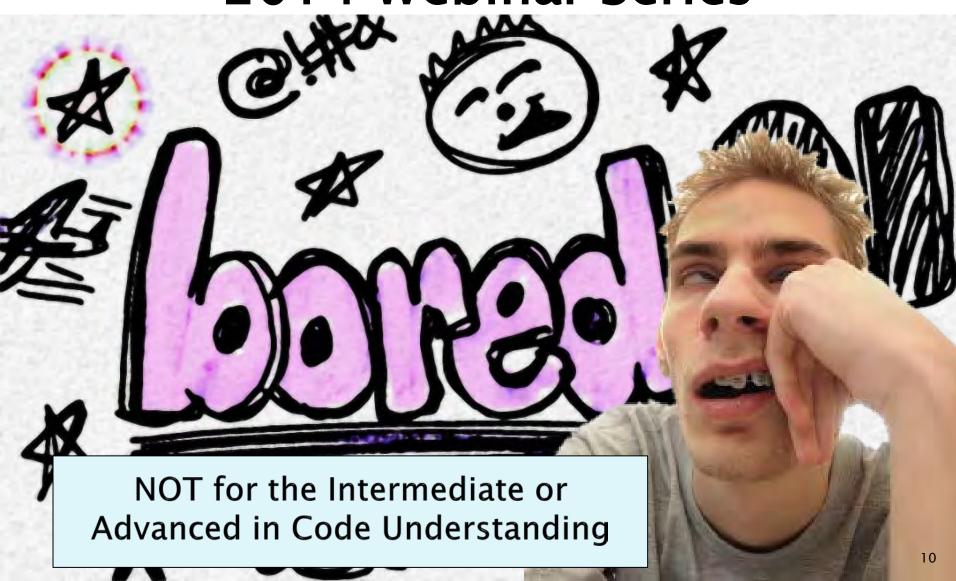


### "Lunch & Learn" 2014 Webinar Series

# Audience:

Maintenance Staff Administrators Contractors

## "Lunch & Learn" 2014 Webinar Series

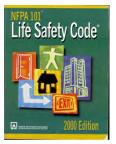


## Have Questions?

**During the Live Webinar:** 

Click on "chat" in the Lower RH corner (Bill gets disappointed if people don't ask questions)

During viewing the posted Webinar: Call Bill Lauzon (262–945–4567) or E-Mail at Lauzon.LSC@gmail.com





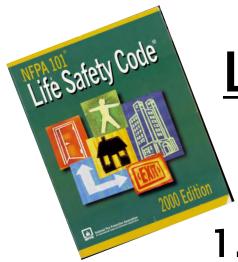
#### WISCONSIN HEALTHCARE ENGINEERING ASSOCIATION

Dedicated to Excellence in Healthcare Engineering

## "Lunch & Learn" 2014 Webinar Series

JANUARY, 2014 INTRODUCTION TO THE LIFE SAFETY CODE





## <u>Lunch & Learn Webinar</u> Jan 9 Agenda

- 1. AHJ's
- 2. NFPA
- 3. Life Safety Code Overview
- 4. Chapter 1 Administration
- 5. Chapter 2 Referenced Codes
- 6. Chapter 3 Definitions
- 7. Chapter 4 General Rules
- 8. Chapter 5 Performance Design
- 9. Chapter 6 Hazard of Contents

## <u>AHJ</u>

(Authorities Having Jurisdiction)

Who ARE They?

# To Understand Codes you must Understand About

## Authorities



#### Anyone that establishes conditions that you are

- legally required to follow, or
- agree to follow

, Authority



In other words, you've <u>consciously agreed</u> to follow <u>their rules</u> to get what they provide

# Typical Health Care Authorities



















#### **Authorities**

Usually have <u>complete ability</u> to determine if the conditions of the law/agreement are being followed

They are the

### **Authorities Having Jurisdiction**



(AHJ)

"Almighty Health Judge"

#### No AHJ

Can OVER-RULE any other AHJ.

Each set of rules stand on their own.

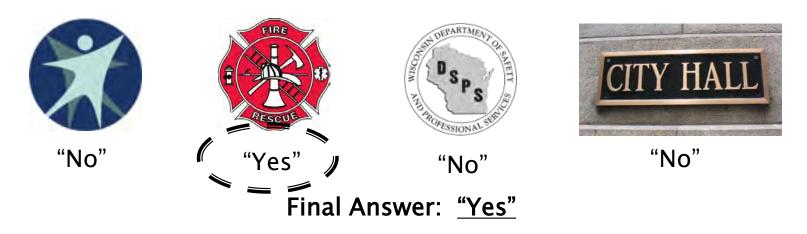


Example:
The State cannot overrule the Fire Dept

Locals can adopt more stringent rules, not less stringent

## You NEED to follow the MOST RESTRICTIVE of all of the rules

Example: "Is an exit sign needed in a particular location?"



## You can't shop around for the most favorable ruling!

### BIG 5 AHJ'S (in Health Care)

1. Centers for Medicare & Medicaid (CMS)



2. The Joint Commission on Accreditation The Joint Commission (TJC)



- 3. Dept of Health Services-Div of Quality **Assurance (DQA)** Wis Administrative Code 124/132
- 4. The Dept of Safety & Professional Services (DSPS)
- 5. Local Fire Departments



# Authorities Having Jurisdiction





## Big 3 AHJ's

How are they Related?







## CMS - DQA

Relationships

Federal Funding AHJ



Hire to do CMS Inspections

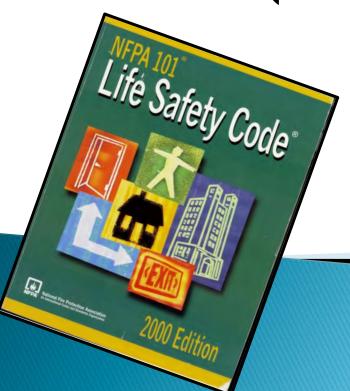
SC Inspection

Wis Licensing AHJ



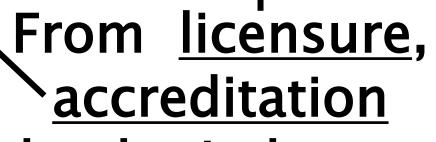
Accreditation AHJ (Optional)

# The Biggest 3 AHJ's have adopted NFPA 101 "THE LIFE SAFETY CODE" (2000 edition)



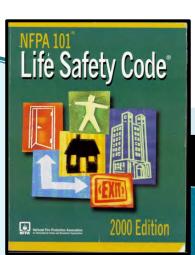
They use it to evaluate if a facility is safe





& federal <u>reimbursemént</u> perspectives there is

One Uniform
Building Survey Rule



# HOWEVER, From a construction perspective

there is

DOOL

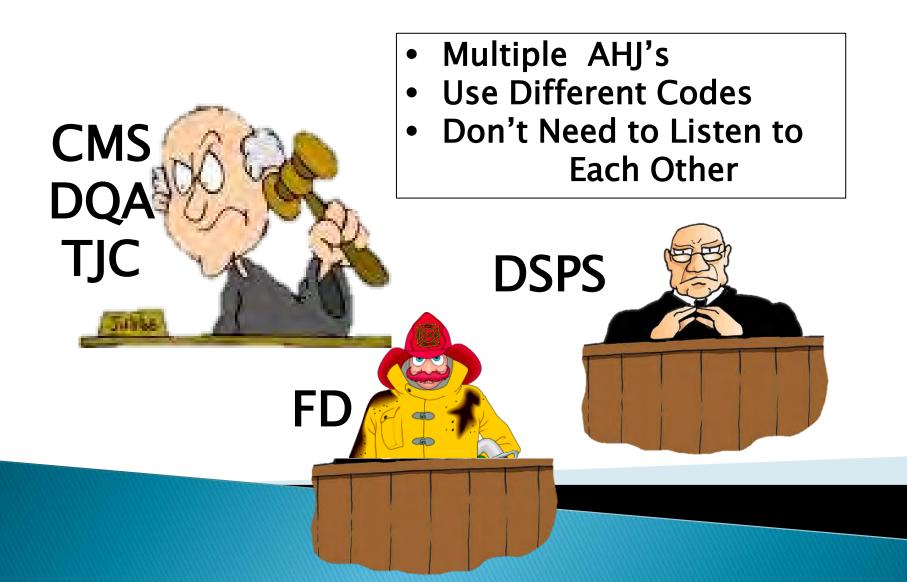


# a <u>Different</u> Building Construction Code

# AND, From a <u>fire prevention</u> perspective each local jurisdiction can choose a



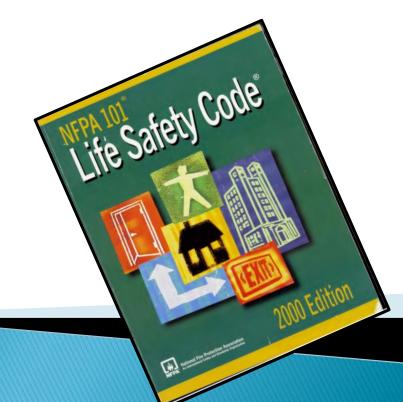




# The 3 largest AHJ's have adopted NFPA 101 "THE LIFE SAFETY CODE"

**CMS** 

(2000 edition)



# Adoption of the Life Safety Code (LSC)

First, CMS Adopts it ...

Then ... DQA & TJC Adopt it

#### Adoption of the Life Safety Code (LSC)

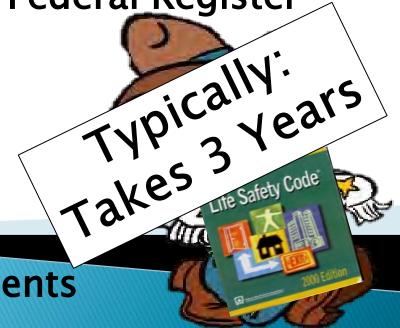
#### **CMS Adoption Process**

(Congressionally mandated)

Publish Intent to Adopt in Federal Register

- Hearings
- Public Comment Period

- Response to Public Comments
- Congressional Action





## Officia

#### **S&C Letters**

(Standards & Certification)

DEPARTMENT OF HEALTH & HUMAN SERVICES Centers for Medicare & Medicaid Services 7500 Security Boulevard, Mail Stop S2-12-25 Baltimore, Maryland 21244-1850



Center for Medicaid and State Operations/Survey and Certification Group

Ref: S&C-03-21

DATE: May 8, 2003

FROM: Director

Survey and Certification Group

SUBJECT: Adoption of New Fire Safety Requirements for Religious Non-medical Health

Care Institutions (RNHCIs), Ambulatory Surgical Centers (ASCs), Hospice, Programs of All-Inclusive Care for the Elderly (PACE), Hospitals, Long Term Care, Intermediate Care Facilities for the Mentally Retarded (ICFs/MR), and

Critical Access Hospitals (CAHs)

TO: Survey and Certification Regional Office Management (G-5)

State Survey Agency Directors/State Fire Authorities

The purpose of this memorandum is to notify states and regional offices (ROs) of the publication on January 10, 2003, in the **Federal Register** (68 FR 1374), of a final rule entitled "Medicare and Medicaid Programs; Fire Safety Requirements for Certain Health Care Facilities." A copy of the regulation is attached.

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Center for Medicaid and State Operations/Survey and Certification Group

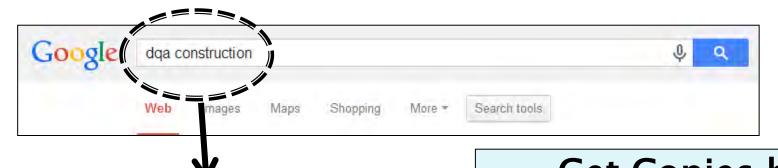
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# Get Copies by: Googling "DQA Construction"

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#### **DQA Construction**/Remodeling Plan Review for H

www.dhs.wisconsin.gov/rl\_dsl/planreview/index.htm ▼
DQA Construction/Remodeling Plan Review for Health Care

#### DQA Memos

DQA Memos - Engineering 2000 -Present, CMS Memos ...

#### Construction Inspections

DQA Construction Inspections (Compliance Statement ...

More results from wisconsin.gov »

#### Forms (a

DQA Formstart, fee c

#### DQA Plai

Plan Applic report provi

#### Wisconsin DQA Memos - Wisconsin Department of

www.dhs.wisconsin.gov/rl\_dsl/publications/BQAnodMems09.htm ▼

Sep 17, 2013 - Sign-up to receive E-mail notification of new DQA memos, DQA Quarterly

.... 09-003 - DQA Website - Construction/Remodeling for Health Care ...

#### **DQA Construction** Listserv Archives

www.dhs.wisconsin.gov/rl\_dsl/listservConstrctn/index.htm \*

10+ items - DQA Construction Listserv Archives. Date. Subject.

Date. Subject.

12/02/13 DQA Construction ListSERV - CMS sprinkler mandate enforcement ...

# Get Copies by: Googling "DOA

Construction"



#### WISCONSIN DEPARTMENT OF HEALTH SERVICES



(Scroll to Bottom)







Sea

#### About DHS Topics A - Z Programs & Services Partners & Providers Reference Center

If You Have Complaints about Wisconsin Health Care

Information about Division of Quality Assurance (DQA)

DQA Web Pages Information

Provider Types Regulated by DQA

DQA Listservs

Consumer Information

Provider Search

DQA Facility Directories DQA
Construction/Remodeling
Plan Review for
Health Care Facilities

This website provides instructions on how to submit plan reviews to the Experiment of Health Services (DHS), Division of Quality Assurance (construction and remodeling of:

- Hospitals
- Nursing homes
- Facilities for the Developmentally Disabled (FDD)
- · Community based residential facilities (CBRF)
- Adult Family Homes (AFH)
- Residential Care Apartment Complexes (RCAC)
- · Hospice inpatient facilities
- · Business occupancies physically attached to a hospital, nursing home, CBRF, or hospice inpatient facility
- Ambulatory Surgical Centers/End Stage Renal Dialysis Facilities (Courtesy Review)

The authority for DHS plan review specifically relates to the building, heating ventilation and air conditioning (HVAC) systems, and fire protection construction projects for the above listed health care facilities.

"Preliminary" reviews are mandated for hospital and nursing home projects to ensure compliance with the appropriate codes, familiarize the d Wisconsin inspection processes, and establish communication links. Regulations requiring this "preliminary" review for hospitals can be located

## DQA Web Page

Training

DQA Numbered Memos

**DHS Forms** 

Construction/ Remodeling of Health Care Facilities

WI Nurse Aide Training and Registry Info

Caregiver Program/ Background Checks

WI Adult Programs Caregiver Misconduct Registry A "courtesy" plan review may be submitted to DHS for review of construction plans for ambulatory surgical centers and end stage renal dialy owner intends to become certified in the Medicare (CMS) program.

DHS has the authority to grant a "permission to start" for only two conditions as long as an application is received and an additional fee is pai

- demolition work prior to remodeling
- · footings and foundation work

NOTE: Unique systems not reviewed by DHS for the providers listed above include plumbing systems, private onsite waste treatment, elevat mechanical refrigeration systems. These systems are under the jurisdiction of the Department of Safety and Professional Services for review regarding their plan submittal process is available at: <a href="http://dsps.wi.gov/Plan-Review">http://dsps.wi.gov/Plan-Review</a>

Follow these links, in the order listed, to begin the plan review process:

- 1. Rules, Regulations & Guidelines
- 2. Forms (applications, permit to start, fee calculator)
- 3. Business Flow Charts (Authority Having Jurisdiction)
- 4. DQA Plan Intake Staff and Inspectors (names and contact information)
- Construction Inspections (Compliance Statement & Inspection Checklists)
- Code Interpretations
- 7. Informational Memorandums (Centers for Medicare/Medicaid, DQA)
- 8. DQA Plan Application Status Report (Status of DQA Review)

PDF: The free Acrobat Reader® software is needed to view and print portable document format (PDF) files. Learn more

#### (At Bottom of Page-Click on #7)









About DHS Topics A - Z Programs & Services Partners & Providers Reference Center

#### Division of Quality Assurance Construction/Remodeling for

**Health Care Facilities** 

Information Memos

The following memorandums are provided to assist plan review and construction related activities. Two separate lists are provided: Medicaid Services (SMS) and the Department of Health Services, Division of Quality Assurance.

- CMS (exit DHS) Common menorandums related to the Life Safety Code NFPA 101.
- DQA Numbered Memos / Common memorandums related to the health care physical environment.

For additional memorantums not specifically identified on these lists, contact <a href="http://www.cms.hhs.gov/SurveyCertificationGenInfo/Phttp://www.dhs.wisconsin.gov/rl\_dsl/Publications/BQAnodMems.htm">http://www.dhs.wisconsin.gov/rl\_dsl/Publications/BQAnodMems.htm</a> respectively.

Last Updated: October 03, 2013

#### Provider Search DQA Facility

#### DQA Facility Directories

If You Have

Complaints about Wisconsin

**Health Care** 

Information about Division of

Assurance (DQA)

**DQA Web Pages** 

Provider Types Regulated by

DQA Listservs

Consumer Information

Information

Quality

DQA



#### CMS Memos - Engineering 2000 - Present

#### Memos

	Number	Subject	Pages	K Tag
	<u>5&amp;C-13-58</u>	CMS additional LSC waiver provisions	5	
	<u>S&amp;C-13-55</u>	August 13, 2013 Deadline - Installation of Automatic Sprinkler Systems in Nursing Homes - <i>Revised</i>	14	K56
	<u>S&amp;C-13-47</u>	ESRD Life Safety Surveys	4	
	<u>S&amp;C-13-25</u>	Relative Humidity & Anesthetic Locations	4	
	<u>S&amp;C-12-29</u>	LSC burden relief	3	
\ \ \	<u>S&amp;C-12-21</u>	Waivers of the 2012 edition of the Life Study Code	2	
	<u>5&amp;C-12-07</u>	Equipment Maintenance Requirements	12	
T V	<u>S&amp;C-11-07</u>	Interior Finish Documentation Requirements for Multiple Providers	2	

Click to Get



#### **S&C Letters**

### (Standards & Certification)

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### Life Safety Code





#### (National Fire Protection Association)

- Nonprofit
- Established in 1896
- Purpose: Reduce hazards on the quality of life
- Consensus codes & standards (Over 300)
- Research, Training & Education
- NFPA Membership: Over > 70,000 individuals

#### (National Fire Protection Association)



**Anyone Can Join** 

Safety codes and standards available online for Members FREE

Members Vote on Code Revisions

(National Fire Protection Association)

**CONSENSUS CODES** 

Members of NFPA make Proposals & Vote to revise codes

# Proposal Forms are available at the back of Code Books With Instructions

#### FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS Mail to: Secretary, Standards Council National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101 Fax No. 617-770-3500 Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date. If you need further information on the standards-making process, please contact the Standards Administration Department at 617-984-7249. For technical assistance, please call NFPA at 617-770-3000 Please indicate in which format you wish to receive your ROP/ROC: paper electronic download (Note: In choosing the download option you intend to view the ROP/ROC from our website; no copy will be sent to you.) Name John B. Smith Company Street Address 9 Seattle St., Seattle, WA 02255 Please Indicate Organization Represented (if any) Fire Marshals Assn. of North America NFPA No. & Year NFPA 72, 1993 ed. 1. a) NFPA Document Title National Fire Alarm Code b) Section/Paragraph 1-5.8.1 (Exception No.1) FOR OFFICE USE ONLY 2. Proposal Recommends: (Check one) unew text ☐ revised text Date Rec'd ☑ deleted text 3. Proposal (include proposed new or revised wording, or identification of wording to be deleted): (Note: Proposed text should be in legislative format: i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording be deleted (deleted we Delete exception. 4. Statement of Problem and Substantiation for Proposal: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.) A properly installed and maintained system should be free of ground faults. The occurrence of one or more ground faults should be required to cause a "trouble" signal because it indicates a condition that could contribute to future malfunction of the system. Ground fault protection has been widely available on these systems for years and its cost is negligible. Requiring it on all systems will promote better installations, maintenance and reliability. 5. A This Proposal is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.) ☐ This Proposal is not original material; its source (if known) is as follows:

Note 1: Type or print legibly in black ink.

Note 2: If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

I hereby grant the NFPA all and full rights in copyright, in this proposal, and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.

John B. Smith

Signature (Required)

(National Fire Protection Association)

#### **CONSENSUS CODES**

### Hundreds of Technical Committees of members study proposals

- HealthCare
- Fire Protection
- Flammable Liquids
- Fire Doors
- (TC for just about any topic )

(National Fire Protection Association)

**CONSENSUS CODES** 

Members vote at the annual national meeting on recommended code revisions

#### **Annual National NFPA Conference**



### <u>NFPA</u>

#### (National Fire Protection Association)

#### NFPA CODES FREQUENTLY USED IN HEALTH CARE

- 1 Fire Prevention
- 10- Fire Extinguishers
- 13-Sprinkler Sys
- 15-Standpipes & Hoses
- 25-Maintenance of Water Sys
- 30-Flammable Liquids code
- 37-Stationary Combustion Engines
- 45-Laboratories Using Chemicals

#### (National Fire Protection Association)

#### NFPA CODES FREQUENTLY USED IN HEALTH CARE

- 50-Bulk Oxygen Systems
- 54-National Fuel Gas Code
- 70-National Electrical Code
- 72-National Fire Alarm Code
- **80-Fire Doors**
- 82-Waste & Linen Handling Systems
- 90A-HVAC Standard
- 92-Smoke Control Systems

#### (National Fire Protection Association)

#### NFPA CODES FREQUENTLY USED IN HEALTH CARE

96-Commercial Cooking Operations

99-Health Care Facilities Code

#### 101-Life Safety Code

101A-Altenative Approaches to LS

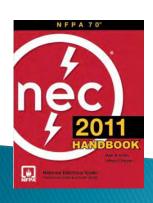
105-Smoke Door Assemblies

110-Emergency Generators

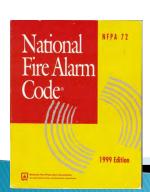
241-Construction Safeguards

(and many more)

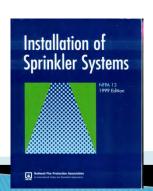
#### The Best Known **NATIONALLY** RECOGNIZED **CODES**

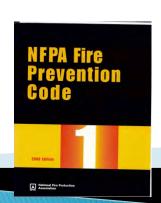




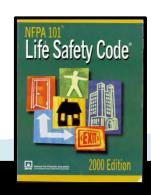


**Fire** Alarm





Sprinkler Prevention



Life Safety

(National Fire Protection Association)

Codes are typically updated every 3 years

Codes are typically updated every 3 years

#### For Example, Editions of LSC

```
1967 - 1970 - 1973 - 1976 - 1979 - 1982
```

1985 - 1988 - 1991 - 1994 - 1997 - 2000

2003 - 2006 - 2009 - 2012 - 2015

(under way)

Codes are typically

updated every 3 years

### To HAVE any EFFECT a Code MUST BE ADOPTED BY AN AUTHORITY HAVING JURISDICTION

1967 - 1970 - 1973 - 1976 - 1979 - 1982

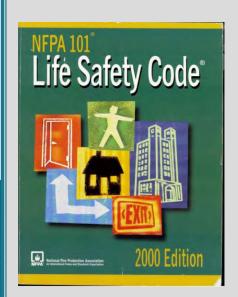
1985 - 1988 - 1991 - 1994 - 1997 - 2000

2003 - 2006 - 2009 - 2012 - 2015

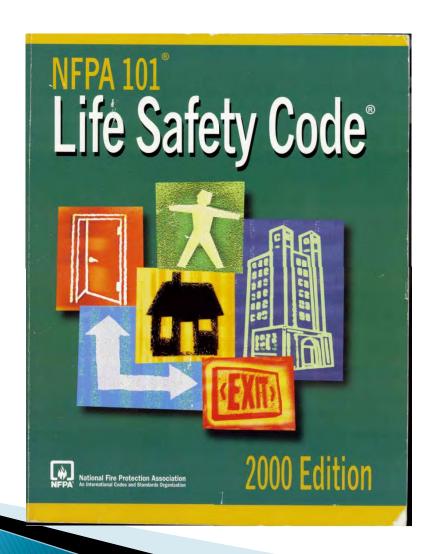
(under way)

#### Adoption of the Life Safety Code (LSC)

1967 Adopted by CMS in 1971
1970 Not adopted
1973 Not adopted
1976 Not adopted
1979 Not adopted
1982 Not adopted
1985 Adopted by CMS in 1988
1988 Not adopted
1991 Not adopted
1994 Not adopted
100C Not adopted
1996 Not adopted



### Life Safety Code



#### Origin and Development of NFPA 101

The Life Safety Code had its origin in the work of the Committee on Safety to Life of the National Fire Protection Association, which was appointed in 1913. In 1912 a pamphlet titled Exit Drills in Factories, Schools, Department Stores and Theaters was published following its presentation by the late Committee member R. H. Newbern at the 1911 Annual Meeting of the Association. Although the pamphlet's publication antedated the organization of the Committee, it was considered a Committee publication.

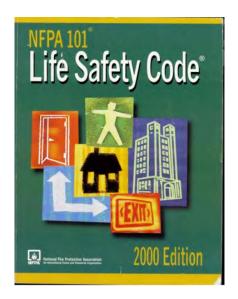
For the first few years of its existence, the Committee on Safety to Life devoted its attention to a study of the notable fires involving loss of life and to analyzing the causes of this loss of life. This work led to the preparation of standards for the construction of stairways, fire escapes, etc., for fire drills in various occupancies, and for the construction and arrangement of exit facilities for factories, schools, and other occupancies. These reports were adopted by the National Fire Protection Association and published in pamphlet form as *Outside Stairs for Fire Exits* (1916) and *Safeguarding Factory Workers from Fire* (1918). These pamphlets served as a groundwork for the present *Code*. These pamphlets were widely circulated and put into general use.

In 1921 the Committee on Safety to Life was enlarged to include representatives of certain interested groups not previously participating in the standard's development. The Committee then began to further develop and integrate previous Committee publications to provide a comprehensive guide to exits and related features of life safety from fire in all classes of occupancy. Known as the *Building Exits Code*, various drafts were published, circulated, and discussed over a period of years, and the first edition of the *Building Exits Code* was published by the National Fire Protection Association in 1927. Thereafter, the Committee continued its deliberations, adding new material on features not originally covered and revising various details in the light of fire experience and practical experience in the use of the *Code*. New editions were published in 1929, 1934, 1936, 1938, 1939, 1942, and 1946 to incorporate the amendments adopted by the National Fire Protection Association.

National attention was focused on the importance of adequate exits and related fire safety features after the Cocoanut Grove Night Club fire in Boston in 1942 in which 492 lives were lost. Public attention to exit matters was further stimulated by the series of hotel fires in 1946 (LaSalle, Chicago — 61 dead; Canfield, Dubuque — 19 dead; and the Winecoff, Atlanta — 119 dead). The Building Exits Code, thereafter, was used to an increasing extent for regulatory purposes. However, the Code was not written in language suitable for adoption into law, as it had been drafted as a reference document and contained advisory provisions that were useful to building designers but inappropriate for legal use. This led to a decision by the Committee to re-edit the entire Code, limiting the body of the text to requirements suitable for mandatory application and placing advisory and explanatory material in notes. The re-editing expanded Code provisions to cover additional occupancies and building features to produce a complete document. The Code expansion was carried on concurrently with development of the 1948, 1949, 1951, and 1952 editions. The results were incorporated in the 1956 edition and further refined in subsequent editions dated 1957, 1958, 1959, 1960, 1961, and 1963.

In 1955, NFPA 101B, on nursing homes and NFPA 101C, on interior finish, were published. NFPA 101C was revised in 1956. These publications have since been withdrawn.

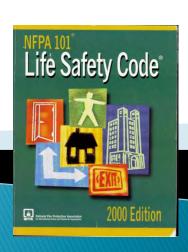
In 1963 the Committee on Safety to Life was restructured to represent all interested factions and to include only those members with broad knowledge of fire matters. The Committee served as a review and correlating committee for seven sectional committees whose



#### Page 1

# Origin & Development of NFPA 101

#### LSC developed slowly over the years in response to many deaths from fires

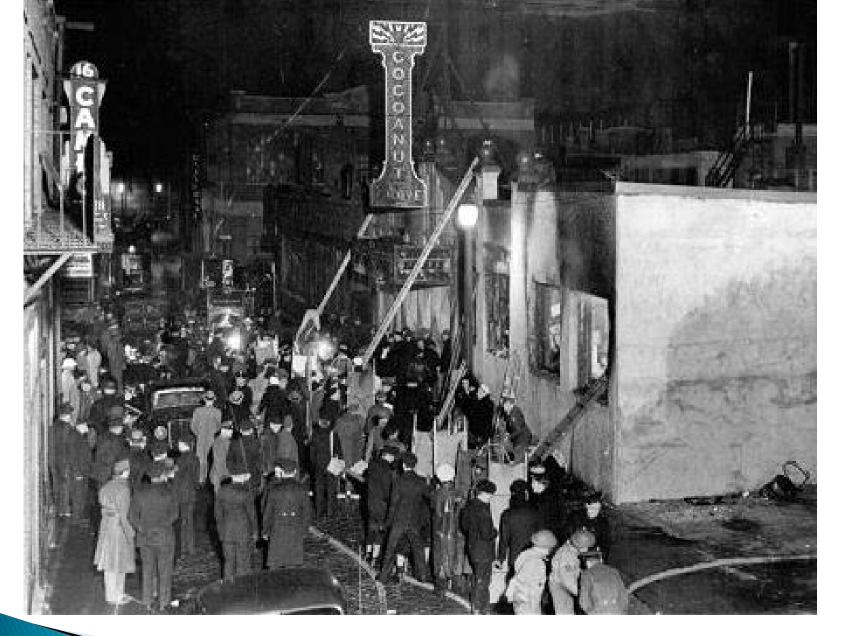




1929 - Cleveland Clinic (125 deaths)



1942 - Cocoanut Grove (492 deaths)



**Most Nightclub Deaths** 

#### 71 DEAD IN NURSING HOME FIRE; LICENSE FOR PLACE HAD BEEN HELD UP BY STATE

Raging Fire Draws On-Lookers to Scene



# WIRING, 2 OTHER FACTORS CITED IN INSPECTION AT WARRENTON

Competent Electrician'
Had Not Examined
System, Report
Shows — Home Was
Allowed to Operate.

A Statt Correspondent of the Post-Dispatch.

WARRENTON, Mn., Feb. 28
—At least II persons died hery
yesterday in a fine in a nursing
forms, whose Branes renewed
had been beld up by the state
as a result of a recent inspenlimi. It was the secret fire in
Missouri's history.

One of three reasons for hold-

1957 - Warrenton Nsg Home (71 deaths)



1977 - Station Nightclub (100 deaths)



2003 - Hartford Nursing Home



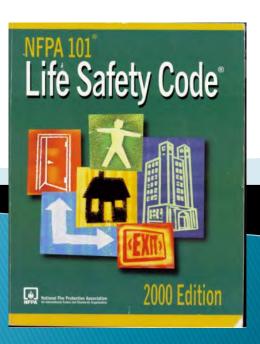
2004 - Nashville Nursing Home

### Evolution of the Life Safety Code (LSC)

1912 ..... Exit Drills pamphlet

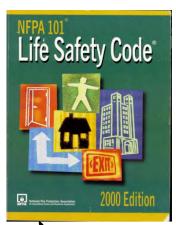
1927 ..... Building Exits Code

1967 ..... Code for Safety to Life



#### **Evolution** of the LSC

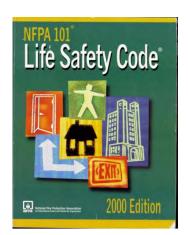
### CHANGING DESIGN PHILOSOPHY



- 1. Compartmentation (Passive Protection) '67 '70 '73
- 2. Detection & Notification (Active Protection) '76 '81 '85

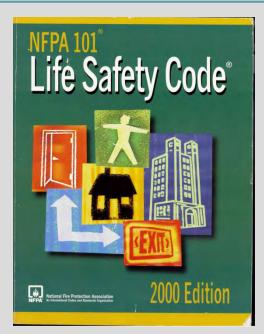
3. Extinguishment (Active Protection) '91 & later

### NO ONE has died in over 100 years



in a FULLY
sprinkled
(and fully maintained)
building



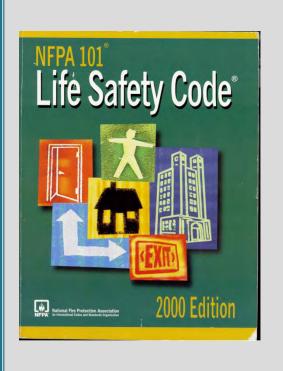


### The 2000 edition of the Life Safety Code

Applicable to: (if receiving Fed \$)

- > Hospitals
- Nursing Homes
- Hospices
- Ambulatory Surgery Clinics
- Dialysis Clinics
- Medical Clinics

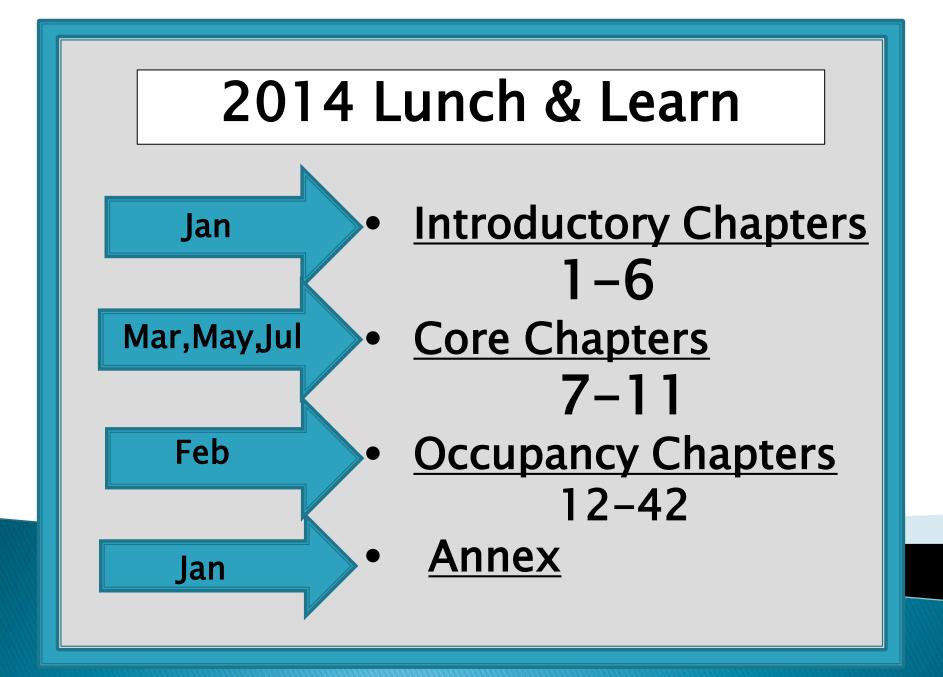
#### **ORGANIZATION OF THE LSC**



- Introductory Chapters1-6
- Core Chapters

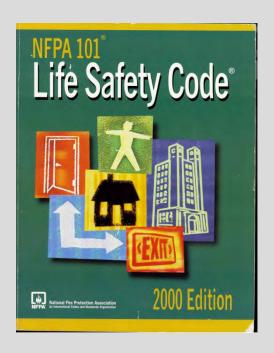
7–11

- Occupancy Chapters
   12-42
- Annex



### **ANNEX**

- 1. Contains Explanatory Information
- 2. Non-binding not part of the code

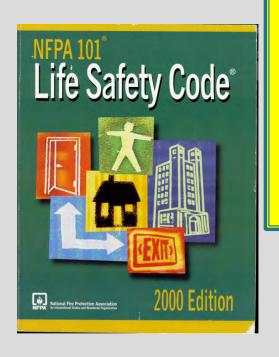


the END of the Code

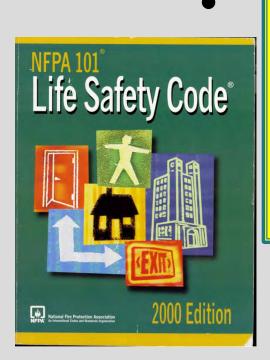


You just need to know where to look



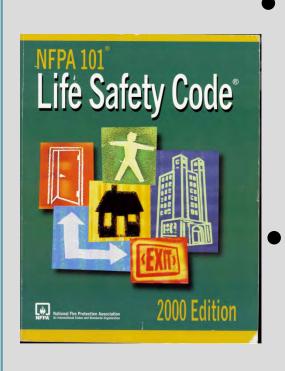


### Occupancy Chapters



### Occupancy Chapters

- 1. Explains WHEN requirements are needed
- 2. NEW verses EXISTING



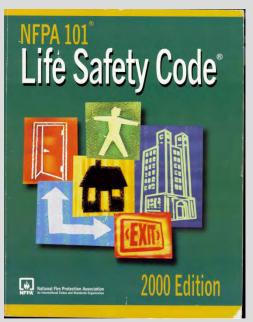
NEW (even # chapters) =

constructed/remodeled

after Mar 2003

EXISTING (even # chapters) =
 constructed/remodeled
 before Mar 2003

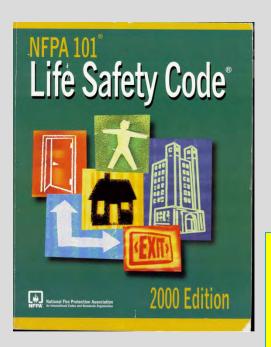




Assembly	Chapters 12/13
Health Care	Chapters 18/19
<b>Ambulatory Care</b>	Chapters 20/21
Residential B & C	Chapters 32/33
Business	Chapters 38/39
Storage	Chapter 42

### Core Chapters

Means of Egress	.Chapter	7
Construction	.Chapter	8
Bldg Svc Equip	Chapter	9
Finishes/Contents	Chapter	10



# Explains HOW to comply

### Core Chapters

Means of Egress.....Chapter 7
Construction.....Chapter 8
Bldg Svc Equip.....Chapter 9
Finishes/Contents...Chapter 10

# The 2000 edition of the Life Safety Code TYPES OF REQUIREMENTS Types of amitted"

# 1. "If Permitted" 2. "If Required"

2000 Edition

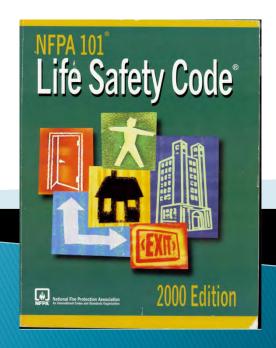
- "If Required Everywhere
   Required Everywhere
  - Storage......Chapter 42

### **Core Chapters**

Means of Egress	Chapter	7
Construction	Chapter	8
Bldg Svc Equip	.Chapter	9
Finishes/Contents	.Chapter	10

# LSC CONVENTIONS

**Vertical Line** = Revisions from Prior Code



14.2.2.5 Horizontal Exits. Horizontal exits complying with 7.2.4 shall be permitted.

14.2.2.6 Ramps. Ramps complying with 7.2.5 shall be permitted.

14.2.2.7 Exit Passageways. Exit passageways complying with 7.2.6 shall be permitted.

14.2.2.8 Fire Escape Ladders. Fire escape ladders complying with 7.2.9 shall be permitted.

14.2.2.9 Alternating Tread Devices. Alternating tread devices complying with 7.2.11 shall be permitted.

14.2.2.10 Areas of Refuge. Areas of refuge complying with 7.2.12 shall be permitted.

14.2.3 Capacity of Means of Egress.

14.2.3.1 Capacity of means of egress shall be in accordance with Section 7.3.

14.23.2 Minimum Corridor Width. Exit access corridors shall have not less than 6 ft (1.8 m) of clear width.

14.2.4 Number of Exits. Not less than two separate exits shall be as follows:

(1) Previded on every story

(2) Accessible from every part of every story and mezzanine

14.2.5 Arrangement of Means of Egress. (See also Section 7.5.)

14.2.5.1 Means of egress shall be arranged in accordance with Section 5.

14.2.5.2 No dead-end corridor shall exceed 20 ft (6.1 m), other than in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7, in which case dead-end corridors shall not exceed 50 ft (15 m).

14.2.5.3 No common path of travel shall exceed 75 ft (23 m), other than for the first 100 ft (30 m) in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.2.5. Every room that is normally subject to student occupancy shall have an exit access door leading directly to an exit access corridor or exit.

Excellion No. 1: This requirement shall not apply where an exit door opens directly to the outside or to an exterior balcony or corridor as described in 14.2.5.7.

\*\*Deeption No. 2: One room shall be permitted to intervene between a normally occupied student room and an exit access corridor, provided that all of the following criteria are met:

(a) The travel from a room served by an intervening room to the corridor door or exit shall not exceed 75 ft (23 m).

(b) Clothing personal effects, or other materials deemed hazardous by the authority having jurisdiction shall be stored in metal lockers, provided that they do not obstruct the exit access, or the intervening room shall be strivblered in accordance with Section 9.7.

intervening room shall be sprinklered in accordance with Section 9.7.

(c) One of the following means of protection shall be provided:

 The intervening room shall have approved fire detection that activates the building alarm.

(2) The building shall be protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.2.5.5 Doors that swing into an exit access corridor shall be arranged to prevent interference with corridor travel. (See also 7.2.1.4.4.)

14.2.5.6 Aisles. Aisles shall be not less than 30 in. (91 cm) wide. The space between parallel rows of seats shall not be subject to the minimum aisle width, provided that the number of seats that intervene between any seat and an aisle do not exceed six.

14.2.5.7\* Exterior Corridors or Balconies. Exterior exit access shall comply with 7.5.3.

14.2.6 Travel Distance to Exits. Travel distance to an exit shall not exceed 150 ft (45 m) from any point in a building. (See also Section 7.6.)

Exception: Travel distance shall not exceed 200 ft (60 m) in educational occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

14.2.7 Discharge from Exits. Discharge from exits shall be arranged in accordance with Section 7.7.

14.2.8 Illumination of Means of Egress. Means of egress shall be illuminated in accordance with Section 7.8.

14.2.9 Emergency Lighting. Emergency lighting shall be provided in accordance with Section 7.9 in the following areas:

(1) Interior stairs and corridors

(2) Assembly use spaces

(3) Flexible and open plan buildings

(4) Interior or windowless portions of buildings

(5) Shops and laboratories

14.2.10 Marking of Means of Egress. Means of egress shall have signs in accordance with Section 7.10.

14.2.11 Special Means of Egress Features.

1 14.2.11.1\* Windows for Rescue. Every room or space greater than 250 ft<sup>2</sup> (23.2 m<sup>2</sup>) used for classroom or other educational purposes or normally subject to student occupancy shall have not less than one outside window for emergency rescue that complies with the following:

(1) Such windows shall be openable from the inside without the use of tools and shall provide a clear opening of not less than 20 in, (51 cm) in width, 24 in. (61 cm) in height, and 5.7 ft<sup>2</sup> (0.53 m<sup>2</sup>) in area.

(2) The bottom of the opening shall be not more than 44 in. (112 cm) above the floor, and any latching device shall be capable of being operated from not more than 54 in. (137 cm) above the finished floor.

(3) The clear opening shall allow a rectangular solid, with a width and height that provides not less than the required 5.7462 (0.53-m²) opening and a depth of not less than 20 in. (51 cm), to pass fully through the opening.

(4) Such windows shall be accessible by the fire department and shall open into an area having access to a public way.

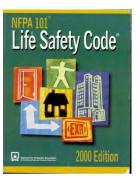
Exception No. 1: This requirement shall not apply to buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

Exception No. 2: This requirement shall not apply where the room or space has a door leading directly to the outside of the building.

Exception No. 3: This requirement shall not apply to rooms located higher than three stories above grade.

2000 Edition

# LSC Convention #1



# Vertical Line = Revisions from Prior Code

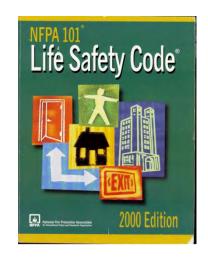
### **LSC** Convention #2

## **\*** = Explanation in Annex

### SECTION 1.5 EQUIVALENCY

1.5.1 Nothing in this *Code* is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this *Code*. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.5.2\* Equivalent Compliance. Alternative systems, methods, or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this *Code*.



**A.1.5.2** An equivalent method of protection provides an equal or greater level of safety. It is not a waiver or deletion of a *Code* requirement.

The prescriptive provisions of this *Code* provide specific requirements for broad classifications of buildings and structures. These requirements are stated in terms of fixed values, such as maximum travel distance, minimum fire resistance ratings, and minimum features of required systems, such as, detection, alarm, suppression, and ventilation, and not in terms of overall building or system performance.

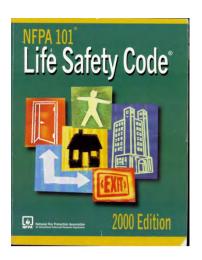
However, the equivalency clause in 1.5.2 permits the use of alternative systems, methods, or devices to meet the intent of the prescribed code provisions where approved as being equivalent. Equivalency provides an opportunity for a performance-based design approach. Through the rigor of a performance-based design, it can be demonstrated whether or not a building design is satisfactory and complies with the implicit or explicit intent of the applicable code requirement.

When employing the equivalency clause, it is important to clearly identify the prescriptive-based code provision being addressed (scope), to provide an interpretation of the intent of the provision (goals and objectives), to provide an alternative approach (proposed design), and to provide appropriate support for the suggested alternative (evaluation of proposed designs).

Performance resulting from proposed designs can be compared to the performance of the design features required by this *Code*. Using prescribed features as a baseline for comparison, it can then be demonstrated in the evaluation whether a proposed design offers the intended level of performance. A comparison of safety provided can be used as the basis for establishing equivalency.

# LSC Convention #2

\* = Info in Annex



### 14.2.3 Capacity of Means of Egress.

**14.2.3.1** Capacity of means of egress shall be in with Section 7.3.

14.2.3.2 Minimum Corridor Width. Exit access of have not less than 6 ft (1.8 m) of clear width.

LSC Convention #3

## Numbering

### Chapter

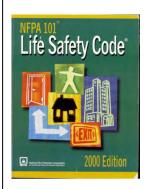
Not less than two separate exits shall

be as follows:

- (1) Provided on every story
- (2) Accessible from every part of every story and mezzanine
- 14.2.5 Arrangement of Means of Egress. (See also Section 7.5.)

14.2.5.1 Means of egress shall be arranged in accordance with

14.2.5.2 No dead-end Paragraph (6.1 m), other than in build Paragraph t by an approved, supervised automate springer system in accordance with Section 9.7, in which case dead-end corridors shall not exceed 50 ft (15 m).



### 14.2.3 Capacity of Means of Egress.

14.2.3.1 Capacity of means of egress shall be in acc with Section 7.3.

40.3.2 Minimum Corridor Width. Exit access corrid have not less than 6-ft (1.8 m) of clear width.

## **LSC** Convention #3

## Paragraph Numbering

14.2.4 Number of Exits. Not less than two separate exits shall be as follows:

- Provided on every story
- Accessible from every part of every
- 2.5 Arrangement of Means of Egress

Assembly......Chapters 12/13 Health Care ...... Chapters 18/19 Ambulatory Care....Chapters 20/21 Residential B & C....Chapters 32/33 Business......Chapters 38/39 Storage......Chapter 42

14.2.5.1 Means of egress shall be arranged in accordance with Section 7.5. Life Safety Code

14.2.5.2 No dead-end corri other than in buildings approved, supervised autor dance with Section 9.7, in dead-end corridors shall not exceed 50 ft (15 m).

xceed 20 ft (6.1 m), throughout by an kler system in accor-

### **Chapter 3 DEFINITIONS**

#### SECTION 3.1 GENERAL

- **3.1.1** The following terms, for the purposes of this *Code*, shall have the meanings given in this chapter, if not otherwise modified for a specific occupancy.
- 3.1.2 Words used in the present tense shall include the future; words used in the masculine gender shall include the feminine and neuter; the singular number shall include the plural, and the plural number shall include the singular.
- 3.1.3 Where terms are not defined in this chapter or within an occupancy chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. Webster's Third New International Dictionary of the English Language, Unabridged, shall be a source for ordinarily accepted meaning.

#### SECTION 3.2 OFFICIAL NFPA DEFINITIONS

- 3.2.1\* Approved. Acceptable to the authority having jurisdiction
- **3.2.2\* Authority Having Jurisdiction.** The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure
- **3.2.3\* 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.
- **3.2.4 Labeled.** Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.
- 3.2.5\* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.
- 3.2.6 Shall. Indicates a mandatory requirement.
- **3.2.7 Should.** Indicates a recommendation or that which is advised but not required.

#### SECTION 3.3 GENERAL DEFINITIONS

- 3.3.1 Accessible Area of Refuge. See 3.3.14.1, Area of Refuge, Accessible.
- 3.3.2 Accessible Means of Egress. See 3.3.121.1, Means of Egress, Accessible
- 3.3.3 Addition. An extension or increase in the floor area or height of a building or structure.
- 3.3.4 Air-Inflated Structure See 3.3.197.1, Structure, Air-Inflated.

- 3.3.5 Air-Supported Structure. See 3.3.197.2, Structure, Air-Supported.
- 3.3.6\* Aisle Accessway. The initial portion of an exit access that leads to an aisle.
- **3.3.7 Alternative Calculation Procedure.** A calculation procedure that differs from the procedure originally employed by the design team but that provides predictions for the same variables of interest.
- 3.3.8 Ambulatory Health Care Occupancy, See 3.3.134.1, dicupancy, Ambulatory Health Care.
- **3.3.9** Analysis, Sensitivity. An analysis performed to determine the degree to which a predicted output will vary given a specified change in an input parameter, usually in relation to models.
- **3.3.10** Analysis, Uncertainty. An analysis performed to determine the degree to which a predicted value will vary.
- **3.3.11 Anchor Store.** A department store or major merchandising center that has direct access to the covered mall but in which all required means of egress is independent of the covered mall.
- 3.3.12 Apartment Building. See 3.3.25.1, Building, Apartment.
  3.3.13 Area. See 3.3.81, Floor Area, Gross and 3.3.82, Floor Area,
- **3.3.13.1 Area, Gross Leasable.** The total floor area designated for tenant occupancy and exclusive use, expressed in square feet (square meters), measured from the centerlines of adjoining partitions and exteriors of outside walls.
- **3.3.13.2** Area, Hazardous. An area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure, such as areas used for the storage or use of combustibles or flammables; toxic, noxious, or corrosive materials; or heat-producing appliances.
- **3.3.13.3** Area, Living. Any normally occupiable space in a residential occupancy, other than sleeping rooms or rooms that are intended for combination sleeping/living, bathrooms, toilet compartments, kitchens, closets, halls, storage or utility spaces, and similar areas.
- **3.3.14\* Area of Refuge.** An area that is either (1) a story in a building where the building is protected throughout by an approved, supervised automatic sprinkler system and has not less than two accessible rooms or spaces separated from each other by smoke-resisting partitions; or (2) a space located in a path of travel leading to a public way that is protected from the effects of fire, either by means of separation from other spaces in the same building or by virtue of location, thereby permitting a delay in egress travel from any level.
- 3.3.14.1 Area of Refuge, Accessible. An area of refuge that complies with the accessible route requirements of CABO/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
- 3.3.15 Assembly Occupancy. See 3.3.134.2, Odupancy, Assembly.
- **3.3.16 Atmosphere, Common.** The atmosphere that exists between rooms, spaces, or areas within a building that are not separated by an approved smoke barrier.

# LSC Convention #4

### MANDITORY PAGE FLIPPING

NFPA 101°

# Tabs make it easier to find chapters

NETIONAL Fire Protection Association NETPA An interestional Codes and Standards Depositation ZUUU EUILIUII



# Assigned a Number to Key Elements in the LSC (for ease of citation reference)

"K TAG"



# "K TAG"

Published in Form 2786

Name of Facility 2000 CODE

ID REFIX				MET	NOT MET	N/A	
	PA		rs - Items in italics relate to the FSES				Γ
			CONSTRUCTION			= >	
K11	the cresis addi shalleas	common wall is a fire barr stance rating constructed o ition. Communicating oper					
2	2 <del>00</del> 0 EXISTING — — — — — — — — — — — —			†=	† =	<b> </b> =	
		ding construction type and 1.6.2, 19.1.6.3, 19.1.6.4, 1	theight meets one of the following: 9.3.5.1				
	1	I (443), I (332), II (222)	Any Height				ı
	2	II (111)	One story only (non-sprinklered).				
	3	II (111)	Not over three stories with complete automatic sprinkler system.				
	4	III (211)					ı
	5	V (111)	Not over two stories with complete automatic				
	6	IV (2HH)	sprinkler system.				
	7	II (000)					l
	8	III (200)	Not over one story with complete automatic				
	9	V (000)	sprinkler system.				
	Give num are l appi	ber of stories, including ballocated, location of smoke	d wood. ARKS, of the construction, the sements, floors on which patients or fire barriers and dates of attach small floor plan of the				

Form CMS-2786R (02/2013)



### **K11**

### **Summary of Requirements**

If the building has a common wall with a nonconforming building, the common wall is a fire barrier having at least a two hour fire resistance rating constructed of materials as required for the addition. Communicating openings occur only in corridors and shall be protected by approved self-closing fire doors with at least 1½ hour fire resistance rating

18.1.1.4.1, 18.1.1.4.2, 18.2.3.2, 19.1.1.4.1, 19.1.1.4.2

### Code # References

Used as "Regulatory Reference" in federal Statement of Deficiencies (SOD)

Name of Facility 2000 CODE

ID PREFIX		MET	NOT MET	N/A	REMARKS
	2000 NEW				
	Width of aisles or corridors (clear and unobstructed) serving as exit access in hospitals and nursing homes shall be at least 8 feet. In limited care facility and psychiatric hospitals, width of aisles or corridors shall be at least 6 feet. 18233. 18234		_	_,	
(40	2000 EXISTING				
	Exit access doors and exit doors used by health care occupants are of the swinging type and are at least 32 inches in clear width. An exception is provided for existing 34-inch doors in existing occupancies. 19.2.3.5				
	2000 NEW				
	Exit access doors and exit doors used by health care occupants are of the swinging type and are at least 41.5 inches in clear width. Doors in exit stairway enclosures shall be no less than 32 inches in clear width. In psychiatric hospitals or limited care facilities (e.g.,ICF/MD providing medical treatment) doors are at least 32 inches wide. 18.2.3.5				
K <del>41</del>	Air sleeping rooms have a door leading to a corridor providing access to an exit or have a door leading directly to grade. One room may intervene in accordance with 18.2.5.1, 19.2.5.1  If doors lead directly to grade from each room, check this box.			: <b>-</b>	
K42	Any patient sleeping room or suite of rooms of more than 1,000 sq. ft. has at least 2 exit access doors remote from each other. 18.2.5.2, 19.2.5.2				
K43	Patient room doors are arranged such that the patients can open the door from inside without using a key.				
	Special door locking arrangements are permitted in facilities. 18.2.2.2.4, 18.2.2.2.5, 19.2.2.2.4, 19.2.2.2.5				
	If door locking arrangement without delay egress is used indicate in REMARKS 18.2.2.2.2, 19.2.2.2.2				
K44	Horizontal exits, if used, are in accordance with 7.2.4. 18.2.2.5, 19.2.2.5				
K47	Exit and directional signs are displayed in accordance with 7.10 with continuous illumination also served by the emergency lighting system. 18.2.10.1, 19.2.10.1				
	(Indicate N/A in one story existing occupancies with less than 30 occupants where the line of exit travel is obvious.)				

Form CMS-2786R (02/2013)



### к40

### **Built Prior to Adoption**

### 2000 EXISTING

Exit access doors and exit doors used by health care occupants are of the swinging type and are at least 32 inches in clear width. An exception is provided for existing 34-inch doors in existing occupancies. 19.2.3.5

### Built After Adoption

Exit access doors and exit doors used by health care occupants are of the swinging type and are at least 41.5 inches in clear width. Doors in exit stairway enclosures shall be no less than 32 inches in clear width. In psychiatric hospitals or limited care facilities (e.g.,ICF/MD providing medical treatment) doors are at least 32 inches wide. 18.2.3.5



# Full Set Available at CMS.gov

Search: "Form 2786"

2786\_ (Suffix)

R = Hospital & Nursing Home

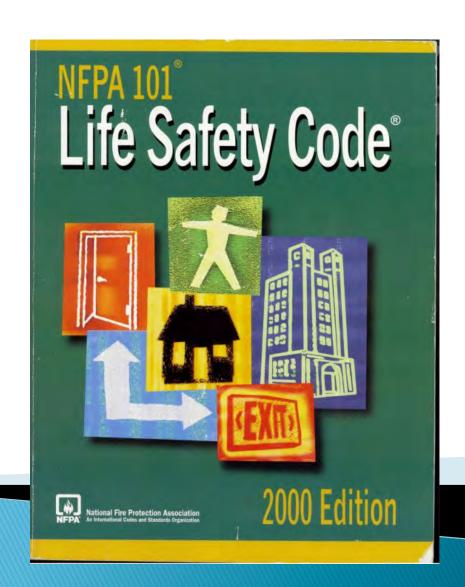
**U** = Dialysis & Ambulatory Surgery Center

V,W = Intermediate Care Facility for Disabled

T,S = Fire Safety Evaluation System (FSES)

# The Life Safety Code

Let's OPEN it Up



### (Front of LSC)

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# The Life Safety Code

# CHAPTER ADMINISTRATION

(1 PAGE)

#### NFPA 101®

#### Code for

### Safety to Life from Fire in Buildings and Structures

#### 2000 Edition

NOTICE: An asterisk (\*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

Information on referenced publications can be found in Chapter 2 and Annex B.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition.

### Chapter 1 ADMINISTRATION

#### SECTION 1.1 TITLE

1.1.1 Code Title. NFPA 101®, Code for Safety to Life from Fire in Buildings and Structures, shall be known as the Life Scient Code®, is cited as such, and shall be referred to herein Code" or "the Code."

#### SECTION 1.2\* SCOPE

1.2.1\* Danger to Life from Fire. The Code addresses those construction, protection, and occupancy features necessary to minimize danger to life from fire, including smoke, fumes, or panic.

**1.2.2 Egress Facilities.** The *Code* establishes minimum criteria for the design of egress facilities so as to permit prompt escape of occupants from buildings or, where desirable, into safe areas within buildings.

**1.2.3 Other Considerations.** The *Code* addresses other considerations that are essential to life safety in recognition of the fact that life safety is more than a matter of egress. The *Code* also addresses protective features and systems, building services, operating features, maintenance activities, and other provisions in recognition of the fact that achieving an acceptable degree of life safety depends on additional safeguards to provide adequate egress time or protection for people exposed to fire.

**1.2.4 Areas Not Addressed.** The *Code* does not address the following:

 \*General fire prevention or building construction features that are normally a function of fire prevention codes and building codes

- (2) Prevention of personal injuries incurred by an individual's own negligence
- (3) Preservation of property from loss by fire

#### SECTION 1.3\* PURPOSE

1.3.1\* Code Purpose. The purpose of this Code is to provide minimum requirements, with due regard to function, for the design, operation, and maintenance of buildings and structures for safety to life from fire. Its provisions will also aid life safety in similar emergencies.

#### SECTION 1.4\* APPLICATION

- 1.4.1\* New and Existing Buildings and Structures. The Code shall apply to both new construction and existing buildings and existing structures.
- 1.4.2 Vehicles and Vessels. The *Code* shall apply to vehicles, vessels, or other similar conveyances, as defined in Section 11.6; in which case such vehicles and vessels shall be treated as buildings.

### SECTION 1.5 EQUIVALENC

- 1.5.1 Nothing in this *Code* is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this *Code*. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.
- **1.5.2\* Equivalent Compliance.** Alternative systems, methods, or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this *Code*

#### SECTION 1.6 UNITS AND FORMULAS

- **1.6.1 SI Units.** Metric units of measurement in this *Code* are in accordance with the modernized metric system known as the International System of Units (SI).
- **1.6.2 Primary and Equivalent Values.** If a value for a measurement as given in this *Code* is followed by an equivalent value in other units, the first stated value shall be regarded as the requirement. A given equivalent value might be approximate.
- **1.6.3 Conversion Procedure.** SI units have been converted by multiplying the quantity by the conversion factor and then rounding the result to the appropriate number of significant digits.

#### SECTION 1.7 ENFORCEMENT

**1.7.1 Administration and Enforcement.** This *Code* shall be administered and enforced by the authority having jurisdiction designated by the governing authority.





## Explanation in Annex

### Recommended Code Evaluation Procedures

- 1. Occupancy Class?
- 2. New/Existing?
- 3. Occupant Load?
- 4. Content Hazard?

## 5-9. Apply Occupancy Requirements

**A.1.2** The following is a suggested procedure for determining the *Code* requirements for a building or structure:

- (1) Determine the occupancy classification by referring to the occupancy definitions in Chapter 6 and the occupancy Chapters 12 through 42 (see 6.1.14 for buildings with more than one use).
- (2) Determine if the building or structure is new or existing (see the definitions in Chapter 3).

(3) Determine the occupant load (see 7.3.1).

(4) Determine the hazard of contents (see Section 6.2).

(5) Refer to the applicable occupancy chapter of the Code (Chapters 12 through 42) (see Chapters † through 4 and 6 through 11, as needed, for general information (such as definitions) or as directed by the occupancy chapter).

(6) Determine the occupancy subclassification or special use condition, if any, by referring to Chapters 18 and 19, health care occupancies; Chapters 22 and 23, detention and correctional occupancies; Chapters 28 and 29, hotels and dormitories; Chapters 32 and 33, residential board and care occupancies; and Chapters 36 and 37, mercantile occupancies, which contain subclassifications or special use definitions.

(7) Proceed through the applicable occupancy chapter to verify compliance with each referenced section, subsection, paragraph, subparagraph, and referenced codes, standards, and other documents.

(8) Where two or more requirements apply, the occupancy chapter generally takes precedence over the base Chapters 1 through 4 and 6 through 11.

(9) Where two or more occupancy chapters apply, such as in a mixed occupancy (see 6.1.14), the most restrictive or requirements apply.



### **EQUIVALENCES**

Or Alternatives

### SECTION 1.5 EQUIVALENCY

1.5.1 Nothing in this *Code* is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this *Code*. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.5.2\* Equivalent Compliance. Alternative systems, methods, or devices approved as equivalent by the authority having jurisdiction shall be recognized as being in compliance with this *Code*.

Example Alternative: **FSES** 

### Fire Safety Evaluation System

#### **FSES** DEPARTMENT OF HEALTH AND HUMAN SERVICES CENTERS FOR MEDICARE & MEDICAID SERVICES OMB Exempt ZONE FIRE/SMOKE ZONE\* EVALUATION WORKSHEET FOR HEALTH CARE FACILITIES Fire Safety Evaluation System ZONE(S) EVALUATED PROVIDER/VENDOR NO. DATE OF SURVEY COMPLETE THIS WORKSHEET FOR EACH ZONE. WHERE CONDITIONS ARE THE SAME IN SEVERAL ZONES ONE WORKSHEET CAN BE USED FOR THOSE ZONES. Step 1: Determine Occupancy Risk Parameter Factors - Use Table 1. A. For each Risk Parameter in Table 1, select and circle the appropriate risk factor value. Choose only one for each of the five Risk Parameters. 4 that best describes the conditions two or more appear to apply, choose TABLE 1. OCCUPANCY RISK PARAMETER FACTORS Risk Parameters Risk Factors Values Limited Mobility Mobility Status Not Mobile Not Movable NonCombustible Mobility (M) Risk Factor 'use as a last resort" No. of Patients Density (D) Risk Factor d the floor where the zone is located circle the Floor 3. Zone Location (L) ed So So and So in Table 7. Risk Factor or greater. Check "No" if the value in the 4. Ratio of ICY EVALUATION Patients to Attendants (T) Rick Factor = Patient Average Risk Factor Only Valid until: Step 2: Compute Occupancy Risk Fact A. Transfer the circled risk factor. B. Compute F by multiplying the 1. Next inspection 2. Any change of staffing Applic. Step 3: Compute Adjusted Building Sta A. If building is classified as "NEW Transfer the value of F from Ta and 18.5.1.3 C. Transfer R to the block labeled ing, and ventilating igs, which have TABLE 3A. (NEW BUILDIN 3. Any change of patient beds \* FIRE/SMOKE ZONE is a space separated from all SURVEYOR SIGNATURE nbustibility is limited 4. Any remodeling FIRE AUTHORITY SIGNATURE Form CMS-2786T (02/2013) 5. Any deficiency re safety is at least equivalent to that 6. Any AHJ who refuses to honor red by the Life Safety Code. There are a few ksheet is to be completed for each facility.

# 3 AHJ

### SECTION 1.7 ENFORCEMENT

**1.7.1 Administration and Enforcement.** This *Code* shall be administered and enforced by the authority having jurisdiction designated by the governing authority.

### The Life Safety Code

CHAPTER 2

MANDATORY REFERENCED CODES

(2 PAGES)

#### Chapter 2 MANDATORY REFERENCES

NOTE: (See Annex B for other referenced publications that are advisory and thus do not constitute that of the requirements of this Code.)

2.1 The following documents or portions thereof are referenced within this Code as mandatory requirements and shall be considered part of the requirements of this Code. The edition indicated for each referenced mandatory document is present edition as of the date of the NFPA issuance of Some of these mandatory documents might also enced in this Code for specific informational purp therefore, are also listed in Annex B.

The numbers in parentneses represent the paragraph numbers from chapters of this Code that reference the given publication in a mandatory way.

The Committee on Safety to Life recognizes that it is some times impractical to continually upgrade existing buildings or installations to comply with all the requirements of the following referenced publications. Existing buildings or installation that do not comply with the provisions of the following reenced publications shall be permitted to be continued in vice, provided the lack of conformity with these standards doe not present a serious hazard to the occupants as determined by the authority having jurisdiction.

2.1.1 NPPA Publications National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA(10, Standard for Portable Fire Extinguishers, 1998 edition. (9.7,21)

NFPA 13, Standard for the Installation of Sprinkler Systems, 1999 edition [8,2.5.12 Exc. No. 1, 9.7.1.1, 9.7.4.2, 12.4.5.7, 12.4.5.12, 12.7.4.3.7 Exc. No. 1, 13.4.5.12, 13.7.4.3.7 Exc. No. 1, 18.3.5.5, 19.3.5.5, 26.3.5.1 Exc. No. 1, 28.1.5, 28.3.5.1 Exc. No. 2, 31.2.2.1.3, 31.3.5.1 Exc. No. 2, 32.2.3.5.2 Exc. No. 3, 32.3.5.2 Exc. No. 3, 36.4.4.2.5(2), 36.4.5.3.1(1), 36.4.5.5(1), 37.4.4.2.5(2), 37.4.5.3.1(1), 37.4.5.5(1), 38.1.5.2, 39.1.5.2]

NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 1999 edition. [9.7.1.1 Exc. No. 2, 24.3.5, 26.3.5.1, 32.2.3.5.2 Exc. No. 1, 32.2.3.5.2 Exc. No. 2, 33.2.3.5.2 Exc. No. 1, 33.2.3.5.2 Exc. No. 2]

NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, 1999 edition. [9.7.1.1 Exc. No. 1, 24.3.5, 26.3.5.1, 28.3.5.1, 30.3.5.1, 31.3.5.1, 32.2.3.5.2 Exc. No. 4, 32.2.3.5.2 Exc. No. 5, 32.3.3.5.1 Exc. No. 1, 33.2.3.5.2 Exc. No. 4, 33.2.3.5.2 Exc. No. 5, 33.3.3.5.1 Exc. No. 1]

NFPA 14, Standard for the Installation of Standpipe, Private Hydrants, and Hose Systems, 2000 edition. (9.7.4.2, 12.4.5.12, 13.4.5.12)

NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 1998 edition. (9.7.5, 9.7.6.2)

NFP 30 Flammable and Combustible Liquids Code, 1996 edition. [8.4.3.1, 36.4.5.3.1(2), 36.4.5.5(2), 37.4.5.3.1(2), 37.4.5.5(2), 42.2.6.3 Exc. No. 2]

NFPA 30B, Code for the Manufacture and Storage of Aerosol Products, 1998 edition. [36.4.5.3.1(3), 36.4.5.5(3), 37.4.5.3.1(3), 37.4.5.5(3)]

NFPA 31, Standard for the Installation of Oil-Burning Equipment, 1997 edition, (9.2.2) NFPA 40, Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film, 1997 edition. (12.4.6.1, 12.4.6.3, 13.4.6.1, 13.4.6.3)

NFPA (45) Standard on Fire Protection for Laboratories Using Chemicals, 1996 edition, (8.4.4, 9.2.4)

NFPA(54) National Fuel Gas Code, 1999 edition. (8.4.3.1, 9.1.1, 9.2.2, 14.5.2.2, 15.5.2.2, 16.5.2.2, 17.5.2.2, 26.5.2.2, 28.5.2.2 Exc., 29.5.2.2 Exc., 30.5.2.2, 31.5.2.2 Exc.)

NFPA 58, Liquefied Petroleum Gas Code, 1999 edition. [8.4.3.1, 9.1.1, 11.9.5.1.3, 11.10.7.1.3, 11.11.6.1.3, 12.7.1.4(5), 13.7.1.4(5)]

NFPA 70, National Electrical Code<sup>®</sup>, 1999 edition. (7.9.2.4, 8.2.5.13, 9.1.2, 9.2.2, 9.6.1.4, 9.6.1.7, 10.2.4.5, 11.8.4.2, 12.4.3.4, 22.5.1.2, 23.5.1.2, 23.5.1.2 Exc.)

NFPA (72) National Fire Alarm Code<sup>®</sup>, 1999 edition. [7.2.1.8.2(3), 7.2.1.9.2(4), 8.2.4.4.3, 8.3.5.2, 8.3.5.2 Exc. No. 2, 8.3.5.3, 9.6.1.4, 9.6.1.7, 9.6.2.8, 9.6.2.9, 9.6.2.10.1, 9.6.2.10.2, 9.6.3.4, 9.6.3.5, 9.6.3.6, 9.6.3.7 Exc. No. 2, 9.6.3.10, 9.6.4, 9.7.2.1, 11.8.3.2, 14.3.4.2.3(1), 15.3.4.2.3(1), 15.3.4.2.3(1), 15.3.4.2.3(1), 15.3.4.2.3(1), 17.2.2.3.7.9, 23.3.4.1.2, 23.3.7.9, 32.3.3.4.8]

NFPA[80] Standard for Fire Doors and Fire Windows, 1999 edition. [7.2.1.14(5), 8.2.3.2.1(a), 8.2.3.2.2, 8.2.4.3.4, 18.3.6.3.1, 18.3.6.3.6, 19.3.6.3.1, 19.3.6.3.6]

NFPA 82, Standard on Incinerators and Waste and Linen Handling Systems and Equipment, 1999 edition. (9.5.2)

NFPA 88A, Standard for Parking Structures, 1998 edition. (28.3.5.4, 30,3.5.4)

NFPA 90A) Standard for the Installation of Air-Conditioning and Ventilating Systems, 1999 edition. (8.2.7.1 Exc. No. 2, 9.2.1)

NFPA 90B. Standard for the Installation of Warm Air Heating and Air-Conditioning Systems, 1999 edition. (9.2.1)

NFPA 91 Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids 1999 edition. (922.2)

NFPA 96, Standard for Ventilation Control and Fire

NFPA 99 Standard for Health Care Facilities, 1999 (8.44 Exc., 8.4.5, 9.2.4, 18.2.9.2, 18.2.10.2, Table 18.3.2.1, 18.3.2.2, 18.3.2.3, 18.3.2.4, 18.5.1.2, 18.5.1.3, 19.3.2.2, 19.3.2.3, 19.3.2.4, 20.2.9.2, 20.3.2.1, 20.3.2.2, 21.2.9.2, 21.3.2.1, 21.3.2.2

NFPAQ 01A, Cuide on Alternative Approaches to Life Safety, 1998 edition. (33.2.1.3.2 Exc. No. 5, 33.2.3.6.1 Exc. No. 4)

NFPA 110, Standard for Emergency and Standby Power Systems, 1999 edition. (7.9.2.3, 9.1.3, 11.8.4.2)

NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems, 1996 edition. (7.9.2.3, 9.1.4)

NFPA 160, Standard for Flame Effects Before an Audience, 1998 edition. (12.7.2 Exc. No. 2, 13.7.2 Exc. No. 2)

NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances, 2000 edition. (9.2.2)

NFPA 220 Standard on Types of Building Construction, 1999 edition. (8.2.1, 10.2.3.1 Exc. No. 1, 20.1.6.2, 21.1.6.2)

NFPA 221 Standard for Fire Walls and Fire Barrier Walls, 1997 edition. [8.2.1(1), 8.2.2.2]

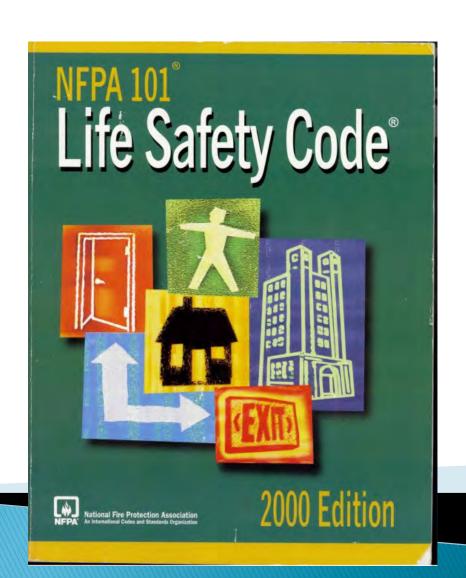
NFPA 230, Standard for the Fire Protection of Storage, 1999 edition [36.4.5.3.1(4), 36.4.5.5(4), 37.4.5.3.1(4), 37.4.5.5(4)]

NFPA 231D, Standard for Storage of Rubber Tires, 1998 edition. [36.4.5,3.1(5), 36.4.5.5(5), 37.4.5.3.1(5), 37.4.5.5(5)]

NFPA(24) Standard for Safeguarding Construction, Alteration, and Demolition Operations, 1996 edition. (18.7.9.2, 19.7.9.2, 20.7.9.2, 21.7.9.2)

### The Life Safety Code Is a PRIMARY CODE

It references other Codes & Standards





# CHAPTER 2 MANDATORY REFERENCED CODES

### 1 – NOTE THE SPECIFIC EDITION

2.1 The following documents or portions thereof are referenced within this Code as mandatory requirements and shall be considered part of the requirements of this Code. The edition indicated for each referenced mandatory document is the current edition as of the date of the NFPA issuance of this Code. Some of these mandatory documents might also be referenced in this Code for specific informational purposes and, therefore, are also listed in Annex B.

The numbers in parentheses represent the paragraph numbers from chapters of this *Code* that reference the given publication in a mandatory way.



## ONLY the 1999 Edition of NFPA 99

# has been adopted by CMS, DQA, The Joint Commission

```
NFPA 99, Standard for Health Care Facilities, 1999 edition. (8.4.4 Exc., 8.4.5, 9.2.4, 18.2.9.2, 18.2.10.2, Table 18.3.2.1, 18.3.2.2, 18.3.2.3, 18.3.2.4, 18.5.1.2, 18.5.1.3, 19.3.2.2, 19.3.2.3, 19.3.2.4, 20.2.9.2, 20.3.2.1, 20.3.2.2, 21.2.9.2, 21.3.2.1, 21.3.2.2)
```

### The Life Safety Code

CHAPTER AMANDATORY
REFERENCED
CODES

ONLY BUY

THESE

### Chapter 2 MANDATORY REFERENCES

NOTE: (See Annex B for other referenced publications that are advisory and thus do not constitute part of the requirements of this Code.)

2.1 The following documents or portions thereof are referenced within this *Code* as mandatory requirements and shall be considered part of the requirements of this *Code*. The edition indicated for each referenced mandatory document is the current edition as of the date of the NFPA issuance of this *Code*. Some of these mandatory documents might also be referenced in this *Code* for specific informational purposes and, therefore, are also listed in Annex B.

The numbers in parentheses represent the paragraph numbers from chapters of this *Code* that reference the given publication in a mandatory way.

The Committee on Safety to Life recognizes that it is sometimes impractical to continually upgrade existing buildings or installations to comply with all the requirements of the following referenced publications. Existing buildings or installations that do not comply with the provisions of the following referenced publications shall be permitted to be continued in service, provided the lack of conformity with these standards does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

by the authority having jurisdiction.

2.1.1 TPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 10. Standard for Portable Fire Extinguishers, 1998 edition. (9.7.2.1)

NFPA 13, Standard for the Installation of Sprinkler Systems, 1999 edition. [8.2.5.12 Exc. No. 1, 9.7.1.1, 9.7.4.2, 12.4.5.7, 12.4.5.12, 12.7.4.3.7 Exc. No. 1, 13.4.5.12, 13.7.4.3.7 Exc. No. 1, 18.3.5.5, 19.3.5.5, 26.3.5.1 Exc. No. 1, 28.1.5, 28.3.5.1 Exc. No. 1, 5, 29.3.5.1 Exc. No. 1, 30.3.5.1 Exc. No. 2, 31.2.2.1.3, 31.3.5.1 Exc. No. 2, 32.2.3.5.2 Exc. No. 3, 36.4.4.2.5(2), 36.4.5.3.1(1), 36.4.5.5(1), 37.4.4.2.5(2), 37.4.5.3.1(1), 37.4.5.5(1), 381.5.2, 39.1.5.2]

NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 1999 edition. [9.7.1.1 Exc. No. 2, 24.3.5, 26.3.5.1, 32.2.3.5.2 Exc. No. 1, 32.2.3.5.2 Exc. No. 2, 33.2.3.5.2 Exc. No. 1, 33.2.3.5.2 Exc. No. 2]

NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, 1999 edition. [9.7.1.1 Exc. No. 1, 24.3.5, 26.3.5.1, 28.3.5.1, 29.3.5.1, 30.3.5.1, 31.3.5.1, 32.2.3.5.2 Exc. No. 4, 32.2.3.5.2 Exc. No. 5, 32.3.3.5.1 Exc. No. 1, 33.2.3.5.2 Exc. No. 4, 33.2.3.5.2 Exc. No. 5, 33.3.3.5.1 Exc. No. 1]

NFPA 14, Standard for the Installation of Standpipe, Private Hydrants, and Hose Systems, 2000 edition. (9.7.4.2, 12.4.5.12, 13.4.5.12)

NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 1998 edition. (9.7.5, 9.7.6.2)

NFPA 30 Flammable and Combustible Liquids Code, 1996 edition. [8.4.3.1, 36.4.5.3.1(2), 36.4.5.5(2), 37.4.5.3.1(2), 37.4.5.5(2), 42.2.6.3 Exc. No. 2]

FPA 30B, Code for the Manufacture and Storage of Aerosol Products, 1998 edition. [36.4.5.3.1(3), 36.4.5.5(3), 37.4.5.3.1(3), 37.4.5.5(3)]

NFPA 37, Sandard for the Installation of Oil-Burning Equipment, 1997 edition. (9.2.2)

Nevate Motion Picture Film, 1997 edition. (12.4.6.1, \$2.4.6.3, \$4.6.1, 13.4.6.3)

NFPA 45 Standard on Fire Protection for Laboratories Using Chemicals, 1996 edition. (8.4.4, 9.2.4)

NFPA 54, National Fuel Gas Code, 1999 edition. (8.4.3.1, 9.1.1, 9.2.2, 14.5.2.2, 15.5.2.2, 16.5.2.2, 17.5.2.2, 26.5.2.2, 28.5.2.2 Exc., 29.5.2.2 Exc., 30.5.2.2, 31.5.2.2 Exc..)

NFPA 58, Liquefied Petroleum Gas Code, 1999 edition. [8.4.3.1, 9.1.1, 11.9.5.1.3, 11.10.7.1.3, 11.11.6.1.3, 12.7.1.4(5), [13.7.1.4(5).]

NFPA (70, National Electrical Code®, 1999 edition. (7.9.2.4, 8.2.5.13, 91.2, 9.2.2, 9.6.1.4, 9.6.1.7, 10.2.4.5, 11.8.4.2, 11.8.4.2, 12.4.3.4, 22.5.1.2, 23.5.1.2, 23.5.1.2 Exc.)

NFPA (72) National Fire Alarm Code, 1999 edition. [7.2.1.8.2(3), 7.2.1.9.2(4), 8.2.4.4.3, 8.3.5.2, 8.3.5.2 Exc. No. 2, 8.3.5.3, 9.6.1.4, 9.6.1.7, 9.6.2.8, 9.6.2.9, 9.6.2.10.1, 9.6.2.10.2, 9.6.3.4, 9.6.3.5, 9.6.3.6, 9.6.3.7 Exc. No. 2, 9.6.3.10, 9.6.4, 9.6.5.4, 9.7.2.1, 11.8.3.2, 14.3.4.2.3(1), 15.3.4.2.3(1), 22.3.4.1.2, 22.3.7.9, 23.3.4.1.2, 23.3.7.9, 32.3.3.4.8]

NFPA(80) Standard for Fire Doors and Fire Windows, 1999 edition. [7.2.1.14(5), 8.2.3.2.1(a), 8.2.3.2.2, 8.2.4.3.4, 18.3.6.3.1, 18.3.6.3.6, 19.3.6.3.1, 19.3.6.3.6]

NFPA 82, Standard on Incinerators and Waste and Linen Handling Systems and Equipment, 1999 edition. (9.5.2)

NFPA 88A, Standard for Parking Structures, 1998 edition. (28.3.5.4, 30.3.5.4)

NFPA 90A Standard for the Installation of Air-Conditioning and Ventiliting Systems, 1999 edition. (8.2.7.1 Exc. No. 2, 9.2.1)

NFPA 90B Standard for the Installation of Warm Air Heating and Air-Conditioning Systems, 1999 edition. (9.2.1)

NFPA 91, Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids, 1999 edition. (2,2.2)

NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, 1998 edition. (9.2.3)

NFP 99 Standard for Health Care Facilities, 1999 edition. (8.4.4 Exc., 8.4.5, 9.2.4, 18.2.9.2, 18.2.10.2, Table 18.3.2.1, 18.3.2.2, 18.3.2.3, 18.3.2.4, 18.5.1.2, 18.5.1.3, 19.3.2.2, 19.3.2.3, 19.3.2.4, 20.2.9.2, 20.3.2.1, 20.3.2.2, 21.2.9.2, 21.3.2.1, 21.3.2.2)

NFPA 101A. Guide on Alternative Approaches to Life Safety, 1998 edition. (33.2.1.3.2 Exc. No. 5, 33.2.3.6.1 Exc. No. 4)

NFPA 110, Standard for Emergency and Standby Power Systems, 1999 edition. (7.9.2.3, 9.1.3, 11.8.4.2)

NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems, 1996 edition. (7.9.2.3, 9.1.4)

NFPA 160, Standard for Flame Effects Before an Audience, 1998 edition. (12.7.2 Exc. No. 2, 13.7.2 Exc. No. 2)

NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances, 2000 edition. (9.2.2)

NFPA 220, Standard on Types of Building Construction, 1999 edition. (8,2,1, 10,2,3,1 Exc. No. 1, 20,1,6,2, 21,1,6,2)

NFPA 221 Standard for Fire Walls and Fire Barrier Walls, 1997 edition. [8.2.1(1), 8.2.2.2]

NFPA 230, Standard for the Fire Protection of Storage, 1999 edition [36.4.5.3.1(4), 36.4.5.5(4), 37.4.5.3.1(4), 37.4.5.5(4)]

NFPA 231D, Standard for Storage of Rubber Tires, 1998 stition. [36.4.5.3.1(5), 36.4.5.5(5), 37.4.5.3.1(5), 37.4.5.5(5)]

NFPA(24) Standard for Safeguarding Construction, Meration, and Demolition Operations, 1996 edition. (18.7 ± 2, 19.7.9.2, 20.7.9.2, 21.7.9.2)

# Common Construction Standards:

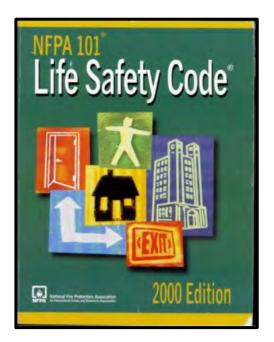
- NFPA 80 Fire Doors (1999 edition)
- NFPA 82 Chutes (1999 edition)
- NFPA 10 Extinguishers (1998 ed)
- NFPA 220 Construction Types (1999 edition)
- NFPA 221 Fire Walls/Barriers (1999 edition)
- NFPA 241 Construction Safety (1996 edition)

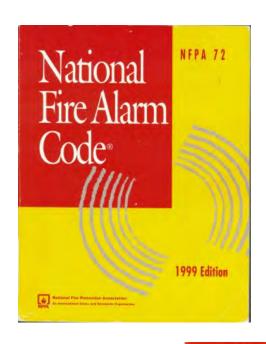
## Common Utility Standards:

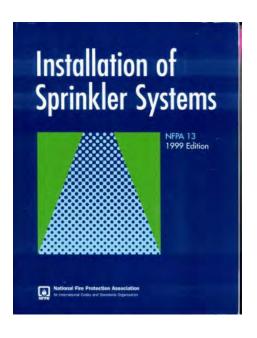
- NFPA 13-Sprinkler Installation (1999 edition)
- NFPA 25-Sprinkler Maintenance (1998 edition)
- NFPA 72-National Fire Alarm (1999 edition)
- NFPA 92- Smoke Control (1999 edition)
- NFPA 96- Kitchen Exhaust(1998 edition)
- NFPA 99 Health Care Standard (1999 edition)
- NFPA 110-Generators (1999 edition)

NFPA 70-National Electrical Code (1999 edition) NFPA 90A-Ventilation (1999 edition)

### **Best to Have These**

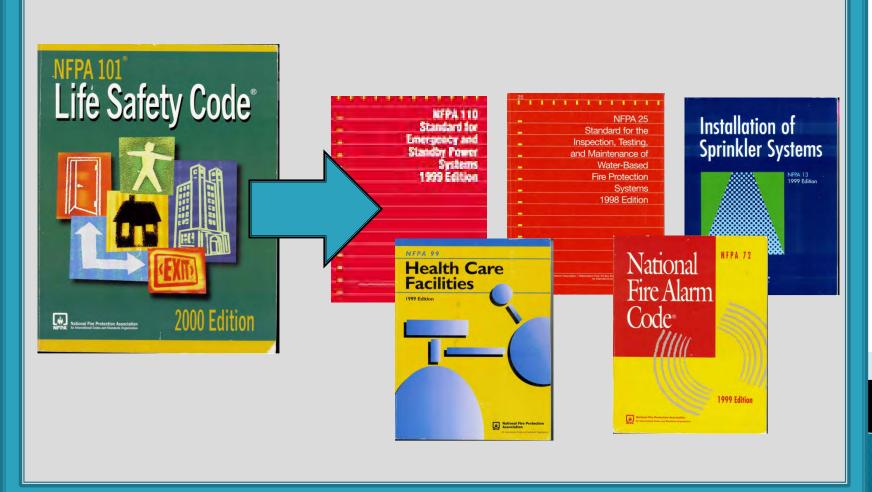








## The LSC points to STANDARDS that describe HOW to install/maintain systems



## CHAPTER 2 MANDATORY REFERENCED CODES

# 1- NOTE THE SPECIFIC EDITION 2- APPLIES ONLY TO PARAGRAPHS LISTED

The numbers in parentheses represent the paragraph numbers from chapters of this *Code* that reference the given publication in a mandatory way.

### MANDATORY ONLY FOR PARAGRAPHS LISTED

#### **EXAMPLE:**

NFPA 99 is mandatory in existing health care in 3 situations:

```
19.3.2.2 = Laboratories with haz amounts of chemical
```

19.3.2.3 = Anesthetizing locations

19.3.2.4 = Medical gas storage

```
NFP 99, Standard for Health Care Facilities, 1999 edition. (8.4.4 Exc., 8.4.5, 9.2.4, 18.2.9.2, 18.2.10.2, Table 18.3.2.1, 18.3.2.2, 18.3.2.3, 18.3.2.4, 18.5.1.2, 18.5.1.3, 19.3.2.2, 19.3.2.3, 19.3.2.4, 20.2.9.2, 20.3.2.1, 20.3.2.2, 21.2.9.2, 21.3.2.1, 21.3.2.2)
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# CHAPTER 2 AHJ has the power to accept existing installations

The Committee on Safety to Life recognizes that it is sometimes impractical to continually upgrade existing buildings or installations to comply with all the requirements of the following referenced publications. Existing buildings or installations that do not comply with the provisions of the following referenced publications shall be permitted to be continued in service, provided the lack of conformity with these standards does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

## "Grand-Fathering"



You just need to know where to look

# CHAPTER 5 DEFINITIONS

(8 PAGES)

#### **Chapter 3 DEFINITIONS**

#### SECTION 3.1 GENERAL

- **3.1.1** The following terms, for the purposes of this *Code*, shall have the meanings given in this chapter, if not otherwise modified for a specific occupancy.
- 3.1.2 Words used in the present tense shall include the future; words used in the masculine gender shall include in the manual neuter; the singular number shall include and the plural number shall include the singular.
- 3.1.3 Where terms are not defined in this chapter or occupancy chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. Webster's Third New International Dictionary of the English Language, Unabridged, shall be a source for ordinarily accepted meaning.

#### SECTION 3.2 OFFICIAL NFPA DEFINITION

- 3.2.1\* Approved. Acceptable to the authority having juris-
- **3.2.2\* Authority Having Jurisdiction.** The organi office, or individual responsible for approving equipmaterials, an installation, or a procedure
- 3.2.3\* 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.
- 3.2.4 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.
- 3.2.5\* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.
- 3.2.6 Shall. Indicates a mandatory requirement.
- **3.2.7 Should.** Indicates a recommendation or that which is advised but not required.

#### SECTION 3.3 GENERAL DEFINITIONS

- 3.3.1 Accessible Area of Refuge. See 3.3.14.1, Area of Refuge,
- 3.3.2 Accessible Means of Egress. See 3.3.121.1, Means of Egress, Accessible.
- 3.3.3 Addition. An extension or increase in the floor area or height of a building or structure.
- **3.3.4 Air-Inflated Structure.** See 3.3.197.1, Structure, Air-Inflated.

- **3.3.5 Air-Supported Structure.** See 3.3.197.2, Structure, Air-Supported.
- 3.3.6\* Aisle Accessway. The initial portion of an exit access
- 3.3.7 Alternative Calculation Procedure. A calculation procedure that differs from the procedure originally employed by the design team but that provides predictions for the same variables of interest.
- **3.3.8** Ambulatory Health Care Occupancy. See 3.3.134.1, Occupancy, Ambulatory Health Care.
- 3.3.9 Analysis, Sensitivity. An analysis performed to determine the degree to which a predicted output will vary given a specified change in an input parameter, usually in relation to models.
- **3.3.10** Analysis, Uncertainty. An analysis performed to determine the degree to which a predicted value will vary.
- 3.3.11 Anchor Store. A department store or major merchandising center that has direct access to the covered mall but in which all required means of egress is independent of the covered mall.
- 3.3.12 Apartment Building. See 3.3.25.1, Building, Apartment.
- 3.3.13 Area. See 3.3.81, Floor Area, Gross and 3.3.82, Floor Area, Net.
- **3.3.13.1** Area, Gross Leasable. The total floor area designated for tenant occupancy and exclusive use, expected in square feet (square meters), measured from the cadjoining partitions and exteriors of outside wall
- 3.3.13.2 Area, Hazardous. An area of a structure hg that poses a degree of hazard greater than that normal to the general occupancy of the building or structure, such as areas used for the storage or use of combustibles or flammables; toxic, noxious, or corrosive materials; or heat-producing appliances.
- 3.3.13.3 Area, Living. Any normally occupiable space in a residential occupancy, other than sleeping rooms or rooms that are intended for combination sleeping/living, bathrooms, toilet compartments, kitchens, closets, halls, storage or utility spaces, and similar areas.
- **3.3.14\* Area of Refuge.** An area that is either (1) a story in a building where the building is protected throughout by an approved, supervised automatic sprinkler system and has not less than two accessible rooms or spaces separated from each other by smoke-resisting partitions; or (2) a space located in a path of travel leading to a public way that is protected from the effects of fire, either by means of separation from other spaces in the same building or by virtue of location, thereby permitting a delay in egress travel from any level.
- **3.3.14.1** Area of Refuge, Accessible. An area of refuge that complies with the accessible route requirements of CABO/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
- 3.3.15 Assembly Occupancy. See 3.3.134.2, Occupancy, Assembly.
- **3.3.16 Atmosphere, Common.** The atmosphere that exists between rooms, spaces, or areas within a building that are not separated by an approved smoke barrier.

# 1 CHAPTER 3 DEFINITIONS

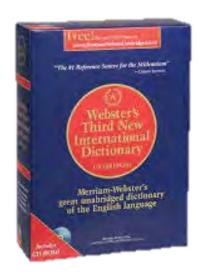
3.1.3 Where terms are not defined in this chapter or within an occupancy chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used Webster's Third New International Dictionary of the English Language, Unabridged, shall be a source for ordinarily accepted meaning.

# If not defined in chapter 3, use the dictionary:

#### Merriam-Webster's Unabridged

aban·don·ment ='=dənmənt noun-s Etymology: French abandonnement, from abandonner to abandon (from Old French abandoner) + -ment -- more at abandon

1 a): the act of abandoning:
relinquishment, renunciation <such
freedom meant the ~ of many longcherished phrases -- I.M.Price>
b) (1): desertion of a spouse with the
intention of creating a permanent
separation (2): desertion of a child by its
parents



#### **EXAMPLE DEFINITIONS:**

3.2.2\* Authority Having Jurisdiction. The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure

3.3.13.2 Area, Hazardous. An area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure, such as areas used for the storage or use of combustibles or flammables; toxic, noxious, or corrosive materials; or heat-producing appliances.

A building or portion thereof used on a 24hour basis for the medical, psychiatric, obstetrical, or surgical care of four or more inpatients.

#### **EXAMPLE DEFINITIONS:**

3.3.13.2 Area, Hazardon Hi) Uses it a hospital!
that poses a degree Hi make an that normal to the general occurs (the make of combustibles of combustibles of combustibles opliance. ONE impatie of combustibles opliance.

3.3.104 Hospital. A building or portion thereof used on a 24hour basis for the medical, psychiatric, obstetrical, or surgical care of four or more inpatients.

#### **EXAMPLE DEFINITIONS:**

**3.3.25.4\* Building, Existing.** A building erected or officially authorized prior to the effective date of the adoption of this edition of the *Code* by the agency or jurisdiction.

## NEW = After Mar, 2003 EXISTING = Before Mar, 2003

CMS officially adopted 2000 LSC on March 11, 2003

## **CHAPTER GENERAL**

(3 PAGES)

#### Chapter 4 GENERAL

- .1.1\* Fire and Similar Emergency. The goal of this Code is to provide an environment for the occupants that is reasonably safe from fire and similar emergencies by the following means:
- \*Protection of occupants not intimate with the initial fire
- (2) Improvement of the survivability of occupants with the initial fire development
- 4.1.2\* Crowd Movement. An additional goal is to pro reasonably safe emergency crowd movement and, where required, reasonably safe nonemergency crowd movement.

#### **SECTION 4.2 OBJECTIVES**

- 4.2.1 Occupant Protection. A structure shall be designed, constructed, and maintained to protect occupants who are not intimate with the initial fire development for the time needed to evacuate, relocate, or defend in place.
- 4.2.2 Structural Integrity. Structural integrity shall be maintained for the time needed to evacuate, relocate, or defend in place occupants who are not intimate with the initial fire development.
- 4.2.3 Systems Effectiveness. Systems utilized to achieve the goals of Section 4.1 shall be effective in mitigating the hazard or condition for which they are being used, shall be reliable, shall be maintained to the level at which they were designed to operate, and shall remain operational.

#### **SECTION 4.3 ASSUMPTION**

4.3.1\* Single Fire Source. The protection methods of this Code assume a single fire source.

#### SECTION 4.4 LIFE SAFETY COMPLIANCE OPTIONS

- 4.4.1 Options. Life safety meeting the goals and objectives of Sections 4.1 and 4.2 shall be provided in accordance with either of the following:
- .(1) The prescriptive-based provisions per 4.4.2
- (2) The performance-based provisions per 4.4.3

#### 4.4.2 Prescriptive-Based Option.

- 4.4.2.1 A prescriptive-based life safety design shall be dance with Chapters 1 through 4, Chapters 6 through re applicable occupancy Chapters 12 timougle 12
- 4.4.2.2 Where specific requirements contained in Ch 11 through 42 differ from general requirements contained in Chapters 1 through 4, and Chapters 6 through 10, the requirements of Chapters 11 through 42 shall govern.
- 4.4.3 Performance-Based Option. A performance-based life safety design shall be in accordance with Chapters 1, 2, and 3, Sections 4.1 through 4.4, 4.6.9.2, and Chapter 5 of this Code.

#### SECTION 4.5 FUNDAMENTAL REQUIREMENTS

4.5.1 Multiple Safeguards. The design of every building structure intended for human occupancy shall be such t reliance for safety to life does not depend solely on any sing safeguard. An additional safeguard(s) shall be provided for life safety in case any single safeguard is ineffective due to n<u>appropriate human actions or system failure</u>

4.5.2 Appropriateness of Safeguards. Every building or structure shall be provided with means of egress and other safeguards of the kinds, numbers, locations, and capacities appropriate to the individual building or structure, with due regard to the following:

====<u>====</u>=====

- (1) Character of the occupancy
- (2) Capabilities of the occupants
- (3) Number of persons exposed
- (4) Fire protection available
- Height and type of construction of the building or structure
- Other factors necessary to provide occupants with a reasonable degree of safety

#### .5.3 Means of Egress.

- 1.5.3.1 Number of Means of Egress Two means of egress, as a minimum, shall be provided in every building or structure, section, and area where size, occupancy, and arrangement endanger occupants attempting to use a single means of egress that is blocked by fire or smoke. The two means of egress shall be arranged to minimize the possibility that both might be rendered impassable by the same emergency condition.
- 4.5.3.2 Unobstructed Egress. In every occupied building or structure, means of egress from all parts of the building shall be maintained free and unobstructed. No lock or fastening shall be permitted that prevents free escape from the inside of any building other than in health care occupancies and detention and correctional occupancies where staff are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency. Means of egress shall be accessible to the extent necessary to ensure reasonable safety for occupants having impaired mobility.
- 4.5.3.3 Awareness of Egress System. Every exit shall be clearly visible, or the route to reach every exit shall be conspicuously indicated. Each means of egress, in its entirety, shall be arranged or marked so that the way to a place of safety is indicated in a clear manner.
- 4.5.3.4 Lighting. Where artificial illumination is needed in a building or structure, egress facilities shall be included in the lighting design.
- 4.5.4\* Occupant Notification. In every building or structure of such size, arrangement, or occupancy that a fire itself might not provide adequate occupant warning, fire alarm facilities shall be provided where necessary to warn occupants of the existence of fire.
- 4.5.5 Vertical Openings. Every vertical opening between the floors of a building shall be suitably enclosed or protected, as necessary, to afford reasonable safety to occupants while using the means of egress and to prevent spread of fire, smoke, or fumes through vertical openings from floor to floor before occupants have entered exits.
- 1.5.6 System Design/Installation. Any fire protection system, building service equipment, feature of protection, or safeguard provided for life safety shall be designed, installed, and pproved in accordance with applicable NFPA standards.
  - .7 Maintenance. Whenever or wherever any device, equipent, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be maintained unless the Code exempts such maintenance.

# CHAPTER 4 GENERAL

Page 2

#### SECTION 4.6 GENERAL REQUIREMENTS

#### 4.6.1 Authority Having Jurisdiction.

4.6.1.1 The authority having jurisdiction shall de whether the provisions of this *Code* are met.

**4.6.1.2** Any requirements that are essential for the building occupants and that are not specifically proviby this *Code* shall be determined by the authority having jurisdiction.

4.6.1.3 Where it is evident that a reasonable degree of safety is provided, any requirement shall be permitted to be modified if its application would be hazardous under normal occupancy conditions in the judgment of the authority having jurisdiction.

**4.6.2\* Historic Buildings.** The provisions of this *Code* shall be permitted to be modified by the authority having jurisdiction for buildings or structures identified and classified as historic buildings or structures where it is evident that a reasonable degree of safety is provided.

**4.6.3\* Modification of Requirements for Existing Buildings.** Where it is evident that a reasonable degree of safety is provided, the requirements for existing buildings shall be permitted to be modified if their application would be impractical in the judgment of the authority having jurisdiction.

4.6.4 Time Allowed for Compliance. A limited but reasonable time, commensurate with the magnitude of expenditure, disruption of services, and degree of hazard, shall be allowed for compliance with any part of this Code for existing buildings.

4.6.5 Referenced Publications. Existing buildings or installations that do not comply with the provisions of the referenced standards contained in this document (see Chapter 2) shall be permitted to be continued in service, provided that the lack of conformity with these standards does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

4.6.6 Additions. Additions shall conform to the

4.6.7\* Modernization or Renovation. Any alteral installation of new equipment shall meet, as nearly a ble, the requirements for new construction. Only the altered, renovated, or modernized portion of an existing building, system, or individual component shall be required to meet the provisions of this Code that are applicable to new construction. If the alteration, renovation, or modernization adversely impacts required life safety features, additional upgrading shall be required. Existing life safety features that do not meet the requirements for existing buildings, but that exceed the requirements for existing buildings, shall not be further diminished. In no case shall the resulting life safety features buildings.

**4.6.8 Provisions in Excess of Code Requirements.** Nothing in this *Code* shall be construed to prohibit a better type o building construction, an additional means of egress, or an otherwise safer condition than that specified by the minimum requirements of this *Code*.

#### 4.6.9 Conditions for Occupancy.

**4.6.9.1** No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this *Code* unless the following conditions exist:

- (1) A plan of correction has been approved.
- (2) The occupancy classification remains the same.
- (3) No serious life safety hazard exists as judged by the authority having jurisdiction.

**4.6.9.2** Where compliance with this *Code* is effected by means of a performance-based design, the owner shall annually certify compliance with the conditions and limitations of the design by submitting a warrant of fitness acceptable to the authority having jurisdiction. The warrant of fitness shall attest that the building features, systems, and use have been inspected and confirmed to remain consistent with design specifications outlined in the documentation required by Section 5.8 and that they continue to satisfy the goals and spiectives specified in Sections 4.1 and 4.2. (See Chapter

#### 4.6.10 Construction, Repair, and Improvement

**4.6.10.1\*** Buildings or portions of buildings shall be permit ted to be occupied during construction, repair, alterations, or additions only where required means of egress and required fire protection features are in place and continuously main tained for the portion occupied or where alternative life safety measures acceptable to the authority having jurisdiction are in place.

**4.6.10.2\*** In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the *Code* insofar as they can reasonably be applied to buildings under construction.

**4.6.10.3** Flammable or explosive substances or equipment for repairs or alterations shall be permitted in a building while the building is occupied if the condition of use and safeguards provided do not create any additional danger or impediment to egress beyond the normally permissible conditions in the building.

**4.6.11° Changes of Occupancy.** In any building or structure, whether or not a physical alteration is needed, a change from one occupancy classification to another shall be permitted only where such a structure, building, or portion thereof conforms with the requirements of this *Code* that apply to new construction for the proposed new use or, where specifically permitted elsewhere in the *Code*, existing control features shall be permitted to be continued in the permitted to be permitted to be continued in the permitted to be continued in the permitted to be pe

#### 4.6.12 Maintenance and Testing.

**4.6.12.1** Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feture is required for compliance with the provisions of this *Coop*, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in accordance with applicable NFPA requirements or as directed by the authority having jurisdiction.

**4.6.12.2\*** Existing life safety features obvious to the public, for the property of the *Code*, shall be either maintained or removed.

**4.6.12.3** Equipment requiring periodic testing or operation to ensure its maintenance shall be tested or operated as spelled elsewhere in this *Code* or as directed by the authority hydring jurisdiction.

# CHAPTER 4 GENERAL

101-36

#### SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES

4.6.12.4 Maintenance and testing shall be under the supervision of a responsible person who shall ensure that testing and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the authority having jurisdiction.

#### SECTION 4.7\* FIRE DRILLS

**4.7.1 Where Required.** Emergency egress and relocation drills conforming to the provisions of this *Code* shall be conducted as specified by the provisions of Chapters 11 through 42, or by appropriate action of the authority having jurisdiction. Drills shall be designed in cooperation with the local authorities.

4.7.2° Drill Frequency.

drills, where required by Chapters 11 through 42 or the authority having jurisdiction, shall be held with sufficient frequency to familiarize occupants with the drill procedure and

to establish conduct of the drill as a matter of routine, shall include suitable procedures to ensure that all subject to the drill participate.

- 4.7.3 Competency. Responsibility for the planning and duct of drills shall be assigned only to competent persons qual ified to exercise leadership.
- **4.7.4 Orderly Evacuation.** In the conduct of drills, emphasis shall be placed on orderly evacuation rather than on speed.
- **4.7.5\* Simulated Conditions.** Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that can occur in an actual emergency.
- **4.7.6 Relocation Area.** Drill participants shall relocate to a predetermined location and remain at such location until a recall or dismissal signal is given.

Page 3



#### **SECTION 4.1\* GOALS**

- **4.1.1\* Fire and Similar Emergency.** The goal of this *Code* is to provide an environment for the occupants that is reasonably safe from fire and similar emergencies by the following means:
- (1) \*Protection of occupants not intimate with the initial fire development
- (2) Improvement of the survivability of occupants intimate with the initial fire development

## Protect People that are

- AWAY from the fire
- NEAR the fire



**4.4.2.2** Where specific requirements contained in Chapters 11 through 42 differ from general requirements contained in Chapters 1 through 4, and Chapters 6 through 10, the requirements of Chapters 11 through 42 shall govern.

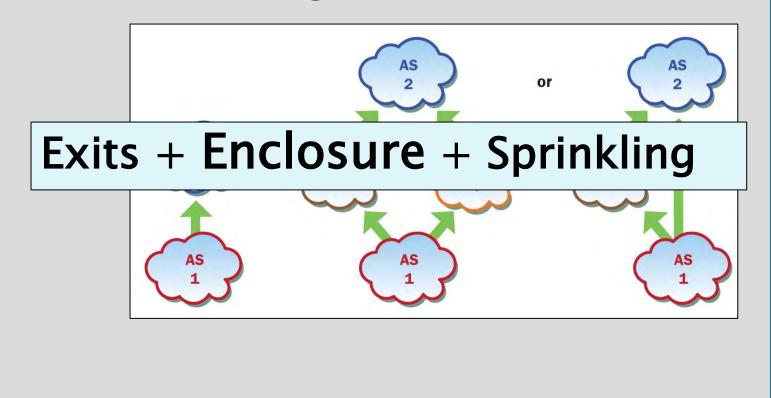
# Follow "Occupancy" requirements OVER "Core" requirements



## The 10 Fundamental LS Requirements

- 1. Multiple Safeguards
- 2. Appropriateness of Safeguards
- 3. Number of Means of Egress
- 4. Unobstructed Egress
- 5. Awareness of Egress System
- 6. Lighting
- 7. Occupant Notification
- 8. Vertical Openings
- 9. System Design/Installation
- 10.Maintenance

## 1. Multiple Safeguards

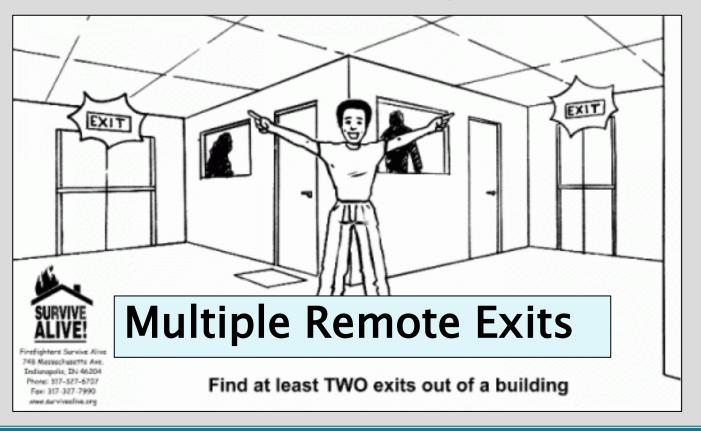


2-Appropriateness of Safeguards



This EXIT sign may not be appropriate in the USA

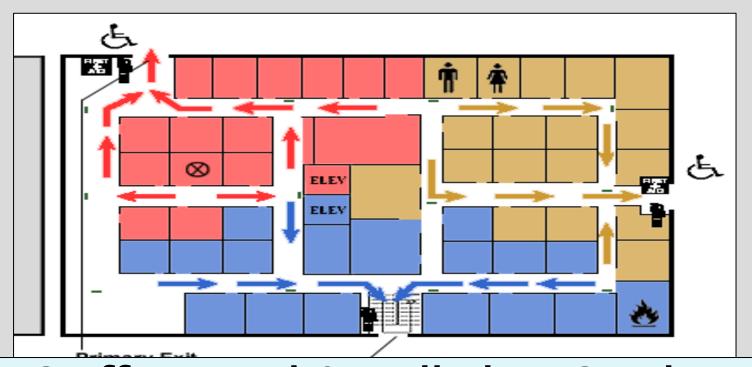
## 3-Number of Means of Egress



## 4 – Unobstructed Egress



5 -Awareness of Egress System



Staff Trained & Drilled on Smoke Compartment + Building Exiting

6- Lighting



Internal & External Pathways on Emergency Power

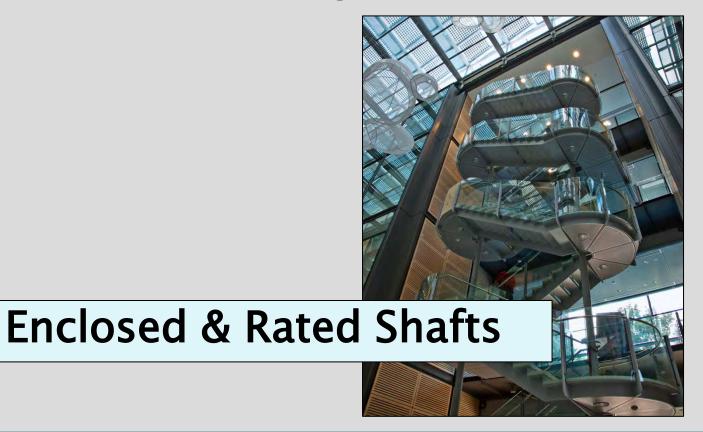
## 7 – Occupant Notification





**Automatic Alarms** 

8- Vertical Openings



## 9 -System Design/Installation



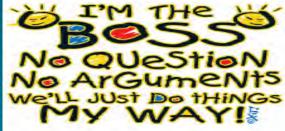
## 10 - Maintenance



**4.6.1.2** Any requirements that are essential for the safety of building occupants and that are not specifically provided for by this *Code* shall be determined by the authority having jurisdiction.



Typically used when an inspector doesn't know what/if a code that applies



"General Duty Clause"



## **RENOVATION**

4.6.7\* Modernization or Renovation. Any alteration or any installation of new equipment shall meet, as nearly as practicable, the requirements for new construction. Only the altered, renovated, or modernized portion of an existing building, system, or individual component shall be required to meet the provisions of this Code that are applicable to new construction. If the alteration, renovation, or modernization adversely impacts required life safety features, additional upgrading shall be required Existing life safety features, that do not meet the requirements for new buildings, but that exceed the requirements for existing buildings, shall not be further diminished. In no case shall the resulting life safety features be less than those required for existing buildings.



## **CONSTRUCTION**

**4.6.10.1\*** Buildings or portions of buildings shall be permitted to be occupied during construction, repair, alterations, or additions only where required means of egress and required fire protection features are in place and continuously maintained for the portion occupied or where alternative life safety measures acceptable to the authority having jurisdiction are in place.



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## **CONSTRUCTION**

**4.6.10.2\*** In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the *Code* insofar as they can reasonably be applied to buildings under construction.

# Construction Sites must have Exit Paths



## **MAINTENANCE**

**4.6.12.1** Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in accordance with applicable NFPA requirements or as directed by the authority having jurisdiction.



## **MAINTENANCE**

**4.6.12.2\*** Existing life safety features obvious to the public, if not required by the *Code*, shall be either maintained or removed.



## **TESTING**

**4.6.12.3** Equipment requiring periodic testing or operation to ensure its maintenance shall be tested or operated as specified elsewhere in this *Code* or as directed by the authority having jurisdiction.



## FIRE DRILLS

- **4.7.3 Competency.** Responsibility for the planning and conduct of drills shall be assigned only to competent persons qualified to exercise leadership.
- 4.7.4 Orderly Evacuation. In the conduct of drills, emphasis shall be placed on orderly evacuation rather than on speed.
- 4.7.5\* Simulated Conditions. Drills shall be held at expected and unexpected times and under varying conditions to simulate the unusual conditions that can occur in an actual emergency.
- **4.7.6 Relocation Area.** Drill participants shall relocate to a predetermined location and remain at such location until a recall or dismissal signal is given.

## The Life Safety Code

**CHAPTER PERFORMANCE DESIGN** 

### Chapter 5 PERFORMANCE-BASED OPTION

### SECTION 5.1 GENERAL REQUIREMENTS

5.1.1\* Application. The requirements of this chapter shall apply to life safety systems designed to the performance-based option permitted by 4.4.3.

5.1.2 Goals and Objectives. The performance-based design shall meet the goals and objectives of this Code in accordance with Sections 4.1 and 4.2.

5.1.3\* Approved Qualifications. The performance-based design shall be prepared by a person with qualifications acceptable to the authority having jurisdiction. (See also

5.8.12.)

**Performance Based Alternative** to the

**Prescriptive Code** 

chapter foll-

5.1.4\* Inde

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third party

uation of th

5.1.5 Source

documented met using

assumption conservatisr justification

5.1.6 Final shall make mance obje

5.1.7\* Mair required fo

mance goals the life of th shall include design speci

of the autho

(See also 4.6. 5.1.8 Specia

Data Conversion. See 3.3.38. Design Fire Scenario. See 3.3.41. SECTION 5.2 PERFORMANCE CRITERIA

Uncertainty Analysis. See 3.3.204. Verification Method. See 3.3.206.

5.2.1 General. A design shall meet the objectives specified in Section 4.2 if, for each design fire scenario, assumption, and design specification, the performance criterion in 5.2.2 is met.

5.2.2\* Performance Criterion. No occupant who is not intimate with ignition shall be exposed to instantaneous or cumulative untenable conditions.

### SECTION 5.3 RETAINED PRESCRIPTIVE REQUIREMENTS

systems and cable NFPA

with the folince criteria rough 5.8:

.2.5.6.1 shall

ered in the retained prescriptive requirements mandated by 5.3.2 shall be addressed in accordance with the equivalency

## Rarely used...

- a) Can't control human behavior;
- b) Unsure who evaluates & how;
- c) Liability issues open to litigation;
- d) Mostly professional opinion-based

# The Life Safety Code

# CHAPTER 6 OCCUPANCY & HAZARDS

(2 PAGES)

### Chapter 6 CLASSIFICATION OF OCCUPANCY AND HAZARD OF CONTENTS

#### SECTION 6.1 CLASSIFICATION OF OCCUPANCY

#### 6.1.1 General.

- **6.1.1.1 Occupancy Classification.** The occupancy of a building or structure, or portion of a building or structure, shall be classified in accordance with 6.1.2 through 6.1.13. Occupancy classification shall be subject to the ruling of the authority having jurisdiction where there is a question of proper classification in any individual case.
- **6.1.1.2 Special Structures.** Occupancies in special structures shall conform to the requirements of the specific occupancy Chapters 12 through 42, except as modified by Chapter 11.
- 6.1.2 Assembly. For requirements, see Chapters 12 and 13.
- **6.1.2.1\* Definition**—Assembly Occupancy. An occupancy (1) used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement,

awaiting transportation, or amusement building, rega

6.1.2.2 Small Assembly Uspace for assembly purpo other occupancy and incide classified as part of the ject to the provisions appl

6.1.3 Educational. For re

- **6.1.3.1\* Definition** E pancy used for educatio grade by six or more pers or more than 12 hours p
- 6.1.3.2 Other Occupancie with educational institution appropriate parts of this (
- **6.1.3.3 Incidental Instruc** incidental to some other governing such other occur
- 6.1.4 Day-Care. For requ

6.1.4.1\* Definition — Day-Care Occupancy. An occupancy in which four or more clients receive care, maintenance, and supervision, by other than their relatives or legal guardians, for less than 24 hours per day.

6.1.5 Health Care. For requirements, see Chapters 18 and 19.

- 6.1.5.1\* Definition Health Care Occupancy. An occupancy used for purposes of medical or other treatment or care of four or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control
- 6.1.6 Ambulatory Health Care. For requirements, see Chapters 20 and 21.
- 6.1.6.1 Definition Ambulatory Health Care Occupancy. A building or portion thereof used to provide services or treatment simultaneously to four or more patients that (1) provides, on an outpatient basis, treatment for patients that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of

others, or (2) provides, on an outpatient basis, anesthesia that renders the patients incapable of taking action for self-preservation under emergency conditions without the assistance of others.

**6.1.7 Detention and Correctional.** For requirements, see Chapters 22 and 23.

6.1.7.1\* Definition — Detention and Correctional Occupancy. An occupancy used to house four or more persons under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control.

**6.1.7.2\*** Nonresidential Uses. Within detention and correctional facilities, uses other than residential housing shall be in accordance with the appropriate chapter of the *Çode.* (See 22.1.2.1 and 23.1.2.1.)

**6.1.8 Residential.** For requirements, see Chapters 24 through 31.

6.1.8.1\* Definition — Residential Occupancy. An occupancy that provides sleeping accommodations for purposes other

# Will cover Occupancy in next Lunch & Learn

nts, see Chap-

are Occupanr lodging and I by blood or rpose of pro-

ers 36 and 37.

n occupancy

s 38 and 39.

n occupancy ransaction of

er 40.

An occupancy

assembling, mixing, packaging, finishing, decorating, or repair operations are conducted.

6.1.13 Storage. For requirements, see Chapter 42.

**6.1.13.1\* Definition** — **Storage Occupancy.** An occupancy used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals.

### 6.1.14 Mixed Occupancies.

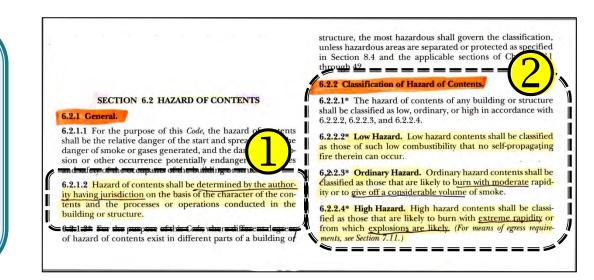
- **6.1.14.1\* Definition Mixed Occupancy.** An occupancy in which two or more classes of occupancy exist in the same building or structure and where such classes are intermingled so that separate safeguards are impracticable.
- **6.1.14.2** Applicable Requirements. Where a mixed occupancy classification occurs, the means of egress facilities, construction, protection, and other safeguards shall comply with the most restrictive life safety requirements of the occupancies involved.

Exception:\* Where incidental to another occupancy, buildings used as follows shall be permitted to be considered part of the predominant

# The Life Safety Code

CHAPTER O

OCCUPANCY &
HAZARDS



(2 PAGES)



### **HAZARDS**

6.2.1.2 Hazard of contents shall be determined by the authority having jurisdiction on the basis of the character of the contents and the processes or operations conducted in the building or structure.



## HAZARD OF CONTENTS

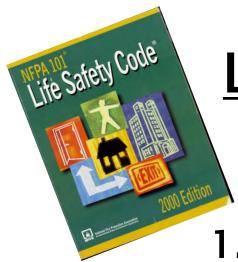
- **6.2.2.1\*** The hazard of contents of any building or structure shall be classified as low, ordinary, or high in accordance with 6.2.2.2, 6.2.2.3, and 6.2.2.4.
- 6.2.2.2\* Low Hazard. Low hazard contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur.
- 6.2.2.3\* Ordinary Hazard, Ordinary hazard contents shall be classified as those that are likely to burn with moderate rapidity or to give off a considerable volume of smoke.
- 6.2.2.4\* High Hazard. High hazard contents shall be classified as those that are likely to burn with extreme rapidity or from which explosions are likely. (For means of egress requirements, see Section 7.11.)

# HAZARD OF CONTENTS

Used in other parts of the LSC for:

	<u>Low</u>	<b>Ordinary</b>	<u>High</u>
Hold doors open (7.2.1.8.2)	X	X	
Special Constr (7.11)			X
Mini-Atriums (8.2.5.5)	X		
Atriums (8.2.5.5)	X		
Mercantile Rms (37.3.2.2)			X
Business Rms (38/39.3.2.2)			X

NOT used for Sprinkler Coverage (NFPA 13) NOT used for Hazardous Area Classification



# <u>Lunch & Learn Webinar</u> Jan 9 Agenda

- 1. AHJ's
- 2. NFPA
- 3. Life Safety Code Overview
- 4. Chapter 1 Administration
- 5. Chapter 2 Referenced Codes
- 6. Chapter 3 Definitions
- 7. Chapter 4 General Rules
- 8. Chapter 5 Performance Design
- 9. Chapter 6 Hazard of Contents

# Have Questions?

<u>During the Live Webinar:</u> Click on "chat" in the Lower RH corner

During viewing the posted Webinar: Call Bill Lauzon (262-945-4567) or E-Mail at Lauzon.LSC@gmail.com

Life Safety Code



You just need to know where to look



## WISCONSIN HEALTHCARE ENGINEERING ASSOCIATION Dedicated to Excellence in Healthcare Engineering

# "Lunch & Learn" 2014 Webinar Series

INTRODUCTION TO THE LIFE SAFETY CODE

