Life Safety Drawings for Accreditation
Faculty Background

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- Principal, Safe Hospital Services
- Former VP of Client Services, SiteFM
- 40+ Years in Healthcare Facilities Management
- Former Joint Commission Life Safety Surveyor
- Former OSHA Voluntary Protection Program (VPP) STAR Worksite Coordinator
Seminar Objectives

At the end of today’s program you will be able to discuss:

- The importance of accurate drawings
- Advantages of the 2000 LSC Edition
- Statement of Conditions Requirements
- Managing SOC/Life Safety Drawings
- Impact on Barrier Management
- Impact on Compliance
- Impact on Safety
Importance

Life Safety Drawings are the basis for the
Life Safety Assessment (LS Chapter)
Statement of Conditions (SOC)
  LS.01.01.01
Barrier Management Program Map
Life Safety Survey Map
  LS.02.01.10
  LS.02.01.20
Importance

Life Safety Drawings serve as a map to all of the identified elements

- Required by The Joint Commission
- Potentially requested by CMS (Medicare)
- May be different for TJC than for the hospital’s license.
- Facility should be maintained to the most stringent standard
Inaccurate Life Safety Drawings
- Can result in findings by The Joint Commission
- Can jeopardize CMS (Medicare) participation status
- May cause a failure to maintain required elements
- May cause unnecessary work
- May cause an unsafe facility
NFPA 101-2000 Edition

This is the edition of The Life Safety Code that is currently adopted by:

- The Joint Commission
- The Center for Medicare Service (CMS)
- Most State Health Depts.
- Often not the AHJ (Authority Having Jurisdiction)
Provides incentives to be fully sprinkled:

- Existing and new hospitals can have non-rated corridor walls
- The ceiling can be used in lieu of walls to deck
- Existing hospital can have non-rated enclosures
- (see table 3A-3)
Hazardous Areas

Existing Healthcare Occupancy

<table>
<thead>
<tr>
<th>Type of Hazardous Area</th>
<th>1 Hr FRRS Required</th>
<th>2 Hr FRRS Required</th>
<th>1 Hr FRRS or non- rated smoke resistant and sprinkled</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Boiler/fuel fired heater rooms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Central/bulk laundries (&gt; 100 sq ft)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Flammable gas storage rooms (NFPA 99: 10.10.2.2)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Flammable liquid storage rooms (NFPA 30: 4.2.1, 4.4.4)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Laboratories:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) less than severe hazard</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) severe hazard (NFPA 99: 10.3.1.1)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Maintenance repair shops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Piped oxygen tank supply rooms (NFPA 99: 4.3.1.1.2)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Paint shops (less than severe hazard)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Soiled linen rooms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Storage rooms for combustible materials (&gt; 50 sq ft)</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. Trash collection rooms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The tables on this page are to be used to assess protection of hazardous areas and identify any deficient areas in conjunction with question 26.

1 1-hr FRRS walls and 9/16-hr FRRS doors if sprinklered.

* with 1 1/2-hr FRRS doors.

** with 2 1/4-hr FRRS doors.
Hazardous Areas
New Healthcare Occupancy

### TABLE 3B-3 – Minimum Required Fire Protection of Hazardous Areas

<table>
<thead>
<tr>
<th>Type of Hazardous Area</th>
<th>Minimum Fire Protection Required</th>
<th>1 hr FRRS &amp; Sprinklers</th>
<th>1 1/2 hr FRRS &amp; Sprinklers</th>
<th>Required 2nd set or Dual Sprinklers</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Boiler/fuel fired heater rooms</td>
<td></td>
<td>X</td>
<td></td>
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<td>c. Flammable gas storage rooms (NFPA 99: 10-10.2.2)</td>
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<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Flammable liquid storage rooms (NFPA 30: 4.2.1, 4.4.4.2)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Laboratories:</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) less than severe hazard</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
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<td>(2) severe hazard (NFPA 99: 10-3.1.1)</td>
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<tr>
<td>f. Maintenance repair shops</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Piped oxygen tank supply rooms (NFPA 99: 4.5.1.1.2)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Paint shops (less than severe hazards)</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>(1) 50–100 sq ft</td>
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<td>X</td>
<td></td>
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</tr>
<tr>
<td>(2) &gt; 100 sq ft</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>k. Trash collection rooms</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

The tables on this page are to be used to assess protection of hazardous areas and identify any deficient areas in conjunction with question 5K.

* with a 1 1/2 hr FRRS doors.
** with a 3/4 hr FRRS doors.

1 Hr FRRS and sprinkled with 3/4 hour rated doors
Advantages

- Reduction in Fire Dampers requiring 4 year inspection (6 years for healthcare only, and if your state adopts the code).
- Reduction in door replacement activity as a result of missing labels or “non-rated” doors
SOC Requirements

There is currently no statement in the accreditation manual to spell out the requirements for SOC drawings.

However, The Joint Commission expects drawings to meet minimum standards anyway.

These were published in the Feb 2012 Edition of the Environment of Care News.

In one article of that publication, The Joint Commission noted the following requirements.
Illustrate (provide a legend) each of the following features that exist:

- Exterior exit doors
- Exit stairs/ramps (exterior or interior)
- Smoke-proof enclosures
- Horizontal exits
- Exit passageways
- Fire barriers
- Fire/Smoke compartments
- Smoke barriers
- Linen/trash chutes
Statement of Conditions Drawings

Illustrate (provide a legend) each of the following features that exist:

- Hazardous Areas (storage, etc)
- Suite Boundaries and Square Footage
- Shafts
- Equivalencies
- Waivers

- If not fully sprinkled, areas that are and are not sprinkled.

- Not required, but a plus – PFI locations
SOC Requirements

- A failure to have accurate drawings will result in a finding under LS.01.01.01, Statement of Conditions.
- The SOC BBI and related drawings are required for each building that is of a Healthcare or Ambulatory occupancy.
- The completion of an SOC and related drawings is not required for Business occupancies.
Life Safety Drawing Management

Your Drawings Must Be:
- Accurate (match field conditions)
- Up to date
- Reflective of any changes in your facility

Your Drawings Should Also:
- Leverage 2000 NFPA 101 LSC
- Be readily accessible
Life Safety Drawing Management

Your Drawings Ideally Should Be:

- Readily accessible
- Easy to find
- Widely viewable
- Flexible
- Affordable
- Utilized Regularly
POLICY

Accurate Life Safety (LS) Drawings must be available at all times and provided to the Life Safety surveyor during the building tour. They are the basis for the Life Safety Assessment, Statement of Conditions, Life Safety Building Maintenance Plan and the Life Safety Survey Map. Life Safety Drawings serve as a map to The Joint Commission (TJC), Centers for Medicare and Medicaid Services (CMS), State Health Departments, and by the Authority Having Jurisdiction (AHJ).

PROCEDURE

The ideal situation would be to have a professionally prepared set of Life Safety Drawings of your Organization. If not, you can use a rough sketch, (representative drawings), or floor plans for each story occupied by your organization.

Life Safety Drawings must address the following topics:

- A legend that clearly identifies features of fire safety
- Areas of the building that are fully sprinkled (if the building is partially sprinklered)
- Location of all Exterior exit doors
- Locations of all hazardous storage areas
- Locations of all rated barriers (exit stairs/ramps, horizontal exits and exit passageways)
- Locations of all smoke barriers
- Suite boundaries, including the size of the identified suites – both sleeping (max 5000 sq ft) and non-sleeping (max 10,000 sq ft)
- Locations of designated smoke Compartments
- Locations of chutes and shafts
- Wet locations
- Location of any approved equivalencies or waivers

TJC requires hospitals to define who within your organization is qualified to prepare your SOC. Although there may be many individuals who have a general understanding of the use of NFPA 101® to adequately perform periodic updates of general code-related issues, those individuals may not be qualified to perform a comprehensive evaluation of you building’s level of code compliance. The preparer of the eSOCs ® name and/or organization should be listed in the “Other Information” section of the Basic Building Information (BBI).

While TJC does not specify where LS drawings should be located, the engineering department is a logical place to keep such documents. The location of the LS drawings should also be in the “Other Information” section of the BBI.
Drawings may range from basic to complex depending on the needs of the facility.
Impact on Compliance

Required SOC Layers

- Serve as a guide to the surveyor’s building tour
- Serve as a guide to maintenance operations
- Serve the Code Red plan to identify safe refuge
- Supports horizontal evacuation (staying indoors)
By adding a PFI layer, the organization can easily show a surveyor where their PFI's are.
Barrier Management

Provides a way to accurately assure appropriate walls are inspected and maintained

- Assure proper inspection of smoke and fire barriers above ceiling
- Corridor walls can be maintained to the ceiling if the ceiling can be maintained to resist the passage of smoke (check with Local AHJ first, not permissible under IBC)
- Doors may not require rating.
- But, if a door was installed to latch, latching must be maintained.
Do the right things at the right time

- If a wall is not needed as a barrier or partition, then it will not need to be maintained (above the ceiling)
- Helps assure inclusion of Hazardous Locations
- Rated walls will be identified for use of UL Rated Systems for Penetrations and Construction Joints
Additional Layers

- Map Utility Main Cut-offs
  - Major Electrical Disconnects
  - Main and Zone Medical Gas Valves
  - Sprinkler and Domestic water Shut-off valves
- Security Components
Impact on Safety

To have a fire-safe building
- Have and use accurate, reliable drawings
- Manage an effective Barrier Management Program
- Manage Fire Safety Equipment
- Manage an Above Ceiling Permit process
- Conduct Fire Drills as required
- Use ILSM as needed
Impact on Safety

Life Safety Drawings/Plans:

- A required component of the SOC
- The basis for the Life Safety Program
- Essential for Barrier Management
- Improve communication with techs and contractors
The Update Process

Start with what you have

- Make copies of best existing LS drawing
- Make copies of project drawings showing changes in wall layout
- Refer to evacuation maps, SOC drawings, possibly other resources
- Leverage the advantages of the Code
The Update Process

Tour the building

- Start at the top and work downward
  - Open the ceiling and inspect the walls
  - Does wall rating/construction/door rating align with drawings?
  - Do wall stencils align with drawings?

Tour building below ceiling

- Observe changes in space utilization
- Observe “new” Hazardous Areas
The Update Process

Mark up existing drawings

- Use consistent markup standards
  - Color code wall types
  - Put notes around the outside, with a line or arrow pointing to the location of the issue.
  - Make lengthy notes on back or separate notepad
The Update Process

Compare to Code

  - Leverage code permitted advantages
  - These are SOC drawings, not for filing with the State
  - Maintain the building to original requirements
CAD Files

It is possible to work with PDFs with a low cost application such as Adobe Acrobat Pro or Power Point.

However, it is difficult to accurately determine square footage for smoke compartments and suites.

Working in CAD permits accurate calculation of square footage for such things as smoke compartments and suites.
Whether In-house or through outsourced CAD services, the following process is recommended.

It is essential that the person or persons touring the building have a strong understanding of Life Safety Code for the occupancies of their building(s)
The Update Process

The Drawing Update Process
- Know the codes or hire expertise
- Tour the building and;
- Mark up a copy of old drawings
- Mark up a clean set
- Submit for CAD work
- Review and mark up first drafts
- Submit for final CAD work
- Print color-code drawing
Start with whatever you have
Tour the building and mark it up
The Update Process

Begin with a clean floor plan
Add Doors Showing Direction of Swing
Show Egress Corridors and Exit Discharge Points
Add Occupancy Separation and Smoke/Fire Barriers
Show Hazardous Locations and Suites (with square footage)
Show Smoke Compartments with Square Footage
Exit Signs, Egress Fixtures and Fire Alarm/Sprinkler Devices Can Useful Layers
The Goal: Life Safety Drawings that are accurate and easy to understand
Thank you!

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