ALABAMA SOCIETY FOR HEALTHCARE ENGINEERING

Building, Maintaining, and Improving the Healthcare Environment Responsibly

EC Audit Field Notes

OR

Watch Out for the Low Hanging Finding

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HCT LLC

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Presentation Goals

- Preparing for successful Accreditation Survey
- Paperwork
- Unusual Findings
- Business Occupancies
- LSA Findings
- Door Locking

2

Paperwork objective

- Complete
- Organized
  - One place
  - Inventories
  - Activity Summarized
  - Who Presents What Information

3

Organized

- Binder, folders, milk crate
- Who (department, title) is responsible
- Summarized
  - Summary - Show what the surveyors is interested in up front
  - How is the information collected – Policy/Procedure
  - One year's worth of data.
    - Weekly, every week – 52
    - Monthly, every month – 12
    - Quarterly – four reports – 4; ~90 days from previous event ±10 days
    - Semi-annual – two reports – 2; ~ six months from previous event ±20 days
    - Annual – two reports – current year and previous year; ±30 days from previous event
    - Three, four, five and six year reports – current report and previous report; ±45 days

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Time Frames

- Watch out for Code defined time frames
  - Fire extinguishers - Approximately every 30 days
  - Generator/TS testing – NFPA 110 – monthly, NFPA 99 – 20 to 40 days apart
  - NFPA 72 – more liberal
- Unless clearly defined most restrictive applies.

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Fire Response Plan (FRP)

- Written
- Addresses
  - 1) Roles of staff and LIPs at and away from point of origin
  - 2) When and how to sound alarm
  - 3) How to contain smoke and fire
  - 4) How to use fire extinguisher
  - 5) How to assist and relocate patients
  - 6) How to evacuate to areas of refuge
  - 7) Ongoing training for staff and LIPs
  - 8) Define cooperation with fire department
  - 9) Hard Copy of FRP at Switchboard or Security

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Fire Drills

- Summary
- Timing
- Process
- Documentation
  - Time to notify Emergency Forces
  - Who participated – signature
  - Doctors
  - Critique with staff
  - Resolve all issues identified
- Pass/Fail

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Supervisory Devices

- What are they:
  - control valves
  - pressure supervisory
  - pressure tank
  - pressure supervisory for a dry pipe (both high and low conditions)
  - steam pressure
  - water level supervisory signal initiating device
  - water temperature supervisory
  - room temperature supervisory

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Flow switches

- Time to alarm activation
- **NFPA 72(2010) 17.12.2*** Activation of the initiating device shall occur within 90 seconds of waterflow at the alarm-initiating device when flow occurs that is equal to or greater than that from a single sprinkler of the smallest orifice size installed in the system.
- **17.12.3** Movement of water due to waste, surges, or variable pressure shall not initiate an alarm signal.

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Emergency Forces Notification

- What type of system do you have?
- Testing Defined NFPA 70(2010) Table 14.4.2.2.18.
  - DACT – Digital Alarm Communicator Transmitter
  - DART - Digital Alarm Radio Transmitter
  - McCulloh – McCulloh Transmitter
  - RAT – Radio Alarm Transmitter
- Times:
  - Alarm
  - Supervisory
  - Trouble

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FDC

- How many?
- Usually “Tested FDC” - Yes

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Fire Pump

- Testing
- Operation of ATS at Peak load (150%) NFPA 25(2011) 8.3.3.4
- If not able to run at 150%, explain in writing.
- Pump Curve NFPA 25(2011) 8.3.5.3(1)
- Pass/Fail

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Drain Test

- Annual
- Quarterly – with backflow in line
- Compare to previous tests

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Standpipe testing

- Pass/Fail
- Previous 5-year test

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Dampers

- Summary
- Six-year testing
- One-year testing
- Previous testing

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Doors

- Life Safety Plan required doors
- Door labels
- Process
- Consider
  - Elevator / Dumbwaiter Doors
  - Chute doors
  - Chase doors/hatches
- Pass/Fail

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EC.02.03.05.EP28

- Who – affiliations
- Frequency
- Qualifications – In-house
- PASS / FAIL

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Utility Systems

- Define Utility Systems
- Inventory of Utility System Components
- Maintenance Defined
  - MMR
  - AEM
- Risk Assess
  - High-Risk /Non-High-Risk
  - AEM
  - High-Risk, Infection Control, Non-High-Risk
  - Chapter 99 Risk Assessment

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Risk Assessment

- Documented
- Operating Rooms – EC.02.05.01.EP20 (Wet Procedure Location)
- Construction and Maintenance Activity – EC.02.06.05.EP2
- NFPA 99(2012) Chapter 4 Risk Assessment
  - EC.02.05.01.EP2 – Electrical System
  - EC.02.05.09.EP1 – Piped Medical Gas System

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NFPA 99(2012) Chapter 99 - Risk Assessment

- **4.1* Building System Categories.** Building systems in health care facilities shall be designed to meet system Category 1 through Category 4 requirements as detailed in this code.
  - **4.1.1* Category 1.** Facility systems in which failure of such equipment or system is likely to cause major injury or death of patients or caregivers shall be designed to meet system Category 1 requirements as defined in this code.
  - **4.1.2* Category 2.** Facility systems in which failure of such equipment is likely to cause minor injury to patients or caregivers shall be designed to meet system Category 2 requirements as defined in this code.
  - **4.1.3 Category 3.** Facility systems in which failure of such equipment is not likely to cause injury to patients or caregivers, but can cause patient discomfort, shall be designed to meet system Category 3 requirements as defined in this code.
  - **4.1.4 Category 4.** Facility systems in which failure of such equipment would have no impact on patient care shall be designed to meet system Category 4 requirements as defined in this code.
- **4.2* Risk Assessment.** Categories shall be determined by following and documenting a defined risk assessment procedure.
- **4.3 Application.** The Category definitions in Chapter 4 shall apply to Chapters 5 through 11.

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Primary Consideration for Risk Assessment

- The category definitions apply to equipment operations and are not intended to consider intervention by caregivers or others.

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Risk Category 1

- (1) Category 1: Systems are expected to work or be available at all times to support patient needs. Examples:
  - (1) Ambulatory surgical center, two patients with full OR services, Category 1
  - (2) Reconstructive surgeon's office with general anesthesia, Category 1
- **A.4.1.1** Major injury can include the following:
  - (1) Any amputation
  - (2) Loss of the sight of an eye (whether temporary or permanent)
  - (3) Chemical or hot metal burn to the eye or any penetrating injury to the eye
  - (4) Any injury that results in electric shock and electric burns leading to unconsciousness and that requires resuscitation or admittance to a hospital for 24 hours or more
  - (5) Any other injury leading to hypothermia, heat induced illness, or unconsciousness requiring resuscitation or admittance to a hospital for 24 hours or more
  - (6) Loss of consciousness caused by asphyxia or lack of oxygen or exposure to a biological agent or harmful substance
  - (7) Absorption of any substance by inhalation, skin, or ingestion causing loss of consciousness or acute illness requiring medical treatment
  - (8) Acute illness requiring medical treatment where there is reason to believe the exposure was to biological agents, its toxins, or infected materials

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Risk Category 2

- (2) Category 2: Systems are expected to provide a high level of reliability; however, limited short durations of equipment downtime can be tolerated without significant impact on patient care. Category 2 systems support patient needs but are not critical for life support. Examples:
  - (3) Procedural sedation site for outpatient services, Category 2
  - (4) Cooling Towers in Houston, TX, Category 2
- **A.4.1.2** A minor injury means *not serious* or *involving risk of life*.

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Risk Category 3

- (3) Category 3: Normal building system reliabilities are expected. Such systems support patient needs, but failure of such equipment would not immediately affect patient care. Such equipment is not critical for life support. Examples:
  - (5) Cooling Towers in Seattle, WA, Category 3
  - (6) Dental office, no general anesthesia, Category 3

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Risk Category 4

- (4) Category 4: Such systems have no impact on patient care and would not be noticeable to patients in the event of failure. Example:
  - (7) Typical doctor's office/exam room, Category 4
  - (8) Lawn sprinkler system, Category 4

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Risk Assessment Template

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

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EC.02.05.02 - Water Management

- New Standard Coming – Prepublication is out
- Start getting ready for it

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EC.02.05.01 – Control Airborne Contaminants

- EC.02.05.01.EP15 - Critical Air Systems
  - Appropriate pressure relationships
  - Air exchange rates
  - Filtration efficiencies
  - Temperature and humidity
- EC.02.05.01.EP16 - Non-critical Air Systems
  - General care nursing units
  - Clean and soiled utility rooms in acute care areas
  - Laboratories
  - Pharmacies
  - Diagnostic and treatment areas
  - Food preparation areas
  - Other support departments

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Electrical

- Life Safety Branch
  - Know what is on it, remove all non-LS circuits.
- Critical Branch
  - How identified
  - Pharmacy dispensing and refrigeration
- Equipment Branch
  - Equipment
- Normal
  - Other (Risk 4 maybe some Risk 3)

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Utility Drawings

- Single lines
- Sketches

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Battery Power Lighting and Exit Signs

- Inventory
- Exit signs with power indicator
- Replacing batteries annually, must still test for 90 minutes

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Weekly Generator Inspection

- Weekly
- Batteries NFPA 110(2010) 8.3.7
  - Weekly Inspection of batteries
  - Monthly testing NFPA(2010) 8.3.7.1
    - Hydrometer
    - Maintenance Free battery – Conductance Testing
- Weekly inspection of All ATSs.

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NFPA 110 Recommended Monthly Run Log Includes:

- Record running time meter before and after test
- Start with ATS Test Switch. Alternate through all ATS, no annual requirement
- Record time delay on start
- Record time to transfer power
- Transfer all ATSs
- Record AC voltage, Frequency, amperage/kilowatts
- Record initial oil pressure and battery-charging rate
- Record oil pressure, battery charging rate and water or air temperature after 15 minutes running time
- Return test switch to terminate 30 minute run time
- Record prime mover and AC instruments just before transfer back
- Record time delay on retransfer
- Record time delay on shutdown, cool down period
- Place unit back into automatic mode

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Monthly Generator Test

- Use clock time for duration - >35 minutes
- Record engine time
- Cold Start
  - Record time to transfer
  - Paralleling and Closed Transition
- 30-minute run time @ >30%
- 5-minute cool down time – Document

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NFPA 110(2010) 8.3.8 - Fuel Testing

- Annual
- Document ATSM test used
- Pass/Fail

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Medical Gas

- How often is it assessed – In writing
- Tested to NFPA 99(2012)
- Inventory
- Handling of deficiencies
- Bulk tank inspection

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Medical Gas Piping

- How are Breaches handled
  - Job order
  - Copy of med gas installer license
  - Certification of work
  - Certification
  - Credentials of person certifying

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Med Gas Signs

- <300CF
  - Oxygen and/or Medical Air: “Medical Gases: NO Smoking or Open Flame”
  - Other Gases: “Positive Pressure Gases: NO Smoking or Open Flame. Room May Have Insufficient Oxygen. Open Door and Allow Room to Ventilate Before Opening.”
- >300 - <3000CF & >3000CF Med Gas Storage Room:
  - "CAUTION: OXIDIZING GAS(ES) STORED WITHIN. NO SMOKING.”
  - Use “Other Gas” sign if other gases present
- Bulk Oxygen:
  - “OXYGEN – NO SMOKING – NO OPEN FLAMES.”

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Life Safety

- Who is responsible
- Time frames for LS facility inspection
- Life Safety Plans for walking
  - 10 elements
  - Smoke compartment SF
  - Suites
    - Use (Sleeping / Treatment / Business)
    - SF
    - Number of Exits
- Recent Inspections for Life Safety

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Building Type

- Required BBI info
  - Know where the boundaries are
- Exposed structural Steel
- Older buildings that used hard ceiling for fire protection.
  - How is this remediated?

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ILSMs

- Policy/Procedure
- Address LS.01.02.01.EP2-15
- Construction:
  - Address and Post
  - Multiple “Phases” OK
- Maintenance Activity:
  - Assess for ILSM measures
  - If required, record of how accomplished

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Questions?

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Those UNUSUAL Findings

Is that really in the Code?

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Spare Sprinkler Heads – Coming Soon

- LS.02.01.35.EP7 - At least six spare sprinkler heads of each type and temperature rating installed in the facility are readily available, with the associated wrench or tool to replace the sprinkler head. The spare sprinkler heads and wrench or tool are stored in a cabinet that does not exceed 100°F.
- **NFPA 13(2010) 6.2.9.5** The stock of spare sprinklers shall include all types and ratings installed and shall be as follows:
  - (1) For protected facilities having under 300 sprinklers—no fewer than six sprinklers
  - (2) For protected facilities having 300 to 1000 sprinklers — no fewer than 12 sprinklers
  - (3) For protected facilities having over 1000 sprinklers — no fewer than 24 sprinklers

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Sprinkler Head Inventory

- **NFPA 13(2010) 6.2.9.7** A list of the sprinklers installed in the property shall be posted in the sprinkler cabinet.
- **6.2.9.7.1*** The list shall include the following:
  - (1) Sprinkler Identification Number (SIN) if equipped; or the manufacturer, model, orifice, deflector type, thermal sensitivity, and pressure rating
  - (2) General description
  - (3) Quantity of each type to be contained in the cabinet
  - (4) Issue or revision date of the list

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Sprinkler Discharge Obstructions

- NFPA 13(2010)

Table 8.6.5.1.2 Positioning of Sprinklers to Avoid Obstructions to Discharge [Standard Spray Upright/Standard Spray Pendent (SSU/SSP)]

Distance from Sprinklers to Side of Obstruction *(A)*	Maximum Allowable Distance of Deflector Above Bottom of Obstruction (in.) *(B)*
Less than 1 ft	0
1 ft to less than 1 ft 6 in.	2½
1 ft 6 in. to less than 2 ft	3½
2 ft to less than 2 ft 6 in.	5½
2 ft 6 in. to less than 3 ft	7½
3 ft to less than 3 ft 6 in.	9½
3 ft 6 in. to less than 4 ft	12
4 ft to less than 4 ft 6 in.	14
4 ft 6 in. to less than 5 ft	16½
5 ft to less than 5 ft 6 in.	18
5 ft 6 in. to less than 6 ft	20
6 ft to less than 6 ft 6 in.	24
6 ft 6 in. to less than 7 ft	30
7 ft to less than 7 ft 6 in.	35

For SI units, 1 in. = 25.4 mm; 1 ft = 0.3048 m.
Note: For *A* and *B*, refer to Figure 8.6.5.1.2(a).

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Obstruction Positioning dimension calculation

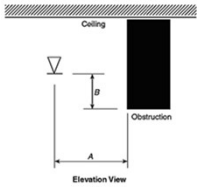

FIGURE 8.6.5.1.2(a) Positioning of Sprinklers to Avoid Obstructions to Discharge (SSU/SSP).

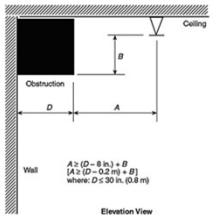

FIGURE 8.6.5.1.2(b) Obstructions Against Walls (SSU/SSP).

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Maintenance Free Batteries

- NFPA 110(2010) 8.3.7.1 and ask for conductance testing.
- 8.3.7* Storage batteries, including electrolyte levels or battery voltage, used in connection with systems shall be inspected weekly and maintained in full compliance with manufacturer's specifications.
- A.8.3.7 A battery load test should be performed quarterly.
- 8.3.7.1 Maintenance of lead-acid batteries shall include the monthly testing and recording of electrolyte specific gravity. Battery conductance testing shall be permitted in lieu of the testing of specific gravity when applicable or warranted.

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Kitchen: Equipment

- Is the kitchen in good repair? e.g. lack of broken floor tiles, delamination, flaking walls, etc.
- Kitchen equipment; is it in safe operating condition? If there is an issue, does the staff have a plan to address it? Manufacturer's recommended periodic maintenance schedule or an acceptable Alternate Equipment Management (AEM) program should be followed. EC.02.06.01 EP26
- Is the area free of any signs of pests? If there are pests, has the organization taken steps to address the issue? EC.02.06.01 EP20
- Is garbage/refuse properly disposed of? EC.02.02.01 EP19
- Is the locking mechanism on the door in proper working condition? EC.02.06.01 EP26
- Are hand washing facilities separate from ones used for food prep? EC.02.06.01 EP1
- Are the gaskets intact for kitchen entry/delivery doors to prevent entry from pests? EC.02.06.01 EP1
- Are sewage/pipelines free from signs of water damage? EC 02.06.01 EP 1

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Kitchen: Temperatures - Cooling Equipment

- Refrigerator temps: have they been monitored? PC.02.02.03 EP11
- Are frequency of temp checks & limits (41º or lower) maintained as per policy? PC.02.02.03 EP11
- Is there a process if the temp is inadequate? If possible, PC.02.02.03 EP11 validate the process was followed.

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Kitchen: Dishwasher

- Evaluate dishwasher temps/chemical monitoring processes IC.02.01.01 EP 1
- Review temp logs – did staff maintain logs for each service? Is the process for monitoring temps sufficient? Temps are usually logged at start, midpoint & end if meal service is extended.

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Kitchen: Eye Wash

- Eyewash/shower station; if required, is it in good working order & located away from hazards? EC.02.02.01 EP5
- Assess adequacy of eyewash station, PPE usage, SDS, staff knowledge, etc.
- Can staff access eyewash station within 10 seconds of hazardous material storage/usage area? EC 02.02.01 EP5
- Has the eyewash inspection log been kept up to date? EC 02.02.01 EP5
- Advanced: Conduct HAZMAT tracer for corrosive lime-away used for decalcifying automated dishwashers.

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Kitchen: Gas Cylinders

- Soda fountain machine; is the CO2 secured? EC 02.06.01 EP 1
- Compressed gas cylinders; are they properly secured? NFPA 99-2012 11.3; 11.6.2.3 EC.02.05.09 EP12

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Kitchen: Fire Suppression

- Do sprinkler heads have adequate 18" clearance? Ensure racks perpendicular to walls do not encroach 18" open space for sprinklers. NFPA 101-2012: 18.3.5.1; 19.3.5.3; 9.7.1.1; NFPA 13-2010: 8.5.5.2; 8.5.5.2.1; 8.5.5.3 LS.02.01.35 EP6
- Evaluate sprinkler head obstructions in BOTH refrigerators & freezers. Be wary of surface mounted fluorescent light fixtures close to sprinkler heads as this does not follow the 18" rule. Refer to attachment for specific criteria.
- K fire extinguisher placard identifying need to activate the fixed suppression (Ansul) system before using the extinguisher? NFPA 96-2011 10.2.2 LS.02.01.35 EP11
- Suppression system; does staff know how to use it? Instructions for manual operations should be conspicuously posted & reviewed by staff. NFPA 96-2011 11.1.4 EC.03.01.01 EP1

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Natural gas; does the organization use this?

- Is a gas valve accessible for emergency shutoff & do staff know its location/operation? EC.02.05.05 EP6/ EC 03.01.01 EP2
- Is emergency shutoff valve properly labeled? EC.02.05.01 EP9
- Is the hood clean with no grease buildup? NFPA 96-2011 11.6.2 LS.2.01.30 EP26
- Are the steel filter baffles all installed with no gaps & are they in the proper direction? NFPA 96-2011 6.2.3.1; 6.2.3.5 LS.2.01.35 EP14
- Is grease producing equipment located properly under the hood? NFPA 96-2011 5.2 LS.2.01.35 EP14

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Kitchen: Natural Gas

- **Gas equipment requiring a fire extinguishing system** shall not be operated unless under fire suppression system and correctly positioned. NFPA 96(2011) 12.1.2.3
- **NFPA 96(2011) 12.1.2.3.1** An approved method shall be provided that will ensure that the appliance is returned to an approved design location.
- **National Fuel Gas Code NFPA 54(2012) 9.6.1.2 Restraint.** Movement of appliances with casters shall be limited by a **restraining device** installed in accordance with the connector and appliance manufacturer's installation instructions.

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Kitchen: Cooking Equipment

- Are extinguishing heads pointed properly toward the cooking surface? LS 02.01.35 EP 14
- Deep fat fryer; is there a K fire extinguisher within 30'? NFPA 96–2011 10.10.1; NFPA 10–2010, 6.6.1; 6.6.2 LS.02.01.35 EP11
- Deep fat fryer; is it installed with at least a 16" space between the fryer & surface flames from adjacent cooking equipment? NFPA 96–2011 12.1.2.4 LS.02.01.30 EP26
  - 12.1.2.5 Permits 8" stainless steel or ceramic baffle 8" above the highest piece of equipment to be equivalent to 16" distance.

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Electrical Panels & Kitchen FRP

- Electrical panels; are they clear from obstruction? There should be 36" EC.02.05.05 EP6
- Fire Evacuation & Relocation Plan; is the staff knowledgeable? NFPA 101-2012: 18/19.7.1; 7.2 EC.03.01.01 EP2

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Questions?

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Business Occupancy

- December 18, 2020
- Business Standards for:
  - Healthcare
  - Critical Access Hospitals
  - Behavioral Health Care
- Effective July 1, 2021
- LS.05 series of Standards

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LS.05.01.10 - Maintenance of Fire Protection Features

- EP1 – Incorporate NFPA 101(2012) Chapter 38, 39 and 43
- EP2 – 2hr Fire Protection from parking structures
- EP3 – Fire barrier door ratings
- EP4 – Vertical opening fire protection ratings
- EP5 – Penetrations protected by appropriate fire rated materials
- EP6 – Door covering prohibition
- EP7 – Compliance with NFPA 101(2012) 38/39.1

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LS.05.01.20 – Integrity of means of egress

- EP1 – Open stair permitted as egress if only 1 floor down
- EP2 - >50 occupancy, corridors ≥44" wide
- EP3 – Dead-end corridors; fully sprinkled, <50', not fully sprinkled, <20'
- EP4 – Travel to exit; sprinkled - <300', unsprinkled - <200'.
- EP5 – Means of egress, continuously illuminated while occupied
- EP6 – Existing: Emergency powered lighting required: ≥3 stories in height or >100 occupants above or below level of exit discharge or >1000 occupants

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LS.05.01.20 – Integrity of means of egress

- EP7 – New: Emergency powered lighting required: ≥3 stories in height or >100 occupants above or below level of exit discharge or >1000 occupants
- EP8 – Doors in means of egress, unlocked. Permitted NFPA 101 delayed egress locking and access-controlled egress locking arrangements
- EP9 – Meets NFPA 101(2012) 38/39.2

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LS.05.01.30 – Protection for hazards of Fire and Smoke

- EP1 – Hazard Area protection
- EP2 - Interior walls and finishes: Exits Class A or B; others Class A, B, or C
- EP3 – ABHR
- EP4 – Meets NFPA 101(2012) 38/39.3

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ABHR Refresh

- **Corridor clear width of 44 inches is not compromised by dispenser**
- **ABHR does not exceed 95% alcohol**
- **Maximum individual dispenser capacity is 0.32 gallon of fluid (0.53 gallon in suites or rooms separated from corridors) or 18 ounces of NFPA Level 1–classified aerosols**
- **Dispensers have a minimum of four feet of horizontal spacing between them**
- **Dispensers are not installed within one inch of an ignition source**
- **If floor is carpeted, the building is fully sprinkler protected**
- **Operation of the dispensers must comply with the manufacturers' instructions for use**
- **ABHR is protected against inappropriate access**
- **Not more than an aggregate of 10 gallons of fluid or 135 ounces of aerosol are used in a single smoke compartment outside a storage cabinet, excluding one individual dispenser per room**
- **Storing more than five gallons of fluid in a single smoke compartment complies with NFPA 30**

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LS.05.01.34 – Fire Alarm System

- EP1 – Existing: Fire alarm system required: ≥3 stories above or below level of exit discharge (LED) or ≥100 occupants above or below LED or ≥1000 occupants. Activation by manual, sprinkler system or smoke detection. General alarm activation or voice annunciation. Fail safe system for notifying emergency forces.
- EP2 – New: Ditto except voice annunciation exception for existing.
- EP3 – Meets NFPA 101(2012) 38/39.4

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LS.05.01.35 – Maintains Equipment for Extinguishing Fires

- EP1 – New: Emergency Response Notification: Fire Department and Local Emergency Organization
- EP2 – Existing: Emergency forces notification per NFPA 101(2012) 9.6.4
- EP3 – Fire extinguisher travel distance ≤75' mounted ≤60" above floor and ≥4" above floor
- EP4 – Sprinklers are not damaged
- EP5 - ≥18" below sprinkler
- EP6 – Meets NFPA 101(2012) 38/39.5

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Questions ?

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Life Safety Assessment Findings

- Deficiencies identified during Life Safety Assessment
- Contain both LS and EC issues

16 Hospitals
2458 Findings

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#10 – Storage (2%)

- Improper storage
  - No solid bottom shelf
- Supplies stored on floor
- Filters stored on floor
- Supplies stored under sinks
- Cardboard boxes in clean areas
- Flammables

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#9 – Pressure Relationships (2%)

- OR Rooms*
- OR Stairs
- Soiled Utility Rooms*
- Clean Utility Rooms*
- Decontamination Rooms*
- Interventional Radiology Clean Rooms
- Temperature and Humidity
- Daily logs
- 20%-60% or 30%-60%
- Action Plan*

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#8 – Smoke Barriers (3%)

- Multiple penetrations*
  - Conduits
  - Ducts
  - Pipes
  - Wires
- Open end conduit
- Re-seal

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#7 – Fire Extinguishers (3%)

- Blocked
- Discharge hose/nozzle
- Inspection Date*
- Missing Fire Extinguisher
- Under/Over Charged

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#6 – Corridor Doors (3%)

- Not positive latching*
- Propped or wedged open
- Items in door swing

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#5 – Electrical

- 6%
  - Open junction boxes
  - Knockouts missing
- 4%
  - Use of RPTs in Non-patient care areas; Hanging / Daisy Chains
  - Extension cords
  - Portable heaters
  - Panel schedules
  - Panel open slots
  - Temporary wiring
  - Timers/motion sensor light controller in electrical room
  - Patient Care Vicinity RPT – uncontrolled*

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#4 – Fire Doors (8%)

- 8%
  - Holes in Door
  - Holes in Door Frame
  - Not automatic closing
  - No closer
  - Not latching*
- 2%
  - Improper rating
  - Missing rating

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#3 – Corridor Partitions including Ceilings (8%)

- Partitions:
  - Holes
  - Conduit
  - Open end conduit
  - Pipes
  - Wires
  - Ducts
- Ceilings:
  - Ceiling tile penetrations
  - Ceiling tiles not seated in grid
  - Ceiling tiles missing
  - Hard ceiling penetrations

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#2 – Fire Sprinkler Issues

- Supporting other stuff;
  - Wires* (9%)
  - Conduits
  - Ducts
  - Pipes
  - Ceiling grid
- Escutcheons (2%)
- Dust, debris, paint

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#1 – Fire Barriers (13%)

- 13%
  - Multiple penetrations
  - Conduit, duct, pipes, wires
  - Through floor penetrations
- 4%
  - Drywall
  - Non-rated materials
  - Seal to Deck
  - Holes
  - Mixed fire caulk
  - Reseal
  - Blowout patches

79

(Un)honorable Mention

- ABHR
- Corridor Storage*
- Cylinder Storage*
- Stair Storage
- Inaccessible: Fire Extinguisher, medical gas shutoffs*, electrical panels*, manual pull stations
- Signs on fire doors
- Medical Gas storage signs*, piping issues
- Kitchen grease filters and equipment migration

80

Other Surveyor Cited Findings

- Patient treatment open to corridor
- Life Safety Plans not accurate
- Rust
- Tears in cushions
- Emergency Nurse Call cords >6" above floor
- Blanket warmer temps
- All ATSs operated – FP?
- Inventories
- Fuel tests for generator
- Eye Wash stations
  - Formalin handling
  - Dishwasher area
  - Power plant chemical treatment area
  - Lab, Histology

81

Questions?

82

Door Locking Arrangements

83

3 ways to lock doors in egress by 7.2.1.6

- Special Locking Arrangements 7.2.1.6
  - #1-Delayed Egress
  - #2-Access Control
  - #3-Elevator Lobby Exit Access Door Assembly Locking

84

Delayed Egress 7.2.1.61.1

- Low/Ordinary Hazard
- Approved/Listed Delayed Egress Locks Provided
- In Buildings Protected Throughout by Approved/Supervised Fire Detection System in accordance with 9.6 OR Approved /Supervised Automatic Sprinkler System in accordance with 9.7

85

Delayed Egress 7.2.1.61.1

Where permitted in chapters 11 thru 43, provided that ALL of the following criteria are met:

86

Delayed Egress 7.2.1.6.1.1

- Leaves unlock in the direction of egress upon activation of AASS, OR not more than 1 heat detector, OR not more than 2 smoke detectors;
- Leaves unlock in the direction of egress upon loss of power controlling the lock or mechanism;

87

Delayed Egress 7.2.1.6.1.1

- Irreversible process releases lock within 15 seconds (or 30 with AHJ approval) when <=15lbs force applied for <=3 seconds
- Initiation process activates an audible signal in vicinity of door opening
- Relocking by manual means only

88

Delayed Egress 7.2.1.6.1.1

- On the door leaf (next to the releasing device) a sign

PUSH UNTIL ALARM SOUNDS
DOOR CAN BE OPENED IN 15 SECONDS

- Letters are 1" high and 1/8" stroke

89

Delayed Egress 7.2.1.6.1.1

Egress side of doors equipped with delayed egress shall be provided with emergency lighting

Allowed in HC, AMB, Lodging, Hotels, and Business

90

Access Control 7.2.1.6.2

- Where permitted in Chapters 11 through 43, door assemblies in the means of egress shall be permitted to be equipped with electrical lock hardware that prevents egress, provided that all of the following criteria are met:

91

Access Control 7.2.1.6.2

- A sensor shall be provided on the egress side, arranged to unlock the door leaf in the direction of egress upon detection of an approaching occupant.

92

Access Control 7.2.1.6.2

- Door leaves shall automatically unlock in the direction of egress upon loss of power to the sensor or to the part of the access control system that locks the door leaves.

93

Access Control 7.2.1.6.2

- Door locks shall be arranged to unlock in the direction of egress from a manual release device complying with all of the following criteria:
  - (a) The manual release device shall be located on the egress side, 40 in. to 48 in. (1015 mm to 1220 mm) vertically above the floor, and within 60 in. (1525 mm) of the secured door openings.

94

Access Control 7.2.1.6.2

- The manual release device shall be readily accessible and clearly identified by a sign that reads as follows:

PUSH TO EXIT.

95

It is just a code……

96

Access Control 7.2.1.6.2

- When operated, the manual release device shall result in direct interruption of power to the lock independent of the locking system electronics and the lock shall remain unlocked for not less than 30 seconds.

97

Access Control 7.2.1.6.2

- Activation of the building fire protective signaling system, if provided, shall automatically unlock the door leaves in the direction of egress, and the door leaves shall remain unlocked until the fire protective signaling system has been manually reset.

98

Access Control 7.2.1.6.2

- The activation of manual fire alarm boxes that activate the building fire protective signaling system specified in 7.2.1.6.2(4) shall not be required to unlock the door leaves.

99

Access Control 7.2.1.6.2

- Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the door leaves in the direction of egress, and the door leaves shall remain unlocked until the fire protective signaling system has been manually reset.

100

Access Control 7.2.1.6.2

- The egress side of access-controlled egress doors, other than existing access-controlled egress doors, shall be provided with emergency lighting in accordance with Section 7.9.

Allowed in HC, AMB, Lodging, Hotels, and Business

101

19.2.2.2.5

- **19.2.2.2.5 Door-locking arrangements shall be permitted in** accordance with either 19.2.2.2.5.1 or 19.2.2.2.5.2.

102

19.2.2.5.1

- **19.2.2.2.5.1* Door-locking arrangements shall be permitted** where the clinical needs of patients require specialized security measures or where patients pose a security threat, provided that staff can readily unlock doors at all times in accordance with 19.2.2.2.6.

103

19.2.2.2.5.2

- **19.2.2.2.5.2* Door-locking arrangements shall be permitted** where patient special needs require specialized protective measures for their safety, provided that all of the following are met:

104

19.2.2.2.5.2

- Staff can readily unlock doors at all times in accordance with 19.2.2.2.6.
- A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space.

105

19.2.2.2.5.2

- The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.1.

  (May get AHJ approval for less than “fully sprinkled” in existing)

106

19.2.2.2.5.2

- The locks are electrical locks that fail safely so as to release upon loss of power to the device.

107

19.2.2.2.5.2

- The locks release by independent activation of each of the following:
  - (a) Activation of the smoke detection system required by 19.2.2.2.5.2(2)
  - (b) Water flow in the automatic sprinkler system required by 19.2.2.2.5.2(3)

108

19.2.2.2.6

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

109

19.2.2.2.6(1) BHU

- Provisions shall be made for the rapid removal of occupants by means of **one** of the following:
  - (a) Remote control of locks
  - (b) Keying of all locks to keys carried by staff at all times
  - (c) Other such reliable means available to the staff at all times

110

19.2.2.2.6(2) & (3) BHU

- Only one locking device shall be permitted on each door.
- More than one lock shall be permitted on each door, subject to approval of the authority having jurisdiction.

111

Questions?

112

Summary

- Preparing for successful Accreditation Survey
- Paperwork
- Unusual Findings
- Business Occupancies
- LSA Findings
- Door locking arrangements

113

THANK YOU

ALABAMA SOCIETY FOR HEALTHCARE ENGINEERING

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