Compliance with the 2012 Life Safety Code®

Implications of the 2012 “NFPA Code Set” for Existing ASCs

William E. Lindeman, AIA
http://www.WELdesigns.com
Financial Interest Disclosure

- The presenter provides Health Care Facility consulting services, related to assessment of regulatory compliance & facility design/planning/construction
- He is on retainer with the Accreditation Association for Ambulatory Health Care as their physical environment consultant
- He developed and maintains the AAAHC’s PEC & Life Safety Code Surveyor Reference documents
REALLY IMPORTANT NOTE!!

- This presentation addresses the most significant changes in ASC physical environment requirements brought on by the CMS adoption of the 2012 NFPA 101 & 99 – it is not a comprehensive review of all applicable requirements.

- The majority of NFPA requirements, that have not significantly changed, are still fundamental to CMS compliance.
CMS adoption of 2012 editions of NFPA® 101® & NFPA® 99

- Federal Register / Vol. 81, No. 86 / May 4, 2016
- Effective July 5, 2016 -- first applied to surveys the following November.
- Defined the distinction between New & Existing ASCs as being the construction start date of the building &/or ASC. Any ASC for which pertinent construction permits were approved -&/or-started construction before July 5, 2016 are considered to be “Existing” for the purposes of CMS compliance.
2012 NFPA 101/99

How NFPA documents “work”

- By adopting the 2012 editions of NFPA 101® & 99 CMS brought with them all “contemporary editions” of other NFPA codes and standards referenced within. Such as the “CMS-current” 2012 ed. of NFPA 101 & 99, are contemporary to the 2011 NFPA 70, the 2010 NFPA 110, etc.

- All together, conveniently described as “the 2012 NFPA Code Set”
2012 NFPA 101/99
How NFPA documents “work”

- The CMS 2012 NFPA “Code Set” involves 4 Codes and a more than a dozen Standards; those most prominent in defining compliance for ASCs include:
  - NFPA 99, Health Care Facilities Code (including ASHRAE 170 for new construction)
  - NFPA 70®, National Electrical Code®
  - NFPA 72®, National Fire Alarm Code
  - NFPA 25, Standard for ITM of sprinkler systems
Existing Facility Changes
Design & Construction

- Approved Supervised Automatic Sprinkler System requirements have always been driven by NFPA 13. Now NFPA 101 upped the ante with a requirement that all supervision must be electrical -- as opposed to supervision of the water supply by securing valves in the open position with chains and locks (as still permitted by NFPA 13) -- and could extend beyond monitoring the reliability of the water supply.
Existing Facility Changes
Design & Construction

Construction & Overall Fire Protection

- Building construction requirements have not changed, relative to protecting a single story Vs. a multi-story building that houses an ASC.

- The NFPA 101 definition of what determines the number of stories in a building has changed, such that some previous one story buildings with a basement now qualify as multi-story buildings -- requiring better fire protection throughout.
Existing Facility Changes
Design & Construction

Exiting/Egress

- Existing egress that passes through intervening rooms require new exit signs and doors with minimum 32 inch clearance when open 90°
- No portion of exit egress is permitted through a hazardous area, storeroom, workroom, kitchen, or toilet room
Existing Facility Changes
Design & Construction

- Hazardous area protection
  - Doors to storage locations with flammable, or otherwise hazardous, contents require automatic closing or self closing doors – CMS is allowing existing ASCs to reach compliance before July 5, 2017.
Existing Facility Changes
Design & Construction

New (additional?) medical gas signs:

Medical Gases
NO Smoking or Open Flame

Positive Pressure Gases
NO Smoking or Open Flame
Room May Have Insufficient Oxygen
Open Door and Allow Room to Ventilate Before Entering
Existing Facility Changes
Design & Construction

- Electrical System
  - Receptacles in pediatric care spaces or where pediatric patients may access them are listed as tamper-resistant or provided with a listed tamper-resistant cover
  - Wet area risk assessment required in all facilities.
Existing Facility Changes
Design & Construction

- Electrical System
  - Patient care electrical receptacles in areas of changed use/classification must be hospital grade.
  - New electrical receptacles in patient care areas must be hospital grade.
  - Existing electrical receptacles requiring maintenance or replacement must be replaced with hospital grade receptacles.
Existing Facility Changes
Inspection, Testing & Maintenance

- Fire Protection Systems
  - When fire alarm system is out of service for more than 4 hours in a 24 hour period, the local AHJ is notified and the building is either evacuated or placed under a fire watch
  - When the fire sprinkler system is impaired or is anticipated to be impaired for more than 10 hours, in any given 24 hour period, a designated Impairment Coordinator must initiate one of three responses.
Existing Facility Changes
Inspection, Testing & Maintenance

- Impaired Fire Sprinkler Systems
  - Evacuate entire building -OR-
  - Establish fire watch: notify all building occupants, mitigate risks that could start or worsen a fire, extinguish small fires, and insure integrity of life safety design and systems -OR-
  - Establish a temporary supply of water for the sprinkler system.
Existing Facility Changes
Inspection, Testing & Maintenance

- Hazardous area protection
  - ABHR considerations now part of NFPA 101, and slightly less restrictive than prior CMS requirements...
  - ABHR now allowed to include aerosol dispensers up to 18 oz.
  - Total allowed quantity of ABHR fluids now exclude one dispenser per room where installed
Existing Facility Changes
Inspection, Testing & Maintenance

- ABHR dispensers
  - Do not release contents without purposeful activation
  - Touch free models require activation within 4 inches of sensing device
  - Touch free activation releases only enough solution for proper hand sanitation regardless of time object is in activation zone
  - Dispensers designed to avoid accidental or malicious activation
Existing Facility Changes
Inspection, Testing & Maintenance

- Piped Medical Gas & EES System ITM requirements based on 4 categories of Risk; but definitions and appendix examples effectively limit ASCs to Category 1 or 2 piped medical gas systems, and Type 1 or 2 EES.
Existing Facility Changes
Inspection, Testing & Maintenance

- Medical gases:
  - Required detail of Med Gas system ITM determined by its Category Classification
  - Routine maintenance programs developed (i.e., written and followed) for each/all piped gas and vacuum systems and/or system components
Existing Facility Changes
Inspection, Testing & Maintenance

- Category 2 Medical gas systems:
  - The facility has an emergency plan for loss of Medical Air
  - The facility has an emergency plan for loss of medical-surgical vacuum
  - The facility has an emergency plan for loss of WAGD
Existing Facility Changes

Inspection, Testing & Maintenance

- **Electrical System**
  - Requirements for plug strip use now part of NFPA 99 – less restrictive than the CMS categorical waiver (no UL rating requirements); but CMS’s position related to that is as yet unknown
  - ASC sets and follows policies for routine testing and maintenance of patient care electrical equipment. Required at minimum when new & after maintenance
Existing Facility Changes

Inspection, Testing & Maintenance

- Electrical System
  - New patient care receptacle testing now addresses pull-retention force of the grounding blade alone
  - Generator set engine jackets heated as specified by the manufacturer
  - Annual load bank of diesel generators, when required, is for 90 minutes
  - Generator sets tested for full duration or 4 hours, whichever is less, every 36 months.
Existing Facility Changes
Inspection, Testing & Maintenance

- Electrical System
  - Some types of sealed batteries now permitted for generator sets; but require supplemental testing
  - Specific testing and maintenance parameters for main and feeder circuit breakers, main feed insulation resistance, generator set starting batteries, and minimum documentation thereof
Existing Facility Changes
Inspection, Testing & Maintenance

- Interior finishes
  - The total combined area of bulletin boards, posters, and paper attached to walls does not exceed 20% of the wall surface they are attached to.
Existing Facility Changes
Inspection, Testing & Maintenance

- Fire Alarm Systems
  - Records of completion for all fire alarm systems are continuously updated to reflect changes to system over time
Existing Facility Changes
Inspection, Testing & Maintenance

Fire Alarm Systems

- Allowances for automated testing of fire alarm system
- **Maintenance** is performed in accordance with manufacturer’s recommendations
- Documentation (paper or electronic) of inspection testing & maintenance are retained for at least one year following the next periodic ITM activity
Existing Facility Changes
Inspection, Testing & Maintenance

- Smoke & Fire Separation
  - Sealing of new penetrations in fire-rated surfaces must utilize a firestop system or device tested in accordance with ASTM 814 or ANSI/UL 1479, with some exceptions that are little if any better.
Existing Facility Changes
Inspection, Testing & Maintenance

- Portable Fire Extinguishers
  - Allowances for specific water-type extinguishers to substitute for 2-A or 4-A types
  - 10/20-B rated extinguishers required within a 30/50 foot travel distance of any point in a room or area (i.e., smoke compartment) containing more than 5 gals of flammable liquids.
  - Must be located along normal paths of travel
Existing Facility Changes
Inspection, Testing & Maintenance

- Portable Fire Extinguishers
  - Allowances for electronic monitoring for monthly inspection
  - Any extinguisher removed from use for service or maintenance are immediately replaced with a like-rated unit for the duration of the service/maintenance
  - Hydrostatic testing of rechargeable extinguishers on 5-12 year interval as applicable to the specific type
Existing Facility Changes
Inspection, Testing & Maintenance

- Building Services
  - Smoke & fire dampers inspected and tested after installation, after 1 year & every 4 years thereafter

- Furnishings and Decorations
  - Mobile trash and soiled linen collection carts > 32 gal. are never left unattended outside of rooms protected as hazardous areas
Optional/Maintenance Upgrades
Design & Construction per “new”

- NFPA 101 requires both vertical & horizontal fire separations for ASCs inside new and/or existing buildings.
- Minimum required separation of 1 to 2 hours, depending on presence of sprinkler systems and the type of adjacent occupancies.
- Fire separations require rated assemblies...
Optional/Maintenance Upgrades
Design & Construction per “new”

- Tactile Signs at new exit access doors as follows:
  - Tactile signage stating “EXIT” located at each new exit door requiring an illuminated exit sign.
  - Includes sans serif letters raised $\frac{1}{32}$” minimum, $\frac{1}{2}$ to 2 inches high, & duplicated in braille
  - Mounted 60” above floor on latch side of door
Optional/Maintenance Upgrades
Design & Construction per “new”

- NFPA 99 adopts the 2008 ANSI/ASHE/ASHRAE 170
  - Applies to the construction of altered, renovated, or modernized portions of existing systems or individual components.
  - Space ventilation and pressure relationship requirements maintained even in the event of loss of normal electrical power to new Operating rooms
Optional/Maintenance Upgrades
Design & Construction per “new”

- ANSI/ASHE/ASHRAE 170 continued . . .
  - Multiple heat sources so that failure of any unit does not reduce heating capability (space, water, etc.)
  - Design, materials and construction of HVAC system
  - Air filtration requirements by type of space
  - Air change, fresh air, and exhaust by types of space
Optional/Maintenance Upgrades
Design & Construction per “new”

- ANSI/ASHE/ASHRAE 170 continued . . .
  - Pressure relationships for a wide variety of “less clean” to “more clean” spaces
  - Required temperature & humidity range (max/min) requirements for a variety of space types
  - Location of air supply relative to O.R. table
  - Filtration requirements by type of space
Optional/Maintenance Upgrades

Design & Construction per “new”

- ANSI/ASHE/ASHRAE 170 continued . . .
  - Air change, fresh air, and exhaust by types of space
  - Pressure relationships for a wide variety of “less clean” to “more clean” spaces
  - Required temperature & humidity range (max/min) requirements for a variety of space types
  - Location of air supply relative to O.R. table
Optional/Maintenance Upgrades
Design & Construction per “new”

- Piped Medical Gas System requirements based on 4 categories if Risk; but definitions and appendix examples effectively limit ASCs to Category 1 or 2 piped medical gas systems

- Difference between Category 1 & 2 piped gas systems similar to that between Levels 1 & 2 in 2000 code set; i.e. the alarm system requirements
Optional/Maintenance Upgrades

Design & Construction per “new”

- Piped Medical Gas System requirements
  - Proscriptive requirements for design & installation of patient gases AND support gases
  - All Category 1 sources are duplexed or greater
  - Category 2 manifold supplies are duplexed or greater
  - New outlets/inlets could require a separate system if existing system cannot be upgraded.
Optional/Maintenance Upgrades Design & Construction per “new”

- Piped Medical Gas System requirements
  - Expanded alarm system monitoring and panel display requirements
  - “Local” alarms required at exterior medical gas manifold sources, and interior reserves for them
  - “Local” alarms required at all motor driven sources of gas of vacuum
Optional/Maintenance Upgrades
Design & Construction per “new”

- Essential Electrical System (EES) requirements based on 4 categories if Risk; but definitions and appendix examples effectively limit ASCs to Category 1 or 2, meaning Type 1 EES or Type 2 EES respectively.

- Type 1 almost identical to 2000 code set requirements; i.e., what hospitals had to have

- Type 2 almost identical to Type 1, except larger systems permitted to have one fewer transfer switch &/or 1 less distribution panel
Optional/Maintenance Upgrades
Design & Construction per “new”

- EES requirements . . .
  - No more Type 3 EES in new spaces
  - All new patient care electrical receptacles must be hospital grade
  - New general care areas/patient positions must have at least 8 electrical receptacles
  - New critical care areas/patient positions must have at least 14 electrical receptacles
Optional/Maintenance Upgrades
Design & Construction per “new”

- Electrical System
  - New O.R.s must have at least 36 electrical receptacles
  - New O.R.s. are wet areas unless ASC demonstrates otherwise through qualified risk assessment
  - New circuit breaker cabinets not located in public access areas
  - New optional loads on an EES require a separate & subservient transfer switch
Optional/Maintenance Upgrades
Design & Construction per “new”

Electrical System

- Self-contained battery-powered emergency lights required where deep sedation or general anesthesia used, at new transfer switch locations, at interior generator sets, & at central battery-source equipment locations
Optional/Maintenance Upgrades
Design & Construction per “new”

- Fire Alarm Systems
  - Documentation of new system acceptance testing on specific NFPA 72 form “FIRE ALARM AND EMERGENCY COMMUNICATION SYSTEM RECORD OF COMPLETION”
  - Remote supplementary power supplies require dual sources of power, and smoke detection if in areas not continuously staffed
IMPORTANT REMINDER!!

- This presentation addressed the most significant changes in ASC physical environment requirements brought on by the CMS adoption of the 2012 NFPA 101 & 99 – it was not a comprehensive review of all applicable requirements.

- The majority of NFPA requirements, that have not significantly changed, are still fundamental to CMS compliance.