

The MN State Fire Marshal Health Care Team Welcomes you to Boot Camp 2013



MHCEA
2013 FALL CONFERENCE
HINCKLEY, MN
SEPTEMBER 12, 2013



Today's Drill Instructors



- Gary Schroeder
- Bob Rexeisen
- Kurt Kastella
- James Anderson
- George Shellum



Today's Support Staff



- Tom Linhoff
- Kerry Queen
- Jeff Juntunen



Headquarters Support Staff



- Pat Sheehan
- Marian Whitney
- Barb Lundberg



Health Care Engineers Fire & Life Safety Boot Camp



**MINNESOTA HEALTH CARE ENGINEERS ASSOCIATION
FALL CONFERENCE
SEPTEMBER 12, 2013**

**HEALTH CARE FIRE INSPECTION TEAM
MINNESOTA STATE FIRE MARSHAL DIVISION**

WEBSITE: [HTTPS://DPS.MN.GOV/DIVISIONS/SFM/PROGRAMS-SERVICES/PAGES/HEALTH-CARE-INSPECTION.ASPX](https://dps.mn.gov/divisions/sfm/programs-services/pages/health-care-inspection.aspx)



Objective



The following presentations will review the required Life Safety Code Documentation for health care facilities



Definitions



CMS – Center for Medicare and Medicaid

MSFC – 2007 MN State Fire Code

NFPA – National Fire Protection Association



Overview



-  Life Safety Code Documentation Book – Schroeder
-  Tab 1 - Building Information – Schroeder
-  Tab 2 - Emergency Plan and In-service Records – Rexeisen
-  Tab 3 - Smoking Policy - Rexeisen
-  Tab 4 – Fire Drills – Rexeisen



Overview



- 🔥 Tab 5 -Systems Out of Service (Fire Watch) – Kastella
- 🔥 Tab 6 -Fire Alarm System/Automatic Dialer – Kastella
- 🔥 Tab 7 -Smoke Detector Sensitivity Testing – Kastella
- 🔥 Tab 8 - Battery-operated Smoke Alarm Testing - Kastella



Overview



-  Tab 9 - Fire Sprinkler System/Fire Pump – Kastella
-  Tab 10 - Kitchen Hood System – Kastella
-  Tab 11 - Portable Fire Extinguishers – Kastella
-  Tab 12 - Emergency Generator - Kastella



Overview



-  Tab 13 - Battery-operated Emergency Lights/EXIT Signs – Anderson
-  Tab 14 - Fire/Smoke Dampers – Anderson
-  Tab 15 - Interior Finishes/Decorations/ Drapes & Curtains – Anderson
-  Tab 16 – Upholstered Furniture Mattresses – Anderson



Overview



-  Tab 17 - Lab Procedures/Incidents
-  Egress / Corridors / Smoke Barriers – Schroeder
-  Wall / Ceilings / Electrical – Anderson
-  Hazardous Areas – Rexeisen
-  ABHR Fires – Shellum
-  Wrap up



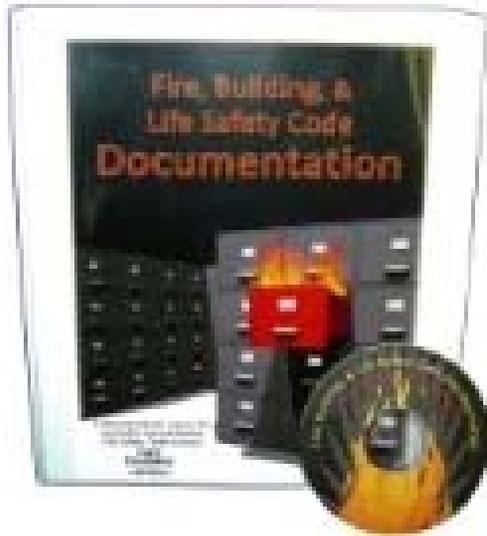
Life Safety Code Documentation Book



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Life Safety Code Documentation Book



Life Safety Code Documentation

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Aging Services of Minnesota is Minnesota's largest association of aging services organizations. Our 800+ members serve over 42,000 Minnesotans every day in settings across the continuum from their homes to congregate housing to assisted living to care centers. Aging Services members are diverse but share a common focus on person-directed living, assurance of services to their communities and choice in older adult services.

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MS-1910-010



Make sure the management staff, facility maintenance staff know where this book it kept



<http://www.health.state.mn.us/divs/fpc/engineering/lifesafetycode.html>



Life Safety Code Documentation Book



How many use the Life
Safety Documentation
Book?



Documentation



REMEMBER

If you didn't document it.

It didn't happen!



How Long Do I keep Records



-  2007 MSFC shall be maintained on the premises for a minimum of three years
-  CMS surveys, you need to have 2 years on hand
-  Then what ever your company policy is



Tab 1 - Building Information



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Tab 1 - Building Information



-  Current building floor(s) plan
-  Building year (each addition)
-  Construction type (each addition)
-  Show smoke barrier walls
-  2 hour fire rated building separations
-  1 and 2 hour fire rated stairwells



Tab 1 - Building Information

GOLDEN LIVINGCENTER - ROCHESTER EAST
501 EIGHTH AVENUE SOUTHEAST
ROCHESTER, MN 55904

Fully Sprinkled

Smoke Barrier 
Fire Separation 
Required EXIT **E**



2nd Floor

ORIGINAL
For Fire Marshal Division File



Construction Type - II (222)
Year - 1968



EMERGENCY PLANS (FIRE SAFETY PLANS)



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What is a Fire Safety Plan



- MN State Fire Code States that their purpose is to “...address the human contribution to life safety in buildings when a fire or other emergency occurs.”
- Managing Fire
- Managing Occupants



Problems with Fire Safety Plans



- Too simple
- Not covering all requirements of LSC
18/19.7.2.2
- Too complex
- Too many versions of plans



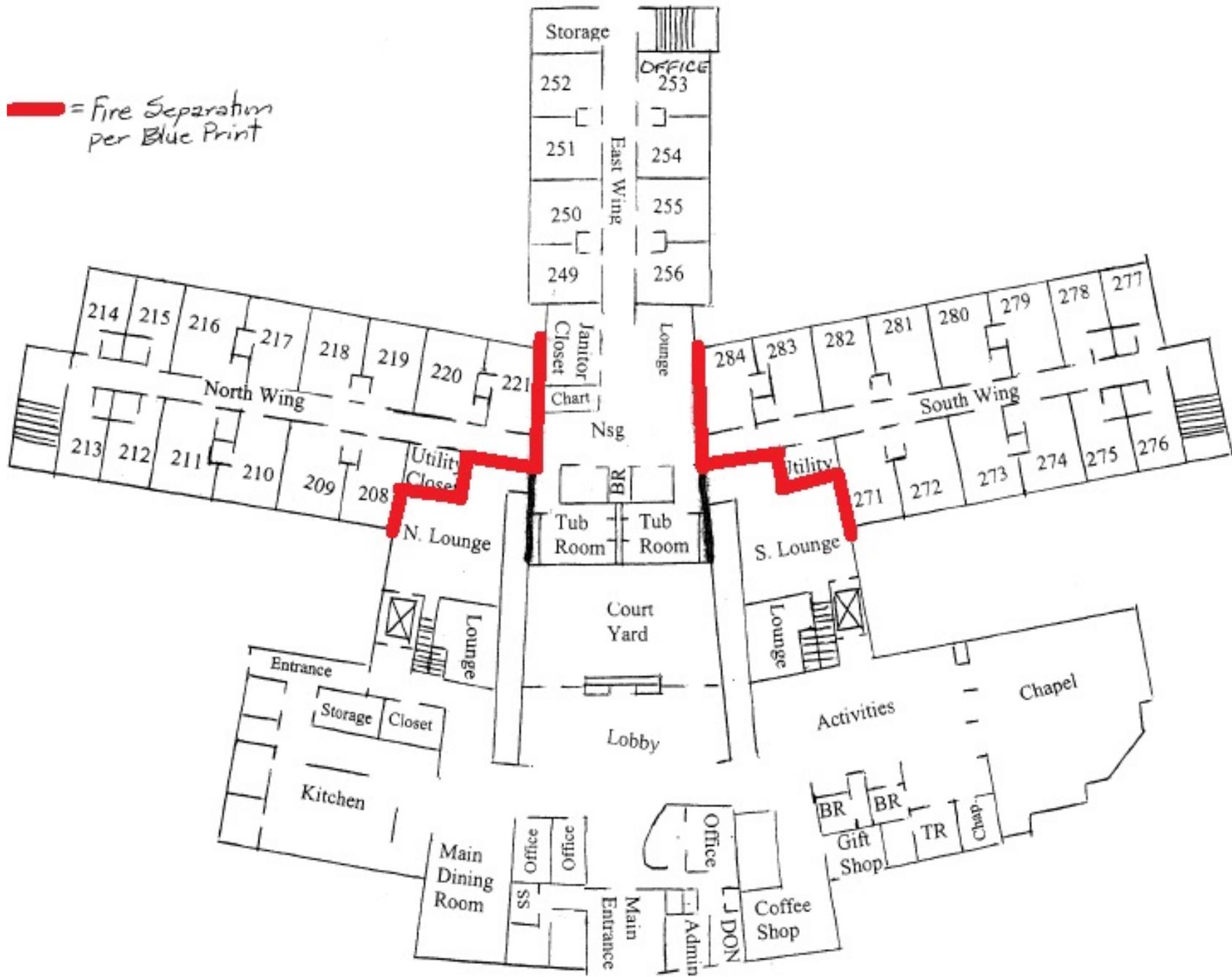
LSC 18/19.7.2.2



- Use of alarms
- Transmission of alarm to fire department
- Response to alarms
- Isolation of fire
- Evacuation of immediate area (*Then,*)
- Evacuation of *smoke compartment* (*Then,*)
- Preparation of floors and building for evacuation
- Extinguishment of fire



 = Fire Separation per Blue Print



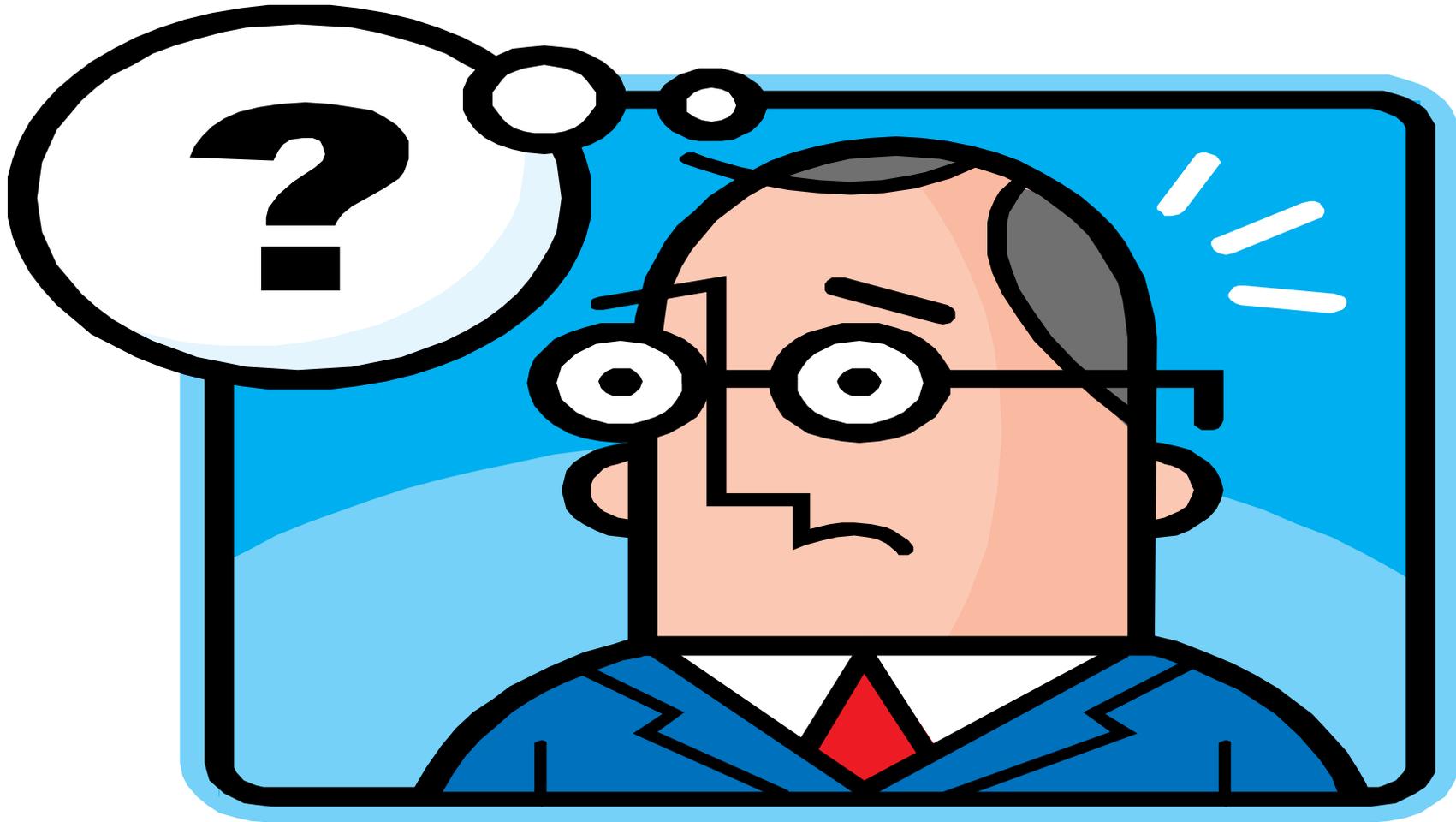
Fire Safety Plan Tips



- Make it clear (plain language)
- Don't overcomplicate
- Use established policies when applicable
- Set strategic goals
- Verify that all plans are the same (revisions)



Questions?



SMOKING POLICY



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SEPTEMBER 12, 2013



The basics...



- MSFC 310
 - Prohibited areas
 - No smoking signs
 - Ash trays
 - BURNING OBJECTS
- LSC 18/19.7.4 requires that smoking regulations shall be adopted



LSC 18/19.7.4



- Minimum requirements:
 - Prohibited areas with signage
 - Prohibited/non-responsible smokers
 - Noncombustible ashtrays
 - Metal, self-closing containers to empty ashtrays



Indoor Smoking



- MN Clean Air Act allows nursing homes to self-designate as either “smoking permitted” or “smoke-free”
- If designated smoke-free, signage on the exterior doors is permitted in lieu of signage on the resident room door



Indoor Smoking-Ventilation



- IAW MN Rule 4658.4515 and 4658.4520
 - Smoking room has negative pressure
 - Minimum of 2 outside air exchanges per hour
 - At least 10 air exchanges per hour
 - All exhaust to the exterior of the building



Indoor Smoking-Cont.



- Smoking room separated from the corridor
- Use or storage of oxygen prohibited in the smoking room
- Other considerations:
 - Fire blankets
 - Fire extinguishers
 - Housekeeping



Outdoor Smoking



- Use of oxygen prohibited
- Ashtrays and metal containers or “smoke poles”
- Enclosed shelters
 - 20 feet from building
 - Combustibility of structure
 - Housekeeping



Problems with Enforcement



- Off-grounds
- Smoking while on oxygen
- Putting cigarettes out on building near staff entrances
- Putting partially smoked cigarettes back in pack



Questions?



FIRE DRILLS



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Common complaints about fire drills



- Why are we doing these?
- They are always the same.
- If I just go through the motions, I can get back to work.
- Fire drills interrupt dining times, shift changes, my break, etc.



Why do monthly fire drills



- MN State Fire Code (paraphrased) states in part that regular fire drills test the continued viability and effectiveness of the established policies and personnel responsible for achieving objectives.



LSC 18/19.7.2.1



- Fire drills shall include:
 - Transmission of fire alarm signal (DACT testing)
 - Conducted quarterly on each shift (1 drill per shift per calendar quarter)
 - Fire drill conducted under varying conditions
 - *CMS requires varied dates and times in order to comply with K-50



LSC 18/19.7.2.1 Cont.



- Fire drills shall include:
 - Coded (silent) drills permitted between 9:00 PM and 6:00 AM
 - Simulation of emergency fire conditions





Fire Drill Report

Facility Name: _____

Address: _____

Date: _____ Time: _____ Shift: _____
(24 Hour Clock)

Person conducting the drill: _____
(Name & Title)

Fire Alarm Activation Method: _____
(Between 9:00 p.m. and 6:00 a.m.: A coded announcement can be used instead of audible alarm)

Drill location and simulated conditions: _____

(Held/bed patients shall not be required to be moved during drill MSPC 488.6.7)

Unusual Conditions: _____
(weather, remodeling, temporary exits)

Number of occupants evacuated: _____ Total Time of Drill: _____

Fire alarm system reset?: _____ Sprinkler System restored?: _____

Critique: _____

Fire alarm system tested: _____ Verified by: _____

Monitoring company received signal at: _____ Verified by: _____
(24 hour clock)



Fire Drill Tips



- Plan your annual drills in advance
- Expect drills to not occur when scheduled and adjust accordingly
- Make the drills unexpected and fun (for you)

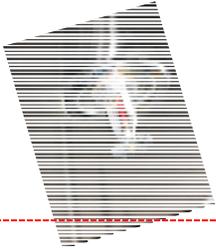


Questions?



Fire System Impairment Policy (Fire Watch)



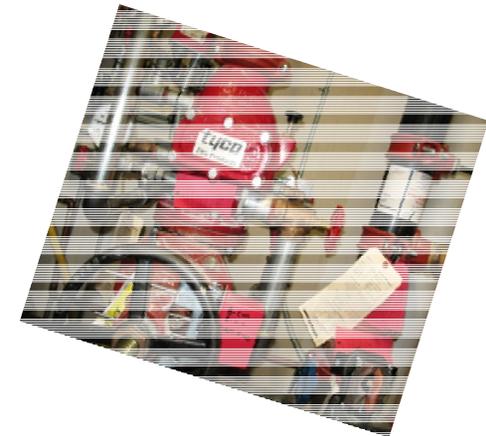


Sprinkler System Shut Down



- Automatic sprinkler system out of service for more than 4 hours in a 24-hour period
 - Notified the authority having jurisdiction
 - The building shall be evacuated OR
 - An approved fire watch shall be provided until the sprinkler system has been returned to service
 - A responsible person dedicated to the watch
 - Keep records
 - Continue until system is functional again

LSC 9.7.6 & MSFC 901.7.1



The Impaired Equipment Includes:



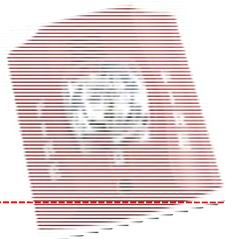
- Sprinkler systems
- Standpipe systems
- Fire hose systems
- Underground fire service mains
- Fire pumps
- Water storage tanks
- Water spray fixed systems
- Foam-water systems
- Fire service control valves



Sprinkler Impairment Procedures

- Shall comply with NFPA 25
 - The building owner assigns an impairment coordinator
 - Tag the system that has been removed from service
 - Tags shall be posted at each fire department connection and system control valve
 - The authority having jurisdiction can specify where the tags are placed





Fire Alarm System Shut Down



- Fire Alarm system is out of service for more than 4 hours in a 24-hour period
 - Notified the authority having jurisdiction
 - The building shall be evacuated **OR**
 - An approved fire watch shall be provided until the sprinkler system has been returned to service
 - A responsible person dedicated to the watch
 - Keep records
 - Continue until system is functional again

LSC 9.6.1.8 & MSFC 901.7.1



Fire Alarm Systems



Fire Alarm Systems

- A complete fire alarm system
- Initiation:
 - provides the input signal to the system
- Notification:
 - advises that human action is required in response to a particular condition
- Control:
 - outputs to control building equipment to enhance protection of life

LSC 9.6.1.9



Initiation



- Shall be by manual means and any required sprinkler system water-flow, detection devices, or detection systems



- Exception: Manual fire alarm boxes not be required at exits if:
 - Patient sleeping area
 - Located at all nurses' stations or other continuously attended location, and boxes are:
 - visible
 - continuously accessible
 - travel distances meets 9.6.2.4 (200 ft. on the same floor)



Initiation



- Manual Fire Alarm Pull Box
- Located within 5 ft. of the exit doorway opening
- Travel distance to a manual pull 200 ft on the same level
- Located at least 3 1/2 ft. and not more than 4 1/2 ft. above floor level





Detection System



- Detection systems shall be in accordance with Section 9.6 (Meet NFPA 70 & 72)
- New Nursing Homes
 - Automatic smoke detection system shall be installed in corridors throughout smoke compartments containing patient sleeping rooms and in spaces open to corridors

LSC 18.3.4.5.3



Detection System



- New and Existing
- Required where doors are held open on the fire alarm
- In areas open to the corridor and the corridor they open onto

LSC 19. 2.2.2.6 & 19. 3.6.1



Minnesota State Fire Code Initiation



- Shall be by manual and automatic means
- Automatic fire detectors shall be installed in
 - Laundry and soiled linen rooms,
 - Boiler and furnace rooms,
 - Mechanical and electrical rooms,
 - Shops, laboratories, kitchens,
 - Locker rooms, janitors' closets, trash-collection rooms,
 - Storage rooms, lounges,
 - Gift shops and
 - Similar areas

MSFC 907.2.6.1



Minnesota State Fire Code Initiation



- ***Exception:***
- Manual fire alarm boxes in patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at all nurses' stations or other constantly attended staff locations, provided fire alarm boxes are:
 - **Visible**
 - **Continuously accessible**
 - **Travel distances required by Section 907.4.1 are not exceeded (200 ft.)**



Minnesota State Fire Code Initiation



- Automatic smoke detectors shall be provided in waiting areas that are open to corridors
- Corridors in hospitals, nursing homes, board and care homes and detox facilities, and spaces open to the corridors shall be protected by an automatic smoke detection system

MSFC 907.2.6.1 & 907.2.6.3



Sleeping Room Detection

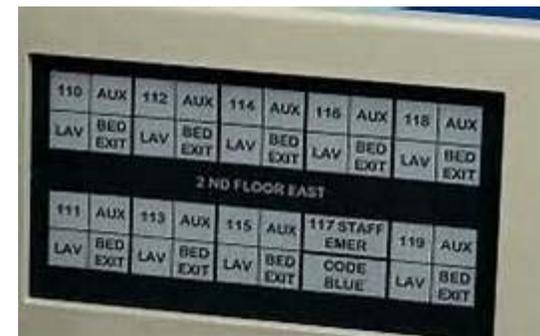
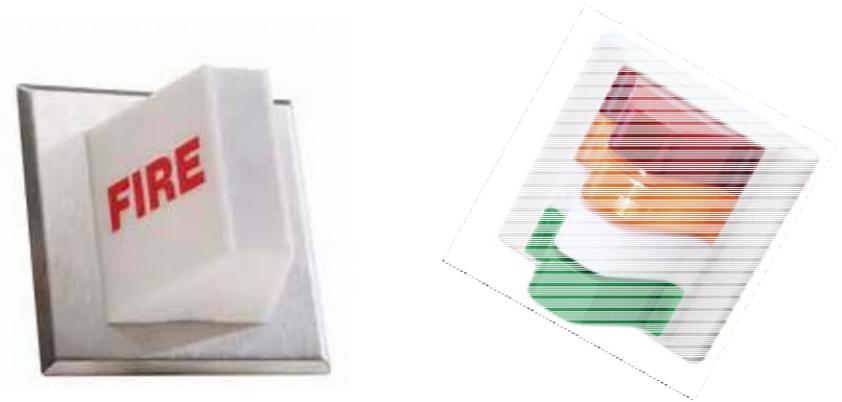
- Smoke detectors that receive their primary power from the building wiring shall be installed in patient sleeping rooms of hospitals and nursing homes

MSFC 907.2.6.3.1



Sleeping Room Detection

- Actuation of such detectors shall cause:
 - A visual display on the corridor side of the room where it is located
 - An audible and visual alarm at the nurse's station attending the room



MSFC 907.2.6.3.1



Sleeping Rooms Detection



- CMS Code of Federal Regulations required battery operated smoke detection in all sleeping rooms of non-sprinkler protected long term care buildings
S&C-05-25 & 05-33
- Mute point due to CFR requiring all long term care facilities to be full sprinkler protected by August 13, 2013

S&C-09-04 for 73FR 47075



Sleeping Room Detection



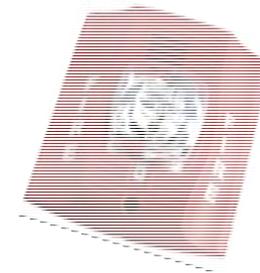
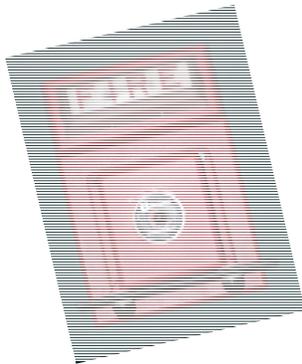
- Testing in accordance with manufactures recommendation
 - Some are weekly
 - But at least monthly



Notification



- Occupant notification shall be automatically
 - Exception: visible alarm-indicating appliances shall be permitted to be used in critical care areas LSC 18.3.4.3.1
- Fire department notification shall be in accordance with 9.6.4 (NFPA 72) LSC 18.3.4.3.2
- Alarm annunciation shall be provided LSC 18.3.4.3.3





Notification MSFC



- Activation of the fire alarm or automatic sprinkler system shall initiate a general evacuation signal
- Activation of the fire alarm shall immediately transmit an alarm to an approved central station or remote station service

MSFC 907.2.6.2



Control



- Operation of any activating device shall accomplish automatically any control functions to be performed by that device

LSC 18.3.4.4



Inspections, Testing and Maintenance



- **Inspection**
 - A visual examination of a system or portion thereof to verify that it appears to be in operating condition and is free of physical damage
- **Testing**
 - A procedure used to determine the status of a system as intended by conducting periodic physical checks on water-based fire protection systems (such as water-flow tests, fire pump tests, alarm tests, and trip tests of dry pipe, deluge, or pre-action valves)
- **Maintenance**
 - Work performed to keep equipment operable or to make repairs



Inspections



Inspections in accordance with

MSFC 907.20

- **NFPA 72 Table 7.3.1**
 - Different components have different intervals
 - Fire Alarm Control unit is annually
 - DACT is semi-annually, DACR is monthly
 - Batteries can be monthly or semi-annually
 - Most initiating devices are annually, however waterflow is semi-annually
- **Records of maintenance are required**

LSC 18.3.4, 19.3.4 & 9.6



Testing



- Testing in accordance with MSFC 907.20
- NFPA 72 Table 7.3.2
 - Different components have different intervals
 - Fire Alarm Control unit is annually
 - DACT is semi-annually, DACR is monthly
 - Batteries can be monthly or semi-annually
 - Most initiating devices are annually, however waterflow is semi-annually
- Records of maintenance are required

LSC 18.3.4, 19.3.4 & 9.6



Smoke Detector Sensitivity



- Shall be checked within the year following installation and every alternate year thereafter
- After the second test, the length of time between tests shall be permitted to be extended to a maximum of five years
- Records of detector-caused nuisance alarms and subsequent trends of these alarms shall be maintained
- In zones or areas where nuisance alarms show any increase over the previous year, sensitivity testing shall be done

MSFC 907.20.3



Automatic Fire Sprinkler Systems



Fire Sprinkler System



- New construction
- Sprinklers are required complete coverage
- In accordance with NFPA 13
- Quick Response or Listed Residential Heads in smoke compartments that contain sleeping rooms
- Existing required by construction type, and
- Existing Long Term Care fully sprinkler protected
- Only licensed company can work on systems (MN Statute)

LSC 18.3.5



Fire Sprinkler System



- Closets
- Elevator Shafts
- Elevator equipment rooms



Inspection, Testing and Maintenance

- Automatic sprinkler and standpipe systems shall be:
- Inspected
- Tested
- Maintained
- In accordance with NFPA 25

LSC 9.7.5



Inspection, Testing and Maintenance



- **Inspection**
 - A visual examination of a system or portion thereof to verify that it appears to be in operating condition and is free of physical damage
- **Testing**
 - A procedure used to determine the status of a system as intended by conducting periodic physical checks on water-based fire protection systems (such as water-flow tests, fire pump tests, alarm tests, and trip tests of dry pipe, deluge, or pre-action valves)
- **Maintenance**
 - Work performed to keep equipment operable or to make repairs



Inspections, Testing and Maintenance



- Inspections in accordance with NFPA 25
- Testing in accordance with NFPA 25
- Maintenance in accordance with NFPA 25 and NFPA 13
- Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems



Kitchen Hoods



Kitchen Hood



- Cooking equipment must meet NFPA 96
- Hood extinguishing is required
- Extinguishing system serviced every 6 months
- Sprinkler systems must protect under hood or extinguishing system must protect the entire hood.



Portable Fire Extinguishers



Portable Extinguishers



- Installed and maintained in accordance with NFPA 10
- Class A extinguishers within 75 feet of any point in the building
- Class B extinguishers within 30 to 50 feet of any point in the building
- Class C (same as above)
- Class K extinguisher within 30 feet of the hazard



Portable Extinguishers



- Monthly quick check
- Annual service of extinguishers
- 6- year service removal of agent
- 12-year hydro test
- Tagged

NFPA 10



Emergency Generator



Emergency Generator



- **Emergency Power Supply (EPS)**
 - The source of electric power of the required capacity and quality for an emergency power supply system (EPSS)
- **Emergency Power Supply System (EPSS)**
 - A EPS coupled to a system of conductors, disconnecting means and over current protective devices, transfer switches, and all control, supervisory, and support devices

NFPA 110 3.3.2 & 3.3.3



Level of Equipment



- Level 1
 - shall be installed when failure of the equipment to perform could result in loss of human life or serious injuries
- Level 2
 - shall be installed when failure of the EPSS is less critical to human life and safety
 - where the authority having jurisdiction shall permit a higher degree of flexibility [NFPA 110](#)



Types of EPSSs



- Time to start and pick up power
- Table 4.1(b)
 - Type U Uninterruptible (UPS Systems)
 - Type 10 10 seconds
 - Type 60 60 seconds
 - Type 120 120 seconds
 - Type M Manual stationary or nonautomatic —
no time limit

NFPA 110



Classification of EPSSs



- Length of time it needs to operate
- Table 4.1(a)
 - Class 0.083 5 minutes
 - Class 0.25 15 minutes
 - Class 2 2 hours
 - Class 6 6 hours
 - Class 48 48 hours
 - Class X Other time, in hours NFPA 110



Generators Required



- NFPA 99 (1999) section 12-3.3.2
- Requires a Type 1 system
- In 3-4.1.1.4 it requires
- Type 10 Class X Level 1 generator
- UL listed



NFPA 99



- Requires Essential Electrical System to have two separate systems
 - Emergency system
 - Life Safety Branch
 - Critical Branch
 - Equipment system



Generator Remote Panel



- Located outside of the generator room in a constantly attended location
 - A visual indicators for
 - Generator is operating
 - The battery charger is malfunctioning
 - Individual visual display, with a common audible alarm for
 - low oil pressure
 - low coolant temperature
 - excessive coolant temperature
 - low fuel level (less than 3-hour supply)
 - failure to start
 - overspeed
- NFPA 110 section 3-5.6.1



Generator NFPA 110



- Fuel Supply Not used for any other purpose
- Low fuel sensing switch
- Main fuel tank is 133% of low fuel switch
- Must meet NFPA 37
- Must have a battery charger
- Instrument panel



Operational inspection and testing



- **EP systems** shall be inspected and tested under load in accordance with NFPA 110 and NFPA 111.
 - **Exception:** Where the emergency power system is used for standby power or peak load shaving, such use shall be recorded and shall be allowed to be substituted for scheduled testing of the generator set, provided that appropriate records are maintained

(604.4)



Inspection, Testing and Maintenance



- Of emergency and standby power systems shall be in accordance with an approved schedule established upon completion and approval of the system installation
- Written record
- Records shall be kept on the premises
- Be available for inspection by the fire code official



Written record



- Shall Include
 - The date of service
 - The name of the servicing technician
 - A summary of conditions noted
 - A detailed description of any conditions requiring correction
 - What corrective action was taken

(604.3.2)



Inspections, Testing and Maintenance



- Inspections Weekly
 - Include Fuel Level, Coolant Level, Oil Level, Battery Charge
- Testing Monthly
 - At Least 30 minutes under load
 - Document Start time, Time to take over load, all gauge readings including engine temp, oil pressure, amps etc.
 - Document % of generator is loaded
- Annual Service and Load Test



Transfer switch testing procedures



- The test shall consist of operating the transfer switch from the normal position to the alternate position and then return to the normal position (604.4.1)
- Routine maintenance, inspection and operational testing shall be overseen by a properly instructed individual (604.5)



Switch Maintenance

- Transfer switches shall be inspected, tested and have a maintenance schedule
- Transfer switches shall be maintained free from accumulated dust and dirt
- Inspection shall include examination of the transfer switch contacts for evidence of deterioration
- When evidence of contact deterioration is detected, the contacts shall be replaced
604.3.3



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



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HVAC SYSTEMS & FIRE/SMOKE DAMPERS



K67 – Heating, ventilation, and air conditioning shall comply with:

- **NFPA’s Life Safety Code 9.2, 18.5/19.5**
- **NFPA 90A**
- **And in accordance with the manufacturer’s specifications**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



CORRIDOR PLENUMS

- Do not presume that buildings build after 1972 do not have a corridor plenum
- Do not presume that the corridor is a balanced system ($Q_{in} = Q_{out}$)



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



CORRIDOR PLENUMS

- Determine how the air is being moved in your facility
- Is the corridor being used to circulate the air in the facility



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



DETERMINING A PLENUM:

- Does the resident bathroom have an exhaust fan in it?
- Does the resident room have a supply and/or a return vent?
- Does the corridor have a supply and/or a return vent?



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



NO CORRIDOR PLENUM ISSUES IF:

- Resident bathroom has an exhaust fan
- No supply or returns in the corridor, bedrooms, or common spaces



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- Air make-up is from door openings, windows, and from air leaks in the building



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



NO CORRIDOR PLENUM ISSUES IF:

- Resident bathroom has an exhaust fan
- One or more supply and return vents in the corridor
- Resident room only has a supply vent in the room



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- **Verify built after 1972, some may meet prior to 1972**
- **Air-handling units are fully functioning**
- **The facility has not modified the HVAC system**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- **CMS expects a licensed HVAC contractor to preform the required repairs**
- **Both corridors and resident rooms are a balanced system**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- Facility has documentation from a licensed HVAC contractor verifying a balanced system
- (Q in = Q out)



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



NO CORRIDOR PLENUM ISSUES IF:

- Resident bathroom has an exhaust fan
- One or more supply and return vents in the corridor
- Resident room has a supply and return vent in the room



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- **Verify built after 1972, some may meet prior to 1972**
- **Air-handling units are fully functioning**
- **The facility has not modified the HVAC system**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- **CMS expects a licensed HVAC contractor to preform the required repairs**
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HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- Facility has documentation from a licensed HVAC contractor verifying a balanced system
- (Q in = Q out)



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



CORRIDOR PLENUM ISSUES IF:

- Resident bathroom has an exhaust vent
- One or more supply vents and no returns vents in the corridors



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- No supply or returns in the resident rooms
- make-up air is mostly from the corridors
- K067 deficiency



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



CORRIDOR PLENUM ISSUES IF:

- Resident bathroom has an exhaust vent
- One or more supply and return vents in the corridors
- No supply or return vents in the resident rooms



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- make-up air is mostly from the corridors
- K067 deficiency
- This could be a $Q_{in} = Q_{out}$ system but the facility would have to provide the needed documentation



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



*WHERE THERE IS A WILL THERE IS
A WAIVER*



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



K67 WAIVERS

- **Get the most recent cost analysis**
- **Corridor restrictions**
- **Electrical system upgrades**
- **Asbestos abatement**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- Existing HVAC fans automatically shut down with fire alarm activation
- Compliance with other fire safety requirements



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



SMOKE DAMPERS

- Are in accordance with NFPA 101 life Safety Code (00) and NFPA 90A (99)
- Are accessible
- Are identified and labeled with ½ inch font size



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- **Fire & Smoke dampers are to be tested and inspected every 4 years***
- **Fusible links shall be removed**
- **Dampers will be operated**
- **Document all testing & inspections of the dampers**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



BUT WAIT, THERE'S MORE!

****Hospitals get to go to a 6 year
testing cycle...***



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



WHY IS THAT?

- CMS S&C-10-04-LSC
- The increase to 6 years did not lower the fire protection levels in hospitals
- Lower incidence of infection
- Cost savings



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



6 YEAR DAMPER TESTING

- **Must comply with the 2007 edition of NFPA 80 and the 2007 edition of NFPA 105**
- **Shall commence on the date of the last documented damper test**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



CATEGORICAL WAIVER

- No need to apply in advance
- No need to wait to be cited in order to apply for a waiver



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



- **Must notify the Fire Inspector at the time of the life-safety code survey**
- **And is in conformance with testing requirements**



HVAC SYSTEMS & FIRE/SMOKE DAMPERS



QUESTIONS???

