

# ***2000 vs. 2012 NFPA 101 Life Safety Code***



**MINNESOTA HEALTH CARE ENGINEERS ASSOCIATION  
SPRING CONFERENCE  
MAY 1, 2015**

**GARY SCHROEDER  
HEALTH CARE FIRE INSPECTOR  
MINNESOTA STATE FIRE MARSHAL DIVISION**

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



# Question



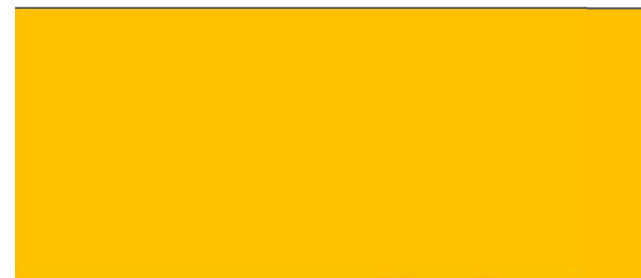
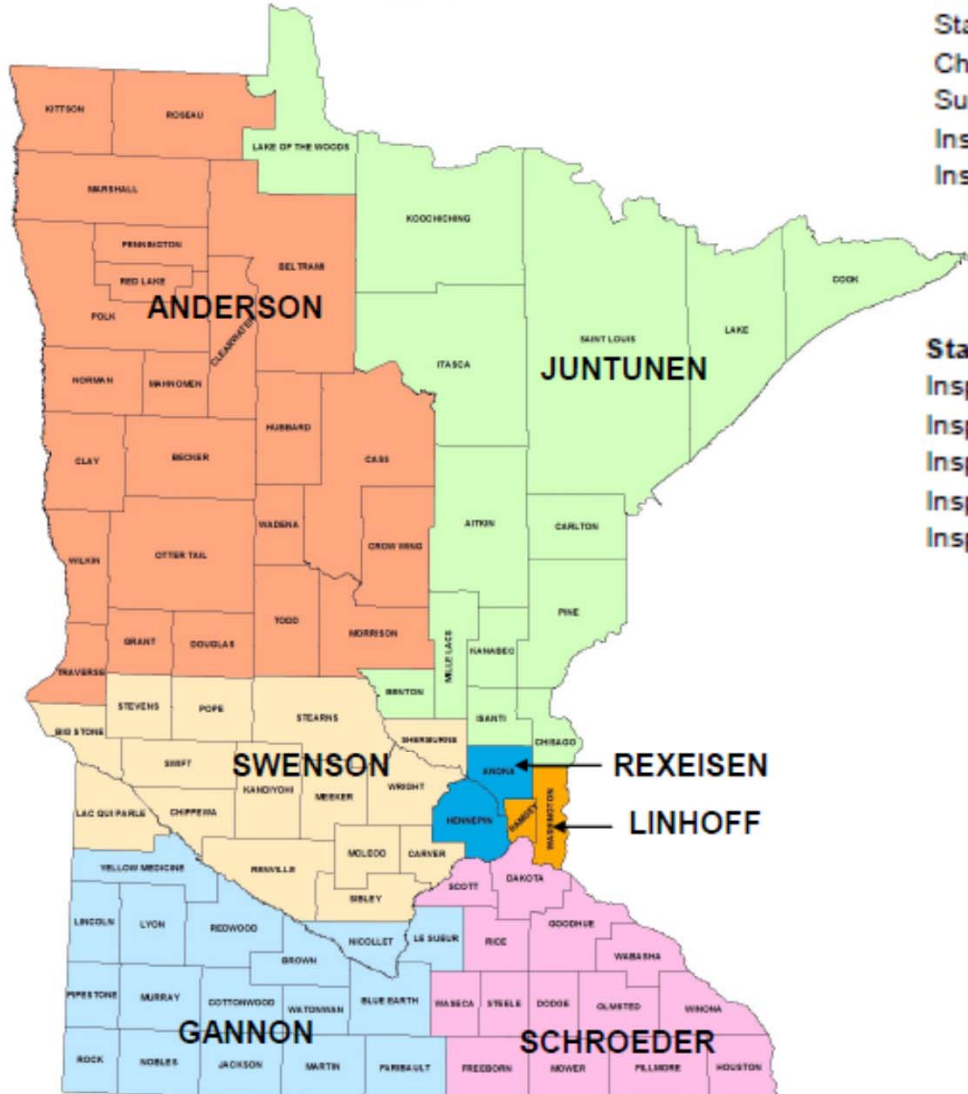
- How many 1<sup>st</sup> time attendees
- 1 – 5 years health care engineer
- 6 – 10 years health care engineer
- 10 years and over health care engineer





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

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 **State Fire Marshal**  
A Division of the Minnesota Department of Public Safety

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- Fire Standard Compliant Cigarettes (FSC)
- Governors Council Fire Prevention and Control
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- Healthcare Inspection**
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## HEALTHCARE INSPECTIO



**Healthcare Inspection Territory**  
[Healthcare Inspection Territory Map](#)

**Life Safety Code Project**  
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**Important Issues**  
[2000 Edition National Fire Protection Association \(NFPA\) 101® Life Safety Code \(LSC\) Waivers.](#)  
[Overview of the 2786R booklet provided by Region V CMS "So That's What They Look For" \(9/3/10\)](#)  
[Elevator Shunt Trip - Fire Alarm Requirements](#)

# Definitions



**ABHRD** – Alcohol-based hand-rub dispenser

**CMS** – Center for Medicare and Medicaid

**LSC** – 2012 NFPA 101 Life Safety Code

**NFPA** – National Fire Protection Association

**SFMD** – State Fire Marshal Division



# Objective



Look at some of the changes  
from the 2000 to 2012  
NFPA 101 (LSC) and related  
references



# 2012 ?



- At this time and date we do not know when the 2012 NFPA 101LSC is going to be adopted
- When we know you will know



# 2012 LSC Referenced Publications



- 2010 NFPA 10 – Portable Fire Extinguishers
- 2010 NFPA 13 – Installation Sprinkler Systems
- 2011 NFPA 25 – Sprinkler System Maintenance
- 2010 NFPA 72 – National Fire Alarm and Signaling
- 2010 NFPA 80 – Fire Doors





# 2012 LSC Referenced Publications



- 2011 NFPA 96 - Kitchen Hood Systems
- 2012 NFPA 99 – Health Care Facilities
- 2010 NFPA 110 – Emergency Power
- 2009 NFPA 241 – Safeguards During Construction



# Categorical Waivers



When the 2012 LSC is adopted, all  
Categorical Waivers go away.  
They will be part of the code.



# 2000 and 2012 LSC



- Chapter 18 – **New** facilities
- Chapter 19 – **Existing** facilities



## Corridors- Chapter 18.2.3.4



- Aisles, corridors, and ramps required for exit access in a hospital or nursing home shall be not less than 8 ft (2440 mm) in clear and unobstructed width, unless otherwise permitted by one of the following:
- (2)\* Noncontinuous projections not more than 6 in. (150 mm) from the corridor wall, positioned not less than 38 in. (965 mm) above the floor, shall be permitted.



# Corridors- Chapter 18.2.3.4



- (4) Projections into the required width shall be permitted for wheeled equipment, provided that **all** of the following conditions are met:
  - (a) The wheeled equipment does not reduce the clear unobstructed corridor width to less than 60 in.(1525 mm).
  - (b) The health care occupancy fire safety plan and training program address the relocation of the wheeled equipment during a fire or similar emergency.
  - (c)\*The wheeled equipment is limited to the following:
    - i. Equipment in use and carts in use
    - ii. Medical emergency equipment not in use
    - iii. Patient lift and transport equipment



## Corridors- Chapter 19.2.3.4



- (2)\* Where corridor width is at least 6 ft (1830 mm), noncontinuous projections not more than 6 in. (150 mm) from the corridor wall, above the handrail height, shall be permitted.



# Corridors- Chapter 19.2.3.4



- (4) Projections into the required width shall be permitted for wheeled equipment, provided that **all** of the following conditions are met:
  - (a) The wheeled equipment does not reduce the clear unobstructed corridor width to less than 60 in.(1525 mm).
  - (b) The health care occupancy fire safety plan and training program address the relocation of the wheeled equipment during a fire or similar emergency.
  - (c)\*The wheeled equipment is limited to the following:
    - i. Equipment in use and carts in use
    - ii. Medical emergency equipment not in use
    - iii. Patient lift and transport equipment



# Cooking - 18/19.3.2.5.3



- Within a smoke compartment, where residential or commercial cooking equipment is used to prepare meals for 30 or fewer persons, one cooking facility shall be permitted to be open to the corridor, provided that **all** of the following conditions are met:
- (1) The portion of the health care facility served by the cooking facility is limited to 30 beds and is separated from other portions of the health care facility by a smoke barrier constructed in accordance with 18.3.7.3, 18.3.7.6, and 18.3.7.8.
- (2) The cooktop or range is equipped with a range hood of a width at least equal to the width of the cooking surface, with grease baffles or other grease-collecting and cleanout capability.





## Cooking - 18/19.3.2.5.3



- (3)\*The hood systems have a minimum airflow of 500 cfm (14,000 L/min).
- (4) The hood systems that are not ducted to the exterior additionally have a charcoal filter to remove smoke and odor.
- **NOTE:** MDH State Rules DO NOT allow recirculate air back into the building



# Cooking - 18/19.3.2.5.3



- **(5)** The cooktop or range complies with all of the following:
- **(a)** The cooktop or range is protected with a fire suppression system listed in accordance with UL 300, *Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*, or is tested and meets all requirements of UL 300A, *Extinguishing System Units for Residential Range Top Cooking Surfaces*, in accordance with the applicable testing document's scope.
- **(b)** A manual release of the extinguishing system is provided in accordance with NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, Section 10.5.
- **(c)** An interlock is provided to turn off all sources of fuel and electrical power to the cooktop or range when the suppression system is activated.



# Cooking - 18/19.3.2.5.3



- **(6)\***The use of solid fuel for cooking is prohibited.
- **(7)\***Deep-fat frying is prohibited
- **(8)** Portable fire extinguishers in accordance with NFPA 96 are located in all kitchen areas.
- **(9)\***A switch meeting all of the following is provided:
  - **(a)** A locked switch, or a switch located in a restricted location, is provided within the cooking facility that deactivates the cooktop or range.
  - **(b)** The switch is used to deactivate the cooktop or range whenever the kitchen is not under staff supervision.
  - **(c)** The switch is on a timer, not exceeding a 120-minute capacity, that automatically deactivates the cooktop or range, independent of staff action.



# Cooking - 18/19.3.2.5.3



- **(10)** Procedures for the use, inspection, testing, and maintenance of the cooking equipment are in accordance with Chapter 11 of NFPA 96 and the manufacturer's instructions and are followed.
- **(11)\*** Not less than two AC-powered photoelectric smoke alarms, interconnected in accordance with 9.6.2.10.3, equipped with a silence feature, and in accordance with *NFPA 72, National Fire Alarm and Signaling Code*, are located not closer than 20 ft (6.1 m) from the cooktop or range.
- **(12)** No smoke detector is located less than 20 ft (6.1 m) from the cooktop or range.



# ABHRD – 18/19.3.2.6



- Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless **all** of the following conditions are met:
- **(1)** Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 ft (1830 mm).
- **(2)** The maximum individual dispenser fluid capacity shall be as follows:
  - **(a)** 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors
  - **(b)** 0.53 gal (2.0 L) for dispensers in suites of rooms



# ABHRD – 18/19.3.2.6



- **(3)** Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz. (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA30B, *Code for the Manufacture and Storage of Aerosol Products*.
- **(4)** Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
- **(5)** Not more than an aggregate 10 gal (37.8 L) of alcohol based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg), shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 18.3.2.6(6).



# ABHRD – 18/19.3.2.6



- **(6)** One dispenser complying with 18.3.2.6(2) or (3) per room and located in that room shall not be included in the aggregated quantity addressed in 18.3.2.6(5).
- **(7)** Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment shall meet the requirements of NFPA 30, *Flammable and Combustible Liquids Code*.
- **(8)** Dispensers shall not be installed in the following locations:
  - **(a)** Above an ignition source within a 1 in. (25 mm) horizontal distance from each side of the ignition source
  - **(b)** To the side of an ignition source within a 1 in. (25mm) horizontal distance from the ignition source
  - **(c)** Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source



## ABHRD – 18/19.3.2.6



- **(9)** Dispensers installed directly over carpeted floors shall be permitted only in sprinklered smoke compartments.
- **(10)** The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.





# ABHRD – 18/19.3.2.6



- **(11)** Operation of the dispenser shall comply with the following criteria:
- **(a)** The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
- **(b)** Any activation of the dispenser shall occur only when an object is placed within 4 in. (100 mm) of the sensing device.
- **(c)** An object placed within the activation zone and left in place shall not cause more than one activation.



## ABHRD – 18/19.3.2.6



- **11(d)** The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
- **(e)** The dispenser shall be designed, constructed, and operated in a manner that ensures that accidental or malicious activation of the dispensing device is minimized.
- **(f)** The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.



# Corridor Doors – 18/19.3.6.3.12



- Nonrated, factory or field-applied protective plates, unlimited in height, shall be permitted.



# Smoke Barrier Doors

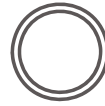


- **18.3.7.6 / 19.3.7.6.1**

Nonrated factory- or field-applied protective plates, unlimited in height, shall be permitted.



# Fire Safety Plan – 18/19.7.2.2



- A written health care occupancy fire safety plan shall provide for all of the following:
- (1) Use of alarms
- (2) Transmission of alarms to fire department
- **(3) Emergency phone call to fire department**
- (4) Response to alarms
- (5) Isolation of fire
- (6) Evacuation of immediate area
- (7) Evacuation of smoke compartment
- (8) Preparation of floors and building for evacuation
- (9) Extinguishment of fire



# Draperies – Curtains 18/19.7.5.1



- Draperies, curtains, and other loosely hanging fabrics and films serving as furnishings or decorations in health care occupancies shall be in accordance with the provisions of 10.3.1 (*see 18.3.5.11*), and the following also shall apply:
- **(1)** Such curtains shall include cubicle curtains.
- **(2)** Such curtains shall not include curtains at showers and baths.
- **(3)** Such draperies and curtains shall not include draperies and curtains at windows in patient sleeping rooms.
- **(4)** Such draperies and curtains shall not include draperies and curtains in other rooms or areas where the draperies and curtains comply with **both** of the following:
  - **(a)** Individual drapery or curtain panel area does not exceed 48 ft<sup>2</sup> (4.5 m<sup>2</sup>)
  - **(b)** Total area of drapery and curtain panels per room or area does not exceed 20 percent of the aggregate area of the wall on which they are located



# Recycling Containers – 18/19.7.5.7.2



- Containers used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded from the requirements of 18.7.5.7.1 where **all** the following conditions are met:
- **(1)** Each container shall be limited to a maximum capacity of 96 gal (363 L), except as permitted by 18.7.5.7.2(2) or (3).
- **(2)\***Containers with capacities greater than 96 gal (363 L) shall be located in a room protected as a hazardous area when not attended.
- **(3)** Container size shall not be limited in hazardous areas.
- **(4)** Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval Standard 6921, *Containers for Combustible Waste*; **however, such testing, listing, and labeling shall not be limited to FM Approvals.**



# Combustible Decorations - 18/19.7.5.6



- Combustible decorations shall be prohibited in any health care occupancy, unless **one** of the following criteria is met:
- (1) They are flame-retardant or are treated with approved fire-retardant coating that is listed and labeled for application to the material to which it is applied.
- (2) The decorations meet the requirements of NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*.
- (3) The decorations exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, *Standard Method of Fire Test for Individual Fuel Packages*, using the 20 kW ignition source.





# Combustible Decorations - 18/19.7.5.6



- (4)\*The decorations, such as photographs, paintings, and other art, are attached directly to the walls, ceiling, and non-fire-rated doors in accordance with the following:
  - (a) Decorations on non-fire-rated doors do not interfere with the operation or any required latching of the door and do not exceed the area limitations of 19.7.5.6(b), (c), or (d).
  - (b) Decorations do not exceed 20 percent of the wall, ceiling, and door areas inside any room or space of a smoke compartment that is not protected throughout by an approved automatic sprinkler system in accordance with Section 9.7.



# Combustible Decorations - 18/19.7.5.6



- (c) Decorations do not exceed 30 percent of the wall, ceiling, and door areas inside any room or space of a smoke compartment that is protected throughout by an approved supervised automatic sprinkler system in accordance with Section 9.7.
- (d) Decorations do not exceed 50 percent of the wall, ceiling, and door areas inside patient sleeping rooms, having a capacity not exceeding four persons, in a smoke compartment that is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.
- (5)\*They are decorations, such as photographs and paintings, in such limited quantities that a hazard of fire development or spread is not present.



# 2010 NFPA 10



- **4.4.1\*** Dry chemical stored-pressure extinguishers manufactured prior to October 1984 shall be removed from service at the next 6-year maintenance interval or the next hydrotest, whichever comes first.



# 2010 NFPA 10



- **7.2.1.2\*** Fire extinguishers shall be inspected either manually or by means of an electronic monitoring device/system at a minimum of 30-day intervals.
- **A.7.2.1.2** Inspections are performed on extinguishers 12 times per year, once per month.



# 2011 NFPA 25



- **5.3 Testing.**
- **5.3.3 Water Flow Alarm Devices.**
- **5.3.3.1** Mechanical water flow alarm devices including, but not limited to, water motor gongs, shall be tested quarterly.
- **5.3.3.2\*** Vane-type and pressure switch–type water flow alarm devices shall be tested semiannually.



# 2011 NFPA 25



- **8.3\* Testing.**
- **8.3.1 Frequency.**
- **8.3.1.1 Diesel engine–driven fire pumps shall be operated weekly.**
- **8.3.1.2\* Electric motor–driven fire pumps shall be operated monthly.**



# 2010 NFPA 72



- **Table 14.4.5**
- 6. Batteries — fire alarm systems
- 7. Power supply — public emergency alarm reporting systems
- Sealed lead-acid type batteries
- Charger test (Replace battery within 5 years after manufacture or more frequently if needed)



# 2012 NFPA 99



- CMS is not going to adopt the whole 2012 NFPA 99.





# 2010 NFPA 80



- **5.2\* Inspections.**
- **5.2.1\*** Fire door assemblies shall be inspected and tested not less than annually, and a written record of the inspection shall be signed and kept for inspection by the AHJ.



# 2010 NFPA 110



- **8.4.2.3 Diesel-powered** EPS installations that do not meet the requirements of section 8.4.2 shall be exercised monthly with the available EPSS load and shall be exercised annually with supplemental loads at not less than 50 percent of the EPS nameplate kW rating for 30 continuous minutes and at not less than 75 percent of the EPS nameplate kW rating for 1 continuous hour for a total test duration of not less than 1.5 continuous hours.



# Questions – Part 1



# QUESTIONS ?



# What SFMD Staff Been Finding



# Circuit Breaker Panels



**1999 NFPA 70 - 110-26.** Spaces About Electrical Equipment. 600 V or less

**Depth of Working Space – 3 feet**

**Width of Working Space – 30 inches**

**Height of Working Space** - The work space shall be clear and extend from the grade, floor, or platform to the height required by Section 110-26(e). **Headroom.** The minimum headroom of working spaces about service equipment, switchboards, panel boards, or motor control centers shall be 6-1/2 ft. (1.98 m). Where the electrical equipment exceeds 6-1/2 ft. (1.98 m) in height, the minimum headroom shall not be less than the height of the equipment.



# Generator Logs



- **6-4.2\***Generator sets in Level 1 and Level 2 service shall be exercised at least once monthly, for a minimum of 30 minutes, using one of the following methods:
- (a) Under operating temperature conditions or at not less than 30 percent of the EPS nameplate rating
- (b) Loading that maintains the minimum exhaust gas temperatures as recommended by the manufacturer



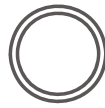
# Generator Logs



- **6-4.4** Time delays shall be set as follows:
- (a) Time delay on start: 1 second minimum  
*Exception: Gas turbine cycle: 0.5 second minimum.*
- (b) Time delay on transfer to emergency: no minimum required
- (c) Time delay on restoration to normal: 5 minutes minimum (see A-4-2.4.7)
- (d) Time delay on shutdown: 5 minutes minimum



# Annual Fire Alarm Reports



- Number of smoke detectors installed vs number tested or sensitivity tested
- Sensitivity report does not contain:
  - Range of each model of smoke detector
  - If the detector passed/failed
- All information that is required by 1999 NFPA 72 7-5.2.2





# Fire Sprinkler Annual Report



- The items noted in report need of repair, replacement and etc. not be done or if done no supporting documentation



# 1998 NFPA 25



- **2-3.2\* Gauges.** Gauges shall be replaced every 5 years or tested every 5 years by comparison with a calibrated gauge. Gauges not accurate to within 3 percent of the full scale shall be recalibrated or replaced.



# 1998 NFPA 25



- **2-4.1.4** A supply of at least six spare sprinklers shall be stored in a cabinet on the premises for replacement purposes. The stock of spare sprinklers shall be proportionally representative of the types and temperature ratings of the system sprinklers. A minimum of two sprinklers of each type and temperature rating installed shall be provided. The cabinet shall be so located that it will not be exposed to moisture, dust, corrosion, or a temperature exceeding 100°F (38°C).

***Exception:*** Where dry sprinklers of different lengths are installed, spare dry sprinklers shall not be required, provided that a means of returning the system to service is furnished.



# 1998 NFPA 25



- **9-4.2 Check Valves.**
- **9-4.2.1 Inspection.** Valves shall be inspected internally every 5 years to verify that all components operate properly, move freely, and are in good condition.
- **10-2.2\* Obstruction Prevention.** Systems shall be examined internally for obstructions where conditions exist that could cause obstructed piping. If the condition has not been corrected or the condition is one that could result in obstruction of piping despite any previous flushing procedures that have been performed, the system shall be examined internally for obstructions every 5 years. This investigation shall be accomplished by examining the interior of a dry valve or preaction valve and by removing two cross main flushing connections.



# During Construction



- **8.6.2 Temporary Separation Walls.**
- **8.6.2.1** Protection shall be provided to separate an occupied portion of the structure from a portion of the structure undergoing alteration, construction, or demolition operations when such operations are considered as having a higher level of hazard than the occupied portion of the building.
- **8.6.2.2** Walls shall have at least a 1-hour fire resistance rating.
- **8.6.2.3** Opening protectives shall have at least a 45-minute fire protection rating.
- **8.6.2.4\*** Nonrated walls and opening protectives shall be permitted when an approved automatic sprinkler system is installed.



**WRAP UP**



**QUESTIONS ?**



# Documentation



**REMEMBER**

**If you didn't document it.**

**It didn't happen!**



MINNESOTA HEALTH CARE ENGINEERS



THANK YOU!

