BFAAM Apprenticeship Program

Period 3

Module 6 – Michigan Building Code

Reading material associated with this module: Chapter 9, sections 911 – 916, Chapters 10 and 11 of the Michigan Building Code, 2015 edition

2015 MBC Section 908 Emergency Alarm Systems

- Group H (Hazardous) occupancies require emergency alarms for the detection and notification of an emergency condition in accordance with section 415.5.
- Storage & Dispensing areas used for hazardous materials require an approved manual emergency alarm system.

908.1, 415.5.1,.2

2015 MBC Section 908 Emergency Alarm Systems

- The alarm shall be both local and supervised by an approved central, proprietary, or remote supervising station, or a constantly attended on site location.

415.5.3

2015 MBC Section 908 Emergency Alarm Systems

- A gas detection system shall be provided to detect highly toxic or toxic gas at, or below the permissible exposure level for the gas
- The alarm shall be both local and transmit a signal to a constantly attended control station. The alarm shall be both visible and audible and shall indicate both inside and outside the area where gas is detected

908.3

2015 MBC Section 908 Emergency Alarm Systems

- Ozone gas generator rooms shall be equipped with a continuous gas detection system that will shut off the generator and sound a local alarm when concentrations above the permissible exposure limit occur

908.4

2015 MBC Section 908 Emergency Alarm Systems

- Repair garages that work on vehicles fueled by non-odorized gases shall be provided with a flammable gas detection system that will shut off the heating system, activate the mechanical ventilation system, and sound a local alarm when concentrations exceed 25% of the lower explosive limit

908.5, 406.8.5.1, .2

2015 MBC Section 908 Emergency Alarm Systems

- Machinery rooms shall contain a refrigerant detector with an audible and visible alarm. The detector, or sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate

908.6

2015 MBC Section 909 Smoke Control Systems

- Smoke control systems are typically designed by the fire protection engineer and mechanical engineer, and have specific performance requirements noted in Section 909
- These systems are typically subject to "special inspections" utilizing experienced commissioning teams to verify compliance

909.1-3

2015 MBC Section 909 Smoke Control Systems

- Fire detection systems providing control input or output signals to a smoke control system shall be equipped with a control panel complying with UL 864 and listed as smoke control equipment (UL listing category UUKL)

909.12

2015 MBC Section 909 Smoke Control Systems

- In addition to complying with the requirements of NFPA 70 (National Electrical Code), all fire detection and control wiring must be installed in raceway, regardless of the voltage

909.12.2

2015 MBC Section 909 Smoke Control Systems

- Identical control diagrams showing all devices in the system and identifying their location and function shall be maintained current and kept on file with fire code official, the fire department, and in the fire command center in a format and manner approved by the fire chief

909.15

2015 MBC Section 911 Fire Command Center

- Where required by other sections of the Code and in all buildings classified as high rise, a Fire Command Center shall be provided
- Required features include:
  - The emergency voice alarm/communications system control unit
  - Fire department communications system

911.1.6

2015 MBC Section 911 Fire Command Center

- Required features include:
  - Fire detection and alarm system annunciator
  - Elevator annunciator unit
  - Status and controls for air handling systems
  - Fire fighters control panel for smoke control systems, if installed
  - Controls for unlocking stairway doors
  - Sprinkler valve and waterflow detector display
  - Emergency and standby power status indicators

911.1.6

2015 MBC Section 911 Fire Command Center

- Required features include:
  - A telephone for fire department use with controlled access to the public phone system
  - Fire pump status indicators
  - Schematic building plans
  - Work table
  - Generator supervision devices, manual start and transfer features
  - Public address system, where specifically required by other sections of the code

911.1.6

2015 MBC Section 911 Fire Command Center

- Required features include:
  - Elevator fire recall switch
  - Elevator emergency or standby power selector switch(es), where elevator emergency or standby power is provided

911.1.6

2015 MBC Section 914 Emergency Responder Safety Features

- Rooms containing controls for air-conditioning systems, sprinkler risers and valves or other fire detection, suppression or control elements shall be identified for the use of the fire department. Approved signs required to identify fire protection equipment shall be constructed of durable materials, permanently installed and readily visible

914.2

2015 MBC Section 916 Emergency Responder Radio Coverage

- Emergency responder radio coverage shall be provided in all new buildings in accordance with Section 510 of the International Fire Code

916.1

2015 MBC Section 915 Carbon Monoxide Detectors

- Carbon monoxide detection shall be installed in new buildings in accordance with section 915. Existing buildings shall comply with Chapter 11 of the International Fire Code
- Carbon monoxide detection shall be provided in Group I-1, I-2, I-4, R and E occupancies when conditions in Section 915 apply.

915.1, .1

2015 MBC Section 1003 Means of Egress

- Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4" over any walking surface between the heights of 27" and 80" above the walking surface

1003.3.3

2015 MBC Section 1009 Accessible Means of Egress

- Areas of refuge shall be provided with a two way communication system between the area of refuge and the fire command center or a central control point approved by the fire department. If the central control point is not constantly attended, there shall be a timed automatic dial out capability to a monitoring location or 911.

1009.8, .8.1

2015 MBC Section 1010 Doors, Gates, Turnstiles

- Means of Egress doors are permitted to be equipped with approved access control systems and/or electric locking hardware in Groups A, B, E, I-1, I-2, I-4, M, R-1 and R-2. Many conditions apply accordingly as to the occupancy and type of locking system & hardware.

  Some common rules that apply;

1010.1.9.6 thru 1010.1.9.99

2015 MBC Section 1010 Doors, Gates, Turnstiles

- Access controlled egress door rules:
  - Loss of power to the locking system or hardware that controls the door shall unlock the door.
  - A manual unlocking device identified as "PUSH TO EXIT" is installed 40"- 48" above the floor and within 5' of the door shall unlock the door when operated. The device shall directly interrupt power to the lock, the door shall remain unlocked for not less than 30 seconds.

2015 MBC Section 1010 Doors, Gates, Turnstiles

- Access controlled egress door rules:
  - Request to Exit (REX) sensor shall be provided on egress side of door to detect an occupant approaching door.
  - REX Sensor shall unlock door on detection of occupant or loss of power.
  - Activation of the building fire alarm, automatic sprinkler or fire detection system shall unlock the door.
  - The door locking system units shall be listed in accordance with UL 294

2015 MBC Section 1010 Doors, Gates, Turnstiles

- Delayed egress lock rules:
  - Not permitted in Groups A, E and H
  - Buildings must be fully sprinklered or equipped throughout with an approved automatic smoke or heat detection system
  - Doors must unlock upon actuation of the automatic sprinkler or automatic detection system

1010.1.9.7

2015 MBC Section 1010 Doors, Gates, Turnstiles

- Delayed egress lock rules:
  - Door must unlock upon loss of power controlling the lock or lock mechanism
  - Door shall be capable of being unlocked by a signal from the fire command center
  - Door shall unlock within 15 seconds when a physical effort to exit is applied for not more than 3 seconds. Manual reset is required.

1010.1.9.7

2015 MBC Section 1010 Doors, Gates, Turnstiles

- Delayed egress lock rules:
  - Where approved by the AHJ, the delay may be extended from 15 seconds to 30 seconds
  - Signage shall be provided that reads "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS"
  - Emergency lighting shall be provided at the door

1010.1.9.7

2015 MBC Section 1023
Interior Exit Stairways & Ramps

- Penetrations into an exit stair are prohibited except for sprinkler piping, standpipes, electrical raceway for fire department communications systems and electrical raceway serving the exit enclosure and terminating at a steel box not exceeding 16 square inches

1023.5

BFAAM Apprenticeship Program

Period 4
Reading Assignment for
Module 1 – Michigan Electrical Code
Reading material associated with this module: Chapter 1, National Electrical Code 2014 edition