



Session: IBC Overview for Permit Techs

IBC Overview

Non-Structural provisions

AZBO Spring 2018



Mary Dickson, CBO

- Building Official, Litchfield Park, AZ
 - CBO- City of El Mirage, AZ- 10 yrs
 - Sr. Plans Examiner- City of Avondale, AZ- 10 yrs
- BS Ed- Vocational Education
- 30+ years in construction/Architectural field
- Taught- High School and Jr. College 15 Years

Objectives

- Better understanding of the scope and purpose of Building Codes.
- Administrative functions
 - Documentation
 - Required inspections
 - Terminology
- Legal Processes
- Occupancy Groups & Construction Types
- Record retention and destruction laws

Building Codes

- Safety of the occupants
- Reduce panic in emergencies
- Safety of first responders
- Safety and protection of other properties
- Safety and protection of own property



Chapter 1 Scope and Administration

- **Scope-** Covers all buildings- exception
Construction, alteration, relocation...repair,...demolition, of every building
Or structure
Or appurtenances connected or attached to
- **Intent-** MINIMUM STANDARDS
- **Application-** Most restrictive shall govern
 - Including Federal, State or Local laws
- References to other codes and standards

Duties and Powers Section 104

Gives BO the RIGHT to:

- create new rules/laws
- issue permits
- issue notices and orders
- inspect
- of entry
- keep records
- make modifications from the code
- approve use of alternate methods and materials
- conduct testing



104.8- Liability



- BO, Board of Appeals, any employee enforcing the codes
- While acting for the jurisdiction in good faith and without malice
- Shall not be personally liable for any damage to persons or property.
- Jurisdiction shall cover all legal expenses defending employee
- Ministerial Acts

Section 105 Permits

- When required
 - Annual permits
- Work exempt
- Mechanical, electrical and plumbing
- Emergency repairs
- What is req'd on application
- Time limits and extensions



- 105.6
- Revoke if issued in error or on the basis of inaccurate info,
- Incomplete info
- Or if in violation of any ordinance, regulation or provision of the code.

Permits

Application 105.3

Legal terminology

- Protect jurisdiction
- Make applicant liable for code compliance
- Give right to inspect



Submittal documents 107

- Provide location, nature and extent of work
- Details showing compliance with codes, laws & ords.



- Scope of the project
- Legal description
- Drawn to scale- measurements
- Different views of the project
- Materials

Complete submittals



Ask yourself-

- **Who** is submitting?
 - Owner/Builder
 - Contractor
- **What** is the project?
 - Architect designed
- **Where** is it being built?
 - and
- **How** is it being constructed?
 - What else may be needed?
 - MEP, calcs, soils report, etc.

Permit and Review timelines

- Permit applications good for 180 days from issuance
 - Renewable upon inspection
- Reviews good for 180 days from date of review
 - Renewable upon subsequent submittals



Design Professionals

- Architects
- Engineers
- Designers
- Drafters



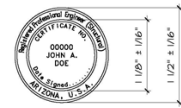
Seals

- Type
 - Engineering, Architectural
 - Civil, Structural, Mechanical, Electrical
- State
- Name
- Number
- Signature line
- Date line
- Wet Seal

- What is a registrant?

What to look for:

Examples of Signatures, Seal and Date of Expiration Meeting Requirements of RA-304 (S) (2) & RA-304 (S) (4):



What type of plans need a stamp?

- Residential
 - The rendering of any architectural service required in the erection, enlargement, alteration, or repair of any building, where such building is to be, or is used as a single or multiple family residence exceeding three (3) units or three (3) stories in height.
- Commercial- 3,000 square feet, any span greater than 60 feet

Section 109 FEES

- Permit is not valid until fees are paid.
- Right to charge fees to cover services
- Extra charge for work done or started w/o permit
- Adopted fee schedules
- Valuation of work
- Materials, labor, & MEP



Inspections

- Required inspection of project progress
 - Foundations
 - Frame or masonry
 - Electrical
 - Mechanical
 - Plumbing
 - Flood Plain
 - Special Inspections
 - Fire rated construction
 - Energy Efficiency



Foundations

- The system which provides a supporting base or grounding of the structure to the soil.



Size, depth, reinforcing, pads, holdowns



Basement Wall/ Stem wall



Reinforcing, grout or concrete, moisture-proofing, venting, egress

Framing

- Strap and Shear



Structural



Masonry

4 foot lift
Grout
Reinforcing
rebar size
spacing



Electrical

- Box spacing/location
- Secured wires, boxes
- Type of wire used/location
- Protection
- Panel



Mechanical

Equipment location/install
Duct size/location/support
Condensate lines
Service area



Plumbing

Under-slab or below floor
Under pressure
Size, clean outs, connection to
sewer & water service/septic
@ Top out- under pressure
Size of vents, traps, thru roof
Water lines
Gas lines



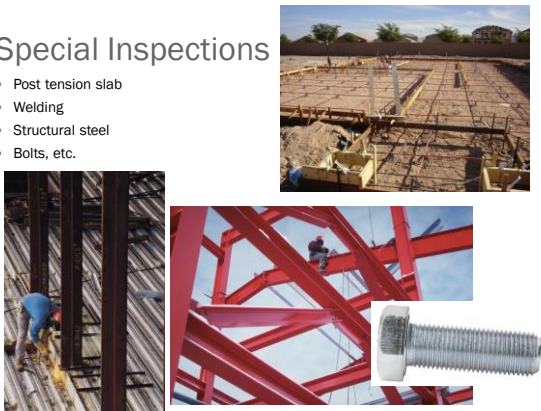
Flood Plain

Venting
Grading
Drainage



Special Inspections

- Post tension slab
- Welding
- Structural steel
- Bolts, etc.



Fire- Rated Construction



Energy



Drywall Nail & Drywall Shear



Roof sheathing & nailing



Moisture Protection



Vapor Barrier



Final Inspection



Certificate of Occupancy

- IBC and IRC Section 110
- Must contain specific information

Certificate of Occupancy
City of El Mirage, Arizona

This certificate is issued pursuant to the requirements of Section 110.2 of the 2006 International Building Code, certifying that at the time of issuance the structure was in compliance with the current ordinances of the city regarding building construction or use for the following:

Business Name: _____
Business Address: _____
Owner's Name: _____
Owner's Address: _____

Does: _____
Sprinkler System: Yes ☐ No ☐ Fire Alarm: _____
Occupancy Load: _____
Permit No: _____

Mary Higgins, C.R.O.
Building Official

Certificate of Completion

- Used for non-occupied spaces
- Shell buildings
Vanilla Shell
Grey Shell
Equipment installation
Spec Suites

Must specify no occupancy

Temporary Certificate of Occupancy

- Section 110.3
- Must specify a time/date the temporary use is valid.
- Building and Fire have no life-safety issues

Change in Occupancy

BUILDINGS *Certificate of Occupancy* Page 1 of 2

C/O Number: 1533201801

A. Building Information:

Building Number	Block Number	Certificate Type	Certificate Date
1533201801	1533	1533201801	1533201801

B. Certificate Holder Information:

Building Name	Address	City	State	Zip
1533201801	1533201801	1533201801	1533201801	1533201801

C. Certificate Holder Information:

Building Name	Address	City	State	Zip
1533201801	1533201801	1533201801	1533201801	1533201801

When a building or suite changes from one 'use' to a different occupancy group a new C/O must be issued

For example: An old warehouse building is converted into apartments and lofts.
An old house is remodeled into a boutique shop or restaurant.

USE AND OCCUPANCY Classification IBC Chapter 3

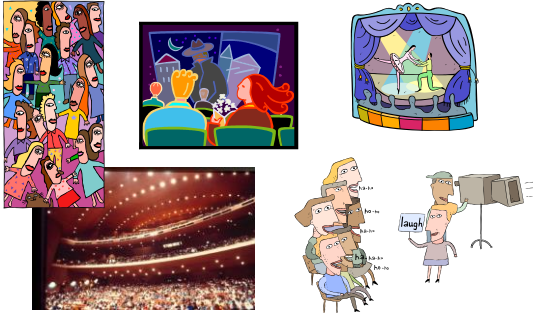
- Section 302- 26 CLASSIFICATIONS
- Based on use of building and contents
 - **A** - Assembly (5)
 - **B** - Business
 - **E** - Education
 - **F** - Factory and Industrial (2)
 - **H** - Hazardous (5)
 - **I** - Institutional (4)
 - **M** - Mercantile
 - **R** - Residential (4)
 - **S** - Storage (2)
 - **U** - Utility and Miscellaneous

Section 303- Assembly- A

- Places where people gather for civic, social or religious functions; recreation, food or drink consumption or awaiting transportation.
- **Exceptions:**
 - Occupant load less than 50 (B)
 - Room or space with less than 50 people that is part of another use OR
 - A room less than 750 square feet and part of a larger use area- both cases may be B or same as main use.
 - Assembly areas accessory to Religious or Educational occupancies

Assembly

A-1



Assembly

A-2



Low light levels
 Bands, music, crowd noise
 Tables and seats
 Arrangements are ill-defined

Assembly

A-3



Lower Occupant loads
 Comparatively low fuel load
 Catch-all classification for Assembly
 groups

Assembly

A-4



Indoor
 Low # on sports floor-
 dense elsewhere
 Spectator seating
 Low fuel load

Assembly

A-5



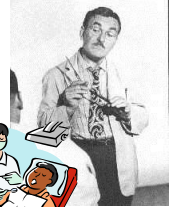
OUTDOOR

Viewing or participating in sport activity.
Non-combustible loads
Dense occupant loads



Business- Group B

- Building or portion of building used for office, professions or service-type transactions
- Includes record and account storage areas
- Outpatient Clinic



Group E- Education (K-12)



5+ kids over the age of 2 1/2



Colleges/ University classrooms
Not an "E"- They're a B!



Factory F1 Moderate Hazard



Rule out what it is not-
Not Hazardous or Storage?

Bakeries
Dry Cleaners
Furniture Plants
Printing and Publishing
Aircraft Manufacturing



Factory (Low Hazard) F-2

No significant fire danger

Non-alcoholic beverage bottlers,
Foundries, Metal Fabrication,

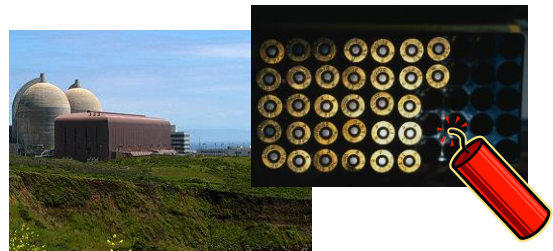


Group H- High Hazard

- Buildings or portions of buildings that involve:
 - Manufacturing
 - Processing
 - Generation
 - Or storage of materials that constitute a physical* or health hazard

* Building or structural damage may occur

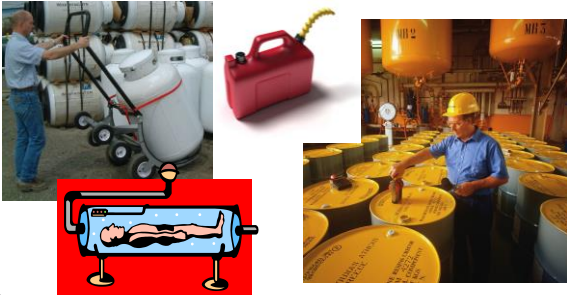
H-1 Detonation Hazard



Explosives, unstable materials, and any detonable materials or gasses

H-2 – High Hazard

- Buildings containing materials which would accelerate burning



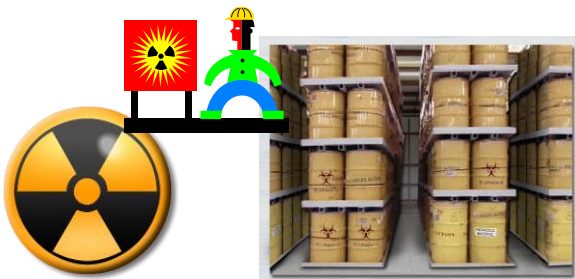
H-3- High Hazard

- Buildings containing materials that support combustion or that pose a physical hazard



H-4- High Hazard

- Buildings containing materials that are health hazards- highly toxic, corrosive.



H5- High Hazard

- Semiconductor plants, research and development areas in which hazardous materials are used



INSTITUTIONAL GROUP- I

- Where people are cared for or live in a supervised environment due to physical limitations because of health or age, medical or care treatment, or correctional purposes.



Group I-1

- Housing 16 or more people 24 hours basis.
- Capable of responding without assistance.
 - Drug Rehab
 - Halfway House
 - Convalescent Homes
 - Assisted Living



- 5 people or fewer- R-3
- 6-16 is R-4

Group I-2- *New Definitions included !!*

- More than five people on a 24 hour basis
- Not capable of self preservation
 - Hospitals (incl. mental)
 - Detox Facilities
 - Skilled care nursing homes
 - 24 Hour child care for <5 children (2 ½ yrs or less)



Group I-3

- More than 5 people under restraint or security
- Conditions 1-5..... Based on freedom of movement



Group I-4

- Day Care- any age
- Less than 24 hour care for more than 5 people



MERCANTILE-

M



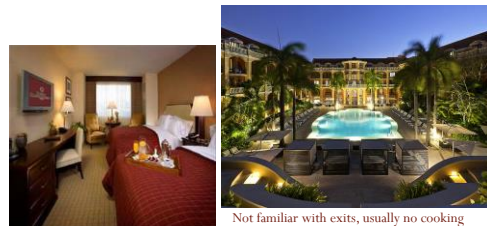
RESIDENTIAL –GROUP R

- Use of a building or structure for sleeping purposes



Group R-1

- Hotels and Motels (transient lodging)
- Boarding houses
- Congregate housing for less than 10



Not familiar with exits, usually no cooking

R-2- Apartments, Dorms, Convents, Monasteries, and Live/Work units

- Non-transient, primarily permanent



R-3- Single Family or Duplex



R-4- Orphanages, Residential Care, Assisted Living

- Residential Care for more than 5 and less than 16 residents, excluding staff.



STORAGE- GROUP S-1

Moderate Hazard



Group S-2 Low Hazard Storage



Utility and Misc.- Group U

- Buildings or structures not classified in any specific occupancy



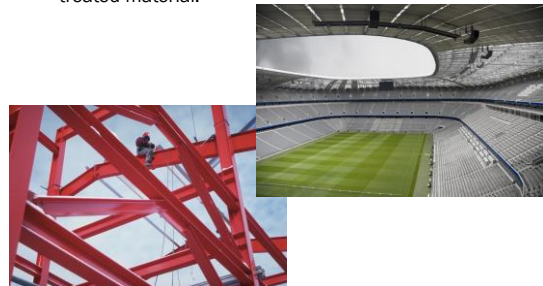
IBC CHAPTER 6-

Types of Construction

- Classification of all building types based on the fire-resistance of the building materials
 - Type I and II
 - Type III
 - Type IV
 - Type V

Type I and II Construction

- All elements (in Table 601) are non-combustible or fire-treated material.



Type III Construction

- Exterior elements are non-combustible. Interior may be anything allowed by code.



Type IV (Heavy Timber HT)

Exterior - non-combustible.

Interior - solid wood but no concealed spaces



Type V Construction

- Any material allowed by code



Allowable
area

Is it an
A or B?

GENERAL BUILDING HEIGHTS AND AREAS

TABLE 605
ALLOWABLE STORY HEIGHTS AND AREAS
FOR TYPE III, IV, V, AND VI CONSTRUCTION
Area limitations are determined by the number of "story heights" per story.

STORY HEIGHT	TYPE III		TYPE IV		TYPE V		TYPE VI	
	Area	Height	Area	Height	Area	Height	Area	Height
1st	10,000	12	10,000	12	10,000	12	10,000	12
2nd	10,000	12	10,000	12	10,000	12	10,000	12
3rd	10,000	12	10,000	12	10,000	12	10,000	12
4th	10,000	12	10,000	12	10,000	12	10,000	12
5th	10,000	12	10,000	12	10,000	12	10,000	12
6th	10,000	12	10,000	12	10,000	12	10,000	12
7th	10,000	12	10,000	12	10,000	12	10,000	12
8th	10,000	12	10,000	12	10,000	12	10,000	12
9th	10,000	12	10,000	12	10,000	12	10,000	12
10th	10,000	12	10,000	12	10,000	12	10,000	12
11th	10,000	12	10,000	12	10,000	12	10,000	12
12th	10,000	12	10,000	12	10,000	12	10,000	12
13th	10,000	12	10,000	12	10,000	12	10,000	12
14th	10,000	12	10,000	12	10,000	12	10,000	12
15th	10,000	12	10,000	12	10,000	12	10,000	12
16th	10,000	12	10,000	12	10,000	12	10,000	12
17th	10,000	12	10,000	12	10,000	12	10,000	12
18th	10,000	12	10,000	12	10,000	12	10,000	12
19th	10,000	12	10,000	12	10,000	12	10,000	12
20th	10,000	12	10,000	12	10,000	12	10,000	12
21st	10,000	12	10,000	12	10,000	12	10,000	12
22nd	10,000	12	10,000	12	10,000	12	10,000	12
23rd	10,000	12	10,000	12	10,000	12	10,000	12
24th	10,000	12	10,000	12	10,000	12	10,000	12
25th	10,000	12	10,000	12	10,000	12	10,000	12
26th	10,000	12	10,000	12	10,000	12	10,000	12
27th	10,000	12	10,000	12	10,000	12	10,000	12
28th	10,000	12	10,000	12	10,000	12	10,000	12
29th	10,000	12	10,000	12	10,000	12	10,000	12
30th	10,000	12	10,000	12	10,000	12	10,000	12
31st	10,000	12	10,000	12	10,000	12	10,000	12
32nd	10,000	12	10,000	12	10,000	12	10,000	12
33rd	10,000	12	10,000	12	10,000	12	10,000	12
34th	10,000	12	10,000	12	10,000	12	10,000	12
35th	10,000	12	10,000	12	10,000	12	10,000	12
36th	10,000	12	10,000	12	10,000	12	10,000	12
37th	10,000	12	10,000	12	10,000	12	10,000	12
38th	10,000	12	10,000	12	10,000	12	10,000	12
39th	10,000	12	10,000	12	10,000	12	10,000	12
40th	10,000	12	10,000	12	10,000	12	10,000	12
41st	10,000	12	10,000	12	10,000	12	10,000	12
42nd	10,000	12	10,000	12	10,000	12	10,000	12
43rd	10,000	12	10,000	12	10,000	12	10,000	12
44th	10,000	12	10,000	12	10,000	12	10,000	12
45th	10,000	12	10,000	12	10,000	12	10,000	12
46th	10,000	12	10,000	12	10,000	12	10,000	12
47th	10,000	12	10,000	12	10,000	12	10,000	12
48th	10,000	12	10,000	12	10,000	12	10,000	12
49th	10,000	12	10,000	12	10,000	12	10,000	12
50th	10,000	12	10,000	12	10,000	12	10,000	12

NOTES: 1. For all stories, the area shall not exceed 10,000 sq. ft. 2. For all stories, the height shall not exceed 12 stories. 3. For all stories, the area shall not exceed 10,000 sq. ft. 4. For all stories, the height shall not exceed 12 stories. 5. For all stories, the area shall not exceed 10,000 sq. ft. 6. For all stories, the height shall not exceed 12 stories. 7. For all stories, the area shall not exceed 10,000 sq. ft. 8. For all stories, the height shall not exceed 12 stories. 9. For all stories, the area shall not exceed 10,000 sq. ft. 10. For all stories, the height shall not exceed 12 stories. 11. For all stories, the area shall not exceed 10,000 sq. ft. 12. For all stories, the height shall not exceed 12 stories. 13. For all stories, the area shall not exceed 10,000 sq. ft. 14. For all stories, the height shall not exceed 12 stories. 15. For all stories, the area shall not exceed 10,000 sq. ft. 16. For all stories, the height shall not exceed 12 stories. 17. For all stories, the area shall not exceed 10,000 sq. ft. 18. For all stories, the height shall not exceed 12 stories. 19. For all stories, the area shall not exceed 10,000 sq. ft. 20. For all stories, the height shall not exceed 12 stories. 21. For all stories, the area shall not exceed 10,000 sq. ft. 22. For all stories, the height shall not exceed 12 stories. 23. For all stories, the area shall not exceed 10,000 sq. ft. 24. For all stories, the height shall not exceed 12 stories. 25. For all stories, the area shall not exceed 10,000 sq. ft. 26. For all stories, the height shall not exceed 12 stories. 27. For all stories, the area shall not exceed 10,000 sq. ft. 28. For all stories, the height shall not exceed 12 stories. 29. For all stories, the area shall not exceed 10,000 sq. ft. 30. For all stories, the height shall not exceed 12 stories. 31. For all stories, the area shall not exceed 10,000 sq. ft. 32. For all stories, the height shall not exceed 12 stories. 33. For all stories, the area shall not exceed 10,000 sq. ft. 34. For all stories, the height shall not exceed 12 stories. 35. For all stories, the area shall not exceed 10,000 sq. ft. 36. For all stories, the height shall not exceed 12 stories. 37. For all stories, the area shall not exceed 10,000 sq. ft. 38. For all stories, the height shall not exceed 12 stories. 39. For all stories, the area shall not exceed 10,000 sq. ft. 40. For all stories, the height shall not exceed 12 stories. 41. For all stories, the area shall not exceed 10,000 sq. ft. 42. For all stories, the height shall not exceed 12 stories. 43. For all stories, the area shall not exceed 10,000 sq. ft. 44. For all stories, the height shall not exceed 12 stories. 45. For all stories, the area shall not exceed 10,000 sq. ft. 46. For all stories, the height shall not exceed 12 stories. 47. For all stories, the area shall not exceed 10,000 sq. ft. 48. For all stories, the height shall not exceed 12 stories. 49. For all stories, the area shall not exceed 10,000 sq. ft. 50. For all stories, the height shall not exceed 12 stories.

Required Plumbing Fixtures

- Chapter 29
- Table-
- Look up using Occupancy Type & Occupant load



Back to Chapter One Service Utilities 112

Turn service on



Turn services off



Violations- 114

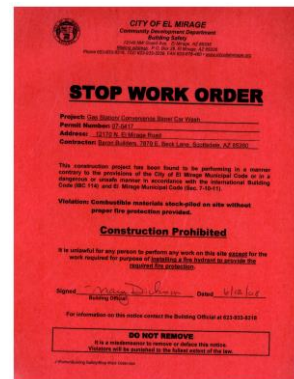
Unlawful Acts

- Person, firm or corporation
- Erect, construct, alter, extend, repair, remove, demolish, or occupy
- Any building, structure or equipment
- Regulated by this code

NOV

- Serve NOV or Stop Work Order
- Immediate discontinuance
- Abatement
- 114.3- If not complied with:
 - Legal counsel
 - Request law to restrain activity or assist in removing occupants

Penalties



Stop Work Orders- 115

BO has authority to determine unsafe or unlawful conditions

- Must be in writing
- Given to owner/agent
- Or contractor
- State reasons for order
- Penalties

Unsafe Structures and Equipment

- When become unsafe, unsanitary.
- or lacks proper egress, light and ventilation
- Or is a fire hazard or otherwise dangerous to humans or public welfare
- Illegal or improper occupancy
- Lack of maintenance
- Serve owner, agent or responsible person
- In writing state the occupancy & nature of problem
- Specify abatement/ timeline
- Deliver personally
- Certified or registered mail
- Deliver in any other manner as prescribed by local law
- Post in a conspicuous place

Building Codes- Dangerous

- Structural stress that exceeds the original intended design.
- Structural member that is likely to fail, detach or collapse
- Structural member that is not strong enough to support or stable, attached or anchored enough to resist wind pressure.
- Likely to collapse due to dilapidated conditions, decay or damage from natural causes.
- Structural members that are out of plumb.



What if property is not secure?



- Have measures in place to secure structures
 - Public Works
 - Contractors
- Post all sides
- Notify authorities to monitor
- Photograph/document


Posting for demolition

- Notify owner of condemnation
 - Registered mail
 - Legally served
 - Specify timeline for removal
- Post property on all sides of building
- Photograph posting in place
- Notify Police or Sheriff

Records Retention- City or County



Permanent records:

- 
- Permits
 - C of C
 - C of O
 - Demolition Permits
 - Permit Registers/Logs
- Electronic records, not listed in the table are not authorized for destruction.

Records Retention



- Construction plans- 6 months after final
- Residential and Commercial
- Expired/denied/withdrawn applications-
6 months
- Code Enforcement , incl. 'no permits
issued' - 3 years after resolution
- Inspection records- SFD and
Commercial 3 Years after final
all others- 1 year
- Pools- Residential- 6 months
Commercial/Public Pools- 5 Years

Destruction forms

- <http://www.azlibrary.gov/records>
- Fillable form on line
- Retain as **Permanent** record

[illegible]

Building Codes

- Safety of the occupants
- Reduce panic in emergencies
- Safety of first responders
- Safety and protection of other properties
- Safety and protection of own property



Questions?

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**Thank You For
Attending**

