The Fire Department, CUPA, and You

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It's All About Safety…

Objectives

- Identify occupancy classifications and their limitations
- Understand how hazardous materials influence building classifications
- Understand the difference between CUPA and Fire Code regulations

The Fire Code – How Did We Get Here

1970s – The Rise of Hazmat

So, You Want to Build a Building

- What's the intended use?
- What processes will you be doing?
- How is the building to be constructed?
- Will the building be protected?
- How much chemical storage will be on site?

What's the intended use?

Thought 1

- What is happening in the building
- How the building is intended for use

Thought 2

- How things will be used in the building
- All buildings are the same

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Actual Thought

- Occupancy classification is based on two things
  - The building's intended use
  - What is going to be done in the building
- Some classifications have multiple sub-classifications
- Some classifications have limitations

Occupancy Classifications

- Assembly
- Business
- Organized Camp
- Educational
- Factory
- High Hazard
- Institutional
- Laboratories
- Mercantile
- Residential
- Storage
- Utility/Miscellaneous

What Code Does What?

Building Code

- Tells you how to build a building
- Tells you what is needed to do certain things

Fire Code

- Tells you how to maintain a building
- Tells you how to conduct processes

Standards

- If adopted, allow for enforcement
- Are more specific , generally single-topic
  - Regulations are generalized
- Many publishers, many topics, many standards

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Other Influences

- CBC Chapter 4
  - Provides special requirements for certain operations and hazardous materials systems and some operations
  - Provides requirements when MAQ's are exceeded

- MAQ → Maximum Allowable Quantity (Per Control Area)

What is the MAQ?

The maximum amount of a hazardous material allowed to be stored or used within a control area inside a building or an outdoor control area.

The maximum allowable quantity per control area is based on the material state (solid, liquid or gas) and the material storage or use conditions.

MAQ's

- Maximum limit not to be exceeded
  - Includes amounts used in open or closed systems
- Amounts broken down by material type
  - Further refined to health and physical hazards
- Indoor and outdoor control areas addressed

The Influence of Hazardous Materials

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In General

- The Fire Code recognizes the use of hazardous materials
- The Fire Code stipulates amounts less than the MAQ's for operational permits
  - This permit allows the business to conduct a specific operation
- The Fire Code stipulates the amounts that can be stored

Control Areas

- Area in which hazardous materials are used/stored
- Number of control areas based on location in the building
- Amount per control area based on percentage of MAQ

[F] TABLE 414.2.2
DESIGN AND NUMBER OF CONTROL AREAS

STORY		PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA[a]	NUMBER OF CONTROL AREAS PER STORY	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS[b]
Above grade plane	Higher than 9	5	1	2
	7—9	5	2	2
	6	12.5	2	2
	5	12.5	2	2
	4	12.5	2	2
	3	50	2	1
	2	75	3	1
	1	100	4	1
Below grade plane	1	75	3	1
	2	50	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

Outdoor Control Areas

- Required to provide weather protection for materials
  - No more than 25% enclosed (walls)
- Still adheres to the MAQ
- Most be located no closer than 20 feet to the public way or lot line that can be built on

Additional Considerations

- Ventilation
- Explosion protection
- Gas detection
- Back-up power supplies
- Rated construction
- Cabinets
- Multiple material classifications
- Fire sprinklers
- Containment pallets

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Let's Make a Deal

- Cabinets and fire sprinklers allow increases to the MAQ
- Increases are done at plan check/building design


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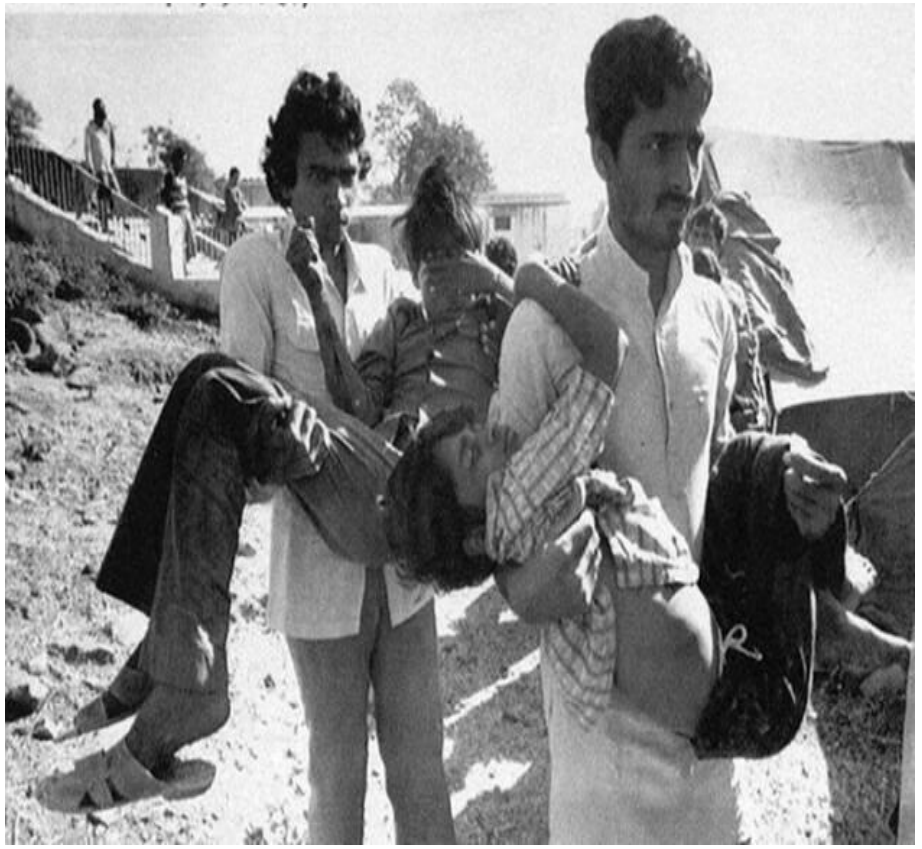
CUPA vs Fire Code

Bhopal, India - 1984

- Union Carbide plant releases 40-tons of Methyl Isocyanate gas
- Killed between 2500 – 6000 persons
- Injured over 200,000 persons
- World's worst industrial disaster



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Institute, West Virginia - 1985

Gas leak at Union Carbide raises new public concerns

INSTITUTE, W.Va. (AP) — The leak of toxic gas from Union Carbide's plant here that sickened 135 people has raised new questions about the safety of an industry whose image was shattered by a deadly leak in India, and has undermined claims that "it can't happen here."

The leak a week ago also has polarized public opinion in an area dubbed "Chemical Valley," a 25-mile stretch along the Kanawha River around Charleston that is dotted by at least 13 major chemical plants.

But by week's end, local officials out of the valley's 10,000 chemical jobs, far outweigh threats posed by the industry.

The leak released a cloud of the pesticide ingredient aldicarb oxime, an irritant, and methylene chloride, a suspected carcinogen. Six workers and 129 residents were hospitalized for eye, nose, throat and lung problems. A smaller leak at Carbide's South Charleston plant two days later caused a brief scare but no serious injuries.

An estimated 2,800 people died in December's methyl isocyanate leak at Union Carbide's plant at Bhopal, India.

made us more aware," said Freda Harkett, who lives about 75 yards from the Institute plant's eastern border.

In addition to providing jobs, chemicals used at Union Carbide's Institute and South Charleston plants are intermediates later turned into such household and farm goods as Glad plastic bags, Prestone antifreeze, Simonize wax, Eveready batteries and the insecticide Sevin.

Organizers of Saturday's parade said the Kanawha Valley would wither without its chemical industry.

Emergency Planning and Community Right-to-Know Act (EPCRA)

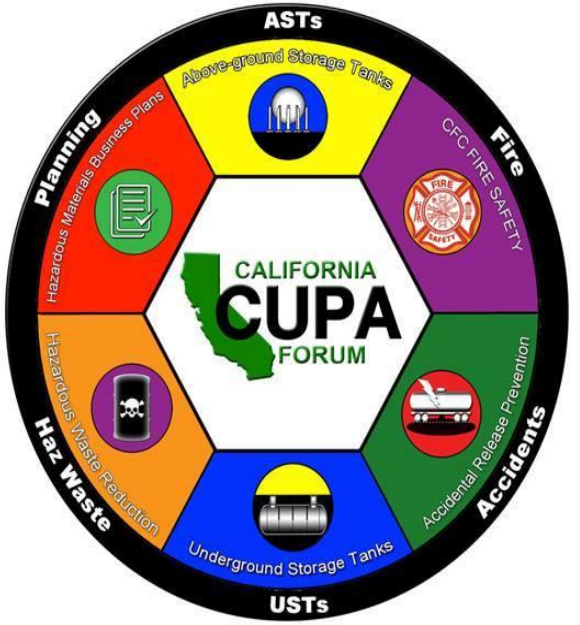
- Passed by U.S. Congress in 1986

- *Planning requirements for chemical emergencies*:
  1) Increase the public's knowledge and access to information on chemicals at facilities

  2) Requires State and Local governments to use information to prepare and protect communities and environment from potential risks of chemical releases

Certified Unified Program Agency (CUPA)

- Hazmat and waste regulation uncoordinated and scattered among many regulatory agencies
- SB 1082 signed into law establishing the Unified Program
- SB 1082 consolidated the coordination and administration of 6 environmental regulatory programs



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CUPA vs CFC

CUPA

- Consolidation of multiple environmental and emergency management programs
- Primarily **administrative controls**
- Reduce the risk of hazmat releases

CFC

- Model Code
- Establish criteria for design, construction, & maintenance
- Focus is on **process regulation**
- Minor administrative controls

CUPA vs CFC – What is the Difference?

Given:

Dispensing Acetone from 55-gallon drum inside building protected by an automatic sprinkler system

What are the:

- CUPA (HMBP)requirements ?
- Fire Code requirements?

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CUPA vs CFC – What is the Difference?

CUPA (HMBP)

1. Establish and implement a business plan for emergency response to release or threatened release hazmat [HSC 25507(a)]

2. Disclosure of flammable liquid at reportable quantity [HSC 25507(a)(1)(A)]

Fire Code

1. Operational permits [CFC 105.5.18]
2. MAQ exceeded [CFC 5003.1.1]
3. Hazard identification signs [CFC 5003.5]
4. Container label [CFC 5003.5.1]
5. No Smoking Signs [CFC 5003.7.1]
6. Prevent static accumulation [CFC 5003.9.5]
7. Classified electrical location [CFC 5703.1.1]
8. Fire extinguishers [CFC 5703.2]
9. Approved or listed piping, hoses, and valves for transfer operations [CFC 5705.2.3]
10. Bonding of vessels [CFC 5705.3.2]

Most Common CUPA Violations – HMBP

Violation Type	# Violations Issued*
1. Failure to electronically submit complete/accurate hazmat inventory	7422
2. Failure to annually review and electronically certify that the business plan is complete and accurate	6915
3. Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release	6538
4. Failure to electronically submit a site map with all required content	5047

*FY 2021-22

Common Fire Code Violations

- Being over MAQ
- Improper storage
- Improper dispensing/use
- Lack of labeling
- Improper signage
- Container re-use

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HMMP to HMIS to HMBP to WTF?!

- ***Hazmat Management Plan*** **(HMMP)** CFC 5001.5.1
  - Used to help facilitate tactical pre-plan of hazardous occupancies
- ***Hazmat Inventory Statement*** **(HMIS)** CFC 5001.5.2
  - Determine amount of hazmat in storage and use. Confirm correct occupancy classification
- ***Hazmat Business Plans*** **(HMBP)** HSC 25507
  - Provides ER responders with information to protect public and environment from release of hazmat

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HMIS & Hazmat Inventory (Chemical Description Page)

HMIS

1. Product Name
2. CAS Number
3. Location Stored or Used
4. Container Size
5. Hazard Classification
6. Amount in Storage
7. Amount in Use-Closed & Open

Hazmat Inventory

1. Chemical / Common Name
2. Trade Secret / EHS / CAS #
3. Hazmat Type (pure, mix, waste)
4. Physical State
5. Largest container
6. Fed Hazard Categories
7. Average / Max Daily Amount
8. Storage container / pressure / temperature

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The HMMP (Facility Site Plan) - CFC 5001.5.1

1. Access to storage and use area
2. Location of Emergency Equipment
3. Location liaison meet responders
4. Facility evacuation point
5. Purpose of other areas in building
6. Location of AST & UST
7. Hazard classes in each area
8. Location of control areas
9. Emergency exit

HMMP & HMBP – The Same?

HMMP

1. General information
2. General Site Plan
3. Building Floor Plan
4. Hazardous Materials Handling
5. Chemical Capability & Separation
6. Monitoring Program
7. Inspection & Record Keeping
8. Employee Training
9. Emergency Response Procedures

HMBP

1. Business Activities & Owner-Operator Information
2. Hazmat inventory
3. Site map
4. Emergency response plans and procedures
   - Notification contacts to FD & UPA
   - Procedures for the mitigation of a release or threatened release
   - Evacuation plans and procedures
   - Training (new employees and annually)

HSC 25504 – A Sensible Law!

- **A business plan in compliance with Section 25505 shall also suffice to meet the requirements for a HHMP & HMIS**
- Coordinated enforcement by UPA and Fire Departments
- Does not affect or limit the authority of the fire code official to enforce the CA Fire Code

Trading Places

Let’s take a journey…

The Stage

- This business can be in any town, in any city, in any part of the world…
- It could also be your next-door neighbor…
- Or a facility you have just started with…

Disclaimer

Photographs have been redacted.


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250/06
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PACKING LIST
ENCLOSED

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10HP
UNLEADED
1 A 1


1 A 1/X/250/06
BR/GEF/DPC - 109/04

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ROCK
SALT
SALT

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Summary

- Discussed the reasons for always needing your HMIS, HMMP
- Discussed how hazardous materials influence building construction
- Took a short trip down memory lane

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