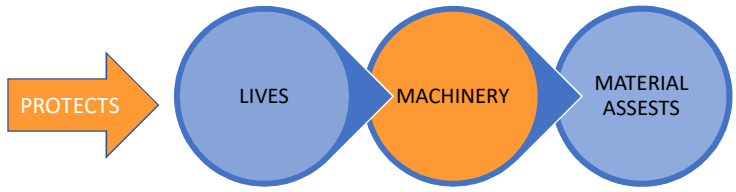
Session 13

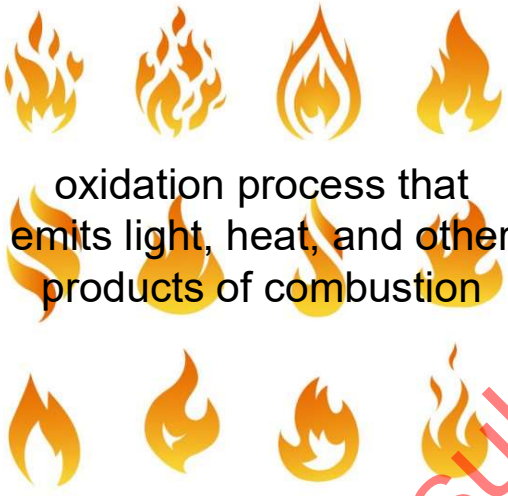
FIRE LOSS CONTROL

FIRE PREVENTION

A special aspect of damage control



Fire



oxidation process that emits light, heat, and other products of combustion

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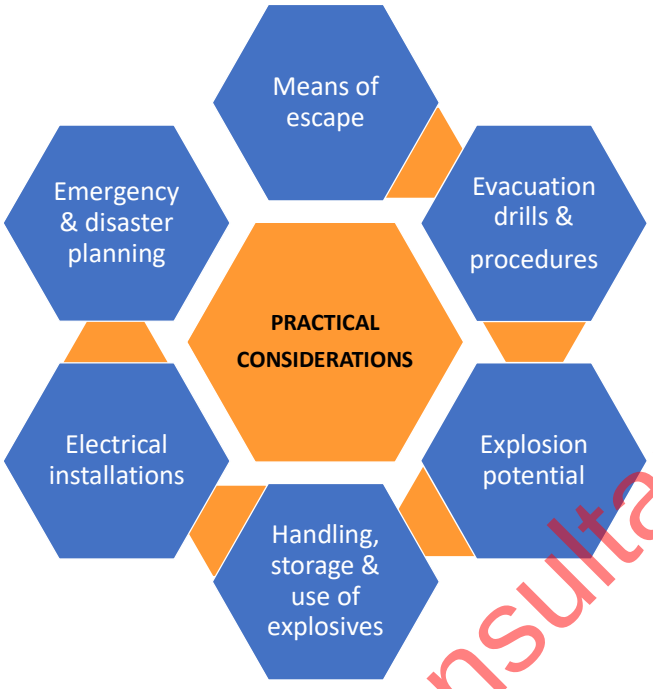
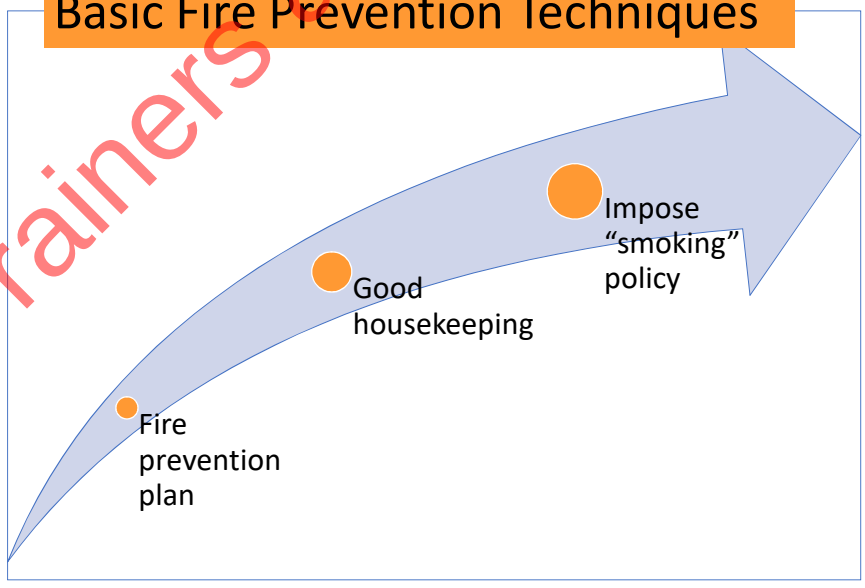
"perhaps the oldest topic in occupational safety and health"

Common Causes of FIRE

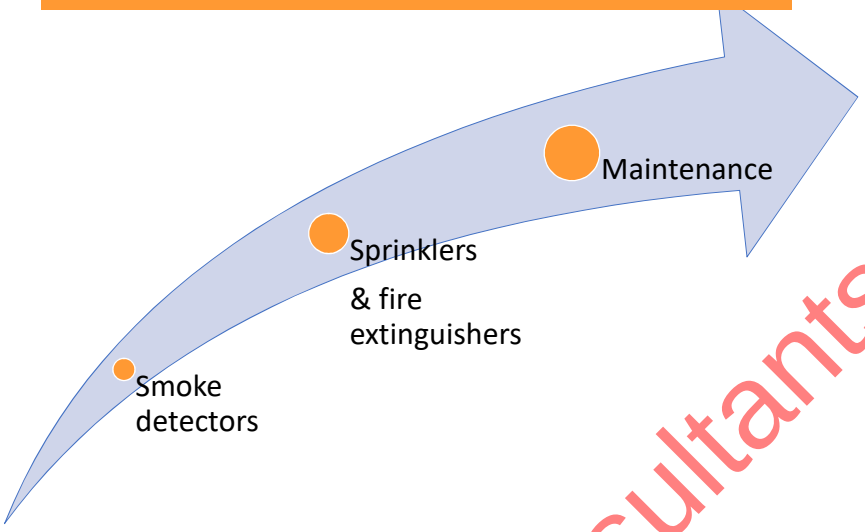
- Machines not properly maintained leading to overloading
- Smoking or use of naked flame
- Excessive storage of waste and scrap materials
- Improper use or storage of flammable liquid e.g. thinner and paint
- Short-circuiting, overloading or poor joints in electrical cables
- Defective electrical equipment and wiring



Basic Fire Prevention Techniques



Basic Fire Prevention Techniques



Fire Control Methods

- limit the size of the fire within the compartment where it started to decrease the heat release
- limit the ceiling gas temperatures by pre-wetting adjacent combustibles
- with a system that has fire control there should be some manual firefighting that needs to occur to completely extinguish fire.

Fire Fighting & Extinguishing

- When there is sharp reduction of the heat release rate, lowered to glowing combustion, suppression follows towards extinguishment.
- Systems for Fire Extinguishing

Fire sprinkler

- Water supply towards distribution piping system
- Provide early extinguishment

Types

- External (Hydrants)
- Internal (Fire hose, automatic sprinkler, fire extinguishers)

Classes of FIRE

Class "A"
(solid fuel)

Class "B"
(liquid fire)

Class "C"
(energized electrical equipment)

Class "D"
(combustible materials e.g. magnesium,, potassium, sodium)

Fire Suppression

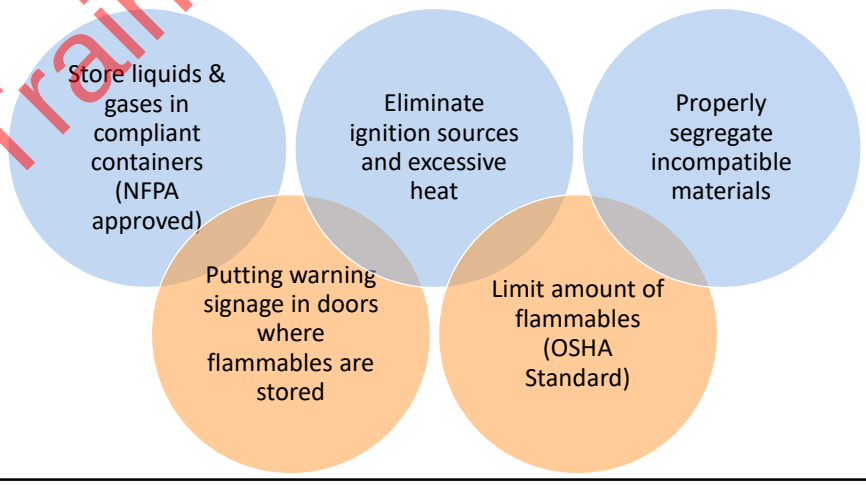
- People are reluctant to sound fire alarms
- Always rational to consider the hazards of panic when a fire alarm sounds

Recommended steps to take:

- Fire Brigades
- Firefighter Training
- Emergency Plans

Storage of Flammables

To reduce the risk of fire, the following storage considerations for combustible or flammable liquids or gases should be followed:



Safety of Employees

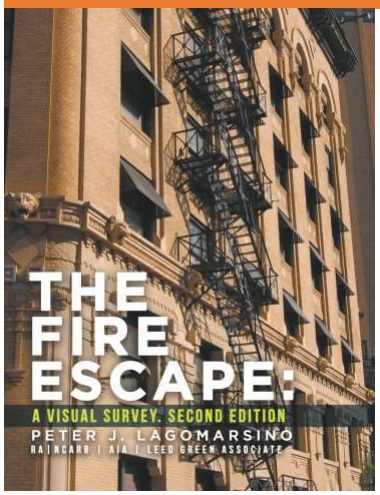
Education
is at the heart of keeping employees safe against fire in the workplace.

Safety of Employees

Some key components:

1	Articulate major fire hazards	5	Communicate evacuation protocol
2	Instruct proper handling and storage of hazardous materials	6	Write procedures to control accumulation of flammable and combustible waste materials
3	Educate on potential ignition sources and their control	7	Communicate safeguards to prevent accidental ignition of combustible materials
4	Communicate what fire protection equipment is in place	8	Develop a list of names/job titles of internal fire safety wardens

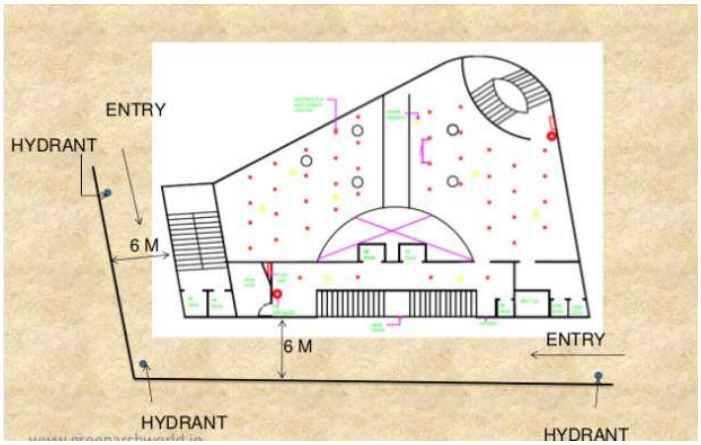
Means of Escape



- clear any obstruction
- provide at least 2 escape routes
- travel distances to safety ore reduced to minimum
- escape routes and emergency exits are clearly signed and never locked while working
- provide emergency lighting
- identify assembly point

Evacuation Drills & Procedures

- Mandatory
- Evacuation Area
- Written procedure

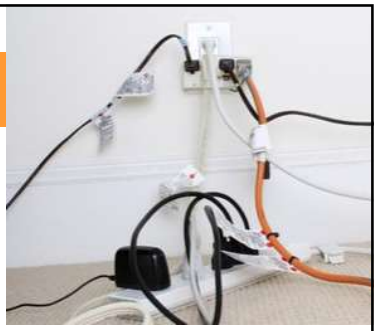


Explosion Potential

Handling, Storage & Use of Explosives

- Inventory of hazardous materials
- Follow guidelines & standards
- Training

Electrical Installations



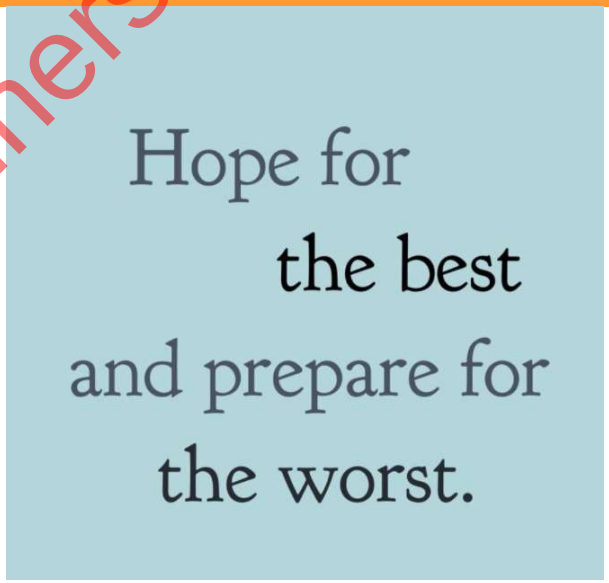
- Electrical safety audits
- Maintenance
- Follow standard
- Correct practices around electricity

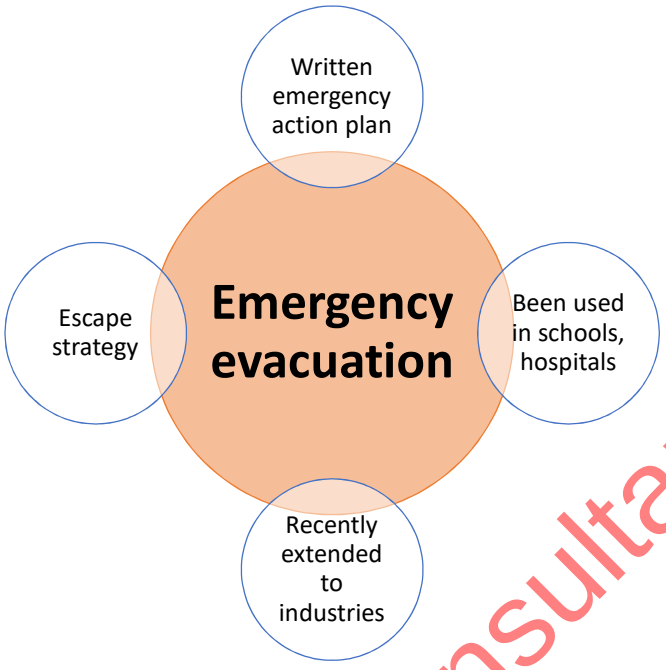
Causes of industrial fires

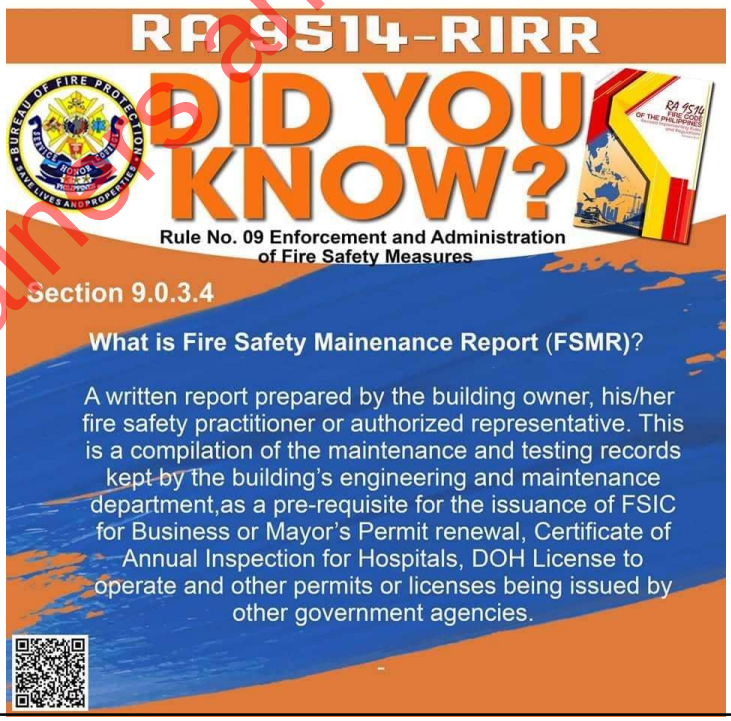
Electrical equipment	**19%**	**Hot Surfaces**	**7%**
Friction	14%	Combustion Sparks	6%
Foreign Substances	12%	Overheated Materials	3%
Open Flame	9%	Static Electricity	2%
Smoking and Matches	8%	Miscellaneous	5%
Spontaneous Ignition	8%	Not Determinable	7%

***Based on a 7-year study of the Association of Fire Insurance Companies*

Emergency & Disaster Planning







KEY POINTS

1. Fire is one of the most frightening scenario in the workplace.
2. Protecting against fire begins with prevention.
3. Most workplace fires can be avoided.
4. A careful risk assessment is the first step in understanding how to avoid fire and mitigate the impact, if it happens.

Q & A