

FIRE PREVENTION AND FIRE PROTECTION



ANTHONY
MEDICAL & CHIROPRACTIC CENTER

Introduction

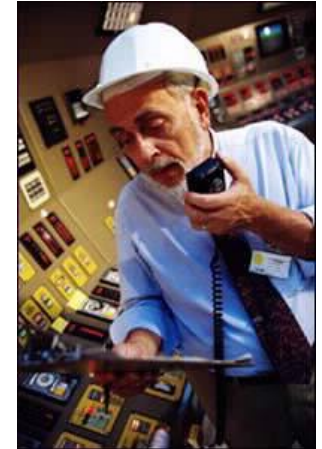
Objectives:

1. Recognize benefits of an Emergency Action Plan.
2. Identify elements of Fire Protection Plan.
3. Identify conditions under which evacuation actions may be necessary in an emergency situation.
5. Identify conditions under which shelter-in-place may be necessary in an emergency situation.
6. Identify characteristics of an effective emergency escape route.
7. Recognize the five types of fire extinguishers, including the types of fires they can extinguish.

Emergency Action Plans

Elements of a Successful Emergency Plan:

- Means of reporting emergency
- Evacuation procedures and emergency escape routes
- Procedures for operations during emergency
- Accounting of all employees during emergency
- Emergency rescue and medical duties
- Contact persons for accountability



Source of graphics: OSHA

Emergency Action Plans

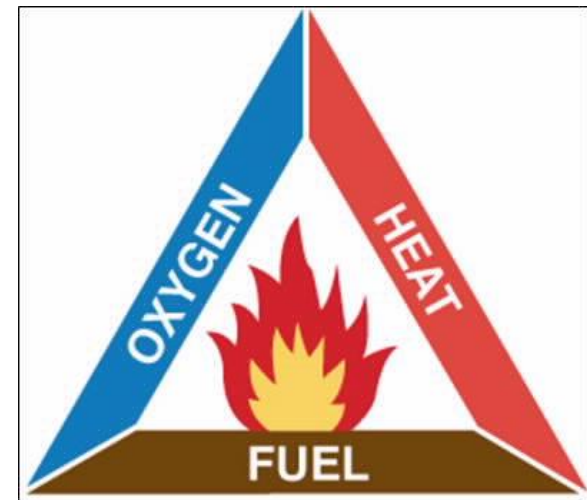
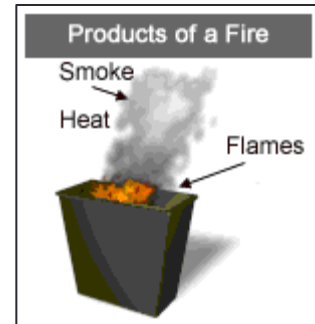
- Staff emergency awareness includes:
 - Roles and responsibilities
 - Threats, hazards, protective actions
 - Notification, warning, communications
 - Locating and accounting of patients
 - Location/use of emergency equipment
- Staff should understand:
 - Emergency response process
 - Evacuation and shelter-in-place process
 - Assembly area location
 - Accounting of employees process



Source of graphics: OSHA

Fire Prevention Plan

- Understanding fires
 - A fire is caused by a rapid chemical reaction between oxygen and a combustible material
 - This results in release of heat, light, flames, and smoke
 - A fire requires four elements:
 - Oxygen
 - Ignition source (heat)
 - Fuel
 - Chemical reaction



Source of graphics: OSHA

Fire Prevention Plan

- Ignition sources
 - Open flames
 - Smoking
 - Static electricity
 - Hot surfaces
 - Electrical and mechanical sparks
 - Lightning



Source: CDC



WARNING	
NO SMOKING--NO HOT WORK SPRAY PAINTING	
PAINT TYPE	124 White
COMP # / LOCATION	2-300-0-L Compartment
SHIFT	Second L/P
L/P	Joe Painter
START DATE	6-14-2001
FINISH DATE	6-18-2001
AUTHORIZED PERSONNEL ONLY	



Source of graphics: OSHA



Fire Prevention Plan

- Examples of fire protection equipment
 - PPE
 - Fire Suppression
 - Portable fire extinguishers
 - Fixed systems



Conditions Requiring Evacuation

Workplace evacuation may be required for:

- **Man-made emergencies**

- Fires
- Explosions
- Toxic material releases
- Radiological/biological incidents
- Civil disturbances
- Workplace violence

- **Natural emergencies**

- Floods
- Earthquakes
- Hurricanes
- Tornadoes
- Wildfires
- Winter weather

Conditions Requiring Shelter-in-Place

Incidents that may require shelter-in-place:

- Release of chemical, biological, or radiological contaminants
- Severe weather – tornadoes
- Other situations occurring outside the workplace



Conditions Requiring Shelter-in-Place

Shelter-in-place:

- Means taking refuge in interior room(s) with no/few windows
- Local authorities often issue shelter-in-place advice via TV or radio
- Procedures specific to worksite procedures should be identified



Source: CDC

Conditions Requiring Shelter-in-Place

Shelter-in-place actions include:

- Alerting employees – ***shelter-in-place***
- Accounting for anyone who is in ***refuge***
- Keeping employees informed



Source of graphics: OSHA

Emergency Escape Routes

Exit routes are:

- Continuous and unobstructed path of exit traveled from any place in workplace to safety
- Maintained for emergency situations

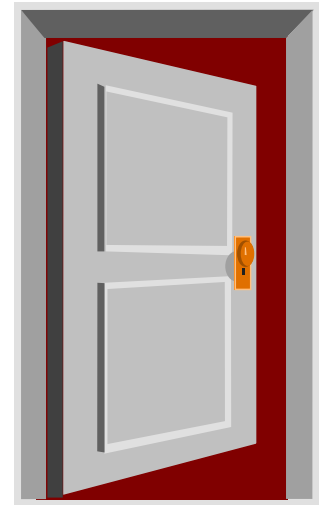
- Pathway should be:
 - Clearly marked
 - Well-lit
 - Appropriate width
 - Unobstructed/clear



Source: TEEEX

Emergency Escape Routes

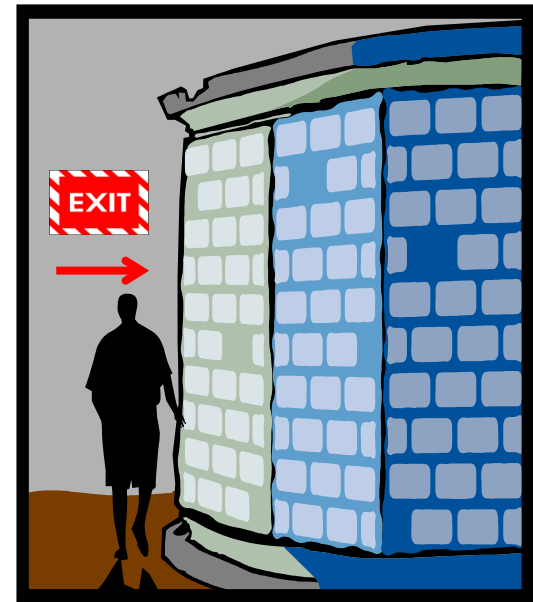
- The basic exit route requirements are:
 - Permanent and recognizable
 - Doors that are fire-resistant materials
 - Adequate number of exit routes
 - Discharge area leading directly outside or to a place with access to outside
 - Exit door unlocked from inside and side-hinged
 - Adequate capacity
 - Minimum height and width



Source of graphics: OSHA

Emergency Escape Routes

- There are 3 elements of escape route
 - Exit access pathway
 - Nearest exits from all points of building
 - Pathway away from building structure



Source of graphics: OSHA

Extinguishing Fires

Methods of fire protection include:

- Fixed extinguishing systems
- Fire fighters
- Fire extinguishers



Source of graphics: OSHA

Fire Classifications

Classes of fires:

- Class A – ordinary combustibles
- Class B – flammable liquids and gases
- Class C – energized electrical equipment
- Class D – combustible metals
- Class K – cooking oils and greases



Extinguishing Fires

- How fire extinguishers work
 - Remove heat
 - Displace/remove oxygen
 - Stop chemical reaction



Source: OSHA

Extinguishing Fires

Parts of a fire extinguisher and labels



Source of graphics: OSHA

Extinguishing Fires

Types of extinguishers:

- Water
- Carbon Dioxide
- Dry Chemical



Source:
OSHA

Extinguishing Fires

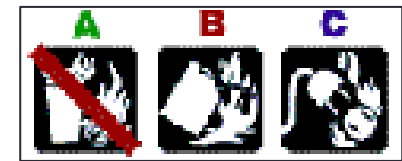
- Water or air-pressurized water (APW) extinguishers
 - Designed for **Class A fires only**
 - Large silver container, 2 to 3 ft. tall, weighing about 25 lbs. when full
 - Filled 2/3 with ordinary water, then pressurized with air
 - Detergents may be added
 - Cool the surface to remove the heat
 - **Never use to extinguish flammable liquid fires or electrical fires**



Source of graphics: OSHA

Extinguishing Fires

- Carbon Dioxide (CO₂) extinguishers
- - Designed for **Class B and Class C fires only**
 - Red cylinders, ranging from 5 to 100 lbs. or larger, with a hard horn and no pressure gauge
 - Filled with Carbon Dioxide (CO₂), under extreme pressure
 - Displace oxygen; dry ice pieces also have cooling effect
 - **Never use in confined space without respiratory protection**



Source of graphics: OSHA

Extinguishing Fires

- Dry Chemical extinguishers (Multi-purpose)
 - May be used on **Class A, Class B, and/or Class C fires** (check label)
 - Red cylinders, ranging in size from 5 to 20 lbs.
 - Fire-retardant powder is the extinguishing agent and is propelled by a compressed, non-flammable gas
 - Separates fuel from oxygen; powder also interrupts chemical reaction



Source of graphics: OSHA

Extinguishing Fires

- Class K – dry and wet chemical extinguishers
 - Designed for **kitchen fires**
 - Only intended to be used after activation of built-in hood suppression system
 - Filled with electrically conductive extinguishing agents; use only after electrical power to appliance has been shut off
 - Potassium bicarbonate may be used in dry types; wet chemical extinguishers spray a fine mist



Source of graphics: OSHA

Extinguishing Fires

Using a fire extinguisher:

- Steps to follow
 1. Sound alarm; call fire department
 2. Identify safe evacuation path
 3. Select appropriate fire extinguisher
 4. Discharge extinguisher using P.A.S.S. technique
 5. Back away once extinguished
 6. Evacuate immediately if:
 - Extinguisher empty and fire is not out
 - Fire progresses beyond incipient stage

Extinguishing Fires

- P.A.S.S. technique

1. **Pull** the pin
2. **Aim** at base of fire
3. **Squeeze** handle
4. **Sweep** side-to-side at base of fire until fire appears out

Watch area for re-ignition and repeat steps 2 – 4;

**When in doubt,
EVACUATE IMMEDIATELY!**



Source: OSHA