Fire Protection Initial

Terminal Objective

Identify the established basic fire safety and fire protection systems.

Enabling Objectives

- EO 1
  - Identify the five classes of fire
- EO 2
  - Identify the different types of fire extinguishers
- EO 3
  - Identify proper use of fire extinguishers
- EO 4
  - Identify proper procedures for reporting a fire and other emergencies
- EO 5
  - Identify life safety objectives of a fire event

Enabling Objectives

- EO 6
  - Identify types of fire barriers
- EO 7
  - Identify lessons learned from industrial fires
- EO 8
  - Identify transient fire load
- EO 9
  - Identify fire protection systems
- EO 10
  - Identify smoking policy

Pantex Fire Department

- State of Texas certified Firefighters/EMT's
- **On duty 24 hours a day, 365 days per year**
- **Contact Numbers:**
  - **EMERGENCY - 477-3333**
  - **Non-Emergency - 477-4454**
- **Fire Department Support Team –**
  - **Plant employee volunteers who are trained to assist in the event of emergencies.**

Classifications of Fires (EO1)

- Class A
  - Ordinary combustibles
  - Leaves an ash product
    - Wood
    - Paper
    - Leaves
    - Some Plastics

Classifications of Fires (EO1)

- Class B
  - Flammable liquids
    - Things stored in barrels
    - Hydrocarbons
      - Gasoline
      - Diesel
      - Solvents

Classifications of Fires (EO1)

- Class C
  - Electrically energized

Classifications of Fires (EO1)

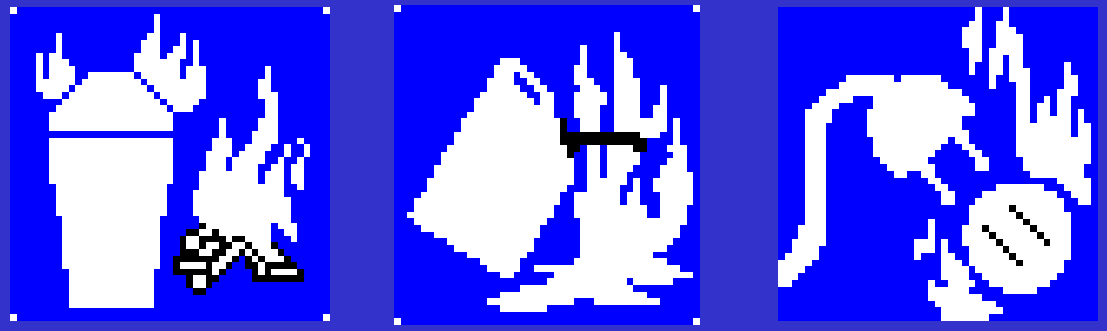
- Class D
  - Combustible Metals
    - Sodium, Magnesium, Lithium
  - These fires liberate tremendous amounts of energy and react unpredictably when extinguishing agents are applied

Classifications of Fires (EO 1)

- Class K
  - Kitchen fires
    - Cooking oils and fats

Types of Fire Extinguishers (EO2)

- Multipurpose ABC Dry Chemical



Types of Fire Extinguishers (EO2)

- Pressurized Water Fire Extinguisher – Class A fires only

Types of Fire Extinguishers (EO2)

- Class D – Metal Fire Only
- Dry Powder
  - For flammable metals
    - ***REMEMBER …***
      - ***Only to be used by personnel with specialized training***

Types of Fire Extinguishers (EO2)

- Class K fires only
- Wet Chemical

Types of Fire Extinguishers (EO2)

- Carbon Dioxide ***can be*** an ***asphyxiant***
  - Carbon Dioxide Fire Extinguishers are not used as a ***principal*** extinguishing agent at any DOE Facility

Types of Fire Extinguishers (EO2)

- Halotron is used in specified areas.
  It is a fixed system.

Proper Use of a Fire Extinguisher (EO3)

- At no time let the fire block your exit
- Check the gauge
- At approximately 8-12 feet from the fire, place the fire extinguisher on the floor
- Use the ***PASS*** method to operate the fire extinguisher

Proper Use of a Fire Extinguisher (EO3)

- The PASS Method
  - ***P***ull the pin from the handle
    - (Discharge a small amount of the agent to ensure operability)
  - ***A***im the nozzle at the base of the fire
  - ***S***queeze the discharge handle
  - ***S***weep the nozzle back and forth at the base of the fire

Proper Use of a Fire Extinguisher (EO3)

- Decision Time
  - If the fire is small (wastebasket…)
  - Use appropriate fire extinguisher for extinguishment
  - If there is any doubt …
    - Activate fire suppression system (if applicable) and go to …***Your muster station***

Proper Use of a Fire Extinguisher (EO3)

- If the fire is large
  - Activate manual fire suppression (if applicable) system as you leave the area
  - Evacuate the facility immediately (close doors)
  - Go to …

Your muster station unless otherwise required to stay in the area (shelter in place)

Procedures For Reporting a Fire (EO4)

- Notify personnel in the affected area by pulling the manual fire alarm and/or yelling …

Fire !!!

- Notify the Fire Department by calling …

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Life Safety Objectives (EO5)

- # 
  - Life safety of personnel in the area.
- # 
  - Life safety of the person using the extinguisher.
- # 
  - Preservation of structures.
- # 
  - Preservation of the environment.

Types of Fire Barriers (EO6)

- Fire Walls
  - Designed for stability as well as fire resistance
  - Must contain the fire and products of combustion on the side of origin
    - Smoke
    - Heat
    - Fire gasses
  - Cannot be breached without proper engineering and approval

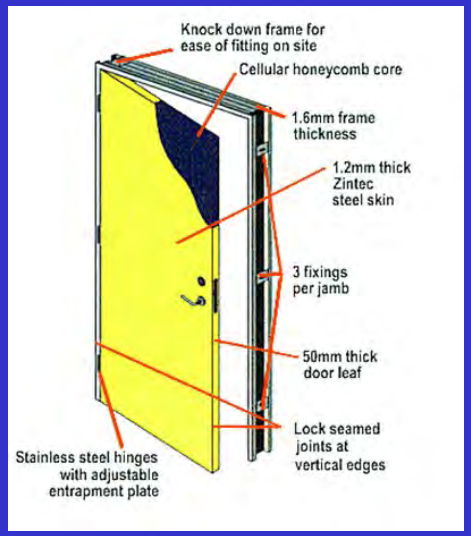
Types of Fire Barriers (EO6)

- Fire Doors
  - Fire doors or, “opening protectors”, are an essential component in maintaining the integrity of the fire-resistive barriers that have openings.
  - Rated and provide protection for openings in fire walls
  - The doors include the frame and hardware

Types of Fire Barriers (EO6)

- Fire Doors cont.
  - Cables, chains, rollers, fusible links, and other moving parts cannot be painted or otherwise damaged.
  - Cables and/or chains on sliding doors must be in good working condition and operate properly
  - There cannot be any obstructions that may interfere with the fire door's operation.

Types of Fire Barriers (EO6)



Types of Fire Barriers (EO6)

- Fire Dampers
  - Normally located in enclosed spaces such as air ducts and air handlers

Types of Fire Barriers (EO6)

- Ceiling Tiles
  - Rated and ***must be in place*** to contain heated gasses, smoke, and flame to the area of origin

Types of Fire Barriers (EO6)

- Requirements for fire barriers
  - There are no hazards to employees from a fire
  - No threat to the public/environment will result from a fire
  - DOE programs will not suffer unacceptable delays because of fire
  - Property damage will be held to a minimum

Types of Fire Barriers (EO6)

- What you should do if fire barriers are found damaged or inoperable?
  - Notify your immediate supervisor
  - Call the Fire Department at ***477-4454*** and report the problem to the Shift Officer

Lessons Learned From Industrial Fires (EO7)

- A fire door blocked open in a chemical lab allowed a fire to extend unchecked …
  - $ 2 Million Loss
- Breached fire wall in a school …
  - $ 1 Million Loss
- Inoperative fire door closures in an office building …
  - $ 1 Million Loss

Identify Transient Fire Load (EO8)

- Transient Fire Load
  - Any combustible material which can be moved in and out of the work area
    - Paper
    - Cardboard boxes
    - Packing materials and shipping palates
    - Flammable materials or products

NOTE: When visiting a bay or cell, maintain control of all combustibles that you bring in; take them out when you leave.

Identify Transient Fire Load (EO8)

- Pantex Plant promotes safe work practices and fire prevention through good housekeeping
- Excessive accumulation of transient fire loading could overwhelm a fire protection system
- Transient fire loading can be found in all areas of the plant

Identify Transient Fire Load (EO8)

- Flammable storage cabinets are utilized for flammable and combustible materials

Identify Fire Protection Systems (EO9)

- Sprinkler systems are for protection of ***facilities*** and ***equipment***
  - Dry Pipe Sprinkler System
    - For buildings subject to freezing temperatures
  - Wet Pipe Sprinkler System
    - For heated buildings
- Sprinkler System Risers
  - Always located in a heated area

Identify Fire Protection Systems (EO9)

- Sprinkler System Head Activation
  - Normal activation temperature of heads is 165° F
  - Fusible links that have been painted will not operate properly and need to be replaced.
  - Sprinkler Heads

Identify Fire Protection Systems (EO9)

- Deluge Systems
  - Designed for the protection of ***PERSONNEL*** located in high-hazard operation areas

Identify Fire Protection Systems (EO9)

- Manual Pull Boxes
  - Manual fire alarm systems for sending alarm signals to the Fire Department
  - If you smell smoke, activate a manual pull box

Identify Fire Protection Systems (EO9)

- Manual Deluge Activation Switch

Identify Fire Protection Systems (EO9)

- When the fire alarm bell sounds, YOU should …
  - Evacuate to assigned Muster Station
  - Ensure accountability is documented
  - Stay in the Muster Station until “all clear” is given from a supervisor, the Fire Department, or Security Police Officer

Identify Smoking Policy (EO10)

- No open flame materials allowed on plant site (matches, lighters)
- Must smoke in designated areas only where electronic lighting devices are installed