Process Safety

Potential PDH: 40

Description:

Upon completion of this course, participants will understand:

- The Importance of Process Safety and Hazard & Effect Management Process (HEMP)
- Safe Design, Pressure Protection, Flare systems
- Safety Classifications, Safeguarding
- Static Electricity, Hazards, Fire and Explosions
- Management of Change, Process Safety Culture

Outline:

1. Introduction
   - Importance of Process Safety. Industry incidents and causes
   - Hazard & Effect Management Process, including Bowtie, LOPA, ALARP
   - Hierarchy of Controls, UKOOA, Critical Elements, Activities, Positions
   - HEMP exercise: 30-minute group work, 30 minutes report out

2. Safe Design, pressure protection, flare systems
   - Design Temperature and Pressure
   - Pressure and Temperature systems
   - Material degradation/failure, material selection,
   - Overpressure protection
   - Relief cases

3. Safety Classifications, Safeguarding
   - Relief Devices: Relief valves , Rupture disks, Emergency depressuring
   - Flare systems
   - Reactive Hazards
   - Passive fire protection, ROV, TSO
   - Types of fires/explosions (VCE, BLEVE, Flash, Pool), Dispersion, Toxicity
   - Flammability, Ternary Diagrams, Purge Exercise

4. Static electricity, hazards, fire and explosions
   - Static Electricity
   - Area Classification/ATEX/Site Lay out
   - Release Detection Systems

- Safeguarding Instrumented Functions
- Safeguarding Memoranda

5. Management of Change, Process safety culture
   - Process and Operational Safety/MOC/Transient conditions
   - MOC exercise - Risk Screening Form
   - Getting the right Process Safety Culture
   - Process Safety Fundamentals
   - Measuring the health process safety: leading, lagging indicators (pyramid)
   - PS Management techniques (Chronic Unease, Asking the right questions)
   - Process Safety Management Reviews and external sources