



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