

Course Content

Title: Process Safety

Potential PDH: 40

Code: BTT060

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

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- 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