

## 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

**Course Content**

Page 2 of 2

- 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