Safety in Process Equipment Design and Operation

Venue Information

Venue: London UK

Place:

Start Date: 2026-04-07

End Date: 2026-04-11

Course Details

Net Fee: £4750.00

Duration: 1 week

Category ID: STC

Course Code: STC-12

Syllabus

courses Syllabus

Introduction:

Safety in Process Design is crucial across various industries such as Oil & Gas, Chemical, and Process. This training courses provides an overview of essential elements of process safety, focusing on engineering design aspects and safeguarding processing equipment within plants.

Objectives:

Upon completion of this training courses, participants will:

- Understand the concept of "Inherently Safer Design" and its importance.
- Gain knowledge of design principles based on codes and standards for safe operation.
- Learn techniques for analyzing and mitigating process safety hazards.
- Familiarize with plant equipment inspection and maintenance procedures.

Detailed:

- Definition and historical incidents of safety in process design.
- Components of process safety and risk identification.
- Introduction to process hazard analysis methods: HAZOP, LOPA, FMEA.

Day 2: Inherently Safer Design

Detailed:

- Methodology and phases of "Inherently Safer Design."
- Hazards associated with process fluids and chemical reactions.
- Safety considerations in materials of construction and fabrication optimization.

Day 3: Safety of Process Equipment

Detailed:

- Hazard associated with process equipment and reactor design.
- Design procedures for pressure vessels, storage tanks, and heat exchangers.
- Assessment of material degradation and NDT inspection.

Day 4: Design of Pressure Relief Systems

Detailed:

- Design and operation of safety valves.
- Calculation and sizing of relief loads.
- Specifics of pressure relief systems for pumps, compressors, and turbines.

Day 5: Process Monitoring and Control

Detailed:

- Safety instrumented systems and SCADA.
- Emergency depressuring systems (EDP) for fire and gas explosion prevention.
- Plant layout considerations and management of change procedures.