

# Safety in Process Equipment Design and Operation

## Venue Information

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**Venue:** London UK

**Place:**

**Start Date:** 2026-02-03

**End Date:** 2026-02-07

## Course Details

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**Net Fee:** £4750.00

**Duration:** 1 week

**Category ID:** STC

**Course Code:** STC-12

## Syllabus

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### **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.