

Process Safety

A Eurotek training course



ERS Process Safety

An introduction:

The ERS Process Safety course covers in detail:

- The key design safety features of process equipment
- The key operational and maintenance procedures which are important in preventing process safety incidents being repeated

Learning objectives:

Upon completion of this course, participants will:

- Have an awareness of what Hazards exist in Refineries and how these hazards can be controlled
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- Have an appreciation for the different types of incidents that can occur in refineries by highlighting various past industrial incidents



Who should attend?

This is a comprehensive core skills course for professionals dealing with all aspects of safety. The course will be highly valuable to all engineers involved in the operation and design of refinery facilities.

Managers – Operations, Safety, and Executive

Engineers – Process, Safety, and Mechanical

Process Safety Management

Implementation Team Members –

Anyone involved with implementation, including operators and maintenance personnel

Description:

This course provides an in-depth study of Process Safety Management. It details what can go wrong within the refinery processes and what hazards exist within the refinery environment. It details the safe limits of the individual refinery equipment in terms of pressure and temperature including the operational safety of piping systems. The key process safety design features of onsite process equipment, such as furnaces, pumps, compressors and heat exchangers, are covered, as well as offsite facilities including atmospheric tankage, pressure storage, flare and blowdown facilities.

The course then expands into operational safety covering the key aspects of operational and maintenance procedures which are important in preventing process safety incidents. Activities such as opening process equipment and bringing equipment back into service are covered in detail focussing on preventing uncontrolled releases of hydrocarbons and reducing exposure of personnel to dangerous gases such as nitrogen and hydrogen sulphide. Other operational safety topics include the safe operation of tanks, including slop operations, controlling pipeline surge, controlling brittle fracture from low temperatures and the control and prevention of static electricity.



Course Presenter

Bill Bridgens has 35 years experience in the petrochemical industry. Bill graduated with a B.Sc. in Chemical Engineering from Imperial College, London and his Initial career was with Exxon Fawley refinery as process engineer, then supervisor & manager of operating plants, including two major turnarounds. In the Last 25 years he worked in process safety advising refineries, chemical plants and fuels terminals around the world on both operational and technical safety issues as well as fire protection

Bill has participated in more than 30 company external assessments of operations integrity management systems at different refineries all over the world. He has conducted various Operational and Technical safety courses, including Handling Fires and Emergencies course and developed global training modules on Refinery and Chemical Plant Operational Safety topics aimed at sustaining knowledge of historical incidents in the workforce.

Particular areas of interest and expertise include operations integrity management systems, operational safety, vapour cloud explosions, blast protection, static electricity, qualitative risk assessments, fire protection, emergency response and historical incidents.



Course programme

Day 1

What Hazards Exist in a Refinery and What Can go wrong

What is a Hazard
What Hazards Exist
What Can Go Wrong
Design of Safe Process Equipment
Design Pressure
Design Temperature
Operational Safety of Piping
Thermal Expansion
Control valves
Utility connections
Furnaces
Compressors
Heat Exchangers
Tankage
LPG Storage
Pressure Relief
Blowdown and Flare System
Emergency Shutdown And Isolation

Day 2

Operational Safety

Hydrogen Sulphide
Nitrogen
Opening-Up Process Equipment
Taking Packed Towers Out of Service
Bringing Equipment Back into Service
Controlling Brittle Fracture
Tank Operations
Slop Operations

Day 3

Operational Safety (contd.)

BLEVE's
Controlling Piping Surge
Sampling
Furnace Flooding
Safety Critical Equipment
Controlling Static Electricity



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