TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000105

Process Safety

Recent and historical incidents have highlighted the importance of having a clear understanding of the principles of process safety management throughout an organisation.



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

Recent and historical incidents have highlighted the importance of having a clear understanding of the principles of process safety management throughout an organisation.

The course is designed to accelerate the participants process safety learning curve. Serious process safety incidents occur somewhere in the industry nearly every week, and few if any are new; essentially the same ways of going wrong are found repeatedly, in different operating contexts.

One of the main objectives of this course is to develop knowledge of the more common ways of going wrong, and one of the ways of doing that is discussion of major incidents, including some of those that have affected our regulatory environment.

Delegates of the course should be able to see their facilities and projects with a new perspective, a new sense of not only how things work, but also of how things fail. They will also have an appreciation of the reasons for some of our process safety practices and regulations, which will contribute to more consistent and better reasoned application of them.

Who it is for and how it helps

Anyone who needs to work with process safety engineers; this would include facilities engineers, operations and maintenance supervisors, project engineers and managers, entry level process safety engineers, experienced professionals new to oil and gas, and anyone who needs a general understanding of the breadth of the process safety engineering discipline.

What you will learn

- Describe standards and participate in the deterministic methods of safety engineering in Oil & Gas processing
- Explain the different elements of Process Safety Management and to identify strategies for implementation
- Identify and describe the safety critical elements in the production process
- Explain the most relevant features of asset integrity
- Define roles and responsibilities applicable to Process Safety Management
- Establish Process Safety Management objectives

Curriculum

Modules 01–04

01 Fundamentals of process safety

- Concept of process safety.
- Process safety roles and responsibilities.
- Safe design principles.
- Concept of loss of containment.
- Major accident hazards.

02 Process safety regulations

- Identification and compliance with legislation and industry standards.
- Best practices standards: OSHA, CCPS.
- Relationship with other benchmarking standards: offshore safety case regulation, SEVESO

03 Process safety culture

- Safety leadership and commitment.
- Safety culture.
- Workforce involvement.
- Stakeholders identification and communication.

04 Process hazard analysis

- Process safety information: products, technology, equipment and human intervention.
- Hazards related to typical Oil & Gas process.
- Methodology for carrying out a HAZID.
- HAZID application.
- Introduction to HAZOP methodology.
- HAZOP register matrix.
- Introduction to What-if methodology.
- HAZOP exercise.
- Introduction to Failure Mode and Equipment Analysis.
- Introduction to fault tree analysis.
- Plant layout. Introduction to consequence analysis.

Curriculum

Modules 05–08

05 Operating procedures

- Definition of operating phase steps and limits.
- Process monitoring. Process control system elements.
- Safe isolation of equipment.
- Pre-startup safety review and operational readiness.

06 Asset integrity

- Safety critical equipment.
- Definition and functions of safety systems.
- Control of ignition sources.
- Control of hydrocarbon inventory.
- Introduction to safety instrumented systems.
- Fire & gas detection systems.
- Passive and active fire protection.
- Maintenance procedures and training.
- Introduction to corrosion.
- Inspection and testing planning and execution.

07 Organizational elements

- Safe work practices. Permit to work system.
- Management of change.
- Downgraded situations.
- Emergency response planning.
- HSE management of contractors: evaluation and performance monitoring.
- Workforce training.
- Human factors in process control.

08 Continuous improvement elements

- Undesired events reporting and investigation. Analysis strategies.
- Management system audit.
- Process Safety Key Performance indicators. API RP 754.

Curriculum

Module 08 — continued

- IOGP Process safety reporting scope.

Joining the programme

Contact the Academy and quote course code 000105 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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