Training - Process Safety Management

PSM-EN-P | Face-to-face only | 10 days

This course provides the knowledge necessary to acquire a consistent approach to achieve an efficient development to effectively manage process safety in production facilities

Level

Skilled

Public

Engineers, technicians and staff, not familiar with the concepts of process safety, involved in operating Oil & Gas field processing facilities or in designing Oil & Gas projects architecture

Objectives

Attendees will be able to implement the following skills:

- Describe standards and participate in the deterministic methods of safety engineering
- Explain the different elements of process safety management and 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

Pedagogical & technical resources

- Several applications and illustrations
- Several case studies and teamwork sessions

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

FUNDAMENTALS OF PROCESS SAFETY — 1 day

Concept of process safety. Historical approach.
Process safety roles and responsibilities.
Safe design principles. Introduction to inherently safer design.

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Concept of loss of containment. Fundamentals of flammability and fluid behavior.
Major accident hazards. Introduction to bowtie diagram representation.

PROCESS SAFETY REGULATIONS — 0.5 day

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

PROCESS SAFETY CULTURE — 0.5 day

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

PROCESS HAZARD ANALYSIS — 1.5 days

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. Node identification. Guidewords.
HAZOP register matrix. Group management.
Introduction to What-if methodology.
HAZOP exercise.
Introduction to Failure Mode and Equipment Analysis (FMEA study).
Introduction to fault tree analysis.
Plant layout. Introduction to consequence analysis.

OPERATING PROCEDURES — 1.5 days

Definition of operating phase steps and limits.
Process monitoring. Process control system elements.
Safe isolation of equipment.
Pre-startup safety review. Operational readiness.
Case study: Buncefield.

ASSET INTEGRITY — 2 days

Safety critical equipment. Equipment deficiencies and quality assurance.
Definition and functions of safety systems.
Control of ignition sources. Electrical equipment regulations.
Control of hydrocarbon inventory. Flares and vents.
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.

ORGANIZATIONAL ELEMENTS — 1.5 days

Safe work practices. Permit to work system.
Management of change.
Downgraded situations.
Emergency response planning. Escape, evacuation and rescue.
HSE management of contractors: evaluation and performance monitoring.
Workforce training. Training matrix development.
Human factors in process control. Alarm systems. Human error in process plants.

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Case study: platform P-36.

CONTINUOUS IMPROVEMENT ELEMENTS — 1.5 days

Undesired events reporting and investigation. Analysis strategies.
Management system audit.
Process Safety Key Performance indicators. API RP 754.
IOGP Process safety reporting scope.
Management review.
Case study: Piper Alpha.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com

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