

40 days

PSENG-EN-P

Overview

LEVEL

Knowledge

PURPOSE

To provide an in-depth knowledge of process safety management in Oil & Gas production activities.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
describe the overall production chain and explain main techniques and equipment used in the Oil & Gas facilities, detail process safety elements and purpose,
describe process safety management roles and responsibilities,
contribute to process hazard analysis studies, events analysis and investigation reporting and monitoring,
develop leadership techniques to enhance safety culture in the organization.

WAYS AND MEANS

Highly interactive training by industry specialist lecturers, with numerous teamwork sessions.
Numerous applications, case studies and experience feedback.

LEARNING ASSESSMENT

Assessment by test at the end of each module and a final oral assessment in front of a jury.

PREREQUISITES

Engineering degree or equivalent experience within the Oil & Gas industry.

WHY AN IFP TRAINING CERTIFICATION?

- An international recognition of your competencies.
- A Graduate Certificate delivered.
- An expertise confirmed in Process Safety Engineer Certification.
- Ready-to-use skills.

Agenda

OIL & GAS FIELD PROCESSING

Fundamentals of reservoir engineering, drilling, completion and well servicing.
Fundamentals of thermodynamics applied to effluent processing.
Crude oil treatment.
Production water treatment and injection.
Gas processing and conditioning.
Overview of static equipment. Piping, valves, thermal and storage equipment.
Overview of rotating equipment. Pumps, compressors and gas turbines.
Instrumentation and process control.

10 d

INTRODUCTION TO PROCESS SAFETY MANAGEMENT

5 d

Fundamentals of process safety. Main standards. Overview of risk based process safety.
Process safety management system. Documentation controls and applicable tools. Implementation.
Commitment to Process Safety:
Workforce involvement and process safety culture.
Workforce training.
Human factors in process control.
Process Safety Information.
Management of contractors.
Continuous improvement elements. Audits and inspections. Establishment of objectives and KPI.
Process safety management in project development.

SAFETY ENGINEERING

10 d

Process hazard analysis. HAZID studies, HAZOP studies. Consequence analysis methodology.
Major hazard assessment and bowtie diagrams analysis.
Quantitative risk assessment.
Layers of protection.
Safety instrumented systems.
Fire detection and protection systems.

HSE IN SURFACE PRODUCTION OPERATIONS

5 d

Safe isolation of plant and equipment (LOTO, degassing-inerting, ventilation...).
Risk assessment of operations. Job safety analysis.
Permit to work system.
Introduction to operating procedures. Pre-startup safety review.
Safe work practices. Management of change.
Downgraded situations.
Simultaneous operations.
Environmental impact of production activities.

ASSET INTEGRITY

5 d

Introduction to Asset Integrity Management.
Criticality and risk assessment tools. FMECA, FTA.
Inspection and test.
Corrosion.
Maintenance and inspection based on failure risk.
Implementation and challenges.

EMERGENCY RESPONSE PLANNING

2 d

Introduction to emergency response management.
Scenario identification and development. Tier definition.
Definition of resources.

ACCIDENT INVESTIGATION WORKSHOP - ROOT CAUSE ANALYSIS

2 d

Introduction to undesired events reporting and investigation.
Initiating investigation process. Gathering of information.
Analysis of information. Root cause analysis.
Identification of risk control measure and definition of action plan.
Case study.

FINAL ORAL ASSESSMENT

1 d