

HSE in Surface Production Operations

5 days
Overview

EPSAFOP-EN-P

LEVEL

Knowledge

PURPOSE

This course provides a thorough understanding of risks and safety measures related to products, equipment and different operations in Oil & Gas production facilities.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
deepen knowledge of hazards involved in routine operations, SIMOPS and shutdown/start-up operations,
assess risks involved in different operations and adopt best industry practices,
adopt the most appropriate safety measures in routine Oil & Gas processing operations and when faced with unforeseen events,
explain key safety management rules leading to high HSE standards.

WAYS AND MEANS

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

LEARNING ASSESSMENT

Assessment by test at the end of the course.

PREREQUISITES

Provide evidence of a professional experience of at least 3 months related to HSE and/or Oil & Gas process industry.

Agenda

OPERATIONS & HSE

0.25 d

Hazards and risks incurred. Consequences.
Risk management means: equipment, organizational and human aspects.

MAIN HAZARDS OF HYDROCARBON PROCESSING

0.75 d

Flammability: flame ignition and propagation principles. Types of combustibles, oxidizers and most common ignition sources in process facilities.
Toxicity: exposure limits. Specific hazards associated to H₂S. Use of Safety Data Sheet (SDS).
Fluid behavior and related hazards: vessel pressure, consequences of temperature variation (thermal expansion, vaporization, vacuum, water hammer).
Fundamentals of pressure relief equipment: pressure relief valves, rupture disks, vacuum protection, flame arrestors.

RISK ASSESSMENT TOOLS - JOB SAFETY ANALYSIS

0.5 d

Fundamentals of risk assessment process.

Job Safety Analysis (JSA) procedure and steps.
JSA exercise.

PERMIT TO WORK SYSTEM PROCEDURE

0.5 d

Permit To Work (PTW) system. Objectives. Roles and responsibilities.
Main elements of PTW system. Typical approval process and information flowchart.
Master permit and associated certificates.
Management of shift and rotation handover. Permit renewals.
New technologies applied to PTW system. Digital PTW.

SAFE ISOLATION OF PLANT & EQUIPMENT

1.5 d

Management of isolations.
Lock-out/tag-out procedure.
Steps of process isolations.
Degassing-inerting: steam, nitrogen, water, vacuum, work permits...
Risks associated to operations of depressurization and drainage toward: flare, slops, tanks, oily water.
Start-up: checks, accessibility and cleanliness, line up, deaeration, seal tests, oil in.
Personal Protective Equipment (PPE).

HSE IN MAINTENANCE & CONSTRUCTION WORKS

0.5 d

Risks associated to construction and maintenance works:
Lifting and rigging operations.
Access and working in confined space. Ventilation and atmosphere analysis: oxygen content explosivity, toxicity.
Works at height: ladders, scaffolding, mobile elevated working platforms...
Safe use of tools.
Radioactive sources.

ORGANIZATIONAL FRAMEWORK - HUMAN FACTORS

0.5 d

Introduction to HSE management system.
SIMultaneous OPerations (SIMOPS) management.
Management of change.
Downgraded situations.
Human factors in risk management.

ENVIRONMENTAL MANAGEMENT IN FIELD OPERATIONS

0.5 d

Main concepts.
Tools to manage sustainability.
Potential environmental impacts in field operations.
Sustainability reporting. Introduction to regulatory framework.