

SURFACE PRODUCTION TECHNICIAN TRAINING

OBJECTIVES

To give the technical background necessary for a safe, environmentally friendly, and optimized operation of the Oil & Gas production facilities.

Upon completion of the course, participants:

- acquire a solid foundation in applied physics and chemistry and a deeper understanding of the physical phenomena involved in the Oil & Gas production facilities,
- know the main completion elements, and well activation techniques and understand the influence of each operating parameter,
- know the oil, water and gas treatment processes, their typical operating conditions and the influence of the different operating parameters,
- know the technology and operation of the static equipment and rotating machinery used in the Oil & Gas production facilities,
- are aware of the product and equipment related risks and know the main safety rules relative to day-to-day operation and works.

COURSE CONTENT

FUNDAMENTALS

5 days

Fundamentals of chemistry: Atoms, molecules, atomic weight, molecular weight Hydrocarbons types and main characteristics

Applied physics: force, work and energy, temperature, thermal energy and heat transfer, pressure, hydrostatics, hydrodynamics and friction losses

Well effluent: composition, types and characterization parameters

Liquid Vapor equilibrium of pure components (Vapor pressure curves, volatility) and mixtures (phase envelopes)

Well effluent behavior from pay zone to the surface processing plant inlet

Need for effluent field processing Product specifications

DOWNHOLE PRODUCTION

5 days

Fundamentals of reservoir engineering

Information on drilling techniques

Completion techniques and equipment Wellhead equipment

Artificial lift by Gas Lift (GL), Electrical Submersible Pumps (ESP), Sucker Rod Pumps (SRP), Progressing Cavity Pumps (PCP): principle, operation, selection criteria

EFFLUENT PROCESSING TECHNIQUES

10 days

Crude oil treatment:

Stabilization (degassing): principle, process parameters, foaming problems and available solutions

Dehydration (water removal): principle, process parameters, emulsion problems and available solutions

Sweetening (H₂S removal): different techniques, process parameters

Reject and injection **water treatment**

Gas conditioning and processing:

Gas dehydration and hydrate formation inhibition

Gas sweetening

NGL extraction/recovery

Fundamentals of LNG

Oil and gas **metering**

Terminals, **FSO/FPSO**, Offshore development, Electricity

STATIC EQUIPMENT: technology and operation (Martigues)

5 days

Piping and valves

Metallurgy and corrosion

Storage equipment

Thermal equipment

Instrumentation, process control

Distributed Control System (DCS)

Safety System: HIPS, ESD, EDP, F&G, USS

ROTATING MACHINERY: technology and operation (Martigues)

5 days

Fundamentals of fluid flow

Pumps: centrifugal and positive displacement

Compressors: centrifugal and reciprocating

Expanders

Gas turbines

SAFETY AND ENVIRONMENT IN OPERATION AND WORKS

5 days

Product related risks

Equipment related risks

Hazards for personnel

Safety in production operations

Safety in construction and repair works

Risks inherent to Simultaneous Operations (SIMOPS)

Safety management on site Responsibilities

Risk analysis Safety Engineering concepts

E-532

▲ Who should attend?

Panel operators and supervisors, working for the Oil & Gas production, transport or storage facilities.

▲ Duration

35 days

▲ Sessions in English

May 17 - July 02, 2010

Pau (South-West)

& 2 weeks in Martigues (South)

French sessions: F-532

▲ Registration

Fees: € 12,900

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▲ Course Coordinator

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Ref. **PROD / PRODTEC**

At request, this course may be organized for a single company, and tailored to its specific requirements.