

E- 532

▲ Who should attend?

Experienced operators or newly affected panel operators, working for the Oil & Gas production, transport or storage facilities.

▲ Duration

35 days

▲ Dates & Location

September 08 to
October 24, 2008
Rueil-Malmaison (Paris)

Scheduled in French
from September to
October 2009

▲ Tuition Fees

€ 11,900

▲ Course Coordinator

Michel CARON

Ref. PROD / PROTEC

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.

On 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.

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.

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.

Case of offshore developments.

Applications using a dynamic Simulator for gas lift developed by RSI (IFP Group)

OIL & GAS PROCESSING TECHNIQUES

10 days

Well effluent: composition, types and characterization parameters.

Need for effluent field processing - Product specifications.

Crude oil treatment.

Stabilization: principle, process parameters, foaming problem;

Dehydration: principle, process parameters, emulsion problems;

Sweetening (H₂S and/or CO₂ removal) : different techniques, process parameters.

Reject and injection water treatment.

Gas conditioning and processing.

Gas dehydration and hydrate formation inhibition;

Gas sweetening;

Hydrocarbon liquid extraction;

Information on LNG.

Oil and gas metering.

STATIC EQUIPMENT: technology and operation

5 days

Piping and vessels.

Metallurgy and corrosion.

Storage equipment.

Thermal equipment.

Instrumentation, process control.

Distributed Control System (DCS).

Safety system layout: ESD, Fire & Gas, HIPPS.

ROTATING MACHINERY: technology and operation

5 days

Fundamentals of fluid flow.

Pumps: centrifugal and positive displacement.

Compressors: centrifugal and reciprocating.

Expanders.

Gas turbines.

Electricity and electrical motors and power generators.

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.