

Gas Processing Operations – Applied Mechanics Training

Course Price

£2750

Course Description

This short course is designed to give the attendees the fundamentals of natural gas processing and conditioning including details of the major processes. Typical equipment and facilities will be discussed with regard to their design and operation including hands-on process simulations.

The course covers the properties, uses and specifications of natural gas and natural gas liquids including stabilized condensate; LPG and LNG to provide for safe storage and transportation.

The design and operation of major Gas Processing Plant components will be covered. These include equipment from the input to the sales products exiting the plant such as Separators; Compressors; Engines; Gas Turbines; Electric Motors; Pumps; Heat Exchangers; Sour Gas Treatment; Dehydration; Dew Point Control and Liquids Treatment.

Course Objectives

- Understand the properties; specifications and uses of Natural Gas and its by-products
- Understand Gas Processing Operations; Compression; Dehydration; Gas Sweetening; Liquid recovery (from Condensate, through LPG; Ethane and LNG).
- Understand the operation of the major Gas Processing hardware.
- Be able to operate the equipment safely and efficiently.
- Be able to trouble shoot major equipment.
- Understand the capital vs operating cost benefits of various equipment options (eg Gas vs Electric Driven equipment)
- Understand the cost benefits of different Maintenance programs.
- Understand the safety and environmental issues pertaining to Gas Processing.

- Understand the relative benefits of Glycol vs Dessicant Dehydration systems.
- Understand safe product storage and transportation practices.
- Be able to optimise Gas Processing control issues.
- Understand the relative benefits of Capacity optimization vs Energy efficiency and where BOTH may be attained simultaneously.
- Be able to co-ordinate with both Project and Production Engineers and understand their differing priorities.

Who Should Attend

- Technical personnel involved in the Natural Gas Industry
- Project, Operations and Maintenance personnel in Gas Processing Plants and Compressor Stations.
- Professionals in other areas of Gas Development who wish to gain a detailed insight in
- Junior and Intermediate Project and Production Engineers and Senior Operators and Plant Foremen.
- Managers and Supervisors who require a better insight into the technology of the Facilities they manage.
- Equipment and Service suppliers who wish to better understand their clients' needs.
- Process Engineers who need a more practical understanding of Process equipment.

Course Content

The Course Logically takes the Attendees through a Processing Plant from the Input to the Sales point of the products.

Day 1

Properties; uses and specifications of Natural Gas and its by-products.

Inlet Separation and Gas Compressors.

The three main types of Compressors; Reciprocating; Centrifugal and Screw and how they are best

suited to your application. Basic Compression Theory and how to calculate power and temperature rise. Valve and rod-load monitoring. Cooling systems, optimizing and troubleshooting. Capacity control. Hands-on Compressor Simulation.

Day 2

Driver selection:- gas engines vs gas turbines vs electric motors vs steam turbines – making the right choice at the outset; understand the capital vs operating costs of these (the most expensive) items of equipment, how they work and why on-stream time is the most important parameter! Pumps and other rotating equipment. Noise control and environmental issues.

Day 3

Refrigeration processes and Dehydration. The ways of attaining Dew point control and Liquid stabilization. Processes for the production of Stabilized Condensate; LPG; Ethane recovery and/or LNG. Optimizing Refrigeration Plants with the use of Sub-coolers and Economizers. Gas Sweetening. Hands-on Refrigerant Plant Simulation.

CPD Unit

Continuing Professional Development

21 HOURS CPD