

Training Title

TRANSPORTATION & PROCESS SYSTEM FOUNDATION

Training Duration

5 days

Training Venue and Dates

REF			19 - 23 May		
PE083	Transportation & Process System Foundation	5	2025	\$5,500	Dubai, UAE

In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.

Training Fees

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments, and Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING INTRODUCTION & DESCRIPTION

The course has been designed for Supervisory level personnel working in oil & gas gathering and processing facilities. The course is designed to give an overview of the complete oil and gas process systems and Gas lifting operations on a basic (foundation) level. Course sessions will emphasize Oil and gas Production process, Wellhead and production facility operation. Also include Natural Gas fundamentals and process which includes Natural gas processing facility operations like separation, sweetening, dehydration and NGL recovery. Understanding the basics instrumentation and process control system included in this course to enhance knowledge like basic instrumentation, process variables, safeguarding systems, etc. Produced water treatments include produced water treatment and disposal. Fuel gas system and Inert gas system.

TRAINING OBJECTIVES

By the end of the training course, the participants should be able to get enhanced exposure in:

- Oil and gas production overview and hydrocarbon basics
- Various natural gas processing operations
- Produced water system, Treatment, and disposal. Chemical treatment. Fuel Gas and inert gas system.
- Basic instrumentation and control system used in an oil and gas process facility.
- Gas compression, dehydration, sweetening, NGL recovery, and gas injection.

WHO SHOULD ATTEND?

The program is ideal for operators & panel operators and as a refresher course for supervisory-level personnel who operate and /or supervise oil & gas production facilities.

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TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your questions and share in developing the right answers using your analysis and experiences. Tests of multiple-choice type will be made available on a daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

DAILY OUTLINE

Day - 1

Welcome, Registration, and pre-assessment test.

1. Hydro Carbon Chemistry and their Behavior
2. Hydro Carbon Process.

Basic hydrocarbon theory, oil Production. Principles of gas / liquid separations, Oil and Gas production process, PFD of the oil treatment facilities starting from the wellhead up to storage tanks. Design basis (Capacity) of the oil treatment facilities. feed/product oil specifications, Process description of Risers, receivers, separators, scrubbers, strippers, pumps, compressors, etc., P&ID's details of the Risers, Receiver, separators, scrubber, flare, strippers, storage tanks.

3. Process safety

Identify workplace health and safety hazards – various hazards in a process plant, unsafe acts and unsafe events, safe working practices, control of hazards, and Permit work system. Handling, storing, and disposing of hazardous workplace chemicals– Hazardous chemicals, chemical properties, MSDS, Hazardous chemicals handling. Storage and disposal, safety practices in handling hazardous chemicals.

Personal Protective Equipment– Importance of PPE, Various PPEs, Use of PPEs, Protection, special PPEs using while handling hazardous chemicals.

4. Case study discussion, Video lessons.

Day - 2

1. Natural Gas Basic Information: - History of natural gas, Commercial uses. Natural Gas Production facility – Primary separation.
2. Natural Gas Processing:-Gas Sweetening Process, Principle of Gas sweetening, Gas sweetening process, Process control, Start up, Shut down and trouble shooting.
3. Gas Dehydration:-Principle of Dehydration, Dehydration Process, Process Control, Start up, shut down and trouble shooting.
4. Gas Compression: -Basic principle of gas compression, types of Gas compressors, Cooling and scrubbers used in Compressors, Operation of gas compressors.
5. Case study discussion, Video lessons.

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Day - 3

Produced water treatment & Disposal

1. Produced water: -properties, Corrosive & scale forming with produced water, produced water separation systems, produced water chemical treatments, Produced water disposal /injection systems.
2. Chemicals used in oil & gas treatment: -Chemical Hazards, MSDS, Chemicals used for Oil and Gas treatments: - Demulsified, corrosion inhibitor, biocide, H₂S Scavenger and Scale inhibitor etc.
3. Chemicals used for gas treatment: -Methanol, DEG, TEG, DEA etc.
4. Chemicals for water treatment: -Oxygen scavengers, poly electrolyte, hypochlorite. etc., Chemical dosing pump Operation.
5. Case study discussion, Video lessons.

Day – 4

1. Basic Instrumentation and control system:-Basics Instrumentation, Process variables, Unit and measurements, Pressure, Temperature, Flow and Level.
- 2.Process Control:-Elements of a control system, Measuring device, Transmitter, Controllers, Final control elements.
3. Process safe guards - Alarms, Trips, shut down valves, Blow down valves, fire and gas detectors,
3. Piping and Instrumentation diagram (P&ID)– PFD and P&ID. Various symbols used in P&ID, Line diagram, identification of various equipment's, signals, valves in a P&ID.
- 4.Practical Task - How to read and understand process from P&ID. Understand various process operation using P&ID, safeguards, trip conditions.

Day – 5

1. Operation Process equipment: - Pre-Start Checks, Equipment Start-up, Start-up after Maintenance, Bringing Equipment to Normal Operating Parameters, Bringing Equipment to Specified Operating Parameters.
 2. Monitor and Control Equipment Item or Process:-Monitoring Checks, Minimizing Impact on Safety, Health and Environment, Monitoring Feed rates and Production.
 3. Change Production Rates & Production Grade/Specification: -Predicting Production or Product Changes
 4. Practical Task – understand start up procedure for various equipment using P&ID.
 5. Practical task – write start up and shut down procedure for various static and dynamic equipment.
 6. Case study discussion, Video lessons.
- Post course assessment, Certificate distribution.

NOTE:

Pre & Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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