

(3) Design and Operation of Gas Gathering Systems

WHO SHOULD ATTEND

- Engineers (production engineers, reservoir engineer and field engineer), and other staffs from an operating and/or service and/or consultant and/or engineering company involved in gas production operation process.
- Geologists, reservoir engineers, line managers, operational staff, shift foremen, those new to the industry such as entry-level engineers, as well as anyone interested in a general, technically oriented overview of the gas processing industry.
- Production & facilities department engineers/senior operating personnel responsible for the design, operation and optimization of onshore gas gathering systems and their associated field facilities.
- Gas process and facility personnel in need of understanding gas gathering systems fundamentals.
- Managers, engineers, chemists, and operators needing to understand gas related problems in gas production and gathering systems and their solutions.
- Engineers and technical personnel involving with appraisal or field development project, and/or reservoir management team intending to enhance their technical skills and level of confidence in decision making by identifying produced gas problems issues, various operational constraints etc.
- Front line engineers from an operating and/or service and/or consultant and/or engineering company requires improving their technical skills with high level of confidence to adapt appropriate technology to solve produced gas problems and better reservoir management.
- Surface facility engineers from an operating and/or service and/or consultant and/or engineering company getting necessary knowledge to design or operate the equipments and facilities.
- Technical, project and managers responsible in the production development for gas gathering facilities operation
- Suppliers, sales and marketing professionals wishing to gain an understanding of gas gathering systems

COURSE OBJECTIVES

- About the selection and evaluation processes used to dehydrate natural gas, meet hydrocarbon dew point specifications and extract natural gas liquids
- How to apply thermodynamic property correlations to the design and evaluation of gas gathering systems
- To recognize and develop solutions to operating problems and control issues in gas gathering facilities
- How to apply thermodynamic laws and principles to equipment design and operation
- The impact of gathering system pressure on gas well deliverability
- The impact of produced fluids composition on gathering system design & operation

- Evaluate field facility & gathering system configurations for different applications
- Recognize and develop solutions to operating problems with existing gas gathering systems

CONTENT

Gas composition, physical and chemical properties of gases; Gas well inflow performance & deliverability; Effect of gathering system/abandonment pressure on reserves recovery; Gas production facilities; CO₂ content, rich and lean gases; Produced water and separation equipment; Heat transfer, heat exchange and compression and compressors; Refrigeration, fractionation/distillation; Hydrates, hydrate inhibition and gas dehydration, chemical inhibition and glycol dehydration; Adsorption systems, gas sweetening and sulfur recovery; Acid gas re-injection; Natural gas liquids; dew point control and condensate stabilization; Multiphase flow basics and gas transportation options; Corrosion/materials selection; Gathering system layout, well site/field facilities options

INTENDED FOR

This course deals with the design, operation and optimization of gas gathering systems and their associated field facilities, from the wellhead to the central gas processing facility. From a design perspective, the main variables that impact the flexibility and operational characteristics of a gas gathering system will be discussed. Typical operating problems will also be covered including hydrates, multiphase flow issues, corrosion, declining well deliverability, etc. Course emphasis is on the application of engineering principles to solve operating and design issues common in gas gathering systems.