

GAS BOOSTER STATION OPERATIONS

PRD054

COURSE DESCRIPTION

This course will highlight the different processes and the associated systems for the gas booster station operations. Glycol dehydration is a liquid desiccant system for the removal of water from natural gas and natural gas liquids (NGL). It is the most common and economic means of water removal from these streams.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary for the operation and maintenance of gas booster stations.

COURSE OBJECTIVES

By the end of this training course, participants will have the knowledge about:

- Gas compression stages.
- Gas separation's modules.
- Booster compression types.
- Calculate and reduce glycol consumption.
- Glycol system startup and shutdown.
- Troubleshooting through glycol analysis interpretation.
- How to recapture the condensate trapped.
- Reducing unnecessary glycol losses.
- Maintenance and repairs.

WHO SHOULD ATTEND

This course is suitable to a wide range of professionals and will greatly benefit:

- Production supervisors.
- Safety personnel.
- Individuals working with Gas compression / Booster Systems.

COURSE DURATION

5 Working Days

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COURSE OUTLINES

1. Introduction to Natural Gas

- Natural Gas Terminology.
- Natural Gas Formation.
- Natural Gas Composition.
- Natural Gas Properties.
- Natural Gas Phase Behavior.

2. Natural Gas Conditioning

- Field Separation.
- Gas Sweetening.
- Gas Dehydration.

3. Booster Station Utilities

- Natural Gas Compression
 - Introduction.
 - Reciprocating Compressors.
 - Centrifugal Compressors.
 - Comparison between Compressors.
 - Compressor Selection.
 - Multistage Compression.
 - Compressors Calculations.
 - Compressor Performance Maps.
- Techniques of Troubleshooting
 - Knowing when there is a problem
 - Troubleshooting guides
 - High water content
 - Glycol concentration
- Operating conditions
 - Pressure
 - Temperature
 - Liquid levels
 - Flow rates
- Maintenance procedures
 - Preventative maintenance
 - Record keeping
 - Mechanical Maintenance

4. Operations of Glycol Dehydrator

- Natural gas principles
- Gas compression principles.
- Booster compressor's types and selections.
- Purpose of dehydration
- Absorption selection of glycol
- Water contents
- Distillation
- Glycol System Startup and Shutdown
 - Startup procedures
 - Shutdown for short term
 - Shutdown for long term
 - Shortcuts for startup
- Glycol Pumps and Glycol Circulation
 - Pumps
 - Glycol circulation rates and main equations
- Glycol Analysis and filtration
 - Parameters
 - Interpretation
 - Absorption
 - Strainers
 - Filter types

5. Natural Gas Processing

- By Refrigerated lean oil Absorption.
- By J.T and LTS.
- By Turbo Expander.

6. Examples for Gas Plants

- Ras Shukier Gas Plant . "GUPCo"
- Amreya Gas Plant.
- Port Said NGL Plant.
- The UGD Company.
- Syrian "Dier El-zour " D.Z Gas Plant.
- Ras Shukier NGL Plant "EBGDco"
- OGD-III GASCO UAE Plant