Tel No:+97126654546 |Fax No:+97126654182|Email: training@cmc-me.com|www.cmc-me.com



PE057:
Gas Conditioning, Treatment Operation & Processing

Training Description:

This intensive training is designed to provide participants with a complete and up-to-date overview of gas conditioning and processing technology. It covers product specifications and the processes available to condition the gas in order to meet these requirements. Participants will understand the nature and purpose of key gas processing operations, and how the individual operations are integrated into plants to process diverse feed streams received from gas fields around the world.

The course will provide participants with a working knowledge of the major processes for Dehydration, Acid Gas Removal (Gas Sweetening), Hydrocarbon Dewpoint Control (HCDP Control), LPG Production, NGL Recovery and Separation (Fractionation), Sulphur Recovery and Tail Gas Clean-up. Participants will also learn the basic vocabulary unique to the industry and the key physical and chemical properties of natural gas constituents.

The course will also cover the important considerations of the design and selection of key process equipment including Separators.

Basic properties of hydrocarbon gases and the behaviour of water-hydrocarbon systems will be discussed. Participants will learn how to calculate system energy changes. This course will discuss the design and operational aspects of process control systems, separation equipment, absorption and fractionation facilities. Further, the methods used for dehydrating natural gas will be covered within the duration of this important course.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Apply and gain an in-depth knowledge on natural gas conditioning, treatment and processing
- ✓ Identify the various types of separators and their sizing and become acquainted with slug catcher and twister supersonic separator
- ✓ Recognize the role & importance of water content & dew point applied in gas conditioning & processing technology
- ✓ Enumerate the formation, prediction and inhibition of hydrates and discuss the process of liquid desiccant dehydration
- ✓ Determine the operating variables of gas conditioning & processing technology and recognize enhanced glycol concentration and solid desiccant
- ✓ Analyze the process of hydrocarbon recovery (NGL) and discuss mechanical refrigeration
- ✓ Emphasize the thermodynamics of gas and employ the removal of acid gases such as H2S, CO2, CS2, COS & RSH
- ✓ Discuss the pH diagram of propane and develop an understanding on liquid ethane recovery
- ✓ Review & improve the amine process, corrosion, process control, physical, combined & sulfinol processes
- ✓ Carryout the operation & control of natural gases as well as the sulphur recovery
- ✓ Describe the chemical reaction of natural gases and gain in-depth knowledge on claus process variations and claus combustion operation
- ✓ Identify the re-heating options and the mechanical considerations of natural gases
- ✓ Employ catalyst converter operation and distinguish the tail gas clean up options

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Training Designed for:

This course is intended for those who are directly involved in supervising gas processing operations; managers and engineers involved in the planning and development of new gas processing facilities or modifying existing facilities; those who are involved in the negotiation of contracts for the sale of Natural Gas, LPG and NGL Products; and newly employed engineers and other technical staff in the oil and gas processing industry will find the course particularly relevant. Those employed in the activities that support the gas processing industry will also receive considerable benefit from the broad overview.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- PRE-TEST
- Introduction to Natural Gas Processing
- Contract Terms
  - Gas Contracts
  - Liquid Contracts
- Separators
  - Types of Separators
- Separator Sizing
- Slug Catcher
- Twister Super Sonic Separator
- Case Study

DAY TWO:

- Water Content & Dew Point
  - Sweet/Sour Gas
  - Calculation Charts
- Hydrates
  - Formation, Prediction and Inhibition
  - Examples
- Liquid Desiccant Dehydration
  - TEG Process
- Operating Variables
- Enhanced Glycol Concentration
- Solid Desiccant
- Case Study

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DAY THREE:

- Hydrocarbon Recovery (NGL)
  - Solid Desiccant Short Cycle Units (HRU's)
  - Joule-Thompson (JT) Plants
  - Mechanical Refrigeration Plants
- Mechanical Refrigeration
- Thermodynamics of Gas
- Removal of Acid Gases (H2S, CO2, CS2, COS & RSH)
  - Batch Processes
  - Amines
  - Physical Solvents
- pH Diagram of Propane
- Case Study

DAY FOUR:

- Liquid Ethane Recovery
- Gas Sweetening
  - Introduction
  - Batch Process
  - Mercury Removal
- Amine Process
- Corrosion
- Process Control
- Physical Process
- Combined Process
- Sulfinol Process
- Operation & Control
- Practical Sessions
  - This hands-on, highly-interactive course includes real-life case studies and exercises

DAY FIVE:

- Sulphur Recovery
  - Modified Claus Plants & Tail Gas Clean-up
- Chemical Reaction
- Straight through Operation
- Claus Process Variations
- Claus Combustion Operation
- Re-heating Options
- Mechanical Considerations
- Catalyst Converter Operation
- Tail Gas Clean Up Options
- Course Conclusion
- POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:
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