GLOBAL EXPERTS INSTITUTE FOR TRAINING.
ISO 9001-2008 TRAINING PROVISION CERTIFIED

Gas Conditioning and Compression System Operation

Schedule Dates:

Start Date	End Date	Place
3 Mar 2024	7 Mar 2024	Dubai

Program Objective:

- ✓ Understand the basic concepts and operational principle, know the specification (water content of gas and issues),
- ✓ Analyze the operating conditions to detect problems more quickly at the production level, improve the existing processes performances,
- ✓ Understand the operation and the detailed equipment technology of compressors,
- ✓ Analyze the operating parameters associated to those rotating machines and their auxiliary circuits,
- ✓ Operate compressors properly.

Who should attend?

- ➢ This course provides technical and operational knowledge related to natural gas treatment and transportation.

Program Outlines

Day One

VAPOR-LIQUID EQUILIBRIUM, ELEMENTS OF DISTILLATION & ABSORPTION

- Phase envelopes.
- Well effluents behavior from pay zone to surface processing facilities.
- Techniques applied to mixture separation: flash process, distillation process.
- Absorption and stripping phenomena.

Day Two

SPECIFICATIONS & WATER CONTENT OF GAS - HYDRATES

- Constituents raising problems for storage, transport or end use of natural gas.
- Different specifications and quality requirements for natural gas.
- Necessary treatments to conform these specifications.

- System behavior. Moisture content of a saturated gas.
- Applications:
- Moisture content of different gases of various compositions.
- Hydrate formation inhibition by injection of inhibitors: MeOH, MEG, DEG, LDHI…

Day Three

GAS DEHYDRATION: TEG ABSORPTION, MOLECULAR SIEVES

- Gas dehydration process: conventional TEG process.
- Case study of gas processing operations: TEG process troubleshooting.
- Gas dehydration by physical adsorption (molecular sieves): technologies, performances and operating principles.

Day Four

GAS TREATMENT: SWEETENING, CONDENSATE EXTRACTION & FRACTIONATION

- Overview of the techniques dedicated to gas sweetening:
- Chemical solvent processes - Amine units (MEA, DEA, DGA, MDEA…).
- Physical solvent processes.
- Hybrid (physico-chemical) solvent processes.
- Overview of other techniques.
- Conversion of H2S: sulfur production (CLAUS process) and tail gas processing.
- Natural Gas Liquids (NGL) extraction (removal of heavy components).
- Low Temperature Separation processes (LTS):
- External refrigeration loop.
- Joule-Thomson expansion.
- Turbo-Expander.
- NGL Fractionation Schemes (C2/LPG/C5+ recovery).

Day Five

TECHNOLOGY & OPERATION OF CENTRIFUGAL & RECIPROCATING COMPRESSORS

- Operating principle, flowrate tuning.
- Technology: constitutive elements and their function.
- Circuits auxiliaries: lubrication, sealing system, cooling, safety systems.
- Compressors operation: routine surveillance, transient conditions.

COMPRESSORS OPERATION (case studies)

- Start-up, shutdown and on-line monitoring.

FEEDBACK & CASE STUDIES - TROUBLESHOOTING SPECIFIC TO CLIENT ASSETS

- Tailored workshops as per client requirements.

Training Methodology:

- Slide presentations
- Interactive discussion
- Simulations and Gamification
- Online Video material

Cost Quotation in Kuwaiti Dinars

The total cost includes:

- Instructor(s) expenses
- Training materials
- Certification

Total Cost: 1250 KD per Participant

(One Thousand Two Hundred Fifty Kuwaiti Dinar)