Gas Treating and Sulphur Recovery Operations

Course general description:

This in-depth training program is designed to provide a thorough understanding of gas treating processes and sulphur recovery operations in the oil and gas industry. It covers fundamental principles, advanced technologies, operational procedures, and troubleshooting techniques for amine treating units, sour water strippers, and sulphur recovery units (SRU). Participants will gain both theoretical knowledge and practical skills necessary for efficient, safe, and environmentally compliant operations.

Audience:

This course is designed for:

1. Process Engineers and Operators
2. Operations Supervisors
3. Technical Services Engineers
4. Maintenance Engineers and Technicians
5. HSE Professionals in gas processing facilities
6. Project Engineers involved in gas treating and Sulphur recovery projects

Course objectives:

By end of the course participants will gain:

1. Understand gas treating processes and Sulphur recovery operations.
2. Implement best practices in amine treating unit operations.
3. Optimize sour water stripping processes and troubleshoot common issues.
4. Effectively operate and troubleshoot Claus Sulphur recovery units.
5. Apply safety protocols for handling acid gases and process equipment.
6. Monitor, control, and interpret process data for better decision-making.

Course duration:

5 days

Course location:

Cairo-Dubai-Istanbul

Course contents:

Day 1: Fundamentals of Gas Treating

1. Introduction to gas treating processes and acid gas removal chemistry.
2. Overview of various amine solutions and their properties.
3. Process flow diagrams, amine treating unit operations, and equipment.
4. Key operational parameters, their significance, and common problems.
5. Case study on amine unit troubleshooting, group exercises on process parameters analysis, and daily quiz.

Day 2: Sour Water Stripping

1. Fundamentals of sour water stripping and associated process chemistry.
2. Thermodynamic principles and equipment design/configuration for sour water strippers.
3. Key operating parameters, control strategies, and performance monitoring.
4. Identifying common operational issues and ensuring safety.
5. Case study on optimizing stripper operations, group exercise on safety protocol development, and daily quiz.

Day 3: Sulphur Recovery Unit Operations

1. Introduction to the Claus process fundamentals and its thermodynamics.

2. Reaction kinetics, material balance calculations, and equipment used in SRUs.
3. Key operating parameters, catalyst management, and thermal/catalytic converters.
4. Tail gas treatment and performance analysis.
5. Case study on SRU performance analysis, group exercises on material balance calculations, and daily quiz.

Day 4: Advanced Topics and Optimization

1. Techniques for process optimization and energy efficiency improvements.
2. Environmental considerations and emission control strategies.
3. Advanced troubleshooting methods and process integration.
4. New technologies and developments in gas treating and sulphur recovery.
5. Case study on a process optimization project, group exercises on troubleshooting scenarios, and daily quiz.

Day 5: Safety, Maintenance, and Certification

1. Overview of safety systems, procedures, and emergency response protocols.
2. Maintenance strategies and environmental compliance.
3. Course review, final Q&A session, and exam preparation.
4. Comprehensive Certification Examination.
5. Distribution of certificates upon successful completion

Methodology:

- 50% lectures & concepts
- 10% Videos
- 15% Case studies
- 15% Exercises
- 10% Discussions

Course code: (TPRS011)