Onshore Pipeline Engineering: Design, Construction & Maintenance

Course general description:

Pipelines are a major asset in most Oil & Gas operators, and ensuring its functionality and effectiveness is a paramount operation and business requirement.

This Onshore Pipeline Engineering: Design, Construction and Maintenance training course identifies all onshore pipeline project aspects including the design, construction, inspection and maintenance. The training course has been designed to cover all life cycle oil and gas pipeline projects.

This training course is prepared to give you the international insight of the onshore pipeline industry to enable you to retain your talent in order to ensure sustainable career growth. This is essential development for those who need to develop their pipeline design, construction, inspection and managerial skills further.

Audience:

This course is designed for:

1. Piping Engineers
2. Pipeline Engineers who want to gain comprehensive knowledge in the pipeline industry
3. Operations Engineers
4. Project Engineers
5. Maintenance Engineers and Technicians
6. Engineers from all disciplines who are new to the pipeline industry
7. Managers and Executives who are new to the pipeline industry
8. Design Engineering staff working on pipeline design & construction

Course objectives:

The course objectives are:

1. Understand how pipelines are basically designed
2. Learn about the challenges of onshore pipeline construction
3. Appreciate the different techniques of pipeline inspection and maintenance
4. Learn about pipeline integrity management
5. Learn about operation and ILI inspection of pipelines

Course duration:

5 days

Course location:

Dubai

Course contents:

Day-1

- Pretest
- Elements of Pipeline Design and Route Selection
  - Pipeline Route Selection
  - Class location
  - Survey and Geotechnical aspects
  - Codes and Standards

- Economics and Cost estimate

Day-2

- Onshore Pipeline Design
  - Pipeline Design
  - Expansion and Flexibility
  - Buoyancy Control
  - Materials Selection and Quality Management
  - Wall Thickness/Pipe Grade
  - Flow Assurance
  - Transient Flow in Liquid and Gas Pipelines

Day-3

- Fabrication and Construction
  - Right-of-Way
  - Ditching
  - Concrete Work
  - Pipeline fabrication
  - Pipe Laying
  - Pipeline Pigging
  - Pipe Lowering
  - Pipeline Welding
  - Main Standards for line pipe manufacturing and testing
  - Crossings (Road, Highways, Minor Streams, and Utilities)
  - Horizontal Directional Drilling (HDD)

Day-4

- Protection, Inspection and Testing of Pipelines
  - External coatings
  - Thermoplastic liners for oilfield pipelines
  - Cathodic protection
  - Inspection and monitoring
  - Direct assessment
  - Intelligent pigging
  - Eddy current testing in pipeline inspection
  - Non-destructive tests (NDT) and Nondestructive examination (NDE) techniques and technologies
  - Ultrasonic monitoring of pipeline wall thickness

Day-5

- Integrity and Maintenance of Pipelines
  - Threats to pipeline integrity and safety
  - External corrosion of pipelines in soil
  - Evaluation and mitigation of mechanical damage in pipelines
  - Erosion-corrosion in oil and gas pipelines
  - Black powder in gas transmission pipelines

- Pipeline cleaning
- Managing of aging pipelines
- Pipeline repair
- Pipeline abandonment
- Risk management of pipelines
- Case histories

- Posttest

Methodology:

- 50% lectures & concepts
- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

Course code: (TEME036)