Intelligent Pigging & Mechanical Cleaning Of Offshore & Onshore Pipelines

Training Program

Introduction:

This BTS Intelligent Pigging & Mechanical Cleaning of offshore & Onshore Pipelines training course consolidates the fundamental knowledge and experiences required by pipeline operators to ensure the pipeline network is well maintained throughout the design life and beyond.
The training course bridges the gap between the theoretical and practical understanding of the pipeline safe operation requirements and integrates the operation, inspection, monitoring and maintenance activities within a robust framework that can be easily communicated and implemented.

Who Should Attend?

The target audience are staff engaged in the design, construction, commissioning and operation of pipelines and associated facilities. This training course is suitable to a wide range of professionals and will greatly benefit:

- Pipelines Maintenance/ Inspection/Repair Engineers
- Pipelines design and construction Specialists
- Oil & Gas Operation & Production Engineers
- Corrosion, Inspection and Integrity Engineers

Course Objectives:

Pigging of pipelines whether it is for cleaning purposes or for defect identification/assessment is vital to ensure that the integrity and reliability of pipelines is effectively managed throughout its entire life cycle from design through to decommissioning.
Lessons learnt from previous failures emphasize that routine cleaning of pipelines at a reasonable frequency is vital to ensure the pipeline health and to avoid unlikely events of failure and subsequent hydrocarbon release.

Course Outline:

Day One:

- Origin and Production of Oil & Gas
- Corrosion & Corrosion control of Offshore & Onshore Pipeline.
- Factors influence pipeline internal corrosion
- Understanding the different failure mechanism of Oil, Water & Gas pipelines
- Introduction to Cleaning Pigging Tools
    - Objectives of routine mechanical cleaning.
    - Factors influencing establishing the cleaning frequency
    - Post cleaning operation samples collection, handling and analysis
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Day Two: How Routine Mechanical Cleaning & Intelligent Pigging can Influence the Pipeline Integrity Management System (PIMS)

- Typical inspection reporting and data assessment
- Codes, Standards and operating instructions
- Pipeline Flow Assurance Problems and how routine mechanical cleaning can control the risk
- Routine pigging and Microbial Corrosion control

- Design consideration for allow easy and successful pigging operation
- Risk Identification and Assessment
- Risk and Risk control measures
    - Developing & Populating Risk Matrix
    - Routine Mechanical Cleaning

- Cleaning pigs design and ordering specifications.
- Types of Cleaning pigs
- Pigging sequence and program development
- Pig tracking while traveling
- Pig Launchers & Receivers

Day Three: Intelligent Pigging

- Preparation of Pipelines for Intelligent pigging operation
- Intelligent pigging Techniques for Oil, Water & Gas pipelines
- Design and functionality of different types of Intelligent Pigging Tools.
- Intelligent Pigging process and preparation requirement
- Pigging un-piggable Lines
- Understanding the Intelligent pigging Report submitted by the IP contractor
- IP operation responsibilities and liabilities
    - Establishing the IP frequency based on risk
    - Validation of IP survey using automated Ultrasonic Sonic Thickness Measurement

Day Four: Intelligent Pigging Techniques for Oil, Water & Gas Pipelines

- Ultrasonic Technique
- Magnetic Flux

- Eddy Current

- Organization Interface with relevant stakeholders
- Roles & Responsibilities
- Competence Assurance
- Emergency Preparedness EPRS
- Pipeline Isolation Technique
- Risk Based Inspection (RBI)
- Remnant life Assessment (RLA)
- Fitness For Service (FFS)
- Defect Assessment

Day Five: Pipelines Repair Techniques

- Codes & Standards
  - Requirement of API 1160

- Intelligent & Routine Pigging Data Management
  - Computers and pipelines Management
  - Routine Mechanical cleaning data handling, validation and assessment
  - Intelligent pigging data handling, validation and assessment
  - How Information Technology application can help Routine & IP programs