IN-LINE INSPECTION FOR PIPELINES PRD040

COURSE DESCRIPTION

The use of in-line tools for inspection and cleaning is accepted as essential for the safe and profitable operation of all pipelines. Now, Regulations require internal inspections using geometry pigs for detecting changes in circumference and MFL or ultrasonic pigs for determining wall anomalies, or wall loss due to corrosion in onshore pipelines in the US. Offshore, pipeline operators wage a constant battle for flow assurance against paraffin, hydrate, and asphaltene formation in deep-water lines, and pigging technology combined with chemical treatment is their primary weapon. This Course is designed to provide a comprehensive introduction to all aspects of utility and in-line inspection pigging. Led by four of the most experienced, independent experts in this field today, the course will be conducted as a workshop, and attendees will be actively encouraged to participate. The course content will be fully illustrated, with actual pigs and models being used to aid understanding and help overcome any language difficulties. Comprehensive course notes will be provided, which will form a valuable source of reference afterwards.

COURSE GOAL

To enhance the participants' knowledge, skills, and attitudes necessary to understand pig types and technology and have an overview of ILI data reporting, and details of pipeline preparation, project planning, procedures, general operations and safety related to pigging activities.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Understand pigging for operation and maintenance.
- Be familiar with in-line inspection (ILI) tools - theory, performance, and detection limits.
- Design and implement an in-line inspection (ILI) program.
- Prepare for (ILI).
- Understand post in-line inspection issues.

WHO SHOULD ATTEND

- Project Managers
- Engineers
- Maintenance and Technical Personnel Responsible for Pipeline Integrity Assurance, Flow Assurance, Corrosion Control, And Safety.

COURSE DURATION

5 Working Days

COURSE OUTLINES

1. Pigging for Operation and Maintenance
    - Pigging during construction.
    - Pigging during operation.
    - Utility Pigs.
    - Cleaning pigs.
    - Sealing pigs.
    - Gauging pigs.
    - Dual diameter pigs.
    - Magnetic cleaning pigs.
    - Designing a Pipeline for Pigging.
    - Pig traps and pigging stations.
    - Location and tracking devices.
2. In-line Inspection (ILI) Tools - Theory, Performance, and Detection Limits
    - Metal loss In-line Inspection.
    - Other In-Line Inspection Tools.
    - Crack detection pigs.
    - Mapping.
    - Geometry and bend-detection pigs.
    - Wax deposition measurement.
    - Spanning pigs.
    - Semi-intelligent pigs.
3. Designing and Implementing an In-line Inspection (ILI) Program
    - Selecting an ILI Tool.
    - Specific Design Considerations for Running ILI Tools.
    - Launch and Receive trap design.
    - Bends, tees, and valves.
    - Issuing an Inquiry.
    - Schedule requirements.
4. Preparation for ILI
    - Controlling Operational Parameters During the Inspection Run.
    - Strategy for Contract Development and Negotiations.

- Developing a good specification.
- Contingency Planning for a Stuck Pig.
- Offshore risers.
- Onshore flowlines, gathering system main sections or laterals.

5. Post In-line Inspection Issues

- Quality Assurance Check of the Data.
- Development of Protocols for Response.
- Prioritization of the Dig Plan.
- US regulatory requirements.
- Criteria for corrosion-caused metal loss.
- Criteria for dents.
- Validation of Results.
- Planning and preparation for field NDE.
- Comparison between ILI, field NDE and actual:
  - Corrosion.
  - Dents - effects of re-rounding.
- Establish level of confidence.
- Fitness for Purpose: Assessment.
- Assessment of defects.
- Establish long-term integrity management program.
- Incorporation of results in risk programs.
- Potential repair consideration.