MAESTRO CONSULTANTS

ADVANCED PIGGING & PLANT ENGINEERING

COURSE OUTLINE 2020

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TRAINING TITLE

ADVANCED PIGGING & PLANT ENGINEERING

VENUE

Dubai, UAE

DURATION

5 Days

DATES

19 - 23 July 2020

PRICE

US$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

TRAINING INTRODUCTION

Pigging is essential for pipelines. Pigging is needed in all the pipelines life stages, during construction, During Operation, and for inline inspection. Pigs can do cleaning to remove depress and other remains after pipe construction to be ready for service. During operation pipeline cleaning to remove wax and black powder will improve the pipeline performance and reduce pumping power. Pigging is used for inline inspection where the present condition of the pipeline can be measured and monitored using recent techniques like MLF and Ultrasonic tools. This will help collecting data for pipeline assessment. This five day course will discuss different aspects of pipeline pigging and its different applications for the pipelines.

TRAINING OBJECTIVES

- Delegates will learn about different types and designs of pigs.
- Delegates will learn different applications of pigs for liquid and gas pipeline
- Delegates will learn about the pipeline degradation mechanisms and types of failure
- Delegates will learn the fitness-for-service assessment techniques

TRAINING AUDIENCE

Engineers and Technicians involves in pipeline construction, maintenance and operation.

COURSE OUTLINE

Ch 1 Pig Design

Types of Pipeline Pigs

- Utility Pigs
- In-Line Inspection Tools
- Gel Pigs

- Pig selection
- Pig Design Aspects
- Pigs Performance
  - Pig Pressure
  - Pig Velocity
  - Pig Wear & Sealing
- Pipeline Design for pigging
  - Onshore and Offshore Pipelines
  - Pipeline Fittings

Ch 2 Pig Launchers

- Components of Pigging Unit
- Pig Launching & Receiving Chambers
- Pigging Obstacles
- Launchers Accessories
- Scraper Traps
- Launching and Receiving Procedures

Ch 3 pigging Applications

Pigging During Pipeline Construction

- Debris Removal
- Gauging
- Cleaning
- Flooding for Hydrotest
- Dewatering & Drying
- Methods of Pipeline Drying
- Case Study – Flooding & Drying

Pigging During Operation

- Separation of Products
- Improving Flow Efficiency
- Corrosion Inhibition
- Meter Proving
- Pigging Frequency
- Case Study – Wax & Black Powder Removal

Specialist Applications

- Intelligence Pigging
  - Calliper Survey
  - Magnetic Flux Pig
  - Ultrasonic Pig
- Internal Coating
  - Epoxy Lining
- Pressure Barriers

Ch4 Intelligent Pigs MFL

- Pipeline Deterioration
- Inspection & Testing Methods
- Inline Inspection
- Types of Flaws
- Parameters Affecting ILI Tools Performance
- Equipment Design
- Probability of Detection
- Magnetic Flux Leakage Technology
    - Factors Affects Capabilities
    - MFL versus Ultrasonic
    - Case Study

Ch 5 Pipeline Assessment

- Causes of Pipeline Failures
- Pipeline Accident Reports
- Fitness-for-Service Assessment
- Piping Degradation – Type of Flaws
- Damage Mechanisms
    - Pre-Service Flaws
    - In-Service Flaws
        - Galvanic Corrosion
        - Cathodic Protection
    - Sweet Corrosion – Inhibitors
    - Sour Corrosion
- Types & Areas of Deterioration

Piping Service Classes

Inspection Intervals

Remaining Life Calculations

Pipeline Assessment – Metal Loss Defects

Level of Assessment

Assessment Procedure

External and Internal Corrosion

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.