

# **ADVANCED PIGGING & PLANT ENGINEERING**



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**TRAINING TITLE**

ADVANCED PIGGING & PLANT ENGINEERING

**VENUE**

Dubai, UAE

**DURATION**

5 Days

**DATES**

25 – 29 July 2021

**PRICE**

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

**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.

## **TRAINING 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

## Pig Tracking Systems

### **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.