

Training Title

ADVANCED PIGGING & PLANT ENGINEERING

Training Duration

5 days

Training Venue and Dates

REF ME080	Advanced Pigging & Plant Engineering	5	19-23 April 2020	\$4,250	Abu Dhabi, UAE
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In any of the 5 star hotel. The exact venue will be informed once finalized.

Training Fees

- **4,250 US\$ per participant for Public Training. Fees Includes Course Materials/ Handouts, Tea/Coffee, refreshments, International Buffet Lunch**

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

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 days course will discuss different aspects of pipeline pigging and its different applications for the pipelines.

TRAINING OBJECTIVES:

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

WHO SHOULD ATTEND

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

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course. Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

COURSE CONTENTS:

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

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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

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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

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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 OUTCOME

Upon successful completion of this course, participants will be able to:

- 1. Learn about different types and designs of pigs.**
- 2. Learn different applications of pigs for liquid and gas pipeline**
- 3. Learn about the pipeline degradation mechanisms and types of failure**
- 4. Learn the fitness-for-service assessment techniques**

NOTE:

Pre & Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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