

Training Title

PIPELINES: DESIGN, INSPECTION & TESTING

Training Duration

5 days

Training Venue and Dates

REF			10-14 January,		
ME047	Pipeline: Design Inspection & Testing	5	2021	\$4,500	Dubai, UAE

In any of the 5 star hotels. The exact venue will be informed once finalized.

Training Fees

- 4,500 US\$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Buffet Lunch

TRAINING OVERVIEW

TRAINING DESCRIPTION

The course will review the basic requirements of the ASME B31 Code for Pressure Piping. Topics include: design conditions, pipe sizing, pressure design, flexibility analysis, material, fabrication, examination, testing, and mechanical integrity for existing piping systems, as provided in API 570 Piping Inspection Code.

TRAINING OBJECTIVES:

- To provide the participant with a complete and up-to-date overview of the area of Piping Technology
- The participant will learn the design, fabrication, examination and testing requirements of ASME B31
- Familiarizing the participant with the related standards for inspection and repair of piping systems that have been in service, as provided in API 570, Piping Inspection Code
- The participant will gain a deep understanding of the physical phenomena which affect the operation, durability of piping systems
- Participant will learn to calculate the pipe schedule, and pipe size that serve certain application
- Participant will learn different methods of pipe inspection and testing based on related Codes and Standards
- Participant will be exposed to different methods of checking pipe flexibility

WHO SHOULD ATTEND

DMCT/OL/9/18(Rev3Dt:23/9/18)

Engineers and Technicians of mechanical, and chemical engineering background will benefit largely from this workshop. Maintenance, Operation, inspection, and R and D People should also attend this course.

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. All presentations are made in excellent colorful power point. Very useful Course Materials will be given.

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

COURSE OUTLINE: -

The Following Topics will be covered in this course over five days

Basics of Piping

Pipe Dimensions and Schedule number

Pipe Manufacturing Methods

Welded and Seamless Pipes

Pipe Drawing Symbols

Types of pipes – application wise

Standard pipe

Pressure pipe

Line pipe

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Piping Materials

Chemical properties

Mechanical properties

Physical properties

Property stability

Classification of steel

Steel heat treating practices

Aging of properties

Piping Codes and Standards

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ASME Boiler and Pressure Vessel Code

ASME B31: Code for pressure piping

API Specifications (Spec), Recommended Practices (RP), and Standards (Std.)

Spec. 5L-90: Specification for Line Pipe

American Welding Society - AWS Welding Handbook

Pipeline Design

1. Design Parameters

Maximum Operating Pressure

Flow Rate of Oil or Gas

Delivery Pressure

Pressure Drop

Pumping Power

2. Failure Theories

3. Design Criteria

Maximum Allowable Stress

Maximum Allowable Pressure

Construction Factor

4. Steel Selection

5. Pipe Sizing

Pipe Diameter

6. Pipe thickness calculation

Pipe Schedule

Pump and Compressor Stations

Originating and booster Stations

Pump Selection

Parallel and Series Operation

Pipeline Installation

Off-shore and on-shore installations

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Welding Techniques

Welding Processes

Welding Procedures

Weld Passes

Inspection and Testing

Visual Inspection

Non-Destructive Testing

Class designation

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Hydrostatic testing

Pigging for Cleaning and Monitoring

Types of Pigs

Monitoring Internal Corrosion

Pipe Repair

Buried pipelines

Corrosion and Cathodic Protection

Pipe Coating

Stress Analysis

Flexibility Analysis Methods

Flexibility Analysis Demonstration

Equipment Load Limits

Cold Spring

Elastic Follow-up

Fluid Service Requirements

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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