PIPELINES: DESIGN, INSPECTION, REPAIR & TESTING

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TRAINING TITLE

PIPELINES: DESIGN, INSPECTION, REPAIR & TESTING

VENUE

Dubai, UAE

DURATION

5 Days

DATES

29 August - 02 September 2021

PRICE

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

TRAINING INTRODUCTION

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 exposed to different method of checking pipe flexibility

TRAINING AUDIENCE

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 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

Piping Materials

Chemical properties

Mechanical properties

Physical properties

Property stability

Classification of steel

Steel heat treating practices

Aging of properties

Piping Codes and Standards

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

Welding Techniques

Welding Processes

Welding Procedures

Weld Passes

Inspection and Testing

Visual Inspection

Non-Destructive Testing

Class designation

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

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.