Gas Transmission & Distribution Piping Systems (Conforms To ASME Code B31.8)

Introduction:

ASME B31.8 is the most widely used Code for the design, operation, maintenance, and repair of natural gas distribution and transmission pipelines. This course explains the present-day piping Code provisions, the principal intentions of the Code, and how the Code should be used. The emphasis is on transmission pipelines.

Who Should Attend?

Engineers; Code compliance personnel; Operation and Maintenance Personnel; Regulatory Personnel

Course Objectives:

By the end of this course delegates will be able to:

- Explain the causes and modes of pipeline failure
- Describe the considerations for material specifications, pipe manufacturing, and pipe joining
- Estimate pipeline stresses from external loadings
- Explain how to evaluate pipeline defects
- Identify pipeline repair techniques
- Identify the elements of pipeline integrity
- Explain how code requirements address these issues
- Explain the differences between B31.8 and US DOT gas pipeline regulations

Course Outline:

Introduction

- Piping Systems Definitions
- Piping Systems Component Definitions
- Design, Fabrication, Operation, and Testing Terms and Definitions
- Quality Assurance

Materials and Equipment

- Materials and Equipment
- Qualification of Materials and Equipment
- Materials for Use in Low Temperature Applications
- Marking & Material Specifications
- Equipment Specifications
- Transportation of Line Pipe
- Conditions for the Reuse of Pipe

Welding

- Introduction to Welding, Preparation for Welding
- Qualification of Procedures and Welders

- Preheating, Stress Relieving
- Weld Inspection Requirements
- Repair or Removal of Defective Welds

Piping System Components and Fabrication Details

- Piping System Components and Fabrication Details
- Piping System Components
- Expansion and Flexibility
- Design for Longitudinal Stress
- Supports and Anchorage for Exposed Piping
- Anchorage for Buried Piping

Design, Installation, and Testing

- Design, Installation, and Testing
- Steel Pipe Other Materials, Compressor Stations
- Pipe-Type and Bottle-Type Holders
- Control and Limiting of Gas Pressure
- Valves & Vaults Customers Meters and Regulators
- Gas Service Lines

Operating and Maintenance Procedures

- Operating and Maintenance Procedures Affecting the
- Safety of Gas Transmission and Distribution Facilities
- Pipeline Maintenance
- Distribution Piping Maintenance
- Pipeline Service Conversions

Corrosion Control

- Principles of Corrosion Control
- External Corrosion Control for Steel Pipelines

- Cathodic Protection Criteria
- Operation and Maintenance of Cathodic Protection Systems
- Internal Corrosion Control
- Steel Pipelines in Arctic Environments
- Steel Pipelines in High-Temperature Service
- Stress Corrosion and Other Phenomena
- Cast Iron, Wrought Iron, Ductile Iron, and Other Metallic

Offshore Gas Transmission

- Offshore Gas Transmission
- Offshore Gas Transmission Terms and Definitions
- Qualification of Materials and Equipment
- Material Specifications
- Conditions for the Reuse and Requalification of Pipe
- Welding Offshore Pipelines
- Stress Relieving
- Inspection of Welds
- Piping System Components and Fabrication
- Design, Installation, and Testing
- Operating and Maintenance Procedures Affecting the Safety of Gas Transmission Facilities
- Pipeline Maintenance
- Corrosion Control of Offshore Pipelines
- External Corrosion Control
- Cathodic Protection Criteria
- Internal Corrosion Control

Sour Gas Service

- Sour Gas Service, Material Specifications
- Welding Sour Gas Pipelines Preparation for Welding
- Qualification of Procedures and Welders

- Preheating, Stress Relieving
- Welding and Inspection Tests
- Piping System Components Design and Fabrication Details
- Testing Sour Gas Pipelines
- Pipeline Maintenance
- Corrosion Control of Sour Gas Pipelines
- External Corrosion Control for Steel Pipelines
- Internal Corrosion Control
- Stress Corrosion and Other Phenomena