PD643
B31.3 Process Piping Code

Day 1

- Introduction to B31.3
  - Aims, objectives, and outcomes of the course
- B31.3 Scope and Definitions
  - General Statements
  - Fluid Service Categories
- Design Considerations & Criteria
  - Design Conditions
  - Design Criteria
- Pressure Design of Piping Components
  - General
  - Pressure Design of Components
  - *Case Study* – Pipe Wall Thickness
- Design - Fluid Service Requirements & Standards for Piping Components Standards
  - Pipe
  - Fittings, Bends, Miters, Laps and Branch Connections
  - Valves and Specialty Components
  - Flanges, Blanks, Flange Facings and Gaskets
  - Bolting
  - Dimensions and Ratings of Components
  - *Case Studies* – Branch connection & Flanges

Day 2

- Design - Fluid Service Requirements for Piping Joints
  - General
  - Welded Joints
  - Expanded Joints
  - Threaded Joints
  - Tubing Joints
  - Caulked Joints

- Soldered and Brazed Joints
- Special Joints

- Design - Flexibility and Support
  - Piping Flexibility
  - Piping Support
  - *Case Study* – Piping Flexibility
  - *Case Study* – Specification of Spring Support
- Bellows Expansion Joints

Day 3

- Design – Systems
  - Specific Piping Systems
  - Pressure Relieving Systems
- Materials
  - General Requirements
  - Materials - Miscellaneous
  - *Case Study* – Selection of Materials for Low Temperature Service
- Fabrication, Assembly & Erection
  - General
  - Welding
  - Preheating
  - Heat Treatment
  - Bending and Forming
  - Brazing and Soldering
  - Assembly and Erection

Days 3 & 4

- Inspection, Examination & Testing
  - Inspection
  - Examination
  - Examination Personnel
  - Examination Procedures
  - Types of Examination
  - Testing

- Records
- *Case Study* – Pressure Testing

Day 4

- Precautionary Considerations
- Safeguarding
- Summary
- *Case Study – Development of a Piping System*

Optional Code Topics

- Nonmetallic Piping and Piping Lined With Nonmetals
- High Pressure Piping
- High Purity Piping