

PD720 **Managing and Coordinating Piping Projects**

Introduction

- Introduction to Piping Layout
 - Piping System Layout
 - Developing the P&ID from the PFD
 - P&ID's, Piping and Equipment Specifications, Lists and Schedules
 - Equipment Layout and Plot Plans
 - Civil, structural, electrical, instrumentation, maintenance considerations
 - Co-ordination of Front End tasks

- Piping and Equipment Arrangements,
 - Describe the procedures involved in the layout and piping of a typical process unit containing pumps, exchangers, horizontal drums, storage tanks and vertical towers.
 - Describe how related disciplines, such as civil, structural, electrical, instrumentation, etc., are relevant to piping design and layout.
 - Identify maintenance and accessibility requirements of piping, equipment and related disciplines.
 - Check and certify piping and vendor drawings and calculations.
 - Implement B31 Code requirements and procedures.
 - Case Studies

Details

- Pipe Supports
 - Identify pipe support requirements and assure compliance with B31 Codes and MSS- SP58.
 - Describe piping stress analysis techniques and check results/outputs.
 - Interpret Selection and Location, Anchors, Guides, Restraints, Variable Springs, Constant Load Springs
 - Case Studies

- Instrumentation
 - Layout requirements. Process Control Loops, Control Valves, Relief Valves

- Steam and Condensate Piping

- Steam Traps, Condensate Collection Systems, Drip Legs, Steam Tracing Manifolds
 - Case Studies
- Pipe Racks
 - Design and layout of piping containing liquid, vapor, steam, condensate, slurries, etc.
- Pumps
 - Layout at Horizontal Centrifugal, Vertical Inline, Double Suction, Positive Displacement, Performance Characteristics, Maintenance, Cavitation, Suction Piping Considerations, Strainers, Valving, Parallel Layouts, Series Layouts, Supports, API 610 Loads at Nozzles
 - Case Studies
- Heat Exchangers
 - Shell & Tube, Fin-Tube, Plate, Piping Layout Considerations, Nozzle Loading
- Horizontal Vessels
 - Placement, Nozzle Orientation, Internals, Platforms, Ladders, Case Studies
- Storage Tanks
 - Tank Types, Fixed and Floating Roofs, Dyked Area Design, Fire Protection, Off Site Piping, Case Studies
- Towers and Vertical Vessels
 - Distillation Columns, Tower Internals, Trays, Packings, Reboilers, Nozzle Orientation, Piping at Towers, Supports, Platforms and Ladders, Piping Layout
 - Isometrics, B.O.M.'s, Case Studies
- Compressors
 - Reciprocating, Centrifugal, Piping at Compressors, Vibration Considerations
 - Case Studies

Managing & Coordinating

- Manage the layout and piping of a typical process unit containing pumps, exchangers, horizontal drums, storage tanks and vertical towers.
- Describe how disciplines, such as civil, structural, electrical, instrumentation, etc., are relevant to piping design and layout.
- Identify maintenance and accessibility requirements of piping, equipment and related disciplines.
- Check and certify piping and vendor drawings and calculations.
- Identify pipe support requirements and assure compliance with B31 Codes and MSS- SP58.
- Describe piping stress analysis techniques and check results/outputs.
- Interpret and implement B31 Code requirements and procedures.
- Learn how to manage a piping project from the front end to completion.
- Develop Operation and Maintenance Procedures.

