

(ME#21) THE LAYOUT OF PIPING SYSTEMS & PROCESS EQUIPMENT

Turning GOOD Engineers into **GREAT** Engineers!

COURSE OVERVIEW

This course will familiarize engineers, designers and construction personnel with layout, design procedures and practices involved in the location of equipment and layout of piping systems. Among other topics that will be discussed are maintenance and accessibility requirements of piping and related disciplines, nozzle orientation procedures, pipe support requirements, latest CAD Techniques used in piping layout and Piping Stress Analysis Techniques. Traditionally there has been little formal training in this area and design decisions have to be made based on practical considerations without formulae or code reinforcement. Completing piping arrangements take up the majority of manhours in the design of a process plant and the designer is required to apply acceptable layout procedures.

WHO SHOULD ATTEND

- Engineers & designers entering the plant design field.
- Piping & Design engineers, Senior draftsmen, piping/process draftsmen
- Practicing engineers requiring to expand their understanding of layout procedures
- Process engineers & Process designers
- Piping fabricators, contractors & suppliers wish to understand the relationship of manufacture & fabrication to the design, layout and construction of piping systems
- Piping design and analysis personnel wishing to expand their knowledge through this program which will offer practical solutions to design problems are encouraged to join

LEARNING APPROACH

An intensive course that will give attendees the background required to complete a typical equipment layout and piping arrangement. Each session will be conducted in lectures, discussion & problem solving format

INTERESTING TOPICS COVERED DURING THE COURSE

Equipment in Plant Design

- Equipment Function & Terminology

Pipe Racks, Yard Piping

- Piperack Arrangements, Pipe Spacing & Pipe Spans and Expansion Loops
- Alternate Pipe rack Configurations
- Pipe Routing and Line Spacing

Plot Plans & Equipment Layout

- Plot Plan
- Equipment Plot Plan
- Specific Considerations

Instrumentation

- Level Instruments
- Temperature Instruments & Flow Instruments
- Control Valves and Sets

Pipe Support

- Recommended Pipe Spans
- Pipe Shoe, Base Elbows, Pipe Guides, Pipe Restraints, Rod Hangers and Pipe Support

Steam Piping

- Steam Traps and Steam Control Set
- Hose Stations

- Steam Tracing and Tracer Lines

Pump Piping

- Cavitation and Design Factors
- Surging
- Piping at Pump

Exchangers

Horizontal Drums

Storage Tanks

Towers and Vertical Vessels

Compressors

Fin Fans

Workshop