

PD391

ASME B31.4 Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids

Day One

- Scope and definitions
- Design
 - The Barlow formula
 - What is surge?
 - Head loss and hydraulic design
 - Pipeline size considerations
 - Curved pipe, fittings, and flanges
 - Longitudinal stress
 - Stresses in buried pipelines
 - Expansion and flexibility
- Material Selection
 - The difference between strength and toughness
 - Ductile and brittle fracture
 - How toughness is measured
 - Line pipe materials and their characteristics
 - Line pipe toughness specification
 - How fittings and flanges are selected
- Construction Welding and Assembly
 - Care and handling of line pipe
 - Bending of pipe
 - Welding procedure specifications
 - Welder qualification
 - Welded joint design and fit-up considerations Welding problems
 - Requirements for tanks, terminals, pump stations, and special components

Day Two

- Hydrostatic Testing
 - History of the hydrostatic test
 - Test-pressure-to-operating-pressure ratio
 - Hold-time/leak test
 - Pressure reversals
 - Optimum tests for new pipe
 - Optimum tests for revalidating existing pipelines
- Operations, Maintenance, and Corrosion Control
 - Requirements for operating and maintaining a pipeline
 - Defect assessment
 - Pipeline repair methods
 - Remaining life assessment
 - Requirements for corrosion control



- Offshore Liquid Pipeline Systems
 - Design conditions
 - Materials
 - Construction
 - Testing
 - Operations and maintenance