Chemical Process Engineering

EN Engineering offers extensive experience in the area of chemical process design services. Our team brings a variety of backgrounds and decades of operational and project experience to our chemical processing assignments. We understand the complex concerns that a client faces on a day-to-day basis. From creating block flow and process flow diagrams, to calculating and specifying equipment, we have the experience necessary to understand client concerns and complete a comprehensive, cost-effective design. Our solutions are customized, engineered, and delivered with a focus on exceeding expectations and building long-term relationships with our clients. Our expertise in process design for refineries and chemical plants helps us solve challenging design problems and improve projects.

Chemical Process Design Services

• Coordinate and develop process design basis
• Create block flow diagrams (BFD) and process flow diagrams (PFD)
• Develop heat and material balances
• Identify and specify necessary equipment
• Specify normal and maximum operating conditions for equipment
• Complete equipment and instrumentation data sheets
• Calculate initial piping and specify equipment required
  • Line size: pipe size and schedule, flow velocities, pressure drops
  • Pumps: GPM, TDH, HP
  • Exchangers: duty, area, LMTD
  • Vessels: D and L, internals
• Size relief valves
• Size control valves
• Develop process simulation models (ASPN Plus, HYSYS, etc.)
• Design and specify distillation towers
• Conduct piping hydraulic calculations
• Complete line list – including all process and utility streams
• Select equipment and instruments in consultation with vendors
• Specify basic process controls required
  • Level, temperature, pressure, flow
• Create, review, revise and finalize P&IDs
• Collaborate with other engineering disciplines throughout project design
• Complete economic analysis
• Complete environmental permitting
• Write operating procedures
• Assist operations with start up
• Post start performance tests
• Troubleshoot and optimize the operation
• Perform energy optimization studies

Engineering Tools & Software
• ASPEN
• COMPRESS
• WinSim DESIGN II
• CAESAR II
• AutoPlant 3D

Staff & Experience
• 25 process engineers offering design services
• Expertise in design, operations, process improvement, and environmental compliance
• Experience in process pilot plants