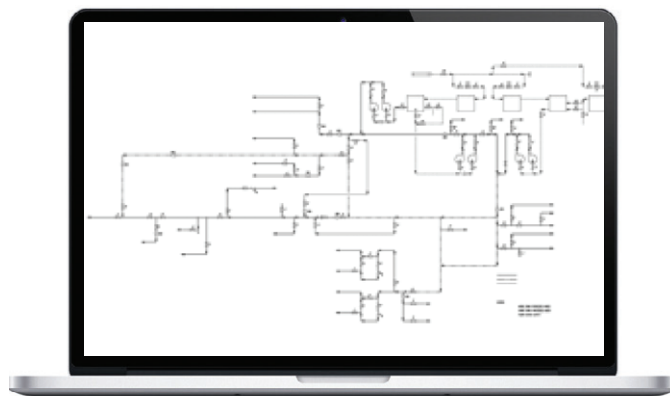


CHEMICAL PROCESS ENGINEERING

OUR SOLUTIONS

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 (ASPEN 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