

SOUTHWEST RESEARCH INSTITUTE



## Pilot Plant Design and Fabrication

The Chemical Engineering Department at Southwest Research Institute® (SwRI®) has extensive experience designing and fabricating pilot plants for chemical, biochemical, and petroleum processes. We apply this knowledge and expertise to help our clients meet project requirements and timelines. Multidisciplinary resources are available from our nine technical divisions, each with many years of experience in design, engineering, machining, and fabrication.

### Fabrication Strengths

- Modular pilot plant design and fabrication
- Manufacturing Accreditations
  - ISO 9001:2008
  - ISO 14001
  - ASME Code Section VIII – Pressure Vessels, Division 1–3
- Procurement
  - Established vendor contacts/relationships
  - Existing industry contacts for specialty design pieces/reactors
- Specialty coatings on- and off-site (metallics/composites)
- Custom materials/alloys (exotics/plastics)
- Certified welders
- Technicians with 30+ years of experience
- Rigging and large equipment installation experience

### Commissioning and Operation Capabilities

- 24/7 pilot plant operations
- Experienced operators and engineers
- ISO 9001:2008 documentation and logbooks
- Documentation in accordance with PSM Plan



*Pilot-scale carbon capture processing unit designed and fabricated by SwRI*



*On-site equipment welding at SwRI*

Advanced science. Applied technology.

## Engineering and Design Expertise

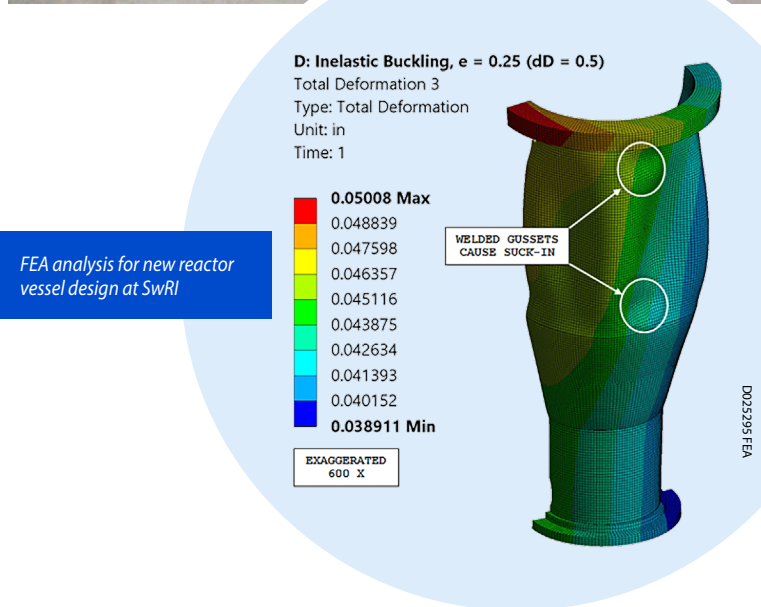
- Process design and simulation
- Computational fluid dynamics
- 3-D layout and plot plan
- Process flow diagram (PFD) development
- Piping and instrumentation diagram (P&ID) development
- Electrical drawings and design
- Equipment design, sizing, and procurement
- Vessel sizing and engineering drawings
- Materials compatibility testing
- Process control system development and installation
- HAZOP, PHA, and PSSR
- Final design package with complete bill of materials (BOM)

## Facilities

- Fabrication high bays and pilot plant pad sites
- Utilities (natural gas, electrical power, air)
- Machine shops for fabrication and machining of custom equipment to precise measurements
- 24/7 on-site security
- Site security at client offices available on request
- Shipping department for coordination of transportation, rigging, offloading, and containment of completed pilot plants
- Texas Commission on Environmental Quality blanket emissions permit for R&D



Natural gas-to-liquids pilot plant designed and fabricated by SwRI



FEA analysis for new reactor vessel design at SwRI

We welcome your inquiries.

For more information, please contact:

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Chemistry & Chemical  
Engineering Division

## SOUTHWEST RESEARCH INSTITUTE

Southwest Research Institute is a premier independent, nonprofit research and development organization using multidisciplinary services to provide solutions to some of the world's most challenging scientific and engineering problems. Headquartered in San Antonio, Texas, our client-focused, client-funded organization occupies 1,500 acres, providing more than 2.3 million square feet of laboratories, test facilities, workshops, and offices for more than 2,700 employees who perform contract work for government and industry clients.

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