

Chemical Process Development



EXPERTISE

The Energy & Environmental Research Center (EERC) has decades of experience in delivering solutions to the chemical processing industry, covering lab-scale testing through full-scale design and commissioning. We have the capability to work with:

- Solids, liquids, gases, and mixed-phase systems.
- Low and high pressure and temperature.
- Initial lab-scale subsystems and processes.
- Pilot-scale subsystems and processes.

We use Aspen software for:

- Process and economic modeling.
- Optimizing operations in the conceptual design phase.



FACILITIES

Cutting-edge research requires state-of-the-art resources. Our facilities support chemical processing research and development including:

- Seven different laboratory spaces.
- Three city blocks of pilot demonstration facilities.
- 65' high-bay demonstration areas.

The pilot demonstration facilities are NFPA rated for high hazard occupancy and comply with Class I Division 2 NEC ratings.



CUSTOM SOLUTIONS



Critical custom components and systems are required for lab- and pilot-scale testing. Our highly skilled team of experts can rapidly produce and operate systems based on client needs. Our well-rounded team includes the following:

- Machinists
- Certified welders
- Mechanics
- Electronics technicians
- Distributed control system programmers
- Electricians
- Plumbers
- Engineers

PROCESS SAFETY AND MANAGEMENT

The EERC maintains a team-based process safety management (PSM) approach so that your process will have a design basis rooted in safety, including a full HAZOP review. Our project management is focused on our client's needs, budget, and deliverables.

EQUIPMENT

The EERC has the following equipment currently available:

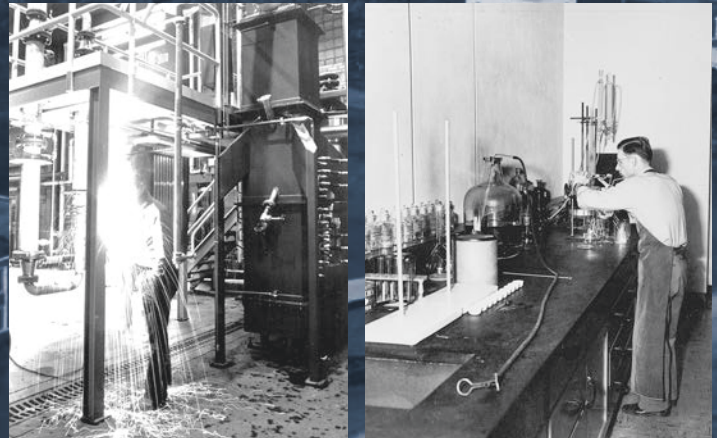
- High-pressure reactors
- Fluidized-bed/moving-bed reactors
- Transport reactors
- Entrained-flow reactors
- Fixed-bed reactors
- Particulate control devices
- Boilers and superheaters
- Gas and liquids blending
- High-pressure compressors and pumps
- Spray quench and noncontact condensers
- Distillation columns
- Thermal oxidizers
- Rotary kiln
- Analyzers

Solutions can be custom from start to finish or integrated into existing equipment. This adaptability can reduce the time line and costs for a project.



HISTORY

Since 1951, we have worked with U.S. and international clientele to become a world-renowned solutions provider by working in partnership with clients to develop, refine, demonstrate, and commercialize marketable products and processes in response to real-world challenges. We have worked with more than 1300 clients in 53 countries. Our business partners range from Fortune 500 companies to small start-ups.



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