

We put science to work.™

SRNL is a DOE National Laboratory
operated by Savannah River Nuclear Solutions.

Facts

about Savannah River National Laboratory

U.S. DEPARTMENT OF ENERGY • SAVANNAH RIVER SITE • AIKEN • SC

srnl.doe.gov

SRNL Fast Facts

- > Located at the U.S. Department of Energy's Savannah River Site near Aiken, South Carolina
- > Operated by Savannah River Nuclear Solutions
- > "National Laboratory" for DOE Office of Environmental Management
- > Applied research, development and deployment of practical, high-value and cost-effective nuclear materials management and technology solutions in the areas of national security, clean energy and environmental stewardship
- > Supporting customers at SRS, DOE and other federal agencies nationally and internationally

Contact Information

SRNL Office of Communications
803.725.4396



Integrated Capability: Scaled Testing and Demonstration

Outcomes

- Process Flowsheet Development: Ability to scale up and demonstrate new chemical and physical processes at approximately 1/10 scale
- Process Flowsheet Validation: Integration of multiple unit operations and examine effect of recycles
- Process Optimization And Troubleshooting: Ability to mock-up Operational Facilities processes and situations
- Equipment Selection and Validation: Ability to be able to test full-scale components (e.g., centrifugal contactors, slurry mixer pumps and filters) including process control strategies
- Materials of Construction: Examine corrosion and erosion at realistic scales

Core Competencies Necessary to this Capability

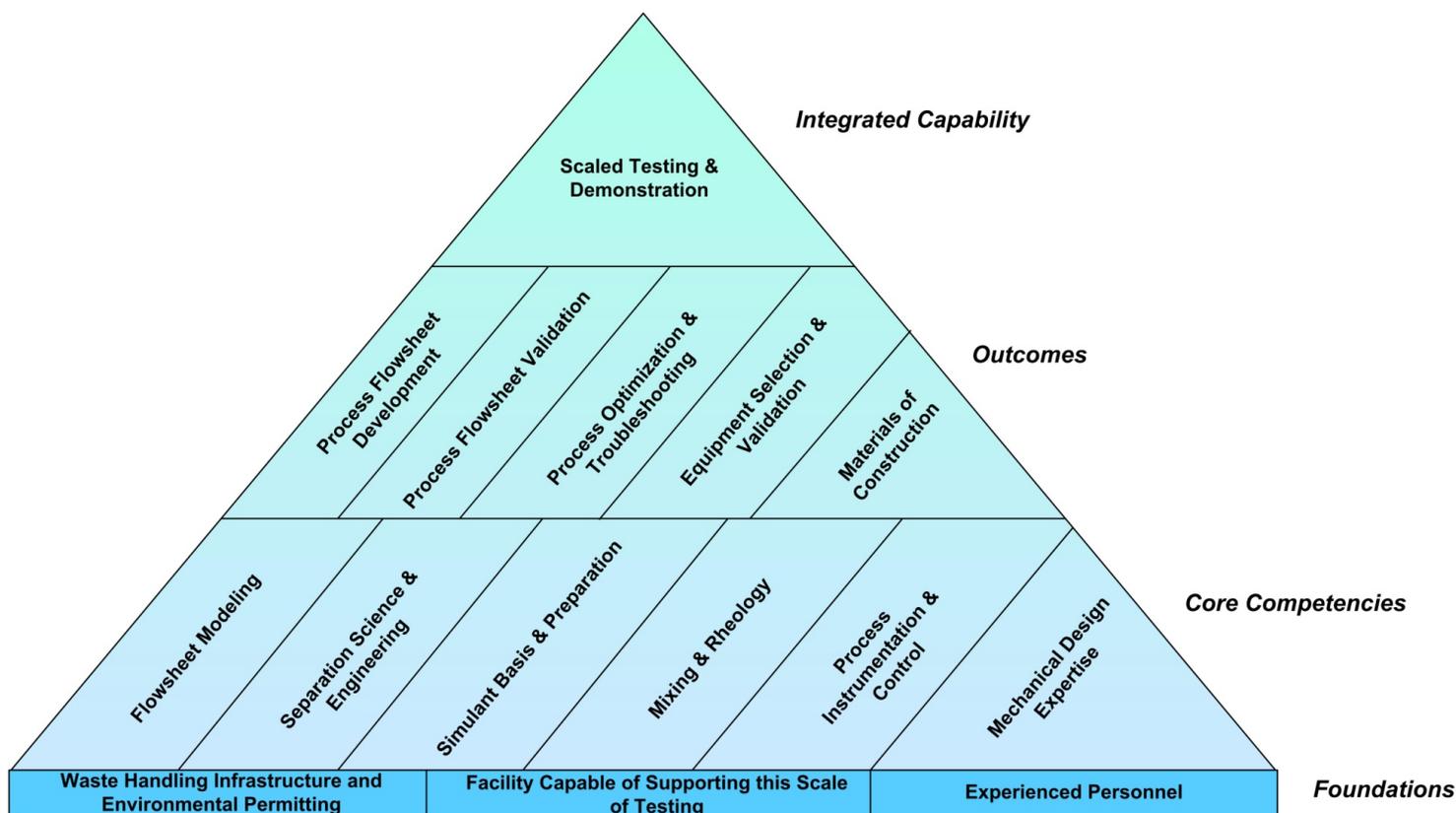
- Flowsheet Modeling: Ability to integrate chemistry and engineering to be able to predict behaviors of units operations under routine and off-normal conditions
- Separation Science and Engineering: Forms the foundation of developing processes for field deployment
- Simulant Basis and Preparation: Major challenges include developing and defending the selection of non-radioactive simulants to ensure bound performance of actual matrices
- Mixing and Rheology: Fundamental understanding of the principles associated with fluid dynamics of Newtonian and non-Newtonian slurries at pilot scale
- Process Instrumentation and Control
- Mechanical Design Expertise for Dealing with Pilot Scale Experimental Setups: Flexibility needed to add additional instrumentation, make adjustments during runs while maintaining safe operation

Facts

about Savannah River National Laboratory

Foundations of the Capability

- Waste Handling Infrastructure and Environmental Permitting
- Facility capable of supporting this scale of testing with chemical simulants including physical size, permitting capability, equipment to handle large tanks and totes of simulants and piping and electrical expertise
- Personnel familiar with assembly of experimental pilot scale equipment; machine shop



Savannah River National Laboratory[™]
OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

The Savannah River Site and the Savannah River National Laboratory are owned by the U.S. Department of Energy, and are managed and operated by Savannah River Nuclear Solutions.