

SRS labs take on tough tasks

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The MOX project is one facet of many technologies in play at Savannah River Site, where researchers who tackle some of the world's most complicated issues adhere to the motto, "We put science to work."

In any given week, nearly 900 scientists and technicians collaborate at the Savannah River National Laboratory and its related offices on projects ranging from solar energy to nuclear waste disposal to hydrogen fuels.

In addition to offering support to on-site programs, researchers focus on solutions for challenges in three key areas: national and homeland security, energy security and environmental management.

In 2006, the Department of Energy designated the lab its "corporate laboratory," whose missions include advancing cleanup technology for other Energy Department facilities, especially those where nuclear materials were produced.

The lab's unique facilities include biotech and radioactive materials labs, a field demonstration site for testing environmental cleanup technologies, and labs for ultra-sensitive measurement of radioactive materials. There is also a program to study containers for the safe transportation of nuclear materials.

Here is a look at some of the lab's facilities:

- Ultra low-level underground counting facility: a one-of-a-kind facility 50 feet below ground with four-inch-thick walls of steel dating from before the nuclear era that allows high-sensitivity measurements of ultra-low amounts of environmental radioactivity
- Gamma irradiation facility: for testing materials' abilities to withstand radiation exposure
- Digital radiography facility: a high-tech alternative to traditional X-rays for verifying the quality of welds, detecting deformations and other uses
- Shielded cells: special containment facilities that provide the shielding for examination, analysis and testing of highly radioactive materials
- Remote systems laboratory: used for the design, development, fabrication and testing of unique equipment systems for use in radioactive, hazardous or inaccessible environments
- High-pressure test facility: includes steel-walled cells for high-pressure hydrogen exposure and testing, fatigue testing and fracture toughness testing of metal specimens
- Atmospheric Technologies Center: includes capabilities for worldwide meteorological forecasts and real-time atmospheric transport modeling and assessment
- Advanced fracture mechanics laboratory: has capability for fracture testing in harsh environments
- Rapid fabrication facility: produces low-cost prototypes, parts and complete working models

Source: U.S. Department of Energy