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

Technology Testbeds at Savannah River National Laboratory

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SRNL Fast Facts

- > The Savannah River National Laboratory (SRNL) has a unique set of assets that can be accessed to test innovative technologies that address Department of Energy, Office of Environmental Management (DOE-EM) high priority needs.
- > Priority DOE-EM concerns include: technetium-99 (Tc-99), mercury, cesium-137, and strontium-90.
- > SRNL Shielded Cells provide for analysis of radioactive Tc-99 or mercury-contaminated radioactive tank waste for demonstration of treatment methods

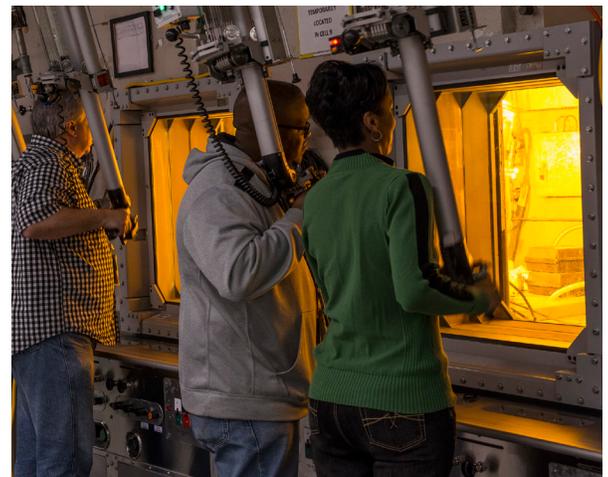
Contact Information

SRNL Office of Communications
803.725.4396



Highly Radioactive Material Processing Testbed

The Savannah River National Laboratory (SRNL) shielded cells serve as a testbed for highly radioactive material processing and provide the ability to safely work with a wide variety of highly radioactive materials in support of nuclear technology development. Skilled operators are able to safely remain outside the cells, using manipulator arms to securely perform complex tasks inside the contained environment. Manipulator arms are designed to handle the most precise tasks and endure exposure to harsh, high-level radiation.



Shielded cells allow for safe manipulation of highly radioactive material.

The cells are arranged in two sections. Cell Block A has six cells and is equipped with a one-ton crane for transferring material between cells. Cell Block B has 10 cells and is equipped with two one-ton cranes. Both an exterior truck dock and a receiving bay area have 10-ton cranes to move material into and out of the cells.

Full-scale replica, non-radioactive mockup cells also provide opportunities for testing compatibility of research equipment with remote operations prior to placement inside the radioactive cells.

Attributes

- Robust facility design allows for safe radioactive material handling up to 10,000 rem/hour
- Cells are independently equipped with manipulator arms and have access to fire suppression, electricity, air, gases and water



Technology Testbeds at SRNL

- High airflow filtration/exhaust system is triple HEPA-filtered and routed through a sand filter system before the air is discharged to the atmosphere
- Infrastructure includes several shielded ports allowing for easy introduction and removal of samples and supplies and removable cell covers, plugs and transfer ports providing for safe movement of equipment and material into the cells
- Specialized equipment is available, such as in-cell gamma counter, examination periscope, analytical balances, drying ovens and an 1100 °C furnace
- Additional equipment and services can be added

Impact

- Demonstrated success in a number of R&D initiatives involving highly radioactive materials
- Specialized equipment and trained operators available for a variety of research tasks
- Established capacity for some customization and tailoring of processes



SRNL Shielded Cells provide for analysis and processing of highly radioactive material, while mock-up cells allow for procedure development and planning



Savannah River National Laboratory[™]
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