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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

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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 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

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The Mobile Plutonium Facility at Savannah River National Laboratory

Unique Capability

The Mobile Plutonium Facility (MPF) is the world's only rapid response capability that can be deployed to characterize, stabilize and package plutonium for shipment to a recipient location. This stand-alone operating environment is completely self-sufficient.

High Hazard Operations in Remote Locations

The MPF has a modular design that consists of air transportable International Standards Organization (ISO) containers that can be shipped to the target location. The ISO modules can then be assembled to execute a recovery mission within the country from which the materials are to be removed. The systems and equipment in the MPF support the safe characterization, stabilization, and packaging of plutonium materials. Most noteworthy, MPF can stabilize plutonium in forms expected to be found in the plutonium recovery and extraction process so that it is safe to ship and store for a sufficient time to allow for decisions to be made as to the ultimate disposition of the material.

The MPF Rapid Response Team is the human component needed to verify, stabilize, package, and ship plutonium material and consists of approximately 25 primary personnel plus alternates on standby. The team's role is to protect human health and safety, and expedite the removal of nuclear materials from a foreign location.

Specific details of a particular mission, such as material properties, quantity, location, duration, destination, and disposition may not be completely known in advance. Hence, the



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Mobile Plutonium Facility Mission

- Rapid recovery of nuclear materials from a foreign weapons program with no prior knowledge of material characteristics
- Function is to characterize, stabilize, package, and ship materials for transport
- Technical objective is to satisfy requirements for receipt and storage of fissile materials at any potential receiving facility
- Self-sufficient facility, only requiring fuel and a level footprint to operate
- Staffed by experts from DOE National Laboratories



The MPF complex at a mock deployment at the Nevada Nuclear Security Site

High Hazard Operations in Remote Locations *(continued)*

capabilities of the RRT staff must be deep, broad, and flexible to deal with a wide range of possible situations. Mission durations could range from several weeks to several months. The premise is to identify capable volunteers who perform similar functions in their regular jobs at DOE sites and National Laboratories, provide them with tools adapted for use in a remote location, and train, support, and enable them.

Innovation from Science to Successful Deployment

- Stabilizes multiple forms of plutonium for transport and temporary storage upon recovery
- Processes a capacity of 1 kg per day, dependent on the form of plutonium
- Packaged in eight interlocking standard 20' ISO containers for increased mobility and flexibility plus support ISOs
- Allows for transportation via standard commercial or military aircraft



MPF "birdcage" racks ensure correct spacing of plutonium containers.