

The Mobile Plutonium Facility: An international treasure

The Savannah River National Laboratory (SRNL) at the Department of Energy's Savannah River Site (SRS) is home to a facility that has a mission of global importance--the Mobile Plutonium Facility (MPF)

Designed and constructed at SRS in just 12 months, the one-of-a-kind MPF is kept at the ready for rapid deployment anywhere in the world. It is designed to recover, characterize, stabilize and ship plutonium materials to a designated safer location.

"If a foreign government collapses or is overrun, and there is a plutonium production or processing plant in jeopardy, the MPF could be deployed to rapidly recover the materials," said John Dewes, Savannah River Nuclear Solutions MPF Team Lead. "The objective is to eliminate the possibility of illicit transfer of weapons usable materials and equipment worldwide."

The MPF is a made up of eight interconnected shipping containers that can be disassembled, shipped by air, rail or sea, and then reassembled. The facility houses a glovebox, which is a specialized steel and glass box that allows employees wearing thick rubber gloves to safely work with the plutonium materials while protecting them from contamination.

"The MPF has fortunately never been deployed to a real-life scene," Dewes said. "But we have been on two practice runs; one to Nevada in 2012 and one to Alaska in 2014. Another exercise is planned for May 2017 in Panama. The practice runs have proven to be great learning experiences. We have come back and made substantial changes to how we do things after each exercise."

The MPF is run by a team of 24 experts, along with 12 alternates, assigned to the project on a part-time basis. "Our team is essential to the success of the MPF," Dewes said. "They are the cream of the crop."

The MPF project was started in 2004, when Congress asked DOE's National Nuclear Security Administration to help improve the nation's "state of readiness" for the potential recovery of materials from foreign nations.



Salt Waste Processing Facility preparing for startup

Parsons has made significant progress over the last few months on testing the Salt Waste Processing Facility Plant's systems at the Department of Energy's Savannah River Site in preparation for startup.

Parsons declared construction of the facility complete in April, eight months ahead of schedule and \$60 million under budget.

"Our workforce has done a great job making the transition from constructing SWPF to getting the plant ready for operations," said Parsons Senior Vice President and SWPF Project Manager Frank Sheppard. "We've conducted additional training, performed utility startups and have begun the process of conducting our System Operability Tests." In August, Parsons completed two of 60 System Operability Tests and expects to complete nine more before the end of October.

Since completing construction in April, the project has been transitioning to the testing and commissioning phase. Components and systems will be rigorously tested to ensure that they meet DOE's strict safety and design requirements for waste processing.

"Safety continues to be a top priority at SWPF and the safe execution of startup testing will allow us to begin operations of the plant," Sheppard said.

Once operational, SWPF will process the majority of the site's salt waste inventory

by treating highly radioactive salt solutions stored in underground tanks at SRS. Removing salt waste, which fills over 90 percent of the tank space in the SRS tank farms, is a major step toward emptying and closing the site's remaining 43 high-level waste tanks.

"When operational, it will allow us to accelerate or more rapidly treat our salt waste at 10 times the rate it is being processed today," DOE Savannah River Operations Office Manager Jack Craig said at a June event marking the completion of construction.

The Department of Energy's Assistant Secretary for Environmental Management Monica Regalbuto also praised SWPF and the progress toward completing the site's high-level waste mission.

Before Parsons signed the design contract in 2002, Regalbuto was among those working in research and development on processes that would one day be used in the operation of the facility.

"If you are a chemical engineer, it is not often that you see a project go from the research and development stages to full operation," she said.

SWPF won the Department of Energy Secretary's Project Management Improvement Award for 2015 and was recently named Project of the Year by the American Society of Civil Engineers, South Carolina Section.