NEWS from
The Savannah River Site

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For Immediate Release

'SAND MANTIS' WILL PREY ON WASTE

AIKEN, S.C., (December 4, 2008) – A new device, known as the Sand Mantis®, began today removing hardened residual waste from inside two liquid radioactive waste tanks at the U.S. Department of Energy's Savannah River Site. This milestone is anticipated to be the final cleaning step for these two tanks.

The Sand Mantis® process removes the residual waste through a patented water-jet system that transfers the waste to a mill that grinds the waste to a smaller particle that can easily be removed from the waste tanks.

It sprays high-pressure water jets from a tiny opening that is made of gems, including sapphires – the only material that can stand up to the water's pressure. The piece of equipment is 8 feet long and weights approximately 800 pounds.

The Sand Mantis® cross-shaped body can be collapsed into a straight line so it can be put into small openings at a tank top. Once inside, it unfolds and is guided by remote control.

The device is being used in two 750,000-gallon tanks, Tanks 18 and 19, which are no longer in use and are designated as non-compliant. It began its work in Tank 19 today. Both tanks are scheduled to be closed in 2010, ahead of the Federal Facilities Agreement requirement of 2012.

Safely closing waste tanks involves an intricate set of steps that includes emptying the waste tanks of bulk waste, then removing as much of the residual waste as possible through various technologies and techniques. Once that's complete, the tanks can be filled with grout, a cement-like material created especially for these waste tanks. This grouting process permanently seals the tanks from future use while binding the residual waste into the grout.

Before the grouting step, as much waste as practical is removed from the tank, which is where Tanks 18 and 19 are in the closure process. However, as the amount of waste gets smaller, the job of waste removal becomes more difficult.

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The residual waste left after thorough cleaning, known as a “heel,” is hard to remove. It becomes hardened from a combination of decades of simply staying in place, and, in some places in tanks, some of the chemical materials left behind bond to the tank floor.

The Washington Savannah River Company (WSRC) conducted a competitive procurement process last year, evaluated several competing technologies, and awarded a contract to TMR Associates LLC of Lakewood, Colorado.

The vendor designed, tested and is operating equipment to remove waste from each tank.

Before the Sand Mantis® began its work, Tank 18 had about 4,300 gallons of waste remaining while Tank 19 had about 15,100 gallons of residual waste. The cleaning of both tanks is scheduled to be completed by the end of March 2009.

SRS is owned by DOE. The Liquid Waste contract is managed by a team of contractors led by WSRC, a subsidiary of URS Washington Division.