

For Immediate Release

Media contact:

Dean Campbell

803.208.8270

Dean.Campbell@srs.gov

SRR Uses Robots Instead of Employees for Hazardous Work

AIKEN, S.C. (May 7, 2012) – Robots and 3-D imagery are more common place in movie theaters than at the Savannah River Site (SRS), but that has changed.

Savannah River Remediation (SRR), SRS's liquid waste contractor, has implemented more robots to do the necessary hazardous work in its waste removal and tank cleaning operations, thus providing additional safety measures by minimizing employee exposure to highly-radioactive waste.

Following in the line of robotic devices called Tizzy, Frankie and G.I. Joe (see YouTube video at <http://youtu.be/nrj0zxOpnOw>), which are currently being used in tank waste removal and sampling activities, are PackBot and the Brokk 400. These remote-controlled robots perform cleanup and inspection work in places so high in radioactivity that employees, who had to perform the work previously, had to wear protective clothing and respirators. Both robots were purchased from suppliers and modified for use at SRS. The PackBot cost approximately \$175,000 and Brokk 400 was approximately \$450,000.

Dave Olson, SRR President and Project Manager, called the use of robots essential in protecting employees from high hazard operations.

"We continually seek to implement practices that will protect our employees, and using robots instead of employees in high radiological areas is the right thing to do," said Olson.

The PackBot, which is the size of a foot stool, is a versatile ground robot that efficiently navigates various terrain including rubble, narrow passages and steep grades. The robot performs remote cleanup activities in the Defense Waste Processing Facility (DWPF) Melt Cell, where hazardous waste is mixed with molten glass and poured into stainless steel canisters for permanent storage. Multiple cameras on the robot will relay real-time images to the operator control unit. These images, coupled with a 3-D image of the PackBot on the operator control unit, allow for precise positioning while the operator stays at a safe distance.

(more)

(add one – robots)

Brandon Hodges, DWPF melter engineer, said the PackBot performs internal inspections in the DWPF sand filter structure, a confined space where inspectors had to wear protective clothing and respirators when performing inspections previously.

“The ability to use the PackBot to remotely perform the inspection using the multiple camera images, as well as to gather air samples, will negate the need to send DWPF personnel into a possibly contaminated area,” said Hodges.

The Brokk 400, also operated by remote control and is about the size of a golf cart, performs several functions at DWPF. As a means to reduce waste volume, the robot cuts waste transfer lines, called jumpers, which are curved sections of piping. The robot cuts the lines into straight pieces that can easily be loaded in containers for disposal.

By cutting the jumpers into straight lengths, the total volume of containers needed to hold the waste is reduced, according to Cliff Ludwig, DWPF engineer.

“Using the Brokk 400 to remotely cut these jumpers also reduces the exposure to workers who currently need to dress out and perform the cutting operations first-hand,” said Ludwig.

Another function that never has been performed because of concerns over worker exposure will be to separate sections of glass pumps and bubblers, both used in the DWPF melter operations. By separating the non-contaminated sections, some pieces can be disposed of as low-level waste, thus reducing worker exposure and reducing the amount of highly contaminated waste.

“The thought processes and creativity used by our employees to maintain safe working conditions for the protection of everyone is amazing,” Olson said. “That is why our workers are the best in the world at what they do.”

SRS is owned by DOE. The SRS Liquid Waste contract is managed by SRR, a team of companies led by URS Corp. with partners Bechtel National, CH2M Hill and Babcock & Wilcox. Critical subcontractors for the contract are AREVA, Energy Solutions and URS Safety Management Solutions.

SRR-2012-22

Photo caption:

The Brokk 400 (left) demonstrates its effectiveness in cutting jumpers while the PackBot prepares to show its flexibility using several pieces of equipment for hazardous waste cleanup activities. Both robots were placed into operations recently at SRS.



Brokk 400



PackBot