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DOE

## UTILITY ARM ENHANCES TANK WASTE CLEANUP

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A robotic arm that had its origins in America's space program is helping to fill a technology gap on the U.S. Department of Energy's (DOE) Hanford Site in Washington State.

Known as the Light Duty Utility Arm (LDUA), the device will be used to perform a variety of tasks inside Hanford's highly radioactive waste storage tanks. The arm was built by Spar Aerospace of Toronto, Ontario, Canada which is the same company that supplies the robotic arms for the NASA space shuttles.

"Private sector involvement helps drive down the cost of cleaning up Hanford through adapting existing technologies to meet DOE needs. Our partnership allows Spar to push the limits of their robotic frontiers while giving DOE the benefit of advanced technologies," said Marcus Glasper of DOE's Science and Technology Programs Division.

The truck-mounted LDUA provides DOE with a flexible and adaptive toolbox of technologies to address a wide range of waste storage and disposal issues. The first LDUA system is undergoing rigorous testing and operator training at Hanford's Cold Test Facility. It will be put into the field later this year. A second system is to be delivered to Hanford in the coming months.

The LDUA is an important problem solving tool under development by the Tanks Focus Area, a national technology development program for radioactive waste tank cleanup led by the Pacific Northwest National Laboratory (PNNL) and DOE in Richland, Washington, immediately south of the Hanford site.

"The LDUA will support the technology needs of several DOE sites including Oak Ridge National Laboratory (Tennessee) and Idaho National Engineering Laboratory. This cooperative approach will accelerate schedules for dealing with tank cleanup issues nationwide while adding significant cost savings for all of the sites," said Nick Lombardo of PNNL.

The truck-mounted robotic arm can be moved from one waste tank to another to deploy a variety of tools, sensors, or other devices including video cameras, analytical instruments or grapplers.

Development of the LDUA System is sponsored by the U.S. DOE's Office of Science and Technology Tanks Focus Area in conjunction with the Tank Waste Remediation System program at Hanford.

"The LDUA fills a technology gap at Hanford by giving us expanded capabilities to do needed work within our high level waste tanks," said Betty Carteret, Light Duty Utility Arm System lead for Westinghouse Hanford Company.

The arm will allow a broader range of activities inside Hanford's waste tanks that are not now available, including tank integrity examinations, broader waste sampling and analysis capabilities and small-scale hardware removal. The arm will support both safe storage and management of waste as well as disposal

activities.

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