

S.A. Technology has provided a remote underwater hydrolasing arm for removal of surface layers of contaminated concrete from the walls and floor surfaces of the K-Basins at the Hanford Site. The underwater hydrolasing arm was deployed from a telescoping arm attached to an overhead gantry crane and was operated through 1-1/2 inch wide slots in the grating over the K-Basin spent fuel storage pool. The arm and hydrolasing equipment were remotely operated by joystick controls and a programmable logic controller.

- Ultra high pressure water hydrolasing head (35,000 psi at 4 gpm) is mounted on the end of a carbon fiber, telescoping robotic arm.
- The arm is attached to a gantry system that passes through the 1 ½ inch slots in the grating located above the Basin.
- The robotic arm has four degrees of freedom so that it can reach all surfaces of the K-Basin walls, corners, and floors as needed to remove surface contamination.
- The gantry allows the robotic arm to be moved around the Basin as needed.
- Underwater cameras provide visibility for hydrolasing operations
- The hydrolasing head is surrounded by a debris collection shroud connected to a vacuum recovery system
- Vacuum recovery system was successful at preventing any clouding around the hydrolasing head during operations
- The robotic arm and hydrolasing are designed to operate under water since the Basin will not be drained during the cleaning process.
- Hydrolasing head removed ½-inch thick layer of concrete at rate of 150 ft² per hour, and produced ten-fold reduction in dose rate
- Remote manual operating mode allows operator to move manipulator to desired location in response to the operator's joystick actions

Client/Location	Fluor Hanford Richland, WA
Technical Point of Contact	Glen Chronister (509) 373-4160 Bldg. 3790 Cypress St. Richland, WA 99352
Period of Performance	January 2004 - June 2005
Contract Value	\$1.2M



Complies with ASME, 10CFR50
Appendix B/NQA-1 Quality Requirements

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