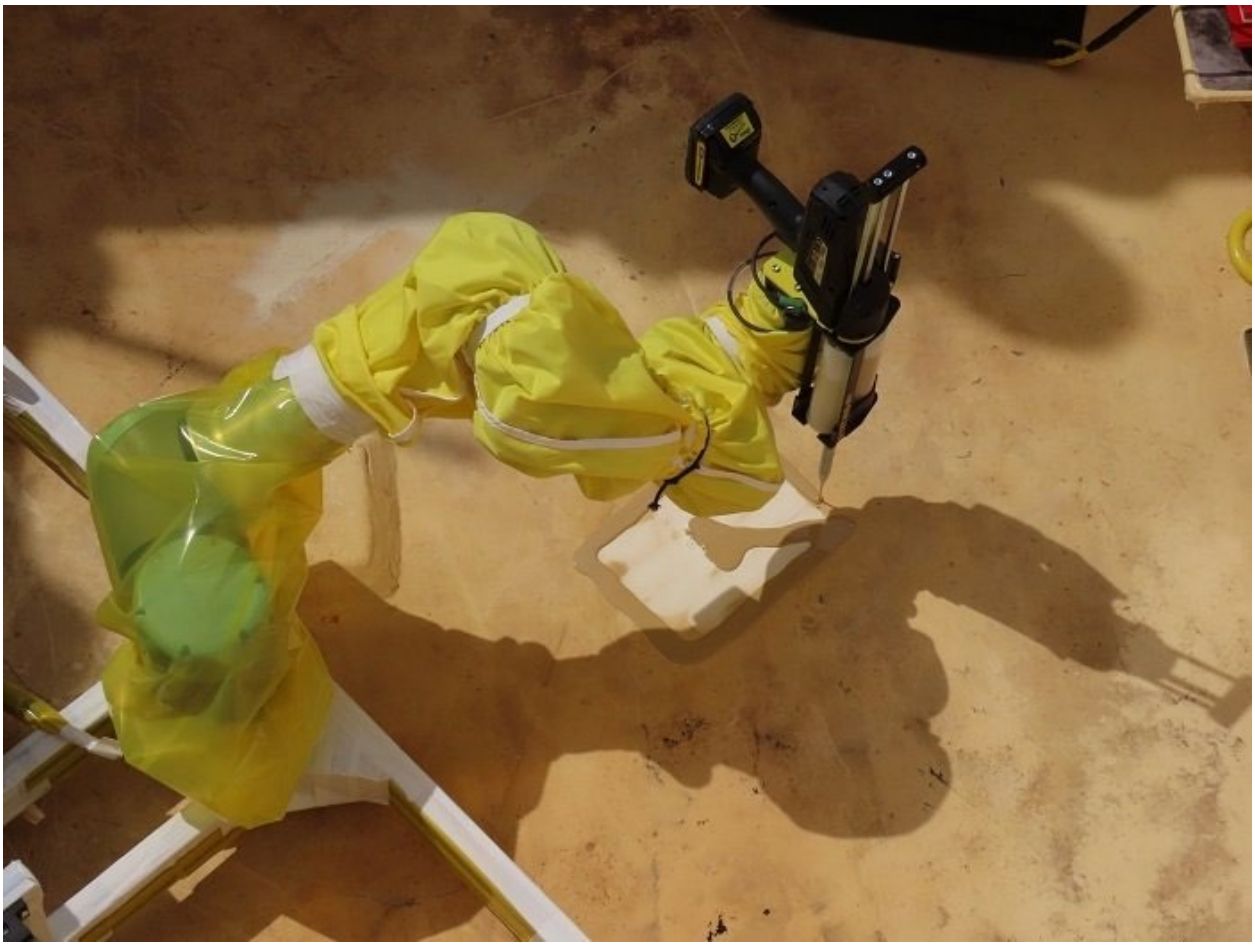
U.S. DEPARTMENT OF ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

Hanford Deploys Repair Robot for First Time

June 21, 2022



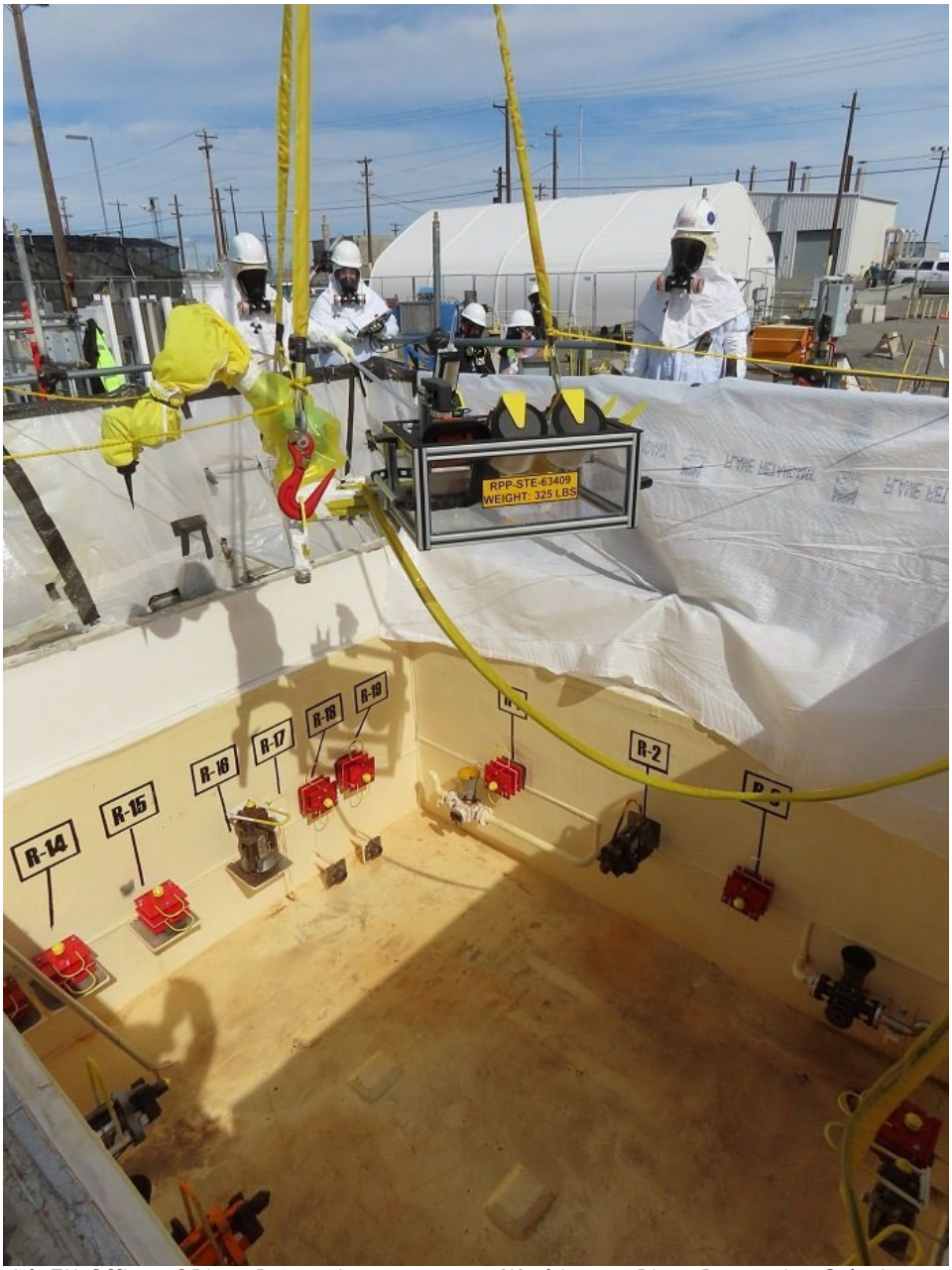
A robotic arm, deployed by EM contractor Washington River Protection Solutions workers, sands, repaints and applies a fresh waterproof coating to repair a valve pit's torn liner at the Hanford Site.

RICHLAND, Wash. – EM's Office of River Protection (ORP) contractor Washington River Protection Solutions (WRPS) recently added the use of a first-of-its-kind robot on the Hanford Site, keeping workers safer while boosting efficiency.

View a video of the robotic arm during testing in a mock-up setting here.

The robotic arm platform, called a "coating repair cobot"— cobot is short for collaborative robot — was put into action to repair a small tear in the protective lining inside an underground concrete valve-and-piping enclosure. The damaged liner, which prevents any leaks from contacting the porous concrete below and seeping through to the soil, had to be repaired before the valve pit could be put back into service.

"The achievement is remarkable," said Ricky Bang, ORP **Tank Farms** Program Division director. "Valve pits are highly hazardous areas, and using this technology means we don't have to send manned crews into the pit."



Workers with EM Office of River Protection contractor Washington River Protection Solutions stand at ground level as a coating repair cobot, or collaborative robot, is lowered into a valve pit to conduct repairs at the Hanford Site.

WRPS workers controlled the cobot from the ground above the pit.

The cobot was lifted into the pit with a crane and put into position over the tear. It then performed a sequence of preprogrammed maneuvers to clean the liner before repairing it.

Remote-controlled robots are often used at Hanford to reduce worker exposure to some of the higher-risk elements associated with site cleanup. The cobot is being hailed for its future potential with other tasks around the Hanford Site. While it was configured specifically for fixing the valve pit's liner, WRPS Project Engineer Peter Griffin said he believes the cobot can easily be retrofitted for numerous uses, like sawing, drilling and camera inspections.

*"*I'm hoping that this really opens the door for more kinds of uses of this robotic arm technology,*"* Griffin said. *"*The new robotic platform seeks to bridge the gap by allowing workers to perform more precise work from a safer location. You'd rather not send people into contaminated areas if you don't have to.*"*