

324 BUILDING B CELL DECONTAMINATION TOOLING

Washington Closure Hanford and its subcontractors are using new and unique technologies to improve safety and reduce costs while supporting cleanup in the River Corridor at the U.S. Department of Energy's Hanford Site. One of the technologies is the 324 Building B Cell Decontamination Tooling.

THE CHALLENGE

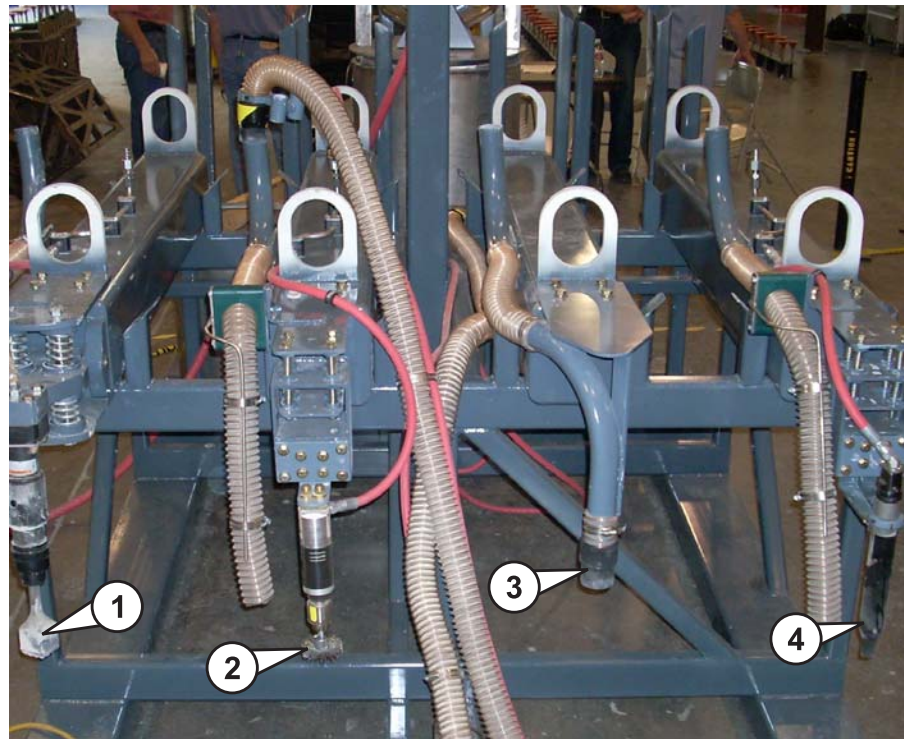
One of the most complex and hazardous facilities Washington Closure Hanford has confronted while cleaning up the River Corridor is the 324 Building. Originally called the Fuel Recycle Pilot Plant and later known as the Radiochemical Engineering Complex (REC), the 324 Building was built in 1966 for nuclear material research and radioactive waste treatment process development and demonstration. The 324 Building contains highly radioactive tanks, piping and chemical processing equipment located in shielded hot cells. B-Cell is the largest of the 324 Building's four hot cells, which are three-story, heavily shielded rooms with five-foot-thick concrete walls and stainless steel liners.

THE TECHNOLOGY

Washington Closure teamed with S.A. Robotics of Loveland, Colorado, to design and adapt commercially available air-driven tools for removing highly contaminated material from the floor of the 324 Building's B-Cell.

The 324 B-Cell Decontamination Tooling features the following:

- A powerful air-driven high-efficiency particulate air filter (HEPA) vacuum.
- A chisel with a bushing head that acts like a jack hammer used to break up grout located in the B-Cell trench/sump.
- A needle scaler used to remove small sections of grout located in the B-Cell trench/sump.
- A wire brush drill used to clean the walls and floor but designed to reach the radial corners of the trench and sump.



S.A. Robotics designed and adapted commercially available tools to tackle the highly radioactive waste removal from the 324 Building. Identified in the photo are (1) chisel tool; (2) wire brush tool; (3) vacuum nozzle tool; and (4) needle scaler.

THE BENEFIT

The 324 Building B Cell Decontamination Tooling improves safety and reduces costs during deactivation, decommissioning, decontamination and demolition of the 324 Building. Radiation levels are so extreme in B-Cell it would take only minutes for workers to exceed exposure limits. Consequently, work must be performed with remote-controlled equipment.