



FORMER CHEMICAL WEAPONS TANK CLEANING

Richmond, KY



History

Though never used by the United States, chemical weapons were stockpiled by the U.S. Army at a number of sites during and after World War II. Bechtel was contracted by the Department of Defense, Program Executive Office, Assembled Chemical Weapons Alternatives, to design, build, test, and operate a first-of-a-kind plant that would destroy the nation's chemical weapons stockpile. Bechtel Parsons Blue Grass, a joint venture of Bechtel National and Parsons Government Services, destroyed more than 100,000 mustard agent and nerve agent-filled projectiles and rockets using neutralization and explosive destruction technologies.

Challenge

Although the destruction process did directly and specifically target the mustard gas and nerve agents in their original form, the resulting byproducts of the destruction process were still very dangerous and potentially volatile. Cleaning five separate tanks with five distinct hazardous byproducts was a complex undertaking with a host of challenges – and this unique project had a slew of them; heat stress during the hot summer months; stringent adherence to U.S. Army base security and protocols; continual medical evaluations and testing; operating in cumbersome personal protective equipment; working in confined spaces; a robust decontamination process; operational working zones for health and safety; and execution of the work at a slow and tedious pace.

Solution

Working in conjunction with industrial hygienists, toxicologists, senior project managers and hazardous materials professionals, a very detailed and specific framework was established to address all environmental, health and safety concerns for executing the scope of work. Hull's designed an approach to cleaning the tanks that included air monitoring, air scrubbing, level A confined space entry and rescue, a 200 psi water jet cleaning device, 3,000-gallon stainless steel vacuum truck and a veteran tank cleaning crew. Each tank was individually evaluated and prepared for cleaning based on the chemical type, volume of product, safety profile, size, specifications and physical access.

Outcome

With anywhere from three to ten passes necessary, depending on the physical state of each tank's contents, an estimated 20,000 ft² of carbon steel surface area was cleaned across five separate above ground storage tanks over the course of two months. In the end, more than 100,000 gallons of rinsewater was produced, pumped and discharged for eventual disposal with 35,000 thousand pounds of filtration media spent to scrub exhaust vapors. All tanks were cleaned and ready for the next stage of the decommissioning process - dismantlement.

Customer Profile

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