

InstaCote



ENGINEERING SERVICES & ENVIRONMENTAL COATINGS

PROJECT PROFILE

Subject: Process Pipe Stabilization - CC Epoxy 609

Project: Rocky Flats, Golden, CO March, 2003

Building 886, Highly Enriched Uranium & Plutonium Contaminated Facility.

Project Contractor: Kaiser Hill

Scope of Work:

Building 886 at Rocky Flats was a Criticality Mass Laboratory used to perform research and testing on criticality limits for highly enriched uranyl nitrate (HEUN) and weapons grade plutonium. By March, 2003, all above-grade piping, HEUN tanks and plutonium glove boxes had been removed from the facility. Contaminated process pipes were imbedded in the walls and slab of this facility. These same process pipes exited the building and traveled underground to tanks in an adjacent valve pit.

Heavy equipment and explosives would be used to remove the reinforced concrete walls and slabs of the facility. A pipe stabilization technology was needed that would insure that the contamination in these process pipes could be controlled during this aggressive demolition process. At the time it was unknown that these pipes still contained process sludge and highly enriched uranyl nitrate solutions.

InstaCote was asked to develop a pipe stabilization media that could be placed in these pipes. This solid matrix had to withstand the rigors of an aggressive demolition of the pipes and prevent the spread of contamination during demolition. As a requirement for waste packaging, these pipes often required further size reduction with heavy equipment (processor shears).

Products used:

CC Epoxy 609 is a two-part epoxy that was developed by InstaCote to solve this problem. The product is poured or pumped into pipes of various sizes. The use of this epoxy reduces the potential for re-suspension and spread of contamination during cutting of the pipes.

Application technique:

InstaCote engineered the placement of the epoxy into the contaminated pipes using a “pour and vent” method. A system to safely vent the displaced gases and collect sludge and other process liquids was developed by InstaCote engineers. The CC Epoxy 609 displaced the highly enriched uranyl nitrate solutions and sludge, which was collected at the valve pit located approximately 20 feet from the building.

Results:

During placement of the CC Epoxy, three liters of HEUN solution and sludge were displaced from the piping system and safely collected. The pipes were verified to be 100% full of epoxy, with the potential for the spread of contamination eliminated. During trenching and excavation of the piping system, the pipes were snapped and size-reduced with no airborne re-suspension detected and no spread of contamination to the soil.