Completed Return-On-Investment Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Polyurea Spray Sytem

Savannah River Site, South Carolina

Original Problem

To conduct activities in radioactive contaminated areas, workers wear protective equipment such as respirators, protective clothing, fresh air suits, etc.. Decontamination of some areas is not practical due to surface conditions. These areas were painted/coated to fix contaminates. Typical paint has a short life of approximately six months and durability requiring rework and increased surveillance. This lead to much rework and a reluctance by Operations to agree to recover these areas due to maintenance difficulty.

The ROI Project Solution

SRS deployed an innovative polyurea coating system as a key part of an aggressive campaign to recover radiological contaminated areas. . A high pressure, high temperature sprayer mixes and applies a resin and isocyanate to create a long-life polyurea coating (InstaCote®, Polyshield SS-100™, etc.) that encapsulates a surface and fixes contaminates.

Value Of Improvement

Radiological area recovery supports SRS ALARA goals to reduce employee hazard exposure and improves working conditions that result in reduced labor and improved operator morale. SRS has a goal to recover 20% of the active, recoverable CAs per year. Benefits of the polyurea coating are the fast cure time allowing a spray operator to walk on a coated area as soon as it is applied and the long durability of 10-20 years from the physical properties of the plastic and the 60-80 mil thickness of the coating. SRS completed 29 recovery projects in one year totaling 61,126 ft2. Life Cycle savings over $8.0 Million. These savings are included in the benefits documented for the Contamination Area (CA) recovery program.

Lifecycle Waste Reduction	
Life Cycle Waste Reduction	1,500 m3
Operation Commencement Date	2/98
Project Useful Life (Years)	5 years

DOE Monetary Benefits	
Cost	$90,000
Lifecycle Savings	$8,000,000
Return on Investment	1,750 %

Benefits At-A-Glance

- Supports ALARA hazard reduction goals
- Savings of ~$8 million per year from radioactive waste and laundry avoidance and productivity improvement.
- Long coating life reduces re-work and makes use attractive to Operations personnel who are required to maintain rollback conditions.
- Coating materials available complex-wide from vendor strategic alliance.

Building Upon An Office of Science and Technology Demonstration Success

Polyurea Spray System
Savannah River Site, South Carolina

Summary Data

ROI Priority Area:	**Newly Generated Waste**
ROI Project Type:	**Source Reduction**
Project Cost:	**$90,000**
Lifecycle Savings:	**$8,000,000**
Implementing Group:	EM, SRS Decontamination Facility
Benefiting Group:	EM, SRS Site
Useful Life Years:	**5**
Return On Investment:	**1,750 %**
Lifecycle Waste Reduction:	**1,500 m3**

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