

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-HL10 / H-Tank Farm Storm Water System Upgrades**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0590**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

THE SCOPE OF WORK DESCRIBED IN THIS PROJECT IS WRITTEN FOR FUNDING AT THE PLANNING LEVEL. This project includes evaluation and correction of the storm water collection, retention and outfall system related to the current flooding condition at Tanks 9-12 in H-Tank Farm. This involves developing and awarding a design fixed price contract and a construction fixed price contract for diversion line replacements, including installation of new manholes, storm water piping and diversion boxes, and modifications to Diversion Box 907-1H and Retention Basin 281-8H. This infrastructure maintenance upgrade project is crucial to maintain the operating integrity of an aging tank farm as SRS transitions from safe storage of waste (which began in 1951) to an active program of waste removal and vitrification, which is projected to last until FY2026. TECHNICAL APPROACH involves standard industrial equipment and materials.

Project Status in FY 2006:

The Project upgrades will be installed from FY98 - FY00. The Project will be completed in FY00 with final startup activities being completed in FY01.

Post-2006 Project Scope:

None. The project scope will have been completed in FY01.

Project End State

The project will end in FY01 when the upgrades are complete.

Cost Baseline Comments:

Funding from year-to-year reflects the project schedule.

Funding of \$3.6M is provided in FY00 to complete construction, including new manholes, storm water piping, and modifications to Diversion Box 907-1H and Retention Basin 281-8H.

Funding of \$0.2 million in FY01 supports final startup testing.

The project will complete in early FY01 so no further funding is required.

Safety & Health Hazards:

The main hazard in this facility is from the highly radioactive liquid waste (33 million gallons, 450 million Ci) stored in 46 underground storage tanks. The main radioactive constituents of this waste are Strontium-90, Cesium-137, Plutonium-238, Plutonium-239, and Plutonium-241. The tanks were built underground to provide shielding from the intense radiation fields of this highly toxic waste. This project work is done under radiological conditions to avoid direct personnel exposure and prevent contamination.

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Other hazards include exposure to process chemicals (such as nitric acid and sodium hydroxide) as well as miscellaneous hazards commonly encountered in industrial settings (lifting, tripping, falls, rotating equipment, etc.). These hazards are controlled both through engineering controls (hand rails, motor guards, etc.) and through administrative controls (policies and procedures, training, personal protective equipment, etc.).

Safety & Health Work Performance:

All work is performed using a WSRC Integrated Safety Management System (ISMS) approach. The ISMS integrates safety considerations into management and work practices at all levels to accomplish missions while protecting the public, the worker, and the environment. The key elements of the WSRC ISMS are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, and provide feedback on adequacy of controls and continue to improve safety management. The WSRC Integrated Procedures Management System is the primary mechanism for implementing the objective, principles and functions of the ISMS. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, disciplined site-wide approach to safety while performing work.

PBS Comments:

Funding for this project is at the level necessary to ensure safe storage and management of the liquid radioactive waste and to meet an overall system production of 200 canisters per year from FY98-04, 225 canisters per year in FY05, 250 canisters per year from FY06-14, 200 canisters per year from FY15-23, and 72 canisters in FY24. Reductions in H-Tank Farm Storm Water Upgrades Project funding would directly impact Waste Removal (SR-HL03), because completion of the H-Tank Farm Storm Water Upgrades Project is integral to the ability of H-Tank Farm (SR-HL01) to safely store and remove waste.

The major drivers for this project are:

- Stakeholders - The continued storage of liquid, high level radioactive waste in underground storage tanks is the major concern of the SRS stakeholders. One of our most important stakeholders, the SRS Citizen's Advisory Board, considers the continued storage of this liquid high level radioactive waste in underground tanks at SRS one of the greatest risks to the public, workers and the environment. This group further stated that processing this waste into glass should be given high priority by DOE.
- Federal Facilities Agreement (FFA) - Executed by the Department of Energy, the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control on January 15, 1993. The agreement currently requires that by 2028, liquid high level radioactive waste must be removed from all 24 of the old style tanks in H and F-Tank Farms which do not meet specified secondary containment and leak detection requirements. (This date, however, is now being rejected by the state as not aggressive enough. Negotiations are underway to establish a more aggressive commitment date that will meet regulatory expectations while balancing technical and resource limitations.)
- Site Treatment Plan (STP) - The Site Treatment Plan for SRS includes the following commitment for DWPF (SR-HL05): "Upon the beginning of full operations, DWPF must maintain an average of 200 canisters of processed glass per year to meet the commitment for the removal of backlogged and currently generated waste inventory by 2028." This requires F-Tank Farm (SR-HL02) and H-Tank Farm (SR-HL01) operations, including upgrade projects, to be funded at the level necessary to maintain safe storage of waste, as well as operation of waste transfer and waste evaporation systems to support the specified production rates in DWPF (SR-HL05). The Tank Farms must provide feed stock to DWPF, as well as receive, evaporate and store recycle waste.
- DNFSB Recommendation 94-1 - Nuclear weapons materials that were in the manufacturing pipeline when production was halted require treatment on an accelerated basis to convert them to forms that are more suitable for safe interim storage. In order to process some of this material, the F&H

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Project Description Narratives

Canyons must operate and the resulting waste must be received, volume reduced and safely stored in the Tank Farms. Continued safe storage of waste in F&H Tank Farms is required for Canyon operations.

Baseline Validation Narrative:

Review by DOE-SR.

General PBS Information

Project Validated? Yes **Date Validated:** 3/10/1999
Has Headquarters reviewed and approved project? No
Date Project was Added: 12/1/1997
Baseline Submission Date: 7/3/1999
FEDPLAN Project? Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	N	N	N	N	N	Y	N	N

Project Identification Information

DOE Project Manager: H. B. Gnann
DOE Project Manager Phone Number: 803-208-6076
DOE Project Manager Fax Number: 803-208-7414
DOE Project Manager e-mail address: howard.gnann@srs.gov
Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	6,478	0	6,478	163	163	404	404	2,044	3,618	249	0	0	0	0	0

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Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (constant 1999 dollars)	6,335	0	6,335	163	163	404	404	2,044	3,492	232	0	0	0	0	0	
PBS EM Baseline (current year dollars)	6,478	0	6,478	163	163	404	404	2,044	3,618	249	0	0	0	0	0	
PBS EM Baseline (constant 1999 dollars)	6,335	0	6,335	163	163	404	404	2,044	3,492	232	0	0	0	0	0	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	3.60%	3.60%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070

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2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2000

Current Projected End Date of Project: 1/31/2001

Explanation of Project Completion Date Difference (if applicable):

Startup schedule delayed to allow proper up front planning and efficient project execution.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	11,562	Actual 1997 Cost:	163	Actual 1998 Cost:	404
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	10,995	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			297
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	11,292				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):	5,525	Excellent up front planning and efficient project execution.
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	5,767	
Additional Amount to Reconcile (+):	1	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	5,768	

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Project Mission Complete	SR-HL10-010		1/31/2001								
Project Start	SR-HL10-001		10/1/1996								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Project Mission Complete	SR-HL10-010					Y					
Project Start	SR-HL10-001			Y							