Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Savannah River**

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

Site Summary Level: **Savannah River Site**

HQ ID: **0037**

Project **SR-HL02 / F-Tank Farm**

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. F Tank Farm safely stores approximately 14 million gallons and 160 million curies of liquid high-level radioactive waste in 20 underground waste storage tanks. Originally there were 22 of these waste storage tanks, but two have been emptied and operationally closed (These two were the first high-level radioactive waste tanks in the DOE complex to be operationally closed.) Tank farm activities include 24-hr surveillance, monitoring, inspection, sampling and maintenance of 20 underground storage tanks ranging in volume between 750,000 gal and 1,300,000 gal each; 24-hr manning of control rooms; operation of the 2F evaporator system; continual waste transfers (between tanks, from F-Canyon, and to/from H-Tank Farm); and area radiation monitoring. Tank farm work is done remotely or with shielding due to the intense radiation fields. TECHNICAL APPROACH: The key technologies used in the safe storage and management of this liquid high level radioactive waste include the following: evaporation (to reduce the volume of waste to be stored); chemical additions (to adjust waste pH to minimize corrosion of carbon steel tank walls); ventilation (to remove hydrogen gas from tank vapor space); cooling (to remove heat caused by radioactive decay); shielded transfer systems (piping, gang valves, jumpers, pumps and jets); monitoring systems (radiation, liquid levels, leak detection, combustible gas, etc.); and remote inspection for tanks walls and annuli.

Project Status in FY 2006:

Waste will have been removed from 5 of the original 22 underground, high-level radioactive waste storage tanks and 4 of these empty tanks will have been operationally closed. NOTE: Operational tank closure is covered by Waste Removal Operations and Tank Closure(SR-HL03) and disposition is covered by HLW Facility Disposition (SR-FA24).

Post-2006 Project Scope:

Waste will be removed from the remaining 17 waste storage tanks and all tanks will be operationally closed by the end of FY27. Supporting systems (evaporator systems, control rooms, etc) will also be operationally closed. NOTE: Operational tank closure is covered by Waste Removal Operations and Tank Closure (SR-HL03) and disposition is covered by HLW Facility Disposition (SR-FA24).

Project End State

The project will end in FY27 when all waste removal activities are complete and all remaining tanks and facilities have been removed from service. This includes de-inventorying the existing underground high level radioactive waste storage tanks and associated facilities. NOTE: Operational tank closure is covered by Waste Removal Operations and Tank Closure(SR-HL03) and disposition is covered by HLW Facility Disposition (SR-FA24).

Cost Baseline Comments:

Outyear cost baseline estimates use FY01 as the base year, adding escalation and adjusting for the following major programmatic changes.
FY02-04: DCS upgrade to process computers. Tanks and the supporting infrastructure for tank groups are removed from service the previous year and results in a cost reduction in the years as follows: Tank 19 (FY03); Tank 18 and the infrastructure for Tanks 17-20 (FY04); Tank 4 (FY08); Tank 5 (FY11); Tank 8 (FY15); Tanks 2 & 6 (FY17); Tank 1 (FY18); Tank 3 (FY19); Tanks 7 & 34 and the infrastructure for Tanks 1-8 (FY20); Tank 28 (FY21); Tank 44 (FY22); Tank 45 (FY23); Tanks 26, 46, & 47 and the infrastructure for tanks 44-47 (FY25); Tanks 25, 27, & 33 (FY27); also, in

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FY27 all remaining tanks and infrastructure are removed from service and F Tank Farm operations will be ended.

Safety & Health Hazards:

The main hazard in this facility is from the highly radioactive liquid waste (14 million gallons, 160 million Ci) stored in 20 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. Operations, maintenance and waste handling are done under radiological conditions to avoid direct personnel exposure and prevent contamination. 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 F Tank Farm is at the level necessary to ensure safe storage and management of the liquid high level radioactive waste and to meet an overall system production of 200 canisters per year from FY98-04, 225 canisters in FY05, 250 canisters per year in FY06-14, and 200 canisters per year in FY15-24. FY99 funding reductions for a related project (SR-HL04 - ITP/ESP/LW Operations) has already resulted in a one year extension of this project.

The tank farm operates under a SCDHEC waste water permit.

The major drivers for this project are:
- Stakeholders - The continued storage of liquid, high-level radioactive waste in underground tanks is the major concern of the SRS stakeholders. One of our major 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 the processing of 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 initial schedule proposed that liquid high level radioactive waste be removed from all 12 of the old style tanks in F-Tank Farm which do not meet specified secondary containment and leak detection requirements by 2028. This proposed date, however, has been rejected by the state as not aggressive enough. Negotiations are underway to establish a more aggressive

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Project **SR-HL02 / F-Tank Farm**

Project Description Narratives

commitment date that will meet regulatory expectations while balancing technical and resource limitations.
- Site Treatment Plan - The Site Treatment Plan for SRS includes the following commitments for DWPF (Vitrification, SR-HL05): "After the startup period is complete and DWPF begins full operation, the maintenance of an average of 200 canisters of processed glass per year will be required in order to meet the schedule for removal of backlogged and currently generated waste inventory by the year 2028." This requires H-Tank Farm operation 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 this production rate in DWPF (i.e., H-Tank Farm must receive, evaporate, and store recycle waste from DWPF as well as provide feed stock for DWPF)
- DNFSB Recommendation 94-1 - Nuclear materials to be used in nuclear weapons that were in the manufacturing pipeline when production was halted requires treatment on an accelerated basis to convert them to forms more suitable for safe interim storage. In order to process some of this material, the F & H Canyons must operate and the resulting waste must be received, volume reduced, and safely stored.

Baseline Validation Narrative:

This project has completed an internal validation conducted by SRS personnel independent from the project.

General PBS Information

Project Validated? Yes **Date Validated:** 1/29/1999

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	Y	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):

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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)	593,647	1,107,557	1,701,204	54,770	54,770	53,123	53,123	57,762	61,207	64,265	66,292	67,544	55,973	55,605	57,106
PBS Baseline (constant 1999 dollars)	545,704	706,181	1,251,885	54,770	54,770	53,123	53,123	57,762	59,080	59,876	60,141	59,666	48,145	46,571	46,570
PBS EM Baseline (current year dollars)	593,647	1,107,557	1,701,204	54,770	54,770	53,123	53,123	57,762	61,207	64,265	66,292	67,544	55,973	55,605	57,106
PBS EM Baseline (constant 1999 dollars)	545,704	706,181	1,251,885	54,770	54,770	53,123	53,123	57,762	59,080	59,876	60,141	59,666	48,145	46,571	46,570

	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)	58,648	58,939	60,530	62,165	327,974	317,157	183,776	38,368	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	46,571	45,571	45,571	45,571	222,119	188,002	95,352	17,424	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	58,648	58,939	60,530	62,165	327,974	317,157	183,776	38,368	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	46,571	45,571	45,571	45,571	222,119	188,002	95,352	17,424	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%

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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: 9/1/2021

Current Projected End Date of Project: 9/30/2027

Explanation of Project Completion Date Difference (if applicable):

Due to constrained Budgets in the FY01-06 period, the HLW progam will not complete operations in early FY24 as shown in the last baseline. Operations will continue until end of FY25. This will result in the F Tank Farm facility operations extending from FY21 until FY27.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	1,202,329	**Actual 1997 Cost:**	54,770	**Actual 1998 Cost:**	53,123
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	1,094,436	**Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):**			29,550
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	1,123,986				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):	70,136	PACE savings including maintenance, training and engineering efficiencies.
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):	90,141	Funding limits in FY00-06 results in 6 years of additional storage cost.
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	1,143,991	
Additional Amount to Reconcile (+):	1	

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Project Reconciliation

Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): **1,143,992**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
IMPLEMENT F TANK FARM INTERIM AUTHORIZATION BASIS	SR-HL02-990		7/31/1999								
Project Mission Complete	SR-HL02-270		9/30/2027	9/30/2028			Y				
Remove Tank 19 from HLW Service	SR-HL02-020		9/30/2002								
Remove Tank 18 from HLW Service and remove Tanks 17-20 support systems from service	SR-HL02-030		9/30/2003								
Remove Tank 4 from HLW Service	SR-HL02-070		9/30/2007								
Remove Tank 5 from HLW Service	SR-HL02-100		9/30/2010								
Remove Tank 8 from HLW Service	SR-HL02-140		9/30/2014								
Remove Tanks 2 and 6 from HLW Service	SR-HL02-160		9/30/2016								
Remove Tank 1 from HLW Service	SR-HL02-170		9/30/2017								
Remove Tank 3 from HLW Service	SR-HL02-180		9/30/2018								
Remove Tanks 7 & 34 from HLW Service and remove Tanks 1-8 support systems from service	SR-HL02-190		9/30/2019								
Remove Tank 28 from HLW Service	SR-HL02-200		9/30/2020								
Remove Tank 44 from HLW Service	SR-HL02-210		9/30/2021								
Remove Tank 45 from HLW Service	SR-HL02-220		9/30/2022								
Remove Tanks 26, 46, & 47 from HLW Service and Remove Tanks 44-47 Support Systems from Service	SR-HL02-240		9/30/2024								
Remove Tanks 25, 27 and 33 from HLW Service	SR-HL02-260		9/30/2026								
Project Start	SR-HL02-001		10/1/1996								

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Project **SR-HL02 / F-Tank Farm**

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
IMPLEMENT F TANK FARM INTERIM AUTHORIZATION BASIS	SR-HL02-990										
Project Mission Complete	SR-HL02-270				Y						
Remove Tank 19 from HLW Service	SR-HL02-020										
Remove Tank 18 from HLW Service and remove Tanks 17-20 support systems from service	SR-HL02-030										
Remove Tank 4 from HLW Service	SR-HL02-070										
Remove Tank 5 from HLW Service	SR-HL02-100										
Remove Tank 8 from HLW Service	SR-HL02-140										
Remove Tanks 2 and 6 from HLW Service	SR-HL02-160										
Remove Tank 1 from HLW Service	SR-HL02-170										
Remove Tank 3 from HLW Service	SR-HL02-180										
Remove Tanks 7 & 34 from HLW Service and remove Tanks 1-8 support systems from service	SR-HL02-190										
Remove Tank 28 from HLW Service	SR-HL02-200										
Remove Tank 44 from HLW Service	SR-HL02-210										
Remove Tank 45 from HLW Service	SR-HL02-220										
Remove Tanks 26, 46, & 47 from HLW Service and Remove Tanks 44-47 Support Systems from	SR-HL02-240										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Service											
Remove Tanks 25, 27 and 33 from HLW Service	SR-HL02-260										
Project Start	SR-HL02-001			Y							

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 200
HLW														
Storage	M3							55,108.00	53,778.00	53,810.00	53,926.00	55,044.00	55,051.00	55,017.0
Tech.														
Deployed	Ntd	3.00	0.00	3.00						1.00	2.00			

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
HLW													
Storage	M3	55,017.00	55,339.00	55,747.00	56,066.00	57,169.00	57,622.00	56,240.00	36,438.00	21,049.00	6,446.00	0.00	
Tech.													
Deployed	Ntd												

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
HLW										
Storage	M3									

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
Tech.										
Deployed	Ntd									3.00

Technology Needs

Site Need Code: SR99-2027

Site Need Name: Demonstrate Alternative Filtration Technologies to Replace HEPA Filters

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Metal Filters for Waste Tank Ventilation	5,000	Low
Metal Filters for Waste Tank Ventilation	5,000	Low

Site Need Code: SR99-2028

Site Need Name: Alternative Waste Removal Technology

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Flygt Mixer		

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00496: -	Y	N
	00499: -	Y	N

Site Need Code: SR99-2033

Site Need Name: Provide Alternative Processing and/or Concentration Methods For DWPF Recycle Aqueous Streams

Focus Area Work Package ID: TFA-3 **Focus Area Work Package:** Alternative Paths to In-Tank Precipitation at SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Cesium Removal Using Crystalline Silicotitanate		
Advanced Separations at Savannah River Site		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00499: -	Y	N
	00496: -	Y	N

Site Need Code: SR99-2035

Site Need Name: Develop Advanced Techniques for Life Extension of High Level Waste Tanks and Piping

Focus Area Work Package ID: WT-03-01 **Focus Area Work Package:** Tank Integrity and Heel Retrieval

Focus Area: TFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00503: -	Y	N
	00496: -	Y	N
	00499: -	Y	N
	00502: -	Y	N

Site Need Code: SR99-2037

Site Need Name: Tank Heel Removal/Closure Technology

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
In Situ Viscosity and Density Monitoring Using Quartz Resonators		
Bamberger Ultrasonic Sensor		
Automated Monitoring System for Fluid Level and Density in High-Level Waste Tanks		
AEA Fluidic Pulse Jet Mixer		
Heel Retrieval for SRS		
Tank Riser Pit Decontamination System		
Flygt Mixer		
Sludge Wash Monitor		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00496: -	Y	N
	00499: -	Y	N

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Technology Needs

Site Need Code: SR99-2039
Site Need Name: Methods to Unplug Waste Transfer Lines
Focus Area Work Package ID: WT-01-01
Focus Area Work Package: Transfer Line/Unplugging/Feed Analysis
Focus Area: TFA
Agree with Technology Link: Y
Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Site Need Code: SR99-2041
Site Need Name: Demonstration of Alternative Mixer Technology for HLW Pump Tanks
Focus Area Work Package ID: WT-02-01
Focus Area Work Package: Waste Mobilization and Retrieval
Focus Area: TFA
Agree with Technology Link: Y
Benefits (Cost, Risk Reduction, Both): Both

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
AEA Fluidic Pulse Jet Mixer	10,000	Low
AEA Fluidic Pulse Jet Mixer	10,000	Low

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00503: -	Y	N
	00496: -	Y	N
	00499: -	Y	N
	00502: -	Y	N

Technology Needs

Site Need Code: SR99-2044

Site Need Name: Demonstrate In-Situ Characterization Weight Percent Probe

Focus Area Work Package ID: TFA-1 **Focus Area Work Package:** Required Steps to Tank Closure at Hanford, ORR, Idaho, and SRS

Focus Area: TFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Automated Monitoring System for Fluid Level and Density in High-Level Waste Tanks		

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00503: -	Y	N
	00496: -	Y	N
	00499: -	Y	N
	00502: -	Y	N

Site Need Code: SR99-2045

Site Need Name: In-Situ Waste Tank Corrosion Probe

Focus Area Work Package ID: WT-04-01 **Focus Area Work Package:** Ancillary Tank Equipment Enhancements

Focus Area: TFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Corrosion Probe	100,000	Low
Corrosion Probe	100,000	Low
Integrated Raman pOH Sensor for In-Tank Corrosion Monitoring		

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00512: -	Y	N
	00496: -	Y	N
	00499: -	Y	N

Site Need Code: SR99-2050-S

Site Need Name: Fracture Toughness Properties for Carbon Steel Utilized for Nuclear Waste Containment Vessels

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	00512: -	Y	N
	00496: -	Y	N
	00499: -	Y	N

Site Need Code: SR99-4012

Site Need Name: Stabilization of Contaminated Equipment / Components/ Surfaces

Focus Area Work Package ID: DD-03 **Focus Area Work Package:** Canyon Disposition Initiative

Focus Area: DDFA **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
Reactor Surface Contamination Stabilization		
Reactor Surface Contamination Stabilization		

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Technology Needs

Reactor Surface Contamination Stabilization

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

Technology Deployments

		Deployment Year		
Deployment Status		**Planned**	**Forecast**	**Actual Date**
Technology Name:	AEA Fluidic Pulse Jet Mixer			
Potential Deployment		2000		
Technology Name:	Corrosion Probe			
Potential Deployment		2001		
Technology Name:	Metal Filters for Waste Tank Ventilation			
Potential Deployment		2001		