

# *Project Baseline Summary Report*

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SF07 / Disassembly Basin Upgrade Line Item**

Report Number: **GEN-01b**

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

HQ ID: **0074**

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## **General Project Information**

### **Project Description Narratives**

#### **Purpose, Scope, and Technical Approach:**

L-Area disassembly basin is the primary wet basin for short term management of SRS spent nuclear fuel (SNF). The mission for the L-Area disassembly basin is to 1) safely store existing inventoried SNF, 2) receive and provide interim storage for additional off-site research reactor SNF and spent fuel presently located in RBOF, and 3) provide lag storage for the new Treatment and Storage Facility (TSF). In order to accommodate projected inventories prior to operation of the TSF, additional racks are required in L (and/or K) basin. These additional racks will be added as sub-projects of the Disassembly Basin Upgrades Line Item (95-D-158) to allow for the required additional storage capacity of spent nuclear fuel at SRS from receipts or delay in the FY05 start of TSF. These sub-projects will allow for design, fabrication, and installation of additional (phase II) High Flux Isotope Reactor (HFIR) racks; design, fabrication, and installation of additional (phase II) Materials Test Reactor (MTR) racks; and design, fabrication, and installation of Stainless Steel/Zircaloy (SS/Zr) clad fuel racks.

The High Flux Isotope Reactor (HFIR) project (phase I) provided and installed modular storage racks and associated equipment to allow the storage of 60 HFIR cores. The HFIR project essentially consists of installation of procured engineered components. The rack design was analyzed and bounded by nuclear critically spacing requirements. The HFIR fuel carriers will duplicate the HFIR rack design from L-Basin Phase I. Existing chain hoists will be used for handling fuel carriers as they are transferred to the bucket storage area and installed into new racks. A new tool is required to install the posts on the second tier of the rack. In the baseline case, assuming TSF is operational in FY05, additional (phase II) HFIR racks are expected to be required by 3QFY01. If the TSF is delayed additional racks could be required as early as 2008.

It is assumed that Al-clad fuel will be transferred to the L-Disassembly Basin in anticipation of disposition as feed to the TSF facility per the SRS SNF Management EIS ROD. As of 2/10/99, there was the equivalent of 297 EBS bundles of Al-clad MTR fuel stored in RBOF for transfer. The 297 bundles of Al-clad MTR in backlog are estimated to require 35 cask loads to move. In the baseline case, assuming TSF operational in FY05, additional (phase II) MTR racks are expected to be required by the end of FY02. With a 1-Canyon scenario, these MTR racks will be required by mid FY01. Assuming the TSF is operational by FY05, only one phase of additional MTR racks will be required.

It is assumed that SRS will begin INEEL-SRS swap of SS and Al-clad SNF after the FRR campaign (~2009-2015); SS/Zr-clad SNF will be transferred to a 105 (L or K) Disassembly Basin for temporary storage to support deinventory of RBOF/reduced mortgage costs prior to shipment to Idaho per the ROD for the DOE Programmatic SNF Management EIS. There are 650 individual items of which 280 will require unique container designs for repackaging prior to shipment and storage to a basin. Preliminary SFSD engineering evaluation indicates multiple rack designs are needed for the basin to accommodate the assortment of fuel assembly and container shapes. Few details are available on composition of the individual items.

The key upfront activity, necessary for successful completion of the SS/Zr-clad fuel transfer, is development of a conceptual plan with details for the disposition of the material. Attention must be focused on defining the scope of characterization required prior to shipment off-site to either Idaho or the geologic repository. If the racks for SS/Zr-clad SNF are to be located in L-Basin, the disposition of 189 bundles of Mk16B's and removal of scrap from L-Basin must be completed to provide access for rack installation to accommodate the SS/Zr-clad materials from RBOF. This results in the earliest possible transfer of SS/Zr-clad material from RBOF to L-Basin in 3/02.

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## Project Description Narratives

If H-Canyon does not operate, K-basin will be utilized for expediting the SS/Zr-clad fuel deinventory, with racks needed by 2/01. Project completion will be achieved when all approved sub-projects are complete and fully operational.

### Project Status in FY 2006:

Project completed

### Post-2006 Project Scope:

Not Applicable

### Project End State

Completion of Line Item project.

### Cost Baseline Comments:

The financial figures for the Disassembly Basin Upgrades Line Item update to the PBS are based on planning for the remaining sub-project scopes of work to be completed. Several potential subprojects have been identified for the Reactor Disassembly Basin Upgrade line item Project in FY00-03 timeframe. If approved, these projects will expand the storage of L and/or K Basin to accommodate the total projected inventory through 2010. The assumption for funding purposes was the 'baseline' integrated cask handling case identified in the 'draft' RBOF Deinventory Plan. This is the least conservative case. If another case is realized then additional funding may be required.

The financial figures for the Path to Closure (PtC) were derived using the SRS FY99 Annual Operating Plan (AOP) as the beginning basis. Outyear budget (OYB) requirements were estimated by factoring Detailed Information Input Forms (DIIFs) and outyear program planning assumptions/schedules against this AOP baseline. The OYB process utilizes the program requirements contained in the DOE Strategic Execution Guidance (SEG) as the formulation basis of detailed program/operating assumptions and Program Planning Packages used to communicate scope of work requirements to other SRS divisions, e.g. Construction, Waste Management, Environment, Safety & Health, etc. Financial estimates for planning purposes only, in this case, (not budget quality) are generated by the line and support organizations. Estimates were escalated for anticipated inflation using a 3.6% factor for FY00 and 01, and 2.7% for FY02 and beyond - per the guidance from the site.

The full cost of PBS work scope may change based on the authorized funding and priorities in any given year due to changes in site overhead assumptions. For planning and budgeting purposes, work scope costs were estimated using site overhead rates sized for clearance at a funding target of \$1,222.5 million. For FY2001 (the budget year), the site overhead is applied and cleared at the funding target, while the work scope below the funding target (planning level) is incremental direct cost. For FY2002, the site overhead is applied and cleared over the total planning level of scope.

### Safety & Health Hazards:

The criteria for determining the radiological hazard categories are provided in DOE-STD-1027-92, and the criteria for determining the chemical hazard categorization are provided in WSRC-MS-92-206. Chemical inventory is controlled in accordance with RDP 14.1 "Chemical Management Program," and "Chemicals and Non-radioactive Hazardous Materials Control (U), DPSOL 105-1845-K." Hazards present in the Heavy Water Processing Facility will vary during the construction and operation of the facility.

### Safety & Health Work Performance:

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## Project Description Narratives

As described in DOE's, "Safety Management System Policy," P450.4, there are six primary components that must be implemented; Objective, Principles, Functions, Implementation, Responsibilities, and Mechanisms. In adopting these components into the WSRC program, WSRC developed the Safety Management System Policy MP 1.22, "Integrated Standards Based Safety Management Program," and submitted to the DOE (WSRC letter ESH-97-0004, F. B. Davis to L. C. Sjostrom, "Schedules for Implementation of a Safety Management System (SMS) (U)," dated March 17, 1997) WSRC-IM-97-10, Rev .0, "Safety Management System Description (U)." These documents describe the Safety Management System used to ensure safety is integrated into work performed under WSRC's Contract No. DE-AC09-96SR1850.

Through the performance of a Readiness Assessment and continuing operational assessments, there is reasonable assurance the facility can be operated without endangering the health and safety of the public, the workers, or the environment.

Activities and checkpoints are described by the Integrated Management System Description. The conditions and requirements are clearly established and agreed upon prior to the starting of any project and those requirements are contractually binding upon WSRC. The key elements of the WSRC Integrated Safety Program 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 Safety Management System. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, discipline site-wide approach to safety while performing work.

### PBS Comments:

The current mission for the L Area disassembly basin is the preparation for the receipt and storage of research reactor spent nuclear fuel (SNF). These receipts are in support national foreign policy objectives and have been validated through several Environmental Impact Statement Records of Decision.

SNF can be shipped to the basin in a number of different type transportation casks. Modifications being made to the basin and supporting equipment will enable the receipt of all identified cask types with the exception of TN1/7 casks which will continue to be received in RBOF.

Project completion will be achieved when all approved sub-projects are complete and fully operational, see also Sections A.2.11.

### Baseline Validation Narrative:

## General PBS Information

<b>Project Validated?</b>	<b>Date Validated:</b>
<b>Has Headquarters reviewed and approved project?</b>	No
<b>Date Project was Added:</b>	12/1/1997
<b>Baseline Submission Date:</b>	7/3/1999

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## General PBS Information

FEDPLAN Project?	Yes							
<b>Drivers:</b>	<b>CERCLA</b>	<b>RCRA</b>	<b>DNFSB</b>	<b>AEA</b>	<b>UMTRCA</b>	<b>State</b>	<b>DOE Orders</b>	<b>Other</b>
	N	N	N	N	N	N	Y	Y

## Project Identification Information

DOE Project Manager: Sandra L. Johnson

DOE Project Manager Phone Number: 803-557-3828

DOE Project Manager Fax Number: 803-557-3996

DOE Project Manager e-mail address: sandra-l.johnson@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)	20,853	0	20,853	4,414	4,414	3,970	3,970	680	750	0	4,415	1,472	2,576	2,576	0	
PBS Baseline (constant 1999 dollars)	19,466	0	19,466	4,414	4,414	3,970	3,970	680	724	0	4,005	1,300	2,216	2,157	0	
PBS EM Baseline (current year dollars)	20,853	0	20,853	4,414	4,414	3,970	3,970	680	750	0	4,415	1,472	2,576	2,576	0	
PBS EM Baseline (constant 1999 dollars)	19,466	0	19,466	4,414	4,414	3,970	3,970	680	724	0	4,005	1,300	2,216	2,157	0	
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011-2015</b>	<b>2016-2020</b>	<b>2021-2025</b>	<b>2026-2030</b>	<b>2031-2035</b>	<b>2036-2040</b>	<b>2041-2045</b>	<b>2046-2050</b>	<b>2051-2055</b>	<b>2056-2060</b>	<b>2061-2065</b>	<b>2066-2070</b>

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	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
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: 9/30/1998

Current Projected End Date of Project: 9/30/2005

Explanation of Project Completion Date Difference (if applicable):

### Project Cost Estimates (in thousands of dollars)

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## Project Reconciliation

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	10,198	Actual 1997 Cost:	4,414	Actual 1998 Cost:	3,970
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	1,814	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			49
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	1,863				

## Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):	9,219	Add'l Basin Storage racks required, enabling the deinventory and retirement of the RBOF facility.
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
<b>Subtotal:</b>	<b>11,082</b>	
<b>Additional Amount to Reconcile (+):</b>	<b>0</b>	
<b>Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):</b>	<b>11,082</b>	

## Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Project Start	SR-SF07-001		10/1/1996								
Installation of SS and Phase II HFIR racks	SR-SF07-002		9/30/2002								
Complete Installation of Phase II EBS racks	SR-SF07-003		9/30/2002								
Project Complete	SR-SF07-004		9/30/2005								

## 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
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## **Milestones - Part II**

<b>Milestone/Activity</b>	<b>Field Milestone Code</b>	<b>Critical Decision</b>	<b>Critical Closure Path</b>	<b>Project Start</b>	<b>Project End</b>	<b>Mission Complete</b>	<b>Tech Risk</b>	<b>Work Scope Risk</b>	<b>Intersite Risk</b>	<b>Cancelled</b>	<b>Milestone Description</b>
Project Start	SR-SF07-001			Y							
Installation of SS and Phase II HFIR racks	SR-SF07-002										Complete installation of Stainless Steel and HFIR Phase II racks.
Complete Installation of Phase II EBS racks	SR-SF07-003										Complete Installation of Phase II Expanded Basin Storage (EBS) racks in L Basin - funding needs to be restored to the line item project to support this work
Project Complete	SR-SF07-004				Y						