FI-96-0140
001
Savannah plan

137

US DEPARTMENT OF ENERGY
SAVANNAH RIVER OPERATIONS OFFICE

Assistant Manager for Defense Programs

Date 7-3-96

Phone: (803) 725-9798 Fax: (803) 725-8272

To: Andre Cygelman MD-3
Dept: HQ
Fax No: 202-586-3883
Verify:

No. of Pages (excluding cover) 13

From: Don Bridges
Phone: 803-725-5530

Comments:
Copy Bob Anderson 714-975-5530
Allen Guenter 803-952-2019

DOE
Box 81
Item 7

Consolidated Storage at SRS
Assumptions
7/3/96

1. 40,000 storage positions - 25,000 are pits.

2. All hardened structures and vaults are underground.

3. All expansion vault modules are included in a single construction package. APSF completed per existing schedule.

4. Receive 2 SSTs per week (100 shipping packages). One truck bay is sufficient.

5. Unpackaging and accountability measurements areas operate 7 days per week, 24 hours per day. Other areas operate 5 days per week, 8 hours per day.

6. The construction schedule for additional vaults is extended 1 to 2 years due to budget and logistics considerations.

7. Pits received ready for storage in AT-400A primary containers.

8. Metal and oxide containers received in final storage containers requiring no repackaging.

9. Repackaging area is for abnormal conditions only.

10. Pit unpackaging line and pit NDA equipment added and area increased 600 sp. ft.

11. Truck unloading and confirmatory measurement areas increased by 500 sp. ft.

12. Additional Security costs will be incurred during the transition after completion and start-up of the APSF project and completion of the additional vault modules.

7/3/96

Consolidated Storage At SRS

Estimates For Increasing 2000 Position APSF to 40,000 Position

Original APSF Project Estimate	$138,800K
Pit Receipt and Storage Capability Pit Unpackaging Line. Pit NDA Equipment. Larger Gantry Crane in AM. Larger SPU and AM, increased by 600 sq.ft. Vault size increased from 2000 to 5600 positions(4,075 sq.ft.)	$ 17,025K
Additional Increases Required	
2 Calorimeters for Pits	$ 1,200K
TU and CM increase by 500 sq.ft. (500 X $2,500)	$ 1,250K
Need 7 more vault modules at 5000 positions each (7 X $20,000K - includes burial).	$140,000K
Total	**$298,275K**
Existing APSF	$138,800K
Incremental Capital Cost	**$159,475K**

CONSOLIDATED STORAGE CASE
ESTIMATED ANNUAL OPERATING COST

July 3, 1996

	FTE	$Million
• APSF Operating Cost*	130	21
• Incremental Increase for Consolidated Case (5 man crew - material handling) (14-vaults)	20**	4
• Steady State Increment	-	3

* Does not include repackaging charges.
** First 10 years operating in receipt mode (20 FTE) - balance of operating life 15 FTE's.

DRAFT

IV. B. Construction Funded Project Descriptive Summary

1. Project Title and Location: Project 97-SR-253 Actinide packaging and storage facility Savannah River Site/Aiken, South Carolina

TEC: $109,838
TPC: $136,753

Start Date: 2nd Qtr. FY 1997 Completion Date: 3rd Qtr. FY 2001

2. Financial Schedule (Federal Funds):

Fiscal Year	Appropriations	Adjustment	Obligations	Costs
1997	$ 7,900	0	$ 7,900	$ 7,514
1998	18,000	0	18,000	14,339
1999	39,800	0	39,800	34,864
2000	31,000	0	31,000	34,380
2001	$13,138	0	$13,138	16,741

3. Narrative:

The Department of Energy (DOE) committed in the Implementation Plan for the Defense Nuclear Facility Safety Board Recommendation 94-1 to meet the DOE Criteria., DOE-STD-3013-94, for Storage of Plutonium metal and oxides by May 2002. The existing Savannah River Site Facilities are not sufficient or capable of meeting the commitments in the DNFSB 94-1 Implementation Plan; therefore the Actinide Packaging and Storage Facility must be constructed. SRS has determined that a new Actinide Packaging and Storage Facility is the safest (to the worker and environment), and the most economical option compared to the major modification and refurbishing of existing SRS facilities and to a "no action" option. A life cycle cost estimate demonstrated that a new Actinide Packaging and Storage Facility has the lowest total associated cost with a payback period of approximately 3-1/2 years.

The Actinide Packaging and Storage Facility will provide for thermal stabilization, repackaging, and safe, secure, cost effective, storage of the Special Nuclear Material (SNM) to meet DOE-STD-3013-94 Criteria for Storage of Plutonium Metals and Oxides. The facility is to be a 40,000 sq. ft. (approx.) structure constructed in F-Area consisting of a 23,000 sq. ft. (approx.) hardened structure containing the Material Access Area (MAA). The MAA will be bounded by a contiguous 17,000 sq. ft. (approx.) soft structure containing offices, HVAC support equipment, and other administrative functions and will be designed to meet all the applicable national standards and DOE orders.

DRAFT

DEPARTMENT OF ENERGY
FY 1998 FIELD BUDGET REQUEST
(Changes from FY 1997 Congressional Budget Request are denoted with a vertical line in left margin)

NUCLEAR MATERIALS AND FACILITIES STABILIZATION
DEFENSE ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

1. Title and location of project:	Actinide packaging and storage facility Savannah River Site/Aiken, South Carolina	2a. Project No. 97-SR-253 2b. Construction Funded	ADS: SR-6915-17

SIGNIFICANT CHANGES

- None

DRAFT

DEPARTMENT OF ENERGY
FY 1998 FIELD BUDGET REQUEST
(Changes from FY 1997 Congressional Budget Request are denoted with a vertical line in left margin)

NUCLEAR MATERIALS AND FACILITIES STABILIZATION
DEFENSE ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

1. Title and location of Project: Actinide packaging and storage facility, Savannah River Site/Aiken, South Carolina

2a. Project No. 97-SR-253 ADS: SR-6915-17
2b. Construction Funded

3a. Date A-E Work Initiated, (Title I Design Start Scheduled): 2nd Qtr. FY 1997
3b. A-E Work (Title I & II) Duration: 12 months

5. Previous Cost Estimate:
Total Estimated Cost (TEC) -- $109,838
Total Project Cost (TPC) -- $138,753

4a. Date Physical Construction Starts: 2nd Qtr. FY 1998
4b. Date Construction Ends: 3rd Qtr. FY 2001

6. Current Cost Estimate:
TEC -- $109,838
TPC -- $138,753

7. Financial Schedule (Federal Funds):

Fiscal Year	Appropriations	Adjustment	Obligations	Costs
1997	$ 7,900	0	$ 7,900	$ 7,514
1998	18,000	0	18,000	14,339
1999	39,800	0	39,800	34,864
2000	31,000	0	31,000	34,380
2001	$13,138	0	13,138	18,741

8. Brief Physical Description, Purpose, Justification of Need and Scope of Project

The Department of Energy (DOE) committed in the Implementation Plan for the Defense Nuclear Facility Safety Board Recommendation 94-1 to meet the DOE Criteria., DOE-STD-3013-94, for Storage of Plutonium metal and oxides by May 2002. The existing Savannah River Site Facilities are not sufficient or capable of meeting the commitments in the DNFSB 94-1 Implementation Plan; therefore the Actinide Packaging and Storage Facility must be constructed. SRS has determined that a new Actinide Packaging and Storage Facility is the safest (to the worker and environment), and the most economical option compared to the major modification and refurbishing of existing SRS facilities and to a "no action" option. A life cycle cost estimate demonstrated that a new Actinide Packaging and Storage Facility has the lowest total associated cost with a payback period of approximately 3-1/2 years.

The Actinide Packaging and Storage Facility will provide for thermal stabilization, repackaging, and safe, secure, cost effective, storage of the Special Nuclear Material (SNM) to meet DOE-STD-3013-94 Criteria for Storage of Plutonium Metals and Oxides. The facility is to be a 40,000 sq. ft. (approx.) structure constructed in F-Area consisting of a 23,000 sq. ft (approx.) hardened structure containing the Material Access Area (MAA). The MAA will be bounded by a contiguous 17,000 sq. ft. (approx.) soft structure containing offices, HVAC support equipment, and other administrative functions and will be designed to meet all the applicable national standards and DOE orders.

07/03/96 WED 16:40 FAX 8037258272 AMDP 011

DRAFT

1. Title and location of project:	Actinide packaging and storage facility Savannah River Site/Aiken, South Carolina	2a. Project No. 97-SR-253 2b. Construction Funded	

9. Detail of Cost Estimate

This cost estimate is based upon completed conceptual design.

		Item Cost	Total Cost
a.	Design and Management Costs		$18,028
	1. Engineering, design and inspection at approximately 17 percent of construction costs, item c (Design, Drawings, and Specifications: $6,003)	11,184	
	2. Construction Management Costs at 6.3 percent of construction costs, item c	4,102	
	3. Project management at 4.2 percent of construction costs, item c	2,742	
b.	Land and land rights		
c.	Construction costs		65,614
	1. Improvements to land	6,304	
	2. Buildings	28,715	
	3. Other structures	1,327	
	4. Utilities	3,386	
	5. Special facilities	25,882	
d.	Standard equipment		7,614
e.	Major computer items		
f.	Removal cost less salvage		10
g.	Design and project liaison, testing, checkout and acceptance		0
	Subtotal		91,266
h.	Contingencies at approximately 20.3 percent of above costs		18,572
i.	Total line item cost (Section 11.a.1.(a))		109,838
j.	Non-Federal contribution		$ 0
	Net Federal total estimated cost (TEC)		$ 109,838

Department of Energy established escalation rates were used as provided in June 1995.

The above estimate includes $7,110,000 for escalation.

10. Method of Performance

A make versus buy analysis will be completed and as a result, design, construction, and procurement shall be accomplished by fixed priced contracts or by the Management and Operating Contractor (M&O) awarded on the basis of competitive bidding.

DRAFT

1. Title and location of project: Actinide packaging and storage facility
Savannah River Site/Aiken, South Carolina

2a. Project No. 97-SR-253
2b. Construction Funded

12. Narrative Explanation of Total Project Costs and Other Related Cost Requirements

a. Total project costs
   1. Total facility costs
      (a) Line item - The line item TEC is $109,838,000
      (b) PE&D - None
      (c) Operating Expense funded equipment - None
      (d) Inventories - None
   2. Other project costs
      (a) R&D necessary to complete construction - $7,315,000
      These costs include development of the interim storage container, the Bagless Transfer system, Laser Sampling system, Digital Radiography Inspection system, Vault Container Delivery system, Primary Container Welding, and Container Assay Equipment.
      (b) Conceptual Design Costs - $729,000
      (c) Decontamination and Decommissioning (D&D) - None
      (d) NEPA Documentation (Costs) - $300,000
      (e) Other project related costs - $20,571,000
      These costs include technical support during design and construction, preparation of safety analysis documentation, preparation of operating procedures and operator training, startup testing and execution of the Operational Readiness Review and Operational Readiness Evaluation.
      (f) Non-Federal Contribution - None

b. Related annual costs
   1. Facility operating costs - $16,600,000
   2. Facility maintenance and repair costs - $2,500,000
   3. Programmatic operating expenses directly related to the facility - None
   4. Capital equipment not related to construction but related to the programmatic effort in the facility - $500,000
   5. GPP, or Other Construction Related to the Programmatic Effort - $500,000
   6. Utility costs - $900,000
   7. Other costs - None