

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Ohio**

Site Summary Level: **Fernald Environmental Management Project**

Project **OH-FN-11 / Waste Management**

Report Number: **GEN-01b**

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

HQ ID: **0527**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

The Waste Management project involves the management and oversight for all waste management activities associated with legacy waste, remediation waste, and waste generated in on-going landlord operations. This PBS also includes planning and implementation of low level waste characterization and disposition activities and the administrative support associated with low level waste management.

Definition of Scope: The Waste Management project is divided into Project Support and Integration, Waste Services, and Low Level Waste Management. Project Support and Integration is new scope added in FY 1997 and includes the development and integration of division-wide policies and guidance for environmental compliance, safety and health, project controls, quality assurance, project support, contracts and acquisitions activities, issues within the PBS and with similar activities in other divisions, and site-wide standards. Technology Programs and Environmental Engineering were also transferred into this element in 1997. These two programs provide overall direction, administration, and management of advantaged technology development and demonstration, and environmental engineering design, configuration management, and research and development. The Waste Services element provides scope for all tasks related to site wide planning and coordination of waste disposition operations, oversight of the site characterization program, low level waste storage operations and associated self assessments, traffic management, waste operations conduct of operations, and inventory management. In 1997 waste minimization, pollution prevention, and sanitary waste disposition scopes of work were added to this element. The Low Level Waste Management element provides effective, safe and efficient segregation/sorting, packaging, and preparation of all low-level waste shipments to the Nevada Test Site (NTS) or other disposition alternatives. The Low Level Waste Management waste streams include legacy low-level wastes which were generated from pre-October 1994 operations. The legacy low-level wastes consist of process area scrap, laboratory waste returns, non-fissile exempt waste, sump cakes, process residue, and asbestos wastes. Contaminated trash and aerosol cans are included in legacy waste, but they are also wastes that are anticipated to continue to be generated through final closure of the FEMP.

Project Status in FY 2006:

Project scope is limited to a support function.

Post-2006 Project Scope:

Project scope may be limited to a support function to Post-2006 remediation projects outside the Waste Management PBS.

Project End State

Access to the OSDF will remain restricted and monitored and under institutional controls in perpetuity. The remainder of the site is expected to achieve final cleanup levels which could support various land uses. However, the decision to limit use to ecological restoration and recreational use was made based on DOE's Natural Resource Damages Act obligations and stakeholder input. Residential and agricultural uses will not be considered for any portion of the site consistent with the recommendations of the Fernald Citizens Advisory Board. Industrial uses may be considered for the 23 acres of potential economic development land. DOE, or a successor agency, will maintain stewardship responsibility for the site.

Cost Baseline Comments:

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

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Project Description Narratives

Due to an approximate 18-month shipment delay to NTS, and pending DOE approval to resume shipments, the PBS-11 baseline schedule and scope will need to be reprogrammed to identify final disposition paths in the baseline and schedule and remain within the funding available. PBS-11 reprogram efforts are currently underway and a change proposal will be submitted in FY 1999 for scope through 2006. Meanwhile, estimates to support the baseline for this PBS were completed using a bottoms-up approach.

The Ohio Field Office has an aggressive cost savings program in place to contain or reduce the Total Estimated Cost of the project; however, there is potential for cost growth at the Fernald Environmental Management Project (FEMP) because the baseline estimates do not include contingency, and Operable Unit 4 (Silos Project) is in the process of amending the Record of Decision with the EPAs.

Safety & Health Hazards:

The hazards of this project include radiological hazards due to penetrating radiation as well as the potential for internal dose from radionuclide uptake. Nuclear safety concerns include potential criticality. Physical hazards include injury from heavy equipment operations and hoisting and rigging. In addition, workers can be expected to encounter normal occupational hazards such as lifting, tripping, or falling. Weather extremes expose personnel to heat and cold stress conditions.

Safety & Health Work Performance:

The resources necessary to accomplish the work safely are provided through the Authorization basis, the FEMP's Safety Performance Requirements manual, the Radiation Protection Program, and through the resources allocated to the site's safety management system in the following functional categories: radiological safety, industrial hygiene, criticality safety, occupational safety and health, emergency management, fire safety, and occupational medicine. Safety and health resources are planned and allocated into these categories by cost centers through the work breakdown structure. There are no unfunded safety and health categories.

PBS Comments:

The FEMP project has already undergone strategic planning to accelerate the cleanup from 25 years to 10 years. This has resulted in a significant amount of savings. To further reduce mortgage costs and allocate additional funds to the cleanup activities requires: a) the removal of the nuclear materials from the site; b) completion of safe shutdown activities; c) utility reduction projects, and d) improved technology for waste excavation and transport. A factor that allowed the FEMP to pursue accelerated cleanup is the agreement and recommendations made by the Citizens Task Force on cleanup levels and disposition of the waste (amount and waste acceptance criteria levels for onsite disposal facility and disposition off-site for wastes above the waste acceptance criteria). Efforts at recycling materials from the site have been initiated to help reduce/minimize the size of the disposal cell.

Fernald developed and implemented an accelerated schedule in FY 1995. This baseline was validated and granted Level 1 approval on August 21, 1996. Impacts to the baseline due to the current funding targets will cause a three year schedule extension. Fernald has committed to implementing cost savings, productivity improvements, and incremental funding to complete the project within the FY 2006 timeframe.

Baseline Validation Narrative:

On October 29, 1998, DOE-FEMP received DOE-HQ approval on the Fiscal Year 1999 Replan Baseline Change Proposal to the current FEMP

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Project Description Narratives

Baseline. The FEMP Baseline had been previously validated after DOE-HQ completed their review and provided their approval on August 21, 1996. Many internal and external reviews have been performed on the FEMP Baseline. In March 1998, the U.S. Corps of Engineers performed an external cost review on the OSDF project with results showing the disposal cell estimates consistent with industry standards. In August 1997 and January 1996, external cost reviews were performed on Operable Unit 4, one by the U.S. Corps of Engineers and one by the U.S. Department of Interior (DOI) and the U.S. Department of Energy (DOE). In June 1996, LMI, Janson Associates, and Burns & Roe performed an external cost review on support costs showing the cost estimates were reasonable. In July 1995, DOI and DOE performed an external cost review on Operable Unit 1 and made formal recommendations to generate technical and/or economic advantages. In September 1993, MTC, Booz-Allen, and Burns & Roe performed an external cost review on the FEMP site and had no significant findings. In addition to external cost reviews, since 1991 almost fifteen internal reviews have been performed.

General PBS Information

Project Validated? Yes Date Validated: 10/29/1998

Has Headquarters reviewed and approved project? Yes

Date Project was Added: 12/1/1997

Baseline Submission Date: 7/8/1999

FEDPLAN Project? Yes

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

Project Identification Information

DOE Project Manager: John Sattler

DOE Project Manager Phone Number: 513-648-3145

DOE Project Manager Fax Number: 513-648-3076

DOE Project Manager e-mail address: john.sattler@fernald.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

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	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)	137,036	1,350	138,386	21,705	19,866	18,310	19,440	20,805	18,114	20,254	9,572	9,190	7,695	6,975	4,416	
PBS Baseline (constant 1999 dollars)	131,104	1,076	132,180	21,705	19,866	18,310	19,440	20,805	17,638	19,203	8,837	8,261	6,735	5,945	3,665	
PBS EM Baseline (current year dollars)	137,036	1,350	138,386	21,705	19,866	18,310	19,440	20,805	18,114	20,254	9,572	9,190	7,695	6,975	4,416	
PBS EM Baseline (constant 1999 dollars)	131,104	1,076	132,180	21,705	19,866	18,310	19,440	20,805	17,638	19,203	8,837	8,261	6,735	5,945	3,665	
	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)	675	675	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	545	531	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	675	675	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	545	531	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%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.10%
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
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/1/2000

Current Projected End Date of Project: 9/30/2008

Explanation of Project Completion Date Difference (if applicable):

This completion date has been extended due to the additional workscope from nuclear materials. Because of the nuclear materials being declared as waste, the entire waste management program, including nuclear materials, low level waste, and mixed waste (PBS-08, PBS-10, PBS-11), have been levelized to maintain these programs and to continue to fund other, higher priority work scope.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	91,150	Actual 1997 Cost:	19,866	Actual 1998 Cost:	19,440
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	51,844	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			1,400
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	53,244				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		\$4,500K due to construction of new pad for waste processing, storage and disposition.
Cost Growth Associated with Scope Previously Reported (+):	40,251	\$35,751 due to higher labor cost projections and shutdown of waste shipments in FY98.
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	93,495	
Additional Amount to Reconcile (+):	-1,330	(\$779K) due to FY97/FY98 Uncosted Balances. (\$551K) due to escalation error.

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Project Reconciliation

Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): **92,165**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Initiate disposition of low level waste.			10/1/1992								
Complete disposition of low level waste.	W8RM002000		12/31/2001	12/31/2001			Y				
Complete low level waste activities.			9/30/2008								

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
Initiate disposition of low level waste.				Y							
Complete disposition of low level waste.	W8RM002000										Milestone formerly titled "Removal of legacy waste from site." This milestone will be renegotiated on June 1, 1999, when the path forward for nuclear materials is provided to USEPA (see milestone in PBS-08).
Complete low level waste activities.					Y	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	Planned 2004
LLW														
Treatment	M3	0.00	0.00	0.00	0.00		0.00							
LLW														
Storage	M3							5,687.00	1,800.00	1,247.00	726.00			

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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	Planned 2004
LLW														
Ship to DOE Disp.	M3	1,915.00	0.00	1,915.00	0.00		0.00	100.00	343.00	225.00	79.00	1,168.00	0.00	0.00
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	Planned 2036 - 2040
LLW														
Treatment	M3													
LLW														
Storage	M3													
LLW														
Ship to DOE Disp.	M3	0.00												
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2065	Planned 2066 - 2070	Exceptions	Lifecycle Total				
LLW														
Treatment	M3									0.00				
LLW														
Storage	M3													
LLW														
Ship to DOE Disp.	M3									4,882.00				