

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Idaho**

Site Summary Level: **Idaho National Engineering and Environmental Laboratory**

Project **ID-HLW-102 / High Level Waste Immobilization Facility**

Report Number: **GEN-01b**

Print Date: **3/10/2000**

HQ ID: **0449**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose: This project will design and construct new remote handled immobilization facilities (RHIF) that will begin operation in FY-2020 to meet the commitment of making the INTEC High Level Waste (HLW) road ready by 2035. These facilities will convert both liquid and calcine to waste forms which are suitable for final disposal.

Definition of Scope: At the end of Project ID-HLW-101, there will be approximately 6000 cubic meters of calcined high level waste stored at the INTEC; there will also be some low level liquid waste produced after this time. These wastes must be converted to final, disposable forms as required by a Settlement Agreement between DOE and the state of Idaho. This project consists of 3 Line Item Capital Projects that will construct the following facilities: 1. Separations Facilities, 2. Low Activity Waste Treatment (Grout) Facilities, and 3. High Activity Waste Treatment (Vitrification) Facilities. This project will also provide for interim storage (part of the High Activity Waste Treatment Facilities construction) for the immobilized material until a final repository is available.

Technical Approach: New remote handled immobilization facilities (RHIF) will begin operation in FY-2020. They will convert both liquid and calcine to final, disposable forms. This process may consist of calcine retrieval, calcine dissolution, radionuclide separations, and high activity waste vitrification, and low activity waste immobilization. All of these processes are highly technical, one-of-a-kind systems which have been pilot plant tested but not developed yet for full scale.

Project Status in FY 2006:

Conceptual Design will be completed and validated for the Separations facilities and Conceptual Design will be initiated for the Vitrification and Grouting facilities.

Post-2006 Project Scope:

The immobilization facility, including the interim storage facilities, will be designed, constructed, and turned over to Operations.

Project End State

When this project is complete, the immobilization facilities will be available to treat low level liquid and high level calcine wastes to final, disposable forms. Facilities will also be available for interim storage of these immobilized wastes until a final repository is available.

Cost Baseline Comments:

An escalation factor of 2.1% per year was applied to the costs for all years, 2000 through project end. This is a preliminary estimate based upon feasibility studies and will be updated during conceptual design. All costs are compliance driven. The primary drivers are the Settlement Agreement with the State of Idaho and the Consent Order. This is a construction project and includes all costs for total project costs including: Conceptual Design, Project Support, Project Management, Title Design, Construction, and Facility Acceptance costs. Any reduction or delay in funding would jeopardize meeting the Settlement Agreement requirement to complete calcine treatment by 2035.

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Project Description Narratives

Safety & Health Hazards:

The project is currently in the feasibility phase and identifies the S&H functions necessary to maintain a safe, and compliant project. Workers can be expected to encounter normal construction and occupational hazards.

Safety & Health Work Performance:

The project will follow all the site S&H procedures needed to ensure readiness prior to start work, monitor adequacy of safety controls, and mechanisms that will be used to identify unforeseen S&H project hazards and manage major project changes or modifications (change control). The resources necessary to accomplish the work safely are provided through the site Health and Safety Program requirements, and through the resources allocated to the site's integrated safety management system, emergency management, fire safety, industrial hygiene, nuclear safety, occupational medicine, occupational safety, safeguards and security, safety integration, performance oversight, and standards management.

PBS Comments:

This project is very visible to the State of Idaho because it is the mechanism by which the Settlement Agreement deadline, for having all HLW ready to leave the state by 2035, will be met.

Baseline Validation Narrative:

This is a construction project which will be validated once Conceptual Design is completed.

General PBS Information

Project Validated?

Date Validated:

Has Headquarters reviewed and approved project?

No

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

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

Project Identification Information

DOE Project Manager: T L Wichmann

DOE Project Manager Phone Number: 208-526-0535

DOE Project Manager Fax Number: 208-526-5678

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General PBS Information

DOE Project Manager e-mail address: wichmatl@inel.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)	42,413	3,889,393	3,931,806						0	0	0	0	0	18,125	24,288
PBS Baseline (constant 1999 dollars)	36,784	2,757,507	2,794,291						0	0	0	0	0	15,907	20,877
PBS EM Baseline (current year dollars)	42,413	3,889,393	3,931,806						0	0	0	0	0	18,125	24,288
PBS EM Baseline (constant 1999 dollars)	36,784	2,757,507	2,794,291						0	0	0	0	0	15,907	20,877

	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)	63,768	115,745	81,246	90,493	1,420,792	2,056,052	61,297	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	53,685	95,439	65,615	71,579	1,056,362	1,377,805	37,022	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	63,768	115,745	81,246	90,493	1,420,792	2,056,052	61,297	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	53,685	95,439	65,615	71,579	1,056,362	1,377,805	37,022	0	0	0	0	0	0	0	0	0

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Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
			2.70%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	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
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:

Current Projected End Date of Project: 9/30/2023

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	1,533,250	Actual 1997 Cost:	Actual 1998 Cost:
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	1,533,250	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):	41,398
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	1,574,648		

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):	535,644	Transfer of project support costs from PBS-103 to PBS-102.
Cost Growth Associated with Scope Previously Reported (+):	684,000	Updated costs (including NRC costs) from feasibility study & change from privatized to LICP.
Cost Reductions Due to Science & Technology Efficiencies (-):		

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Project Reconciliation

Subtotal:	2,794,292
Additional Amount to Reconcile (+):	-1
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	2,794,291

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Submit RCRA Part B Permit for Calcined Waste Treatment			12/1/2012	12/1/2012			Y				
Submit Milestones/Planning Dates for Immobilization Facility			9/30/2005	9/30/2005			Y				
Initiate Title Design for the Separations Facility			1/8/2008								
Complete Turnover Activities of the Separations Facility			7/20/2020								
Initiate Title Design for the Low Activity Waste Treatment (Grout) Facility			1/6/2010								
Complete Turnover Activities for the Low Activity Waste Treatment (Grout) Facility			9/30/2017								
Initiate Title Design for the High Activity Waste Treatment (Vitrification) Facility			1/29/2010								
Complete Turnover Activities for the High Activity Waste Treatment (Vitrification) Facility			1/17/2023								
Project Start			10/1/2004								
Project Mission Complete			9/30/2023								

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
Submit RCRA Part B Permit for											DOE shall submit to Idaho an

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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
Calcined Waste Treatment											application for a RCRA Pbrt B permit by Dec 1, 2012 for the treatment of calcined waste at INEL (into a form suitable for transport to a permanent repository or interim storage) by Dec 31, 1999.
Submit Milestones/Planning Dates for Immobilization Facility											The Remote Handling Immobilization Facility has the following schedule item: Submit Updated Schedule - 4Q 2005 (Submit a schedule to DEQ for inclusion in the approved STP according to the schedule format for existing technologies).
Initiate Title Design for the Separations Facility						Y					This milestone will require that Conceptual Design be completed, capital funding be approved, services of an architect engineering firm be secured, and that Title I Design be started.
Complete Turnover Activities of the Separations Facility											In order to complete turnover activities of the separations facility, construction an startup testing must be complete and the facility must be ready for hot operations.
Initiate Title Design for the Low Activity Waste Treatment (Grout) Facility						Y					In order to initiate title design, conceptual design must be completed, capital funding approved, and procurement completed for architect engineering services.
Complete Turnover Activities for the Low Activity Waste Treatment (Grout) Facility						Y					In order to complete turnover activities, construction and startup testing must be complete. The

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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 Title Design for the High Activity Waste Treatment (Vitrification) Facility						Y					facility must be ready for hot operations. In order to initiate title design, conceptual design must be completed, capital funding approved, and procurement completed for architect engineering services
Complete Turnover Activities for the High Activity Waste Treatment (Vitrification) Facility											In order to complete turnover activities, construction and startup testing must be complete. The facility must be ready for hot operations.
Project Start				Y							
Project Mission Complete						Y					