Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Richland** Print Date: **3/9/2000**

Site Summary Level: **Hanford Site** HQ ID: **0421**

Project **RL-ER07 / Post Closure Surveillance & Maintenance**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose: This PBS provides for the management and integration of long term surveillance and maintenance of waste sites after completion of remediation and of the facilities after completion of D&D. The waste sites and facilities are located throughout the Hanford Site.

Work scope within this PBS includes the following:

Managing and integrating the long-term surveillance and maintenance of waste sites and facilities.

Scope: After completion of remediation of contaminated waste sites and/or surplus facilities, Hanford areas will be restored to support future land uses. Site restoration will consist mainly of site contouring and revegetation efforts for stabilization. Where appropriate, the sites will utilize seeds from local species for revegetation efforts. Upon completion of the revegetation efforts, the sites will enter long-term S&M for monitoring the success of the revegetation efforts. Any revegetation efforts subsequent to those conducted at the end of remediation will be conducted in long-term S&M.

Technical Approach: Long-term S&M of remediated waste sites and facilities is required to identify and mitigate problems associated with site restoration activities. The success rate of the revegetation efforts will be monitored through routine surveys, environmental monitoring, and vegetation management. Specific long-term S&M will be determined at the time of facility closure, final environmental remediation, and/or facility decommissioning.

The Long-Term S&M Project should not produce any waste quantities requiring disposal.

Project Status in FY 2006:

Through FY 2006 the 1100 Area NPL Site, North Slope, Arid-Land Ecology Reserve, and areas within the 100 and 300 Area (where remediation is complete) will be in the long-term S&M.

Post-2006 Project Scope:

Long-term S&M will continue past the final site remediation to ensure the effectiveness of the revegetation efforts to support future land uses.

Project End State

The Long- term S&M Project will support the goals and end states for all areas of the Hanford Site. See other ER PBSs for end state specifics.

Cost Baseline Comments:

The cost estimates for the ER Project are developed through the use of MCACES and RACER models and activity based estimates for project activities like Long-Term S&M and Program Management and Support.
The contingency for outyears was developed through the use of a "Monte Carlo" analysis and selection of an acceptable level of risk.

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Project Description Narratives

Safety & Health Hazards:

The Richland Environmental Restoration (ER) Project`s primary responsibilities are the cleanup of past-practice waste sites, addressing the contaminated groundwater, and decontamination and decommissioning of surplus facilities. In 1987 the Hanford Site Federal Facility Agreement and Consent Order (TPA) was signed by EPA, Ecology, and DOE. This agreement is the primary driver for essentially all remediation and D&D activities.

This PBS addresses ES&H and mission components associated with long-term surveillance and maintenance (LT S&M) of final remediated waste sites and facilities. Typical activities to be performed under LT S&M include: planning, management, performance of radiological surveys, barrier inspections, and vegetation management (herbicide applications) required after final closure, remedial action and/or decommissioning are accomplished. LT S&M activities will not be limited to any one geographical area of the Hanford Site.

The Hanford Site can be grouped into four primary (geographical areas): 100, 200, 300 and the remainder of the Hanford Site. LT S&M activities will be performed in each of these areas. The following are brief descriptions of the primary areas.

The 300 Area is just north of the city of Richland and adjacent to the Columbia River. It was in the 300 Area where uranium metal was manufactured into fuel elements. The 300 Area also supported research and development activities.

The 100 Areas, which are adjacent to the Columbia River, contain nine surplus production reactors and associated ancillary support facilities. Fuel elements manufactured in the 300 Area were transported to the 100 Area reactors where they were irradiated to produce the special nuclear materials (SNMs).

The 200 Areas, which are located in the center of the Hanford Site, contain the chemical processing facilities (also know as canyon facilities) and numerous ancillary support facilities and structures. The irradiated fuel elements were transported from the 100 Area reactors to the chemical processing plants (canyon facilities) in the 200 Areas where the special nuclear materials (SNMs) were separated and purified.

The remainder of the Hanford Site, the 1100 and 600 Areas, were used for a variety of activities but in general had a very limited role in the production or the waste disposal activities.

The focus of LT S&M is to monitor and maintain the areas formally occupied by facilities and waste sites to ensure success of site restoration activities. These activities address a primary regulator priority as well as stakeholder and Tribal Nation values relative to the Hanford Site.

After completion of remediation of contaminated waste sites and/or surplus facilities, the Hanford areas will be restored to support future land uses. At the present time, future land use decisions have not been made for the Hanford Site. Site restoration will consist mainly of site contouring and revegetation efforts to stabilize the sites. Where appropriate, the sites will utilize seeds from local species for revegetation efforts. After completion of the revegetation efforts, the sites will enter the LT S&M for monitoring to ensure the success of the revegetation efforts. Any revegetation efforts subsequent to those conducted at the end of remediation will be conducted in the LT S&M Program.

Each subproject will conduct a hazard analysis evaluation or an operational readiness review, as necessary.

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Project Description Narratives

Safety & Health Work Performance:

The resources necessary to accomplish the work safely are provided through the Authorization Basis, the Site Health and Safety Program requirements, and through the resources allocated to the site's integrated safety management system in the following functional categories: radiological controls, emergency management, fire protection, industrial hygiene, industrial safety, occupation medical services, management and oversight, transportation safety, nuclear safety and management oversight.

ER resources are planned and allocated into these categories by functional responsibility through the work breakdown structure and resource loaded into the project for each fiscal year.

The Emergency Preparedness functional task includes inspection of emergency facilities and equipment; emergency response team personnel training, drills and exercises relative to personnel contamination; construction accident response; maintaining/updating the current BHI emergency plan based on site-specific hazards; coordination with state and local authorities and federal agencies; responses to worker injuries; and recordable occurrences and /or normal events.

The Fire Protection functional task includes related inspections and testing; flammable and explosive material control; review design plans/specifications for compliance with regulations, codes, and standards; and review and concurrence of work packages.

The Industrial Hygiene functional task includes the Chemical Management system, anticipation, recognition, evaluation and control of health hazards; redesign of equipment and tasks; review and approval of work packages; design of airborne fiber wetting systems; respiratory protection standards; respiratory protection equipment supplies; substitution of less hazardous materials; written and verbal communication of real and perceived hazards; personnel protection, and asbestos fiber counts and sample analysis.

The Industrial Safety functional area includes electrical safety; machinery and pressure system safety; hoisting; rigging, and material handling, lockout/tagout; confined space controls; platform, man-lift and scaffolding usage; safe surfaces for walking and working; hand and portable power tool safety; explosives and hazardous material handling, construction safety; review of work packages; site surveillances or subcontractor review.

The Management and Oversight functional task includes S&H documentation, action tracking; S&H self assessment activities; internal audits and surveillance; external S&H program reviews; operational readiness reviews; and Voluntary Protection Program (VPP); trend analysis; lessons learned; coordination and communication with DOE, state and local authorities.

The Management, Oversight, and Reporting functional task includes the coordination of project environmental protection plans, documentation and control, information management, compliance and corrective action tracking, appraisals and self assessments and general environmental monitoring and coordination.

The Occupational Medical Services functional task includes medical scheduling, labor and industries, and OSHA reporting; oversight of the Site Occupational Medical provider; hazardous worker or asbestos worker pre/post-job medical screening coordination, tracking; and case management.

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Project Description Narratives

The Nuclear Safety functional task includes providing direction for the implementation of DOE Orders and Standards related to nuclear safety. In addition, the functional group assists the projects in the development, implementation, and oversight of the safety analysis process.

The Radiation Protection functional task includes radiation monitoring equipment and procedures for radiation controls, oversight of personnel and facilities, radiation control monitoring, interlocks, instrumentation for shielding for radiation-generating devices; equipment and procedures used to minimize or mitigate external exposures; and personnel dosimetry, bioassay program, and radiation-exposure records.

The Transportation Safety functional task includes the activities required to ensure safe packaging and transportation of asbestos, radioactive and hazardous materials, and approval of D.O.T. shippers and container documentation. NOTE: The amount of funding made available for this PBS in any fiscal year will determine the work that will be performed, which will, in turn, be a basis for adjustment in the associated S&H requirements.

PBS Comments:

The initial focus of the D&D Project LTS&M in the Ten-Year Plan is for monitoring the success of revegetation efforts conducted at remediated areas in the 1100, 100, and 300 Areas.

Baseline Validation Narrative:

Baseline validation by Team Associates for DOE.
Validation Report - Richland Environmental Restoration Project FY 1996 Baseline Validation, May 1996.
The DOE requested an independent contractor, Team Associates, to perform a validation of the Richland Environmental Restoration Project. This validation was a follow up of the validation performed for the FY 1995 Baseline. Estimate models with near-term implementation schedules and total project summary costs were reviewed. The validation was broken down into three distinct efforts consistent with the validation objectives.
1) An in-depth review of MCACES models provided by DOE was performed
2) A review of near-term schedules for 100 BC and 300 FF areas to evaluate reasonableness and feasibility of achievement.
3) A top down assessment of the cost estimating process for consistency of approach to identify opportunities for improvement.
There is a formal validation of the current baseline (developed in October 1998 and approved in January 1999) scheduled for March 1999.

General PBS Information

Project Validated?	Yes	**Date Validated:**	5/31/1996
Has Headquarters reviewed and approved project?	Yes		
Date Project was Added:	12/1/1997		
Baseline Submission Date:			
FEDPLAN Project?	Yes		

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Project **RL-ER07 / Post Closure Surveillance & Maintenance**

General PBS Information

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

Project Identification Information

DOE Project Manager: P.M. Pak

DOE Project Manager Phone Number: 509-376-4798

DOE Project Manager Fax Number: 509-376-4360

DOE Project Manager e-mail address:

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)	2,471	138,174	140,645	199	71	203	18	59	60	60	313	365	397	395	420
PBS Baseline (constant 1999 dollars)	2,220	57,017	59,237	199	71	203	18	59	58	57	289	327	346	335	347
PBS EM Baseline (current year dollars)	2,471	138,174	140,645	199	71	203	18	59	60	60	313	365	397	395	420
PBS EM Baseline (constant 1999 dollars)	2,220	57,017	59,237	199	71	203	18	59	58	57	289	327	346	335	347

	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)	435	481	503	594	4,461	9,012	11,025	13,803	30,447	39,964	27,449	0				

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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 (constant 1999 dollars)	350	377	384	441	3,063	5,414	5,798	6,354	12,268	14,095	8,473	0				
PBS EM Baseline (current year dollars)	435	481	503	594	4,461	9,012	11,025	13,803	30,447	39,964	27,449	0				
PBS EM Baseline (constant 1999 dollars)	350	377	384	441	3,063	5,414	5,798	6,354	12,268	14,095	8,473	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%	2.80%	2.80%	2.90%	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%				

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2043

Current Projected End Date of Project: 9/30/2043

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars): 58,981

Actual 1997 Cost: 71

Actual 1998 Cost: 18

Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars): 58,892

Inflation Adjustment (2.7% to convert 1998 to 1999 dollars): 1,590

Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): 60,482

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Project Reconciliation

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	60,482	
Additional Amount to Reconcile (+):	-1,647	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**58,835**	

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Begin Long-Term Surveillance and Maintenance Project	PBS-97-034		2/28/1997								
PBS Mission Completion	PBS-MC-034		9/30/2043								
PBS Project End	PBS-PE-034		9/30/2043								

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
Begin Long-Term Surveillance and Maintenance Project	PBS-97-034			Y							Administrative input to document the start of this PBS.
PBS Mission Completion	PBS-MC-034					Y					Administrative input to document the mission completion of this PBS.
PBS Project End	PBS-PE-034				Y						Administrative input to document

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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
											the project end of this PBS.