

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Chicago**

Site Summary Level: **Argonne National Laboratory - East**

Project **CH-ANLEWO / ANL-E Waste Operations**

Report Number: **GEN-01b**

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

HQ ID: **0004**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Definition of Scope: The Waste Management program provides for the following scope: (1) a Base Program (also called Continuity of Operations, or Program Management), Collection, Treatment, Storage, and Disposal of Federal and State regulated wastes; and (2) legacy waste consisting of stored PCB radioactive waste. The following is a description of each base program element:

Base Program - This element provides for all of the managerial, technical, and oversight support required to carry out the mission, as well as the maintenance of all of the nuclear and radiological facilities occupied by the Waste Management Department that is not directly attributable to the waste processing.

Collection - This element provides for the collection of regulated wastes at the waste accumulation areas and subsequent movement to the waste treatment and/or storage area. This element also provides for the return of wastes which have been collected but found to not meet the ANL-E Waste Acceptance Criteria.

Treatment - This element provides for the segregation, repackaging, volume-reduction and/or treatment of all regulated wastes. This element also provides the labor and supplies for inspection, routine maintenance, and periodic overhaul and upgrade of the waste treatment systems.

Storage - This element provides for the storage of all regulated wastes including space charges, periodic inspections, and maintenance charges related to the storage of these wastes. This element will also include the costs to provide for wastes in long-term storage.

Disposal - This element provides for the safe disposal of all regulated wastes. It includes the pre-transportation preparation and inspections, transportation and subsequent disposal fees for the regulated wastes. This element will include wastes shipped to DOE and commercial disposal facilities.

Technical Approach: Base Program (Continuity of Operations) - This element provides for a base program to supply necessary managerial and technical support to the waste generators and waste operations personnel. Included in this element is the management of numerous RCRA-permitted storage and treatment units, four nuclear facilities (three Hazard Category 3 nuclear facilities and one Hazard Category 2 nuclear facility), multiple radiological facilities, at least two areas for the storage of TSCA regulated wastes, areas for the storage of state-regulated wastes, and storage areas for supplies and materials. In addition, a training program, a nuclear safety program, a criticality safety program, and all administrative activities are included here.

The legacy waste consists of 327 drums of non-defense PCB radioactive waste in Building 202. The storage of this waste stream is exceeding the one-year storage limit (40 CFR 761.65). However, the storage of this waste stream is covered under the National Federal Facility Compliance Agreement with the EPA Headquarters. This waste will remain under EM funding responsibility until the waste stream is dispositioned. Known treatment processes include either thermal desorption or solvent extraction of PCBs.

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It is assumed that all waste stream data will be affected by the implementation of Waste Minimization and Pollution Prevention (WMPP) measures on site. Future WMPP measures are not reflected in the waste stream estimates.

Project Status in FY 2006:

The project will continue to support the waste management program at Argonne National Laboratory but the management function will be transferred to the landlord program, Office of Science. No legacy wastes currently in Waste Management's inventory will be transferred to the Office of Science.

Post-2006 Project Scope:

The waste management program managed by the landlord, Office of Science, will continue with the scope defined in Section A.1.2, Definition of Scope, after FY2006. See section A.1.2. Definition of Scope. Legacy wastes will be dispositioned prior to FY 2006.

Project End State

This project supports the continuing waste management program at Argonne National Laboratory - East. This program will provide for the safe and proper management of all regulated wastes at the Argonne National Laboratory - East site. The current end-state is characterized as the transition of Waste Operations Program from EM-30 to the landlord, (Office of Science (SC) in FY 2001. Planned disposition of legacy waste is in FY 2001.

Cost Baseline Comments:

Baselines have been updated to reflect actual costs thru FY 1998, CYWPs for FY 1999 and Congressional Budget Request for FY 2000. FY 1999 and FY 2000 amounts contain funding to accommodate anticipated costs of legacy waste to be dispositioned prior to turning over waste operations functions to the Office of Science in FY 2001. FY 2001 funding, other than \$900K for legacy waste disposition, is pending transfer to the Office of Science. FY 2001 reflects the increase to implement DOE Order 435.1. The years after FY 2001 reflect increases to maintain compliance with the new Order. Escalation rates used were 2.7% for FY 2000 and 2.1% in years after FY 2000.

The baseline estimate in FY 2001 was increased by \$900K to properly treat and dispose the legacy mixed PCB waste stream. This cost estimate is based on quotes received for on-site treatment using a thermal extraction (\$600K plus on-site requirements), and a non-thermal treatment process (\$1.1M). Additional treatment options and cost estimates are being sought.

Safety & Health Hazards:

The Waste Operations program at ANL-E operates nuclear and radiological facilities, and collects, treats and stores radioactive and hazardous wastes. The program is an on-going operation and therefore must have continuous appropriate S&H functions necessary to maintain a safe and compliant Waste Operations program. The following are the hazards associated with this program:

Radiological hazards - Waste Management manages radioactive wastes that can be fissionable and non-fissionable, contact and remoted-handled, low and high contamination radioactive waste. The waste can be low-level radioactive and transuranic waste.

Chemical Hazards - Waste Management is authorized to collect, treat and store wastes that are corrosive, flammable, reactive, and toxic. Most of the listed wastes are also processed through Waste Management. From time to time, Waste Operations will handle highly reactive wastes, such as picric

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acids, ether salts, etc.

Industrial hazards - Personnel assigned to Waste Management operate in an industrial setting where they are subjected to normal industrial hazards associated with operating cranes, forklifts, elevators, powertools, diesel operated equipment, and other normal occupational hazards e.g., lifting, tripping, or falls. With the exception of Building 303, the buildings are older facilities that provide the possibility of industrial hazards such as leaking steam piping, asbestos insulation, and potential electrical hazards as a result of aging electrical equipment.

Safety & Health Work Performance:

For new or existing nuclear facilities, Operational Readiness Reviews are conducted to ensure a safe facility startup of operations. An ORR was performed on the Mixed Waste Storage Facility and the Radioactive Waste Storage Facility. Changes to facility operations are reviewed through the Unreviewed Safety Question Determination process to ensure that there is an approved authorization basis for the specific operation.

The average cost for "S&H " FTE`s varies from year to year.

PBS Comments:

Waste Operations at Argonne National Laboratory - East is a small but highly visible aspect of the operations conducted at ANL-E. The local community is very interested in the safe handling of regulated wastes at ANL-E. In addition, the Community Leaders

Baseline Validation Narrative:

The reasonableness of the scope and cost of Waste Operations activities for CH laboratories was validated in September 1996. This validation activity was performed by a team comprised of Chicago Operations Office staff, Headquarters Program Office (EM-34) staff and an independent consultant from Project Assistance Corporation who provides support to the Richland Operations Office. The team validated the use of historical data to forecast future waste quantity generation for ongoing research activities and validated the use of Activity Based Cost Estimates to determine the resources required. This scope definition was determined to be the key element in determining costs. Since the validation, changes have been made to reflect the most recent escalation, add costs anticipated due to DOE Order 435.1, and add the costs to dispose of stored PCB radioactive waste.

General PBS Information

Project Validated?	Yes	Date Validated:	9/1/1996
Has Headquarters reviewed and approved project?	No		
Date Project was Added:	12/1/1997		
Baseline Submission Date:	7/7/1999		
FEDPLAN Project?	Yes		

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General PBS Information

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

Project Identification Information

DOE Project Manager: Dale Dietzel

DOE Project Manager Phone Number: 630-252-2555

DOE Project Manager Fax Number: 630-252-2750

DOE Project Manager e-mail address: dale.dietzel@ch.doe.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)	82,176	1,191,979	1,274,155	7,931	7,931	7,251	7,251	8,222	7,600	8,945	8,098	8,268	8,442	8,619	8,800	
PBS Baseline (constant 1999 dollars)	77,155	485,008	562,163	7,931	7,931	7,251	7,251	8,222	7,400	8,531	7,564	7,564	7,564	7,564	7,564	
PBS EM Baseline (current year dollars)	39,949	0	39,949	7,931	7,931	7,251	7,251	8,222	7,600	8,945	0	0	0	0	0	
PBS EM Baseline (constant 1999 dollars)	39,335	0	39,335	7,931	7,931	7,251	7,251	8,222	7,400	8,531	0	0	0	0	0	
	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)	8,985	9,173	9,366	9,563	50,912	56,486	62,672	69,535	77,149	85,597	94,970	105,369	116,908	129,709	145,913	159,672

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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)	7,564	7,564	7,564	7,564	37,853	37,852	37,852	37,852	37,852	37,852	37,852	37,852	37,852	37,852	38,379	37,852
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

Non-EM Costs included in the Cost Baseline

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Non-EM Category: Other													
Office of Science						100	100	100	100	100	100	100	100
	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
Non-EM Category: Other													
Office of Science	100	100	100	100	100	100	100	100	100	100	100	100	100

Baseline Escalation Rates

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	0.00%	0.00%	0.00%	2.70%	2.10%	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:

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Project Reconciliation

Previously Projected End Date of Project: 10/1/1999

Current Projected End Date of Project: 9/30/2001

Explanation of Project Completion Date Difference (if applicable):

The date for transfer to the Office of Science has been changed to 10/01/2000 and PCB legacy waste will be dispositioned by the end of FY 2001.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	25,315	Actual 1997 Cost:	7,931	Actual 1998 Cost:	7,251
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	10,133	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			274
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	10,407				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):	13,746	Legacy PCB waste and DOE O 435.1. (FY 2000/1 were formerly non-EM funded.)
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	24,153	
Additional Amount to Reconcile (+):	0	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	24,153	

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Project Mission Complete	CH-ANLE-WO-001		9/30/1999								
Transfer to Landlord (Office of Science)	CH-ANLE-WO-002		10/1/2000								

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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	CH-ANLE-WO-003		10/1/1996								
Legacy PCBs Dispositioned	CH-ANLE-WO-004		9/30/2001								

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
Project Mission Complete	CH-ANLE-WO-001									Y	
Transfer to Landlord (Office of Science)	CH-ANLE-WO-002										
Project Start	CH-ANLE-WO-003			Y							
Legacy PCBs Dispositioned	CH-ANLE-WO-004		Y		Y		1	1	1		

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
TRU														
Treatment	M3	6.48	0.00	6.48	0.00		0.00	2.40	0.00	2.94	1.14			
TRU														
Storage	M3							89.80	94.20	97.56	5.50			
MLLW														
Treatment	M3	94.43	0.00	94.43	0.00		0.00	37.60	24.79	15.02	17.02			
MLLW														
Storage	M3							134.38	118.32	36.12	22.92			

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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
MLLW														
Comm. Disp.	M3	31.34	0.00	31.34	0.00		0.00	0.00	1.34	15.00	15.00			
LLW														
Treatment	M3	1,181.30	0.00	1,181.30	0.00		0.00	301.00	309.00	294.00	277.30			
LLW														
Storage	M3							132.20	86.00	29.00	0.00			
LLW														
Comm. Disp.	M3	28.00	0.00	28.00				0.00	13.00	7.00	8.00			
LLW														
Ship to DOE Disp.	M3	882.21	0.00	882.21	0.00		0.00	283.00	198.21	208.00	193.00			
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	
TRU														
Treatment	M3													
TRU														
Storage	M3													
MLLW														
Treatment	M3													
MLLW														
Storage	M3													
MLLW														
Comm. Disp.	M3													

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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
LLW													
Treatment	M3												
LLW													
Storage	M3												
LLW													
Comm. Disp.	M3												
LLW													
Ship to DOE Disp.	M3												
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total			
TRU													
Treatment	M3									17.28			
TRU													
Storage	M3												
MLLW													
Treatment	M3									82.74			
MLLW													
Storage	M3												
MLLW													
Comm. Disp.	M3									32.00			
LLW													
Treatment	M3									1,150.30			
LLW													
Storage	M3												

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Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
LLW										
Comm. Disp.	M3									15.00
LLW										
Ship to DOE Disp.	M3									840.30

Technology Needs

Site Need Code: CH-MW02-99

Site Need Name: Treatment of PCB-Contaminated Low Level Radioactive Waste

Focus Area Work Package ID: MW-07

Focus Area Work Package: Alternatives to Incineration to Reduce Emission Hazards.

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies

Direct Chemical Oxidation

Cost Savings (in thousands of dollars)

Range of Estimate

0

Site Need Code: CH-MW03-99

Site Need Name: Lead Removal, Segregation and Disposal

Focus Area Work Package ID: MW-03

Focus Area Work Package: Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies

Cost Savings (in thousands of dollars)

Range of Estimate

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