

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Rocky Flats

Site Summary Level: Rocky Flats Environmental Technology Site

Project RF011 / Uranium Disposition Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0345

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose: Uranium Decontamination Subproject

The purpose of this subproject is to remove HEU inventory from the Site. The scope of this subproject will be completed in FY99.

Some parts are contaminated with plutonium that must be cleaned to levels (20 dpm/100 cm²) to permit off-site shipment and acceptance by Oak Ridge Y-12. Oak Ridge has agreed to receive and store the site's inventory of eU. However, since Oak Ridge cannot accommodate plutonium, all Pu contamination above the threshold of 20 dpm/100 cm² must be removed from the HEU. Once clean, the parts can then be shipped under SNM Shipping. For those parts that cannot be cleaned to the Y-12 specification, alternate disposition will be required for separate processing or storage at another DOE site. Some parts that are greater than 50% Pu will be dispositioned through the Metals & Oxides program to SRS.

This project reduces the material at risk at RFETS, thereby lowering the potential operational risk to the worker, exposure risk to the public, and contamination risk to the environment. Performing the uranium decontamination will cause some increase in the health and safety vulnerabilities associated with the handling, treatment, and transportation of these materials.

HEUN Subproject

The Highly Enriched Uranyl Nitrate (HEUN) Subproject, to remove the nitrate liquid from B886, is complete. The quantity of the remaining nitrate liquid is low enough to deactivate the building and begin the D&D process. All activities are now managed through the Building Cluster.

Uranium Decontamination Subproject

The activities of this subproject include installing and operating the enriched uranium decontamination process (eU decon). Specific quantities of materials to be dispositioned can be found in a Classified List maintained by SSOC.

Technical Approach: Uranium Decontamination Subproject

Gloveboxes and associated equipment in Module A of B707 are modified, and the eU decontamination system, developed and demonstrated at Los Alamos National Laboratory, is installed and operational. The inventory of eU that is Pu-contaminated will be decontaminated. Measurements of surface contamination will be taken periodically on the first 30 shells to determine if any subsurface Pu migrates to the surface. Upon successful demonstration that Pu contamination levels are below 20 dpm/100 cm² and do not over time increase above that level, the contaminated shell inventory will be processed. Parts that cannot be cleaned will be packaged for shipments to other DOE sites for processing and/or storage.

Project Status in FY 2006:

This project will be completed.

Post-2006 Project Scope:

No activities are currently scheduled to occur after 2006 for this project.

Dataset Name: FY 1999 Planning Data

Date of Dataset: 9/20/1999

Page 1 of 7

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Rocky Flats**

Site Summary Level: **Rocky Flats Environmental Technology Site**

Project **RF011 / Uranium Disposition Project**

Report Number: **GEN-01b**

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

HQ ID: **0345**

Project Description Narratives

Project End State

Uranium Decontamination Subproject

The end state is shipping the decontaminated HEU parts by PBS 12, SNM Shipping offsite for ultimate storage. Contaminated parts that cannot be cleaned to specification, will be shipped to other DOE sites.

Cost Baseline Comments:

Cost estimates are based on assumptions and data developed by the technical groups that have responsibility for managing the work. To the extent practical, all cost estimates are Activity-Based Costs (ABC) and tied directly to a defined and detailed work scope. The estimates are developed at the activity level and are further divided into line items. Line items represent individual resource contributions to activities and are the lowest level of input to the planning system. Once the cost estimate is developed, each activity is evaluated for cost, technical and schedule risk and the appropriate contingency is determined. Detailed estimates and the basis of estimates (BOEs) for the 2006 Closure Plan are available at the Site.

Safety & Health Hazards:

The principle hazards in the Uranium Disposition Project are radiological, chemical, and other standard industrial hazards commonly found in metal processing and fabrication buildings at RFETS. Most of these hazards will exist throughout the project and are related to the HEU hemishell decontamination process, SNM material movement, maintenance, surveillance, inspection, sampling and analysis, material decontamination and precipitate drying operations, storage, packaging, and drum handling. The HEU Vulnerability Assessment and DNFSB Recommendation 94-1 will be used as additional reference sources for ensuring that all the hazards have been identified and categorized. These hazards will be analyzed and categorized in accordance with the RFETS Safety and Health Program infrastructure policies, manuals, and procedures.

Safety & Health Work Performance:

This project will be completed within the RFETS Safety and Health Program and within the controls and authorization basis documents defined above to ensure the safety and health of the worker, public and the environment. RFETS has implemented an integrated safety management system consisting of the following elements: Integrated Work Control Program (IWCP), radiological safety, criticality safety, emergency management, fire safety, industrial hygiene, nuclear safety, occupational medicine, occupational safety, safeguards and security, safety integration, performance oversight, and standards management. RFETS provides site wide infrastructure programs for each functional area to establish consistent safety standards and support for this project. Safety and health success results from the efficient and effective implementation of these programs. This project is responsible for ensuring that the necessary elements of the safety and health programs are incorporated into the specific project plans and implementing documents, and that an appropriate Readiness Determination and Safety Evaluation Screen (SES)/Unreviewed Safety Question Determination (USQD) have been performed.

PBS Comments:

Uranium Decontamination Subproject

Electro-decon of eU hemishells contaminated with plutonium will enable acceptance by Oak Ridge Y-12 for storage. Removing these hemishells significantly reduces the amount of SNM at RFETS and is one of the precursors to achieving the end state. While electro-decon is the baseline process

Dataset Name: **FY 1999 Planning Data**

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

Page 2 of 7

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Rocky Flats

Site Summary Level: Rocky Flats Environmental Technology Site

Project RF011 / Uranium Disposition Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0345

Project Description Narratives

for removing Pu contamination to less than 20 dpm/ 100 cm² from the shells, other options are being explored to remove the hemishells from RFETS. The first option includes LANL operating their electro-decon system in a production mode to augment through-put rates to assure completion before June 1999. Completion before June 1999, provides enough time to complete shipping by the end of FY 99. The second option under consideration involves shipping the contaminated hemishells to the Savannah River Site (SRS) for solvent extraction and acid dissolution. Cost, benefit, and feasibility analyses will be performed and compared to the baseline process to evaluate and select the best option.

Baseline Validation Narrative:

Although the 2006 Closure Plan has not been officially validated, it has undergone a high level review by Rocky Flats Field Office (RFFO) and Headquarter personnel. Current independent validation efforts include the following: 1) RFFO has contracted an independent firm to perform a baseline confidence review of the 2006 Closure Plan by the end of FY99, and 2) the Office of Field Management (FM) has contracted a big-five accounting firm to validate the 2006 Closure Plan.

In addition to the 2006 Closure Plan validation efforts, results/recommendations from several previous baseline validation efforts were used in the development of the 2006 Closure Plan. These validations included: 1) The U.S. Army Corps of Engineers (USACE) performed a validation of the Rocky Flats Ten Year Plan in FY97/FY98, 2) Kaiser-Hill contracted Price Waterhouse Coopers, LLP to conduct and independent validation effort of the 2010 Closure Project Baseline that concluded in May of FY99, and 3) Kaiser-Hill engaged Arthur Andersen, LLP to conduct a schedule and cost risk review of the 2010 Closure Project Baseline.

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
	Y	N	Y	N	N	N	Y	N

Project Identification Information

DOE Project Manager: Jessie Roberson

DOE Project Manager Phone Number: 303-966-2263

DOE Project Manager Fax Number: 303-966-4775

Dataset Name: FY 1999 Planning Data

Date of Dataset: 9/20/1999

Page 3 of 7

Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Rocky Flats**

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

Site Summary Level: **Rocky Flats Environmental Technology Site**

HQ ID: **0345**

Project **RF011 / Uranium Disposition Project**

General PBS Information

DOE Project Manager e-mail address: ten.year.plan@rfets.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)	13,670	0	13,670	11,245	11,245	1,241	1,241	1,184	0	0	0	0	0	0	0	
PBS Baseline (constant 1999 dollars)	13,670	0	13,670	11,245	11,245	1,241	1,241	1,184	0	0	0	0	0	0	0	
PBS EM Baseline (current year dollars)	13,666	0	13,666	11,241	11,241	1,241	1,241	1,184	0	0	0	0	0	0	0	
PBS EM Baseline (constant 1999 dollars)	13,666	0	13,666	11,241	11,241	1,241	1,241	1,184	0	0	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)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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

Dataset Name: **FY 1999 Planning Data**

Page 4 of 7

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

Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Rocky Flats**

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

Site Summary Level: **Rocky Flats Environmental Technology Site**

HQ ID: **0345**

Project **RF011 / Uranium Disposition Project**

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													
Defense Programs	0												
	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
Defense Programs

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:

Previously Projected End Date of Project: 6/1/1999

Current Projected End Date of Project: 8/31/1999

Explanation of Project Completion Date Difference (if applicable):

Scope Deletion

Efficiencies

New Scope

Nuclear Fuel Services, Inc. awaiting NRC approval to proceed with conversion of HeUN to oxide, required additional funding for facility operation during the three month delay before conversion was allowed to begin. Additionally, funding was required for further storage and sampling of the converted oxide subsequent to a change in delivery sites from B&W to Y-12.

Dataset Name: **FY 1999 Planning Data**

Page 5 of 7

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

Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Rocky Flats**

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

Site Summary Level: **Rocky Flats Environmental Technology Site**

HQ ID: **0345**

Project **RF011 / Uranium Disposition Project**

Project Reconciliation

Cost Growth

Science & Technology

Other

The scope of work and end state conditions for the 2006 Plan are similar to the current 2010 Baseline, with a four-year acceleration and a reduction in cost being the two most significant differences. The bottom-up estimate for the 2006 Plan is a \$1.65 billion improvement over the comparable activity-based bottoms-up detail estimate for 2010.

To close the Site four years earlier than the current 2010 Baseline requires a strategically different approach. The two key principles followed in preparing the 2006 Baseline were: 1) safely reducing the urgent risks first, and 2) performing work in a sequence that reduces or eliminates operations, maintenance and security costs (often referred to as - mortgage costs) as early as possible. Key to the 2006 Baseline approach is early closure of the secured Protected Area. Closing the Protected Area as soon as possible means that the high security and maintenance costs for this area can be redeployed to accelerate other closure activities. In addition, D&D and SNM risk reduction activities will be performed simultaneously rather than sequentially, supporting both the risk reduction and mortgage reduction principles. The D&D of non- and lower-contaminated facilities and most environmental remediation work will be deferred until later in the project to allow resources to be focused in the areas that result in the greatest reduction in risks and mortgage costs.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	12,984	Actual 1997 Cost:	11,241	Actual 1998 Cost:	1,241
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	502	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			14
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	516				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):	23,876	Rebaselining due to acceleration. New scope dollar estimate is not of audit quality.
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	24,392	
Additional Amount to Reconcile (+):	-23,208	

Dataset Name: **FY 1999 Planning Data**

Page 6 of 7

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

Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Rocky Flats**

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

Site Summary Level: **Rocky Flats Environmental Technology Site**

HQ ID: **0345**

Project **RF011 / Uranium Disposition Project**

Project Reconciliation

Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): **1,184**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Complete shipment of highly enriched uranium to Y-12.			9/30/1999						Y		
Complete PBD 011 - Uranium Disposition Project	RF-OTHE-11		8/31/1999		8/31/1999					Y	
PBD 011 Project Start			10/1/1997								

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
Complete shipment of highly enriched uranium to Y-12.											
Complete PBD 011 - Uranium Disposition Project	RF-OTHE-11				Y	Y					Kaiser Hill Internal (KHIs) Milestones
PBD 011 Project Start				Y							PBD 011 Project Start