

**Kaiser-Hill**

# **PROJECT BASELINE DESCRIPTION**

## **707 Closure Project**

## **Rocky Flats Closure Project**

**June 30, 2000**

**Approved:**

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**Project Manager**

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**Date**

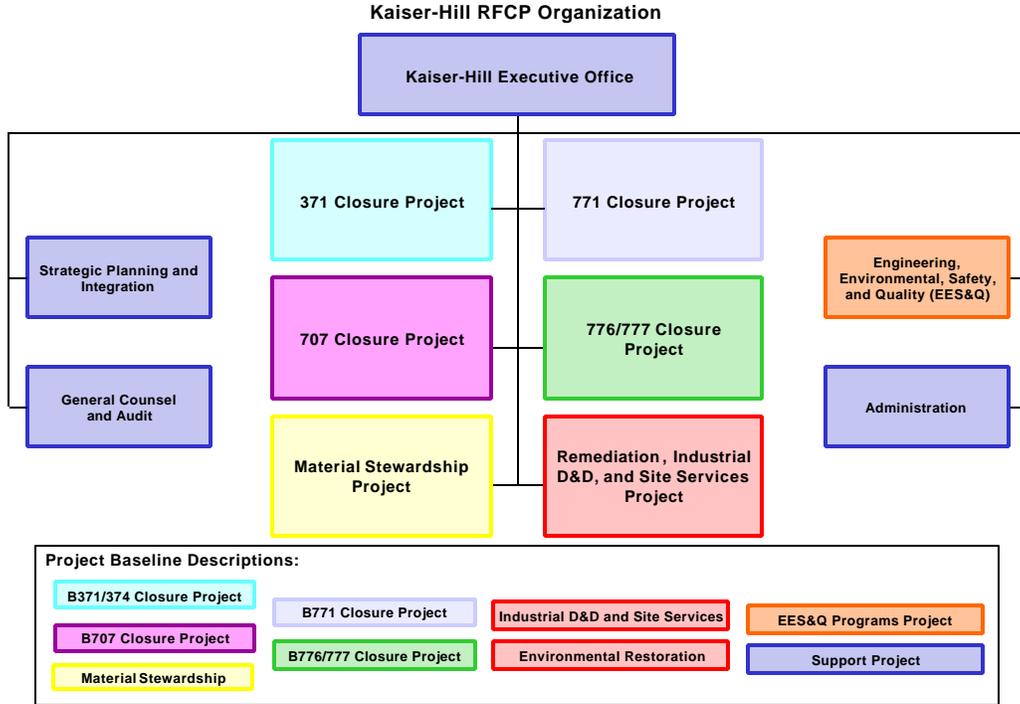
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# PROJECT BASELINE

This Project Baseline Description (PBD) addresses the 707 Closure Project. Its relationship with the rest of the projects and support organizations is shown below in Figure 1.



**Figure 1: Kaiser-Hill RFCP Organization**

## Scope

The scope of Rocky Flats Closure Project is established in the Statement of Work in the Rocky Flats Closure Contract. The scope of work that is included in this project is summarized below by Cost Account.

- B 707 Project**
- BA 707 Closure**
- BAA Project Management**
- BAB Facility management**
- BAC Deactivation**
- BAD Decommissioning**
- BAF Metal Size Reduction and Storage**
- BAH Ash Residue Project**
- BAJ Dry Residue Project**

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## **1.1 BAA Project Management**

The scope of this cost account includes:

Project management

Administrative services management and support

Engineering, environmental, nuclear safety, criticality safety, radiological safety, industrial hygiene, health and quality program management and support

Project planning and control, production control, and contract administration.

## **1.2 BAB Facility management**

Facility Landlord Functions: to provide safe, compliant facilities to allow mission and site closure activities to occur. These activities include; surveillances on Limiting Conditions for Operations (LCOs), SC1/2 and SC-3 Systems as required by the building specific authorization basis document (e.g., fire systems, criticality alarm systems, HVAC systems), and inspections on security and radiological confinement systems. Also included are maintenance activities on SC1/2 and SC-3 systems, structures and components, operations management, and technical support for building baseline activities and in support of mission activities.

## **1.3 BAC Deactivation**

According to RFCA, Type III buildings undergo “deactivation.”

**Deactivation** includes the activities necessary to remove a building from operation and place the building in a safe and stable condition that eliminates or mitigates hazards and ensures adequate protection to workers, the public and the environment. Deactivation potentially results in additional baseline cost reductions by eliminating or reducing the need for surveillance and maintenance activities.

Deactivation includes the tasks of: Characterization; Planning & Project Management; Administrative Deactivation; Authorization Basis Changes; and Physical Deactivation. Deactivation activities remove the cluster of buildings from operation, and prepare them for decommissioning or conversion/release to a new use meeting applicable safeguards, hazard category or other completion criteria.

Specific deactivation activities include preparing Integrated Work Control Program (IWCP) Packages, performing removal of hazardous and non hazardous material, holdup removal, and reduction of building fire loading. Activities may include inventory and removal of unattached hazardous materials from the building and project areas, such as regulated hazardous chemicals, beryllium, gas cylinders, draining fluids from equipment, asbestos abatement and/or encapsulation, and repack of existing waste

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packages. RCRA units may be placed into RCRA stable condition or RCRA unit closure may occur. Disposition of excess property, in accordance with government property disposition requirements may be performed.

Deactivation includes removal of contaminated systems, system components, or equipment for the purpose of accountability of Special Nuclear Material SNM and nuclear safety. It also includes removal of contamination incidental to other deactivation or for the purposes of accountability of SNM and nuclear safety. Deactivation does not include decontamination necessary for the dismantlement phase of decommissioning.

Deactivation is achieved when the building is in a safe and stable condition while awaiting further disposition and/or decommissioning, and dismantlement. The end state (i.e. ready to turn cluster over to Decommissioning) of this element will be defined within this PBD.

Type I and II buildings in the cluster might be treated individually. In that case they would undergo “building stabilization” instead of “deactivation.”

**Building Stabilization** includes the activities necessary to remove a building from operation and place the building in a safe and stable condition that eliminates or mitigates hazards and ensures adequate protection to workers, the public and the environment. Stabilization occurs in buildings that do not have a deactivation phase. Stabilization potentially results in additional baseline cost reductions by eliminating or reducing the need for surveillance and maintenance activities.

Stabilization includes the tasks of: Characterization; Planning & Project Management; Administrative Stabilization; Authorization Basis Changes; and Physical Stabilization. Stabilization activities remove the cluster of buildings from operation, and prepare them for turnover -- possibly to another contractor -- for decommissioning or conversion/release to a new use meeting applicable safeguards, hazard category or other completion criteria.

Specific Stabilization activities include preparing Integrated Work Control Program (IWCP) Packages, performing removal of hazardous and non hazardous materials, holdup removal, and reduction of building fire loading. Activities may include inventory and removal of unattached hazardous materials from the buildings and project areas, such as regulated hazardous chemicals, beryllium and gas cylinders, draining fluids from equipment, asbestos abatement and/or encapsulation, and repack of existing waste packages. RCRA units may be placed into a RCRA stable condition or the RCRA unit closure may occur. Disposition of excess property, in accordance with government property disposition requirements may be performed.

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Building stabilization is achieved when the building is in a safe and stable condition while awaiting further disposition and/or decommissioning, dismantlement, and demolition. The end state (i.e. ready to turn the building over to Decommissioning) of building stabilization will be defined in this PBD.

#### **1.4 *BAD Decommissioning***

**Decommissioning** includes the activities necessary to remove a building from the site, in a safe manner that minimizes hazards and ensures adequate protection to workers, the public and the environment. Decommissioning includes the tasks of: Characterization; Site Preparation; Decontamination; Dismantlement; Demolition; and Project Management and Support Services. Regulatory approval for decommissioning precedes the physical execution of decommissioning tasks. The decommissioning process, as implemented at RFETS, results in each building and contents being dispositioned properly in accordance with the applicable regulations and requirements, whether as waste, as recycle, or as reuse.

Specific physical decommissioning activities include: the characterization, stripout, removal and size reduction, of process equipment (gloveboxes, tanks, process piping, ducting, etc.); distribution systems (building lighting/power, heating, water, sewer, etc.); and isolation of the building from the rest of the site infrastructure. Packaging of contaminated wastes generated during the overall decommissioning effort, holdup removal; property and waste disposition; decontamination; building disassembly and dismantlement; and demolition. Activities such as waste chemical removal, disposition of excess property, chemical hazard reduction and placement of RCRA units into RCRA stable condition, or their closure, may occur either during deactivation or decommissioning.

Physical site preparation includes the establishment of laydown, shipping and material processing areas; set-up of size reduction, monitoring and waste staging areas, and step-off pads, and the removal of stored wastes. Decontamination areas include building interior/exterior surfaces or other fixed structures, equipment, drains, gloveboxes, tanks, process piping, ducting. Removal of hazardous and toxic substances may be performed as a decontamination activity.

Demolition of the walls, roof, non-structural and structural components, foundations and connecting structures (tunnels, breezeways, overhead walkways) of the building is performed. Unless specified differently in the building RFCA decision document, subsurface concrete will be removed to a depth of three feet below the existing grade. Demolition rubble will be properly dispositioned.

Characterization supplies the data necessary to minimize hazards and ensure adequate protection to workers, the public and the environment and has four time phased elements: Scoping; Reconnaissance; In-process; and Pre Demolition Survey (including

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independent verification, if required). Decommissioning characterization does not cover the characterization associated with IHSS remediation, which is part of Environmental Restoration (ER) or any process characterization of SNM.

In order to perform these physical activities significant planning and engineering resources prepare the following major documents (as needed): the Reconnaissance Level Characterization Report (RLCR); Pre Demolition Survey Report (PDSR), Decision Document (Decommissioning Operations Plan (DOP); Proposed Action Memorandum (PAM); Interim Measures/Interim Remedial Actions Document (IM/IRA), or use a RFCA Standard Operating Protocol); RCRA Unit Closure Plan; Health and Safety Plan (HASP); Integrated Work Control Program (IWCP) packages; Quality Assurance Plan (QAP); Waste Management Plan; Training Plan; utility relocation design documents; building demolition design documents, and equipment removal design documents.

The development of these work packages and plans requires the use of multiple support services such as: training; procurement and contract administration; security and fire protection; QA/QC; waste management and inspection; transportation and construction departments; radiological operations and engineering; Radiation Control Technician (RCT); medical and health; safety and industrial hygiene; shipping/ receiving and warehousing; legal; regulatory interface; laundry; small tools and personnel protective equipment (PPE); analytical laboratory; toxic and hazardous material handling; utilities; excess property; telecommunications and information resources; finance and administration; and planning and integration.

Completion of decommissioning results in the building "footprint" being assigned to the Environmental Restoration organization for any required remediation. Unless specified differently in the building RFCA decision document, "all buildings will be demolished..." "All wastes are removed..." and building foundations, utilities or other remaining structures, will be removed to a depth of three feet below the existing grade." For each project, a Project Completion Report will be placed in the Administrative Record in accordance with RFCA and other applicable requirements.

## **1.5 BAF Metal Size Reduction and Storage**

### Pu Sizing Operations

In some cases, plutonium metal items must be size reduced so that they will fit in approved shipping containers for offsite shipment. The Pu Sizing Operations, which are conducted in J/K modules, involve weighing and brushing items if required and then transferring them to a glovebox where they can be size reduced. Oxide obtained from brushing is thermally stabilized.

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### Pu Brushing/Thermal Stabilization

This process, which maintains compliance with the storage requirements of HSP 31.11, is conducted in J module. Plutonium metal items in Buildings 707, 371 and 777 that are due for surveillance as required by HSP 31.11 are weighed to detect an increase that may indicate oxidation. If the weight gain is above the permitted threshold, the items are transferred to B707 for brushing. As items are repackaged in DOE-STD-3013 containers, they no longer require periodic surveillance. Oxide generated from brushing is thermally stabilized.

### **1.6 BAH Ash Residue Project**

Ash residue processing is conducted in Module E within B707 on ash residues located in Buildings 371, 707, 771, 776, and 777 and consists of 16 Item Description Codes (IDCs). The Ash residue IDCs are sorted, sieved, size-reduced if necessary, and blended to prepare the batches to meet shipping and disposal requirements. The beginning state is residue waste material which are not uniform in size or Pu content, and are packaged in a variety of containers of different dimensions. The end state of the material will be waste of a relatively homogeneous, inspected mix which is repackaged in WIPP-certifiable containers staged for pick up by the MSP. MSP is then responsible for placement into a pipe overpack container or other shipping container, temporary staging in B707, and movement to the loading dock for further transfer.

### **1.7 BAJ Dry Residue Project**

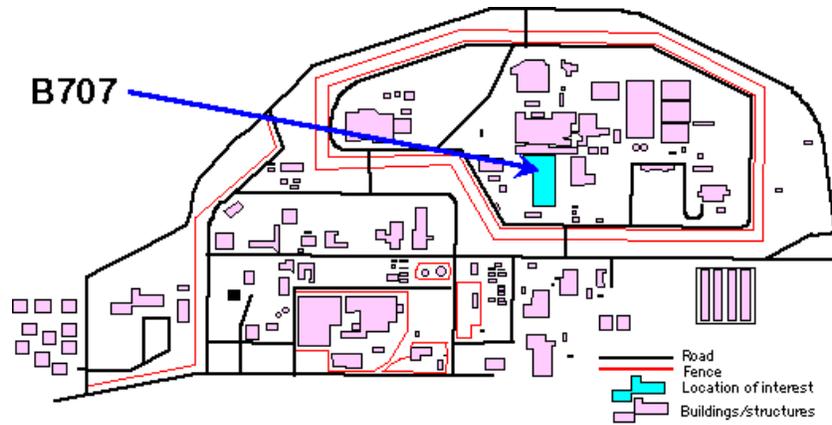
The dry residue repack operation conducted in module D includes the destruction/repackaging of inorganic combustibles and classified shapes for stabilization purposes. A variety of inorganic residues require no treatment, but must be repackaged. Any classified graphite shapes are destroyed. The repackaging is accomplished to meet shipping requirements to WIPP and, for some IDCs, interim safe storage criteria. Current plans for the remainder of the IDCs that do not need to be packaged in the interim safe storage configuration are to repackage these inorganics into metal cans to maximize the allowable wattage limit. The end state of the material will be waste which is repackaged in WIPP-certifiable containers staged for pick up by the MSP. MSP is then responsible for placement into a pipe overpack container or other shipping container, temporary staging in B707, and movement to the loading dock for further transfer. The scope of this project is limited to the completion of IDCs 300, 303, and 312. The remaining dry residues will be transferred to B371 for processing.

## 1.8 Boundaries

This project includes the facilities listed in the following table. The location of the cluster is shown in Figure 2.

**Table 1. B707 Cluster Facilities**

<b>Facility Designation</b>	<b>Rocky Flats Environmental Technology Site (RFETS) Facility Number</b>
707 Cluster	707, PU Manufacturing Building
	731, Process Waste Pit (707)
	732, Process Waste Pit (778)  778, Machine shop, shower, locker, former laundry facility
	708, Compressor Building 709, Cooling Tower 711, Cooling tower 711A, Cooling Tower Emergency Diesel Pump 718, Service Building 707S, Storage Shed
	Tank 206, Carbon Tetrachloride Storage Tank 208, Liquid Argon Storage Tank 209-221 (13 total), Helium Storage Tank 223, Liquid Nitrogen Storage Tank 284, Helium Storage Tank 290, UST Diesel Blend Tanks 324-325 (2 Total), Diesel Storage Tank TK 711 AST Diesel Storage Tank TK-16, AST Diesel Storage



**Figure 2. The B707 Cluster**

## **2. Budget**

The 707 Closure Project Baseline Budget is shown in Table 2 on the following page.

**Table 2. 707 Closure Project Baseline Budget**

*Burdened Cost (\$000)*

<i>Project/Cost Account</i>		<i>F00</i>								
		<i>Feb-Sep</i>	<i>F01</i>	<i>F02</i>	<i>F03</i>	<i>F04</i>	<i>F05</i>	<i>F06</i>	<i>F07</i>	<i>Total</i>
<b>B</b>	<b>707 Complex Project</b>									
	<b>BA 707 Closure</b>									
	<b>BAA Project Management</b>	3,946	7,653	6,436	3,199	3,023	2,066	929	0	<b>27,252</b>
	<b>BAB 707 Closure Project</b>	11,367	14,681	12,653	5,391	3,118	1,725	0	0	<b>48,937</b>
	<b>BAC Deactivation</b>	4,150	7,563	2,019	1,336	212	0	0	0	<b>15,281</b>
	<b>BAD Decommissioning</b>	1,921	18,923	25,831	27,745	30,879	32,336	19,765	0	<b>157,400</b>
	<b>BAF Metal Size Reduction and Storage</b>	2,285	1,004	0	0	0	0	0	0	<b>3,290</b>
	<b>BAG Salt Residues</b>	1,787	0	0	0	0	0	0	0	<b>1,787</b>
	<b>BAH B707 Ash Residue Stabilization Project</b>	5,767	3,052	0	0	0	0	0	0	<b>8,819</b>
	<b>BAJ Dry Residues</b>	1,636	723	0	0	0	0	0	0	<b>2,360</b>
	<b>Project B Totals:</b>	<b>32,859</b>	<b>53,601</b>	<b>46,939</b>	<b>37,672</b>	<b>37,233</b>	<b>36,127</b>	<b>20,694</b>	<b>0</b>	<b>265,124</b>

Thursday, June 22, 2000

Source: Cost Account Flash Price Spread Report, Kaiser-Hill P&I Reporting System (rpt\_fps\_ca, Project: BaslDevl\_0622a)  
 FY00 Actuals from P&I Reporting System, FY00 May Database 6/28/00

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### **3. Schedule**

A summary of the 707 Closure Project Baseline Schedule is shown in Figure 3 on the following page.

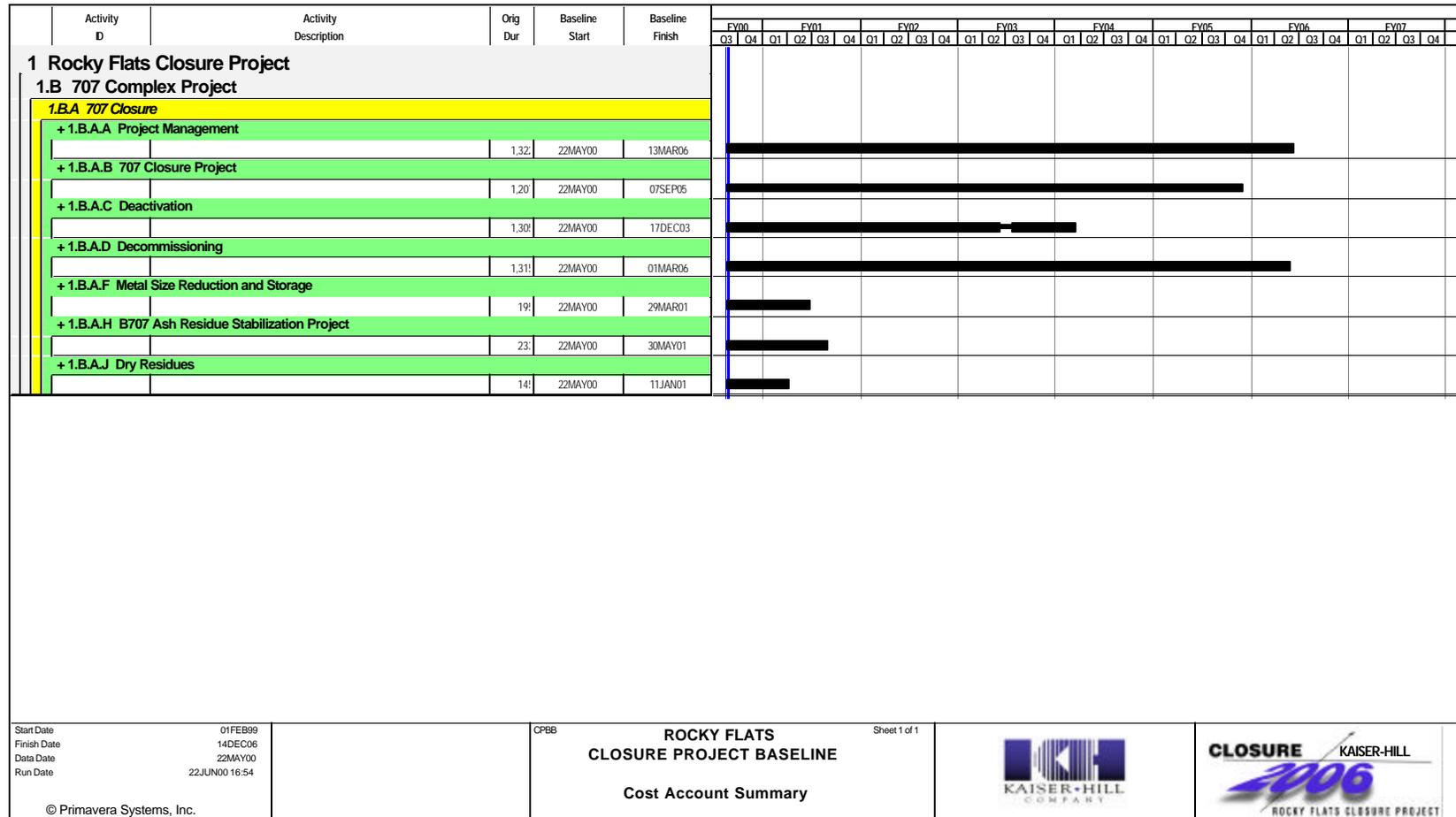


Figure 3: 707 Closure Project Baseline Schedule

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## 4. Assumptions

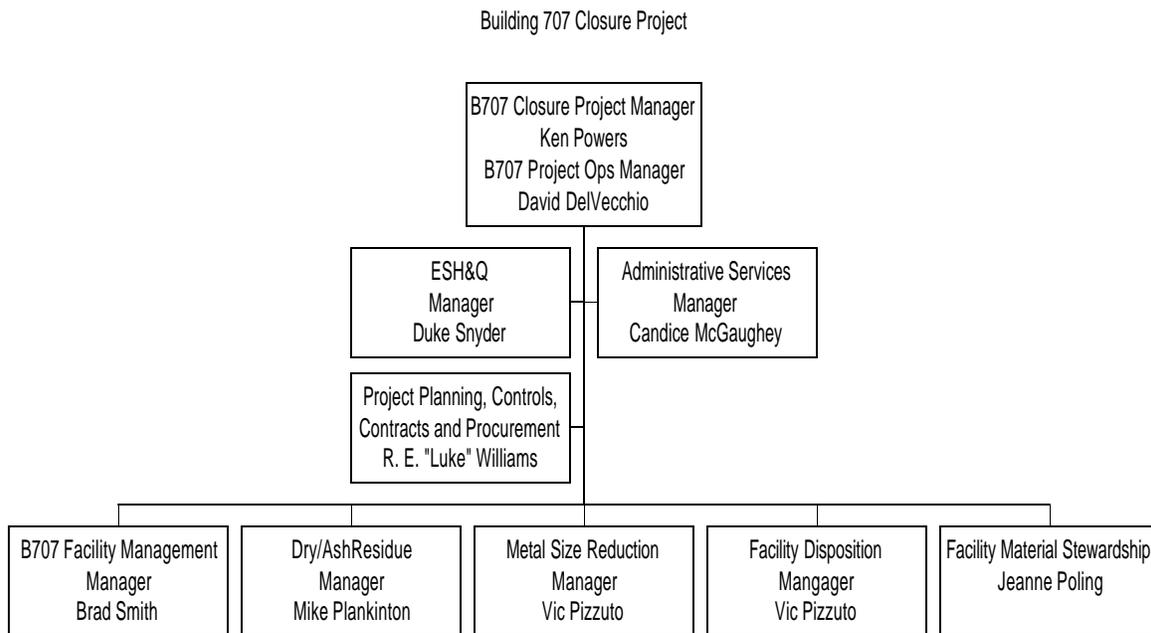
This section includes the project assumptions that may impact scope, schedule or budget.

In addition to the site-wide assumptions that are included in the Rocky Flats Closure Project (RFCP) Project Management Plan, the following project specific assumptions were used in planning this project:

- No annual BIO revision will be required for FY00 because the BIO will have been revised to reflect the addition of D&D activities.
- Remediation of the currently identified 65 SNM locations will be sufficient for PA reconfiguration.
- X-Y retriever will not need to be remediated prior to MAA/PA closure.
- Security compensatory measures will support a Limited Area (LA) for B707 until holdup is remediated to below LA criteria.
- WIPP will take classified TRU waste.
- Plasma arc will be utilized for in-situ size reduction.
- LCOs for Zone II, Fire Protection and Criticality Alarm systems will remain until 2003, when the need for confinement is eliminated and B707 is shown to be “criticality incredible.”
- Deactivation/SNM removal to “inventory clean” allows gloveboxes to be out of commission awaiting decommissioning under the new D&D BIO.
- Maintenance and AB surveillance needs under decommissioning will be as follows:
  - No IWCPs/surveillance requirements/PMOs required on gloveboxes, zone I HVAC, glove box magnahelics calibrations, O2 analyzers, GBOH, assorted SC-3 equipment (instrument/plant air, EGEN’s, site power, etc.)
  - These will be transferred from cost account BAB to cost account BAC for deactivation, and on to cost account BAD for decommissioning.
- Facility management will fund laundry costs through FY 02. Decommissioning will fund FY03 and beyond.
- Dry, Ash, and Metal and Oxide projects are completed and their gloveboxes and equipment are left in inventory clean condition on the dates in the schedule.
- Thermal stabilization of holdup material is budgeted in BAF until 9/30/00 and in BAC beyond 9/30/00
- No size reduction capability for moveable gloveboxes and equipment will be built in B707. These items will be transported to B776 and size reduced in B776.
- 110 GB equivalents will be sent as SCO, 54 GB equivalents will be size reduced in place, and 168 glovebox equivalents will be sent to B776 for size reduction.

- D&D start date will be 3/1/01. The D&D BIO IVR will be 1/29/01 and the readiness assessment will be 2/01.
- Non-high CA work will be subcontracted using building trades.
- The PuSPS project assumes HSP31.11 responsibilities by December 00.
- 53 orphans and 11 targets will be processed in B707. Other orphans will be shipped to B371 or offsite by 12/31/00.
- All Dry IDCs and 3 Ash IDCs (374/601/310p) with the exception of Graphite Shapes/Molds will be processed in B371.
- No rework of residues that had already been processed and were then impacted by the new WIPP/WAP will be performed in B707.
- Mission program, SNM holdup removal, Deactivation, and Decommissioning activities will be performed in parallel.
- The subsurface utilities between facilities outside the facility footprints will be capped and left in place. Removal for IHSS remediation/containment will be performed as required by the Environmental Remediation Project.
- The Decommissioning Operations Plan will be approved by November 00.
- Thermal cutting methods and other size reduction technologies will be allowed.

## 5. Project Organization



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**Figure 4: 707 Closure Project Organization**