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RF/RMRS-98-294

444 CLUSTER REMOVAL PROJECT PROJECT EXECUTION PLAN

INITIAL ISSUE: HAZARDS REDUCTION

REVISION 0

NOVEMBER 1998



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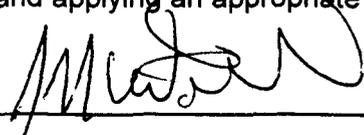
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Date 12/1/98

FOR THE 444 CLUSTER CLOSURE PROJECT

NOVEMBER, 1998

PERFORMING ORGANIZATION CONCURRENCE SHEET

The undersigned have reviewed the cost, schedule and scope commitments established by this Project Execution Plan and agree to meet these commitments by the assignment of resources and applying an appropriate level of management attention to project execution:



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11-30-98

Date



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D&D Projects



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1. PROJECT IDENTIFICATION

The B444 Cluster Closure Project includes complete demolition and removal of the remaining 13 facilities in the cluster. This includes the following buildings: 427, 444, 445, 447, 448, 449, 450, 451, 453, 454, 455, and 457. Buildings 427A and T444A were originally part of the cluster but were previously removed. Figure 1-1 identifies the work area for the Project with respect to the Site's Industrial Area facilities. A close-up of that work area highlighting the relative positioning of the 444 Cluster facilities is shown in Figure 1-2.

This Project Execution Plan (PEP) represents the entire B444 Closure Project. The focus of this initial issue is, however, only one of the elements of cluster closure: Hazards Reduction, in the buildings identified above. The sections that relate to the follow-on decommissioning work are identified in this issue and will be expanded in future PEP revisions as the decommissioning planning progresses.

Hazards Reduction is defined by the team as the reduction of as many higher safety risk areas as possible prior to decommissioning and closure. The duration of the project has been established by the client as one fiscal year (1999). By performing the Hazards Reduction Project, landlord costs are systematically reduced and the cluster is prepared for efficient closure. The major activities in the Hazards Reduction Project were selected based on the highest safety risk and most benefit to the follow-on decommissioning efforts.

The objective of Hazards Reduction is to prepare the cluster for follow-on Decommissioning. If Decommissioning is delayed, the cluster will have achieved a significant lowering of up-keep and landlord costs until such time as Decommissioning is initiated.

1.1 Purpose

The purpose of the 444 Cluster Removal Project is to support the Site mission of safely closing all facilities and operable units in a short amount of time and to reduce landlord costs.

The purpose of Hazards Reduction is to prepare the Cluster for decommissioning and reduce landlord costs to the lowest practical level at the end of the project's one-year duration. To accomplish this, high environmental and personnel safety risk areas will be eliminated and left clean and empty to the extent allowed by regulations and fiscal practicality.

Activities which will be undertaken to eliminate high safety risk areas from the 444 Cluster, include but are not limited to: combustible removal, chemical removal, equipment removal, removal of non-essential personnel and radioactive sources, process equipment deactivation, depleted uranium removal, legacy waste removal, waste packaging and removal, and contaminated area reduction. These activities prepare the cluster for either decommissioning or for a standby mode. Upon completion of Hazards Reduction activities, the areas left behind will contain only fixed equipment, equipment important to safety and to decommissioning, and distributed systems (e.g., electrical, steam, process lines). This is the optimum condition to begin decommissioning.

Decommissioning activities will be integrated with, and follow Hazard Reduction. Decommissioning activities include, but are not limited to: removal of remaining equipment, systems and all facilities from the cluster in a safe, compliant, and cost efficient manner, in accordance with applicable regulations and the Closure Project Baseline (CPB) schedule. When the B444 Cluster Closure Project is completed, all remaining buildings will be leveled to slab, basements filled or demolished, and all waste removed.

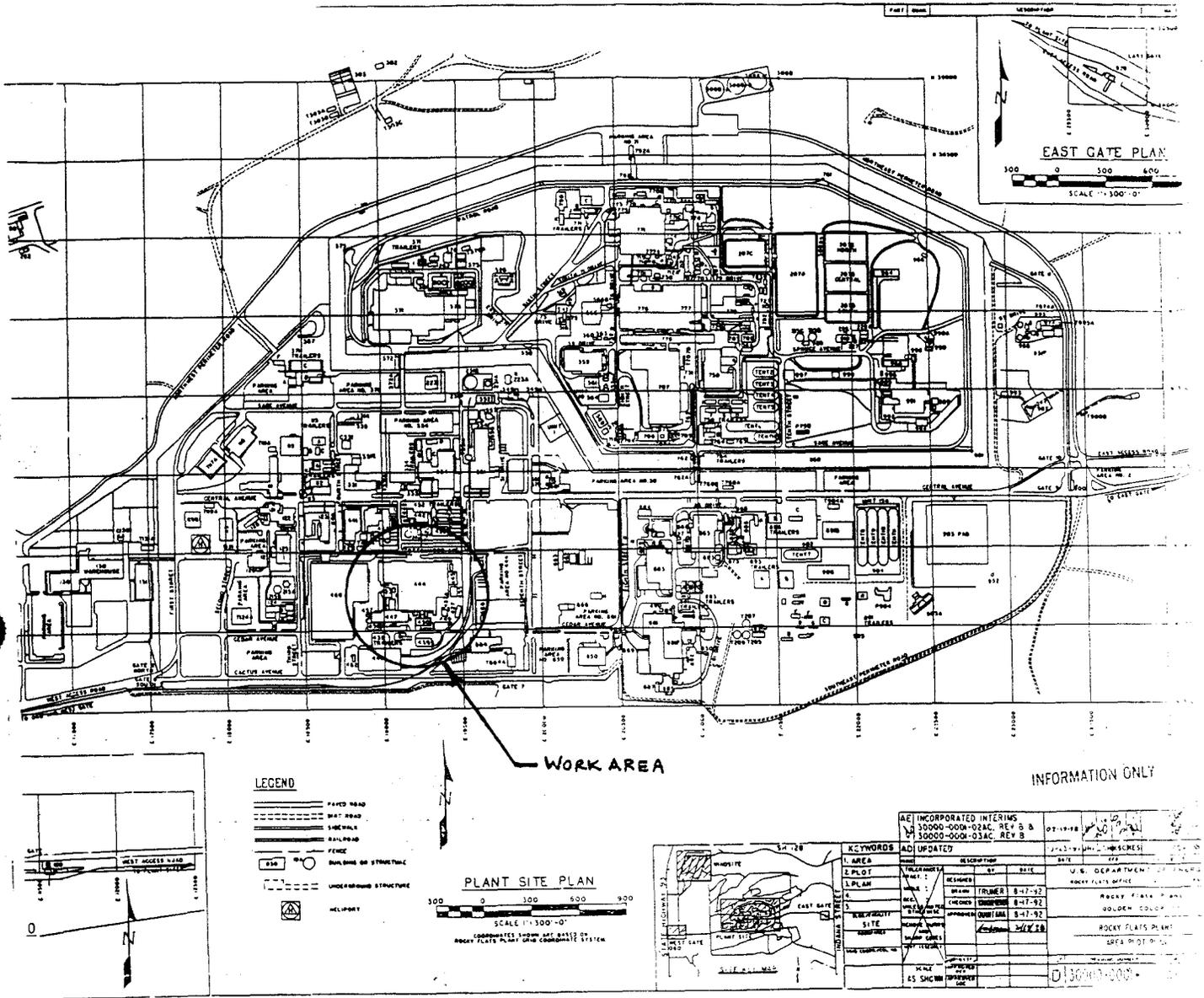


Figure 1. B444 Cluster Closure Project Work Area

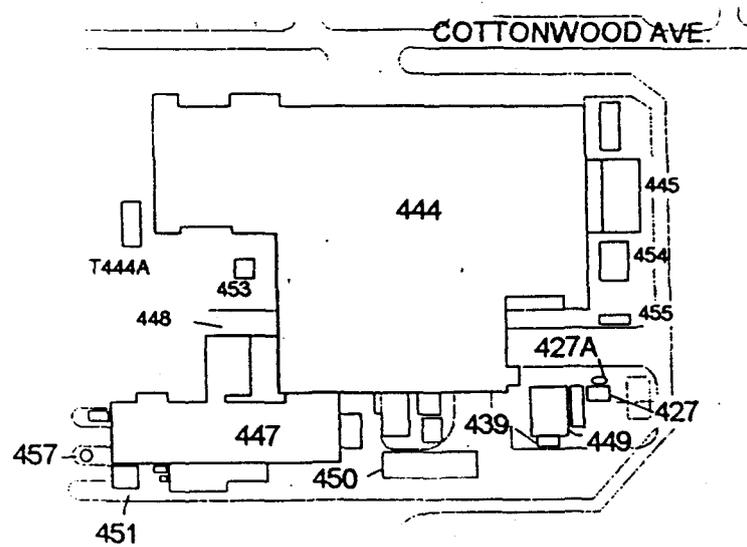


Figure 2. The B444 Cluster

Bld/ID	Description	Bld/ID	Description
427	Emergency generator for B444	427A	Diesel storage for B427 (previously removed)
No #	Storage shed (W of 452)	444	Manufacturing Building
No #	Carpenter Shop(NE of 439)	T444A	Showers/lockers (previously removed)
No #	Maintenance. Storage (NE of 439)	445	Carbon storage
No #	RMRS Maintenance (NE of 439)	447	Manufacturing facility
Tk 064	Propane (W of 444)	448	Storage building
Tk 066	Nitrogen (E of 444)	449	Oil and Paint storage
Tk 067	Nitrogen (S of 444)	450	Filter Plenum B444
Tk 069	Argon (E of 444)	451	Filter Plenum for B447
Tk 070	Nitrogen (N of 444)	453	Oil storage
454	Cooling tower for B444	455	Filter Plenum for B444
457	Cooling tower for B447		

Part of all of the following Individual Hazardous Substance Sites (IHSSs) are within the area of this cluster:

- | | | | |
|-------|-------------------------------------|-------|----------------------------|
| 116.1 | 447, West Loading Dock | 116.2 | 444, South Loading Dock |
| 121 | Old Process Waste Lines | 136.1 | Cooling Twr Pond W. Of 444 |
| 136.2 | Cooling Tower Pond East of Bldg 444 | 147.1 | MAAS Area |
| 157.2 | Rad Site South | 182.0 | 444/453 Drum Storage Area |
| 189 | Nitric Acid Tanks | 207 | Inactive 444 Acid Dump |
| 208 | Inactive 444/447 Waste Storage | | |

Note: UBC-444 "Under Building Contamination Bldg 444" is also within the area of the cluster

1.2 Background/History

The B444 Cluster was a production operations facility, originally constructed in 1953. The cluster encompasses approximately 198,461 square feet of mostly metals processing floor space. Depleted uranium and beryllium foundry and fabrication activities, for use in nuclear weapons components, were the primary focus of the cluster. Other materials processed included tool steel, specialty alloy stainless steel, graphite, and aluminum. Some less common materials processed were: titanium, tantalum, vanadium, gold, silver, copper, and lead. There are no records suggesting that plutonium or enriched uranium was ever processed in the cluster. Plating operations in the cluster included processes that utilized acids and cyanides.

In addition, the cluster contained a carbon shop and produced casting molds for internal and external use, a tool and gage machine shop, and a highly sophisticated metal fabrication and machining area for production of extremely close tolerance parts. The complex had operational capabilities to include: arc melting, induction casting, heat treatment, electrochemical milling, precision machining, welding, jig and fixture manufacturing, plating, cleaning, assembling, dimensional and non-destructive testing, and quality control inspection and acceptance.

There are 11 individual RCRA units in the building that were used for the acid and cyanide liquid processing functions in the cluster. All these units ultimately gravity drain into units 40.04 and 40.05, process waste tanks T-2 and T-3, respectively, in Room 1 of Building 444. Extensive efforts in the early 1990s processed and removed the liquids from these systems, with the exception of the ground water processing tanks T-2 and T-3. These two tanks are inherently clean due over a million gallons of groundwater flowing through them. All the systems are visibly clean, but previous attempts to locate closure records have failed. These systems will require some type of RCRA closure action prior to cluster closure. These systems, like the remainder of the cluster are considered "RCRA Stable."

Another extensive effort in FY1997 removed all RCRA chemicals from the cluster except from the identified exclusion areas (which were subsequently completed in FY 1999) and from legacy wastes stored in and around the cluster. This effort left the cluster in a "RCRA Stable" condition. Numerous inspections have been performed by internal and external organizations to confirm this condition. Some RCRA chemicals have been removed from the legacy waste repackaging operations in FY1998 and FY1999.

On February 22, 1989 chromic acid was released from the facility when a plating bath tank overflowed. The runoff from the plating bath then overflowed a tank and its containment structure. The containment structure leaked into a footing drain beneath the building. None of the acid was released offsite.

A major fire occurred in the Plating Laboratory (Rooms 245, 245A, 245B, and 245C) in the late 1980s. The area was cleaned and debris disposed, but the extent of contamination from this fire is not known.

The building has significant ground water infiltration. The system installed to process this water and pipe it to the Building 374 water treatment facility has failed in the past causing water to flow in the basement.

1.3 Project Justification

The B444 Cluster Closure Project is a required step towards closure of the Site. The B444 Cluster is one of the most complicated Type 2 (as defined by the Decommissioning Program Plan) clusters at the Site. The closure of this cluster will be used as a template for similar Type 2 clusters such as 865/883 and 881. The current preliminary schedules in the Closure Project Baseline show a two-year 444 Cluster decommissioning schedule, making it necessary to start decommissioning activities in FY 1999.

In recent years the cluster has been plagued with expensive maintenance repairs, including roof leaks, steam leaks, steam malfunctions, wet pipe sprinkler breaks due to freezing, and multiple failures of plenum control systems, to name a few. An estimated two million dollars is needed to repair the roof to an acceptable condition if longer term standby is selected. These indicate the need for significant investment in cluster infrastructure.

Further, if the Hazards Reduction Project is not completed ahead of the decommissioning effort, identical or similar activities will be required during decommissioning, thereby lengthening the schedule. Therefore, the Hazards Reduction Project must be completed in FY1999, to ensure successful completion of either baseline or accelerated baseline schedules, as currently planned. The Hazards Reduction Project will leave the 444 Cluster in the most optimum configuration to ensure the success of the decommissioning efforts.

Landlord costs for the 444 Cluster in FY 1998 were approximately \$2.3 million including several Baseline Change Requests for significant repairs. Landlord costs were set at \$1.4 million in FY1999. The differential in costs was in some cases built into the Hazards Reduction Project, because it is the only activity going on in the cluster. Completion of the Hazards Reduction Project as planned will represent a landlord savings of from 20 to 40% over the FY1998 budget. Furthermore, the intent of the project team is to integrate all landlord costs into the Hazards Reduction Project so that by the end of FY1999, all landlord activities are directly applied to the Hazards Reduction effort. At the completion of the Hazards Reduction Project, the follow-on Landlord costs should be at or less than the \$1.4 million.

1.4 Project Funding

Funding has been provided to execute Hazard Reduction during FY 1999 through PBS 014, *The Industrial Zone Closure Project*; WAD 064, *The 125/441,444,690T Cluster Closure Project*; WBS No. 1.1.05.10.02 *B444 Hazards Reduction*. Funding has been planned and budgeted at \$4.210 million for FY99. This PEP details how this funding has been budgeted for the accomplishment of the work elements. These details are summarized in the Project Summary WBS (Chapter 11) and the Project Schedule (Chapter 13) later in this document. The primary charge number for Hazards Reduction is FN0270-XX. The budget for FY00 will be revisited based on the results of WBS 1.1.05.10.1 *Prep for Transition to D&D (K-H)* activity during the FY00 budget development process (3rd and 4th quarters, FY99).

WBS	DIRECT ACTIVITIES	WAD Manager	FY99 Funded	FY99 Planning	FY99 BEST	FY00 Planning	FY00 BEST
PBS 014	INDUSTRIAL ZONE CLOSURE PROJ.	Marshall					
1.1.05.02.04	B123 Decommissioning	Ervin	2,938	0	0	0	0
1.1.05.02.06	B123 Remediation Characterization	Butler	467	0	0	0	0
1.1.05.10.01	B444 Landlord	Ervin	1,954	1,400	1,399	1,400	8,217
1.1.05.10.01	Prep for transition to D&D (K-H)	Ervin	0	250	0	0	0
1.1.05.10.02	B444 Hazards Reduction	Ervin	400	4,210	4,630	2,000	3,804
1.1.05.13.04	T690 D&D Close-Out (B862,663,T690A)	Ervin	68	0	0	0	0
1.1.05.30.01	IA Characterization	Butler	0	0	0	1,000	0
1.1.05.30.01	Bowman's Pond Remediation	Butler	0	0	0	3,200	790
WAD 064	125/441,444,690T Cluster Project	Ervin	5,827	5,860	6,029	7,600	12,811

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2 PROJECT SCOPE

This section is divided in two sections, one describing the major elements of project scope – landlord, hazard reduction, and decommissioning – and the second identifying project documentation to be developed. The decommissioning portion of these sections will be expanded during the decommissioning planning activity.

2.1 Scope

The B444 Cluster Removal Project - Project Summary Work Breakdown Structure is contained in Section 11, and contains the major elements of cluster closure scope. These are:

- Landlord functions (WBS 1.1.05.10.01)
- Hazards Reduction (WBS 1.1.05.10.02)
- Deactivation (WBS 1.1.05.10.03) – Not used
- Decommissioning (WBS 1.1.05.10.04)
- Closure (WBS 1.1.05.10.05)
- Remediate/Contain High Risk IHSSs (WBS 1.1.05.10.06)

The major elements of Landlord functions are given in Section 11.1. The FY 1999 scope for these elements is described in detail in the Basis of Estimate Software Tool (BEST) Budget Work Package prepared for BudCall 99/00. The resultant data was uploaded into the Closure Project Baseline schedule and budget. The major scope elements of Landlord functions are:

- 444 Landlord Compliance Surveillance (WBS 1.1.05.10.01.01)
- 444 Landlord Baseline Maintenance (WBS 1.1.05.10.01.02)
- 444 Landlord Operations Management (WBS 1.1.05.10.01.03)
- 444 Landlord Technical Support (WBS 1.1.05.10.01.04)

For further information on scope of Landlord functions refer to Appendix D Project Baseline Summaries, pages 4 and 5.

The 11 major elements of scope for Hazards Reduction are listed below and also depicted in Figure 11-3:

- Combustible Removal (WBS 1.1.05.10.02.01)
- Chemical Removal (WBS 1.1.05.10.02.02)
- Equipment Removal (WBS 1.1.05.10.02.03)
- Remove People and Sources (WBS 1.1.05.10.02.04)
- Deactivate Process Equipment (WBS 1.1.05.10.02.05)
- Remove Depleted Uranium (WBS 1.1.05.10.02.06)

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- Remove Legacy Waste (WBS 1.1.05.10.02.07)
- Waste Packaging and Removal (WBS 1.1.05.10.02.08)
- Reduce Contaminated Area (WBS 1.1.05.10.02.09)
- Project Management and Planning (WBS 1.1.05.10.02.10)
- Work for Others (WBS 1.1.05.10.02.11)

A general description of scope for Hazard reduction is included in Appendix D Project Baseline Summaries, on page 5. The following provides further description of Hazard Reduction elements. In addition, Hazard Reduction end points are the completion of the work described in the following paragraphs. Where there are exceptions they are noted in that paragraph.

Combustible Removal. The scope of this item includes minimizing the risk of fire due to combustibles present in the cluster. This means removal of all combustible materials in the Cluster that can be eliminated without a Rocky Flats Cleanup Agreement (RFCA) Decision Document. Walls, ceilings, and floors that are permanent parts of the facilities require a Decision Document to remove; similar to equipment that is permanently attached to cluster surfaces. Examples of combustible materials are: wood, paper, plastic, packaging materials, sound proofing, and combustible liquids. Removal of contaminated or potentially contaminated combustibles is accomplished by packaging them as low level waste, as Item Description Code (IDC) 326.

Chemical Removal. This element includes the removal of excess chemicals from the cluster and any chemicals that may be discovered during other Hazard Reduction activities. Existing analytical data available for those chemicals that remain and/or are discovered during the Hazards Reduction activities will be collected and reviewed. Chemicals will then be sampled if required and dispositioned to the appropriate waste chemical collection location, external to the 444 Cluster. The element includes removal of unattached PCB contaminated ballast and all known regulated materials, and those that are discovered during the Hazards Reduction activities. For example, the regulated materials that are discovered during the repackaging of legacy waste containers, and those liquids determined to be regulated during the draining of fluids operation.

Equipment Removal. This element summarizes equipment removal for the entire cluster. Excess materials and supplies used for the original cluster mission are considered equipment for removal by this project. This activity includes the removal of process equipment that is to be salvaged and turned over to PU&D and removal of equipment, declared as waste, that is not permanently attached to the cluster surfaces. Computers, hand tools, desks, and cabinets are examples of equipment which may be declared as waste. Equipment remaining in the cluster after the completion of this activity will be part of the decommissioning scope. All equipment whose purchase price was over \$5,000 is required to have an Economic Disposition Plan (EDP) prepared. The EDP analyzes the different salvage and waste alternative costs and assesses the current salvage value, if any. These EDPs will be prepared during the Hazards Reduction phase.

There are currently nine separate work areas planned for this activity to include machine tools, equipment requiring an economic disposition plan, and other accountable government property. This activity also includes packaging and removal of various equipment that is being shipped to Los Alamos National

preliminary planning, and characterization for decommissioning. The project team will prepare the necessary Baseline Change Proposal documents to secure funding to accomplish the achievable scope in FY1999. The amount of this scope that is completed correlates directly with the amount of funding available and activity duration, including approval cycles.

2.2 Boundaries

The visible physical boundaries of the B444 Cluster Closure Project follow the schematic of the facilities representation in Figure 2. The less obvious boundaries include distributed systems (i.e., utilities), and sanitary and process drains. The scope for these drain systems principally starts in the decommissioning phase. However, if the option to remove process equipment (described below) is exercised in the Hazards Reduction phase, then the ancillary equipment that drains into the process waste system will be terminated at the point closest to the inner cluster surface boundary.

The Hazards Reduction boundaries extend to the limits of the RFCA in that the project is allowed to perform any work that does not require a Decision Document. Other regulatory boundaries such as environmental (e.g., RCRA) and personnel safety (e.g., Health & Safety Practices Manual) also apply.

An option is available in the Hazards Reduction phase to remove permanently attached process equipment from the B444 Cluster. This option exists in the Site's RCRA Interim Status Unit Closure Plan. In this plan it states that equipment that is in the Idle Equipment Program can be removed/disposed through the use of a Closure Description Document. If this option is exercised then the equipment would be terminated at the point where the ancillary equipment intersects the floor, wall, or ceiling.

Decommissioning boundaries will be added to this PEP as the planning for this phase evolves and the decision document is finalized. It is anticipated that the boundaries for the overall 444 Cluster Removal Project will extend through removal of all waste, demolition of all buildings (see Figure 2) to slabs or filling of basements, and stubbing of all utilities at the closest point of tie in to site wide systems. Rerouting of any pass through or cluster provided utilities would also be performed if necessary to maintain operability of site equipment outside of the cluster.

2.3 Project Documents

This section specifies the major documents that will be completed during the 444 Cluster removal project. Deliverable dates for these documents are indicated below or will be established as the critical path schedule is further refined. The following list will be revised when this detailed planning is completed.

Documents applying specifically to Hazards Reduction are:

1. Project Execution Plan for Hazards Reduction to K-H for review and concurrence by November 18, 1998 and approval by December 1, 1998.
2. Project Execution Plan updates, as appropriate, through the one-year duration of the project. At least one update will be done prior to project completion.
3. Property Disposition Plan and a list for equipment to be removed.
4. Closure Description Document (CDD) for removal of excess equipment included in the Idle Equipment program if appropriate.
5. Engineering package for equipment isolation.
6. Integrated Work Control Program work package for the Be Hopper Bag Replacement.
7. Integrated Work Control Program work package for the Depleted Uranium Removal (if required)

8. Plan for reduction of the contaminated areas in the 444 Cluster.
9. Monthly project management report each accounting month.
10. Critical path schedule.
11. Sampling and analysis plan for Hazards Reduction activities.
12. Security Plan (if required).

Documents applying specifically to Decommissioning include:

- Updated Project Execution Plan for Decommissioning.
- Waste Management Plan for Decommissioning.
- Property Disposition Plan updated if necessary for Decommissioning.
- Integrated Work Control Program work packages
- Monthly project management reports.
- Critical path schedule.
- Decision document, currently envisioned to be an Interim Remedial Action (IM/IRA) document.
- Reconnaissance Level Characterization Plan
- Reconnaissance Level Characterization Report
- Security Plan update (if required).
- Other documents will be identified as decommissioning planning is completed.

3 TECHNICAL APPROACH

The broad technical approach for the B444 Cluster Closure project in the near term is to continue the landlord function, in accordance with the RFETS conduct of operations requirements. These landlord functions will be performed in support of the Hazards Reduction phase of the project. The landlord function will be phased-out upon completion of the Hazards Reduction phase. Any remaining work will be absorbed into the decommissioning phase of work (i.e., maintenance and surveillance activities). The technical approach to the decommissioning phase will be developed during the decommissioning planning also scheduled and partially funded for FY 99. Several trade studies were identified during the early decommissioning planning that, if completed, will provide information to determine the best technical approaches.

In addition to the landlord functions, the specific elements of scope for Hazards Reduction are summarized in Section 2.0, Project Scope and described in more detail in Appendix A, Project Summary Work Breakdown Structure Dictionary. The technical methods to accomplish certain features or elements of this scope are expanded upon in Section 3.1, Technical Strategy.

Laboratory. The equipment being shipped offsite is generally funded externally unless it is beneficial to the project to expedite the action and fund it internally.

Remove People and Sources. The scope of this element includes removal of all non-essential building occupants. The list of building (cluster) occupants will be evaluated, and the personnel that are not directly supporting Hazards Reduction will be moved out of the cluster. It also includes the removal of all non-essential radioactive sources. There are 26 sources currently on record in the facility, as presented in Appendix G. Only five of these are active and required to maintain calibration of needed radiological instrumentation in the 444 Cluster.

Deactivate Process Equipment. This element includes three primary activities: de-energize, drain, and apply fixative to process equipment. The resulting end-state places the equipment in a condition that allows for accelerated removal. This work covers the de-energizing of nearly 500 pieces of equipment, draining of 135 pieces of equipment holding a total of more than 1500 gallons of fluid, and applying fixative to over 75 known beryllium contaminated pieces of equipment, to the shelves in Rooms 601 and 602, and to several thousand square feet of building surfaces.

Remove Depleted Uranium (DU). This element includes the removal from the cluster of all depleted uranium (DU) stock, and packaged oxide, chips, turnings, and pieces. This includes approximately 172,000 pounds of stock, approximately 43 drums of oxide, 13 drums of casting residuals, and the 2' x 2' x 2' steel crates of casting residuals. This will leave the cluster free of any significant quantities of DU. The major work areas are in Rooms 32, 101, 202, 204, 403, 405B, 501, and 502. Unburned chips will be removed from the chip roaster in Room 32 of Building 447. The ultimate disposal of DU is an open issue at this time.

Remove Legacy Waste. This element includes the disposition and removal of 455 drums of legacy waste in rooms 101, 201, 205, B444 Basement, and Building 447. Nearly all this work will be performed in the Beryllium Shop (Room 107) due to the suspected beryllium contamination. The legacy drums will be opened, inspected and repackaged into low-level waste crates. The drums will be crushed to fit into the newly repackaged crates. The newly generated crates will be sealed and either staged out of the cluster or shipped directly to a waste disposal facility.

Waste Packaging and Removal. This includes removal from the cluster of an estimated 2700 cubic meters of equipment and materials that are not essential to remaining operations in the Cluster and that do not require a RFCA decision document for removal. Detailed walk downs will be performed to refine this estimate. That is, any objects that are not permanently fixed to cluster surfaces such as: pieces, parts, small tools, desks, chairs, shelves, supplies, molds, and ingots. These items are packaged into waste containers and either staged outside the cluster or shipped directly to an offsite disposal facility. This activity also includes removal of all non-essential compressed gas cylinders from the cluster.

Reduce Contaminated Area. This activity consists of reducing the square footage of areas identified as Contamination Areas within the B444 Cluster (as of October 1, 1998) to Radiological Buffer Areas, Radiological Material Areas, or Controlled Areas. Radiological Engineering and Radiological Operations will determine the requirements for accomplishing this task, in accordance with the Site's Radiological

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Control Manual and 10CFR 835. The end point of this task will be determined by an economic evaluation performed on the reduction plan prepared by radiological Engineering. A map showing the Contaminated Areas that were existing as of October 1, 1998 is provided in Appendix E.

Project Management and Planning. This element includes the scope for project management, project controls, planning, and support services. This consists of:

- day-to-day management of the project including resources assigned to the project
- project meetings, briefings, tours and walk-downs
- management reports, administrative functions, compliance with safety and environmental programs
- presentations and charts that provide technical, cost, and schedule status of the project
- justification of the materials and equipment required for accomplishment of the project
- collection of planning and control data, the development, implementation, and maintenance of computerized costs, schedule, and milestone databases
- preparation and submittal of all budget submittals for the project
- preparation and issuance of cost performance reports
- preparation and issuance of all project schedules
- work planning
- engineering

Work for Others. This element includes all the activities that have been requested to be performed inside the cluster facilities. It includes inspection of 24 remaining crates for classified matter and repackaging into new crates, the continuance of packaging and shipment of loose waste from FY1998, inventory and repackaging of 13 drums inside the Protected Area "NTS Trailer," inventory and repackage of 2 drums originally destined for Los Alamos National Laboratory, inventory and repackage of seven crates in the "NTS Trailer," inventory and repackage of eight drums of beryllium and graphite in the "NTS Trailer," and inventory and repackage of over 50 drums with beryllium contaminated contents currently located in Building 991.

The project scope is defined in the Project Summary WBS dictionary in Appendix A, and can be reviewed to whatever level of the WBS that is desired. Each level of the WBS expands the scope definition to more specific items.

The third WBS element of the 444 Cluster Removal Project, Deactivation (WBS 1.1.05.10.03), is not applicable to this cluster. The detailed breakout of the remaining three WBS elements of the 444 Cluster Removal Project, Decommissioning (WBS 1.1.05.10.04), Closure (WBS 1.1.05.10.05), and Removal/Containment of High Risk IHSSs (WBS 1.1.05.10.06) will be available at a later date.

The Facility Disposition Program Manual (MAN-076-FDPM), Chapters 3 and 4 will be used by the project team to define decommissioning planning (a portion of WBS 1.1.05.10.04). This includes scoping,

3.1. Technical Strategy

Equipment Disposition: The equipment removal activity is linked to Deactivate Process Equipment activity in that prior to removing equipment, it is accounted for in the property disposition system, electrically isolated, drained of all fluids, decontaminated or fixative applied, and packaged for shipment to its final destination. An alternative analysis study will be performed to determine which destination is the most economical to ship to. That is, whether free release and shipment to Property Utilization & Disposal, packaged for shipment to the Nevada Test Site low-level waste repository, or whether packaging for shipment to a metal melting recycler is the most economical. The decision on whether to waste the equipment or ship to a recycler will depend on the size of equipment, how much disassembly and size reduction is required, the decontamination and sampling required, and any other labor intensive waste acceptance criteria requirement.

Some equipment and tools have been requested by other Department of Energy Sites. For example Los Alamos wants to receive all the tools, pieces, parts, and cabinets located in the B444 "tool crib" area – Room 138. The intent of the project will be to minimize all sampling and packaging efforts for the shipment for this type of equipment. The cabinets will be shrink-wrapped and shipped whole from contaminated area to contaminated area, to the extent possible.

Personnel Relocation: The activity to remove personnel from the cluster resulted from a lesson learned on the B123 Removal Project. Personnel were still trying to perform mission activities while the decommissioning team was attempting characterization and removal actions. So, the purpose of this activity is to remove personnel that are not essential to the Hazards Reduction phase and then again as efforts are transitioned into decommissioning.

Source Removal: Removal of sources from the B444 Cluster will require finding an external processing/disposal facility, because all the Site's storage areas are at capacity. The sources in the B444 Cluster include some that were used for the original mission, some that are in-service and used for radiological instrument calibration, and some that were shipped to B444 from B886, during deactivation of that facility. Attempts will be made to locate beneficial reuse destinations prior to paying for disposal.

Liquids Disposition: The fluids that are contained in the equipment, as determined and verified with the Idle Equipment List will be pumped into drums. The drums will be mixed and a representative sample taken. In this way the number of samples will be minimized and, since process knowledge indicates most (all) of the remaining fluids are not hazardous, will lend itself to easier disposal. Four drums will be palletized and banded to enhance this process. For the few pieces of equipment that contain large amounts of liquid, they will be sampled individually and then pumped into large tankers parked outside the facility. If the metal melt recycler or PU&D options are exercised, complete draining may not be required. This will depend on the receiving site's waste acceptance criteria.

Sampling Efficiency: The project will minimize the amount of sampling required to free release items, especially in non-contaminated areas to extent practical and safe. The primary contaminants of concern are depleted uranium and beryllium. A technically sound program will be implemented with assistance from Radiological Engineering and Industrial Hygiene to achieve this. In some cases this program will coincide with the Reduction of the Contaminated Area activity. For example, one of the first targets for contaminated area reduction will be the basement of B444, Rooms 1 through 10. This was originally

utilized as the B444 Cluster Maintenance area. Common industrial materials were processed in this area, not DU or beryllium. An effort will be made to perform minimal confirmatory sampling and then release of the equipment to PU&D for salvage.

Depleted Uranium Disposition: The bulk and containerized depleted uranium is in three basic forms. Stock – large heavy block or cylindrical shapes, small pieces or turnings – chips or casting residuals, and powder – resulting from the roasting operation which converted chips into depleted uranium oxide. An effort will be made to find a beneficial reuse for all three forms. However, it is unlikely that one will be found for chips or oxide. Preliminary efforts also suggest that there are not any entities that have a use for the stock. Therefore, the most likely disposition for the bulk stock items is to package them into standard waste crates and ship them to the Nevada Test Site as waste. To accomplish this, waste streams and acceptance criteria will have to be established with the receiving site.

For the chips, casting residuals, and oxide, it is likely that a vendor such as Starmet will be utilized for disposal. The T-1 Project utilized Starmet for the disposal of buried uranium chips. The chips cannot have hazardous constituents contained within. An extensive effort in the early 1990s was made to verify that this is the condition of the chips. That is, process knowledge indicates that none of the chips will be contaminated with a hazardous constituent. The project may perform confirmatory samples to verify this condition.

Legacy Waste: The strategy for removing legacy waste is straightforward. The existing paperwork will be compared to the information in WEMS and the contents will be verified against those sources. Every effort will be made to minimize the number of containers that have unknown contents. Special, expensive techniques must be employed to open this type of container. The next step will be to identify those drums for which the paperwork can be updated to be acceptable for shipment to a waste repository, including the potential for real time radiography measurements. Finally, an effort will be made to segregate containers that must be repackaged in the Beryllium Shop, with full PPE, from those containers that can be opened in a radiological containment, from those that can be opened near one of the clusters ventilation ports, from those that can be opened with only a respirator in-situ. Each added element of PPE or containment adds significantly to the cost of repackaging. At no time will risks unsafe to personnel be taken. After the containers are emptied, the legacy containers will be crushed using a drum crusher currently located within the cluster and put into crates with the waste being repackaged. All used PPE will also be put into the crates being packaged for shipment.

Loose Waste: Currently loose waste being collected in the cluster is being placed into crates and is packaged to be shipped directly to the Nevada Test Site for burial. If this avenue is cut off during the project, then the crates will be staged elsewhere on Site, external to the B444 Cluster. The waste collection consists of a crate on a crate dolly, wheeled from location to location until it is filled to capacity. The filled crates are then mechanically closed and moved to a sealing area external to B444. After an area is cleared of loose waste in this activity it is ready for reconnaissance level characterization.

Characterization Sequencing: The methodology used to collect loose waste will allow characterization to be performed in parallel with the waste removal activity. Designated routes will be established within the

areas that have been characterized, and later confirmatory measurements will be performed to verify those areas were not contaminated by the traffic movement. This will also allow the reconnaissance characterization data to be used for the final survey in decommissioning. Statistically valid sampling programs will be used to minimize the number of samples with the confidence level selected.

The details of characterization and how Hazards Reduction will be integrated with decommissioning will be established in decommissioning planning. In addition, a decommissioning Scoping Level Characterization effort will be initiated in the first quarter of FY1999, which includes the following:

- Complete the Environmental Checklist, HUD and GSA forms
- Evaluate Historical Data
- Perform Building Walk-downs
- Prepare Initial Characterization Plan (initial Reconnaissance Level Characterization Plan)

Further refinement of detail will be accomplished when the Scoping Level Characterization and decommissioning planning efforts are completed. Additional general strategy is contained in the decommissioning section below.

Contaminated Area Reduction: The strategy for reducing the contaminated areas will be to perform limited statistically valid sampling programs to find any levels of depleted uranium contamination above Table 2-2 values in the RFETS Radiological Control Manual. Those areas that are below the Table 2-2 values will be reduced to controlled areas or Radiological Material Areas, as appropriate. If contamination above Table 2-2 values is discovered, the area will be either decontaminated or posted as contamination areas.

A similar approach will be used for beryllium contamination. The project will work with Industrial Hygiene to establish an appropriate sampling program with the intent to clear areas from beryllium PPE restrictions. All contamination found will be decontaminated or a fixative applied to keep airborne and surface contamination lower than the action levels specified in the Chronic Beryllium Disease Prevention Program.

Project Integration: The intent of the project team is to integrate the follow-on decommissioning phase planning into the Hazards Reduction effort in FY1999. The primary focus will be to get as far along with the RFCA Decision Document as possible this year to ensure a smooth transition into decommissioning from Hazards Reduction. However, to prepare the decision document (IM/IRA) will require a significant amount of funding over the current Hazards Reduction budget. The relatively inexpensive decommissioning planning will determine the funding requirements for this effort, a Baseline Change Proposal will be prepared.

Decommissioning Strategy: As decommissioning scope is further defined, additional strategy element will be developed to support that scope. Elements will include equipment dismantlement/removal, facility decontamination, facility demolition, waste disposition, phased utility shutdown, and additional elements as appropriate.

Decommissioning Characterization: All existing sample result data, especially radiological, beryllium, and hazardous constituent, will be assembled and evaluated prior to determining the requirements for new sampling defined in the Reconnaissance Level Characterization Plan. Collection of any new samples for characterization, to the extent possible within schedule constraints, will be performed following the waste and equipment removal actions. This will lower the probability of finding unexpected contamination during the dismantlement, decontamination, and demolition phases of decommissioning.

The reconnaissance level characterization will focus only on the data that is needed to support the decommissioning Decision Document (probably an IM/IRA). The project team will develop a technical basis to limit the sampling required for this purpose, to a minimum.

Reconnaissance sampling will be performed to a statistically valid plan and will be catalogued and archived to be included in the Pre-Demolition Final Survey Report, when possible. When areas of the cluster have been characterized, work performed after the characterization will be organized and controlled such that only statistical verification of the affected area will be necessary. For example, if a room in Building 444 is characterized and documented in the RLCR, and later a piece of equipment is removed, then only the localized area around that equipment and the limited traffic flow path would be re-sampled, and only that which is required to statistically verify the existing data. Similarly, if a flow path for equipment removal between other areas in the building is needed through that same room after characterization, only the flow path would be verified for the final report. The project team understands that the Pre-Demolition Final Survey Report requires significantly more characterization data than the RLCR.

Where possible, the project team will use automated data logging equipment when characterizing the cluster areas. This is especially important for the manpower intensive radiological characterization when thousands of data points are catalogued and reported.

3.2. Applicable Regulatory Requirements Documentation

The Kaiser-Hill contract with DOE specifies the list of DOE directives applicable to work at Rocky Flats. The Kaiser-Hill Level 1 control documents conform to these requirements. All work on the RFCA is performed to appropriate regulations and standards that help protect the environment and health and safety of the workers and surrounding populations.

There are no ARAR's for the landlord and stabilization/Hazard Reduction portions of the project work. Table 3-1 provides the tentative list of ARAR's for the decommissioning and IHSS closure work.

The applicable regulatory requirements for the decommissioning phase will be developed from the Site's Facility Disposition Program Manual (FDPM).

Table 3-1 Federal and State ARARs for Decommissioning & IHSS Closure

Action	Requirement	Prerequisite	Citation	ARAR
Air Quality	Compliance with air emissions	Control of emissions for smoke, particulate, and volatiles of concern. Implemented for construction activities, haul roads, haul trucks, demolition activities.	5 CCR 1001-3, Reg 1 5 CCR 1001-9, Reg 7	Applicable
Air Quality	Compliance with NESHAP	Regulates radionuclide emissions from DOE facilities with a limit of ten mrem/yr. Site Standard.	5 CCR 1001-10, Reg 8 40 CFR 61 Subpart H	Applicable
Air Quality	Compliance with NAAQS	Maintain quality of ambient air fo. criteria pollutants.	5 CCR 1001-14	Applicable
Air Quality	Emission standards and compliance with asbestos work practice requirements	Standards for demolition, storage, and handling of waste. Implemented through specific operational directions in IWCPs.	5 CCR 1001-10 Reg 8	Applicable
Air Quality	Compliance with hazardous air pollutant requirements	Implemented if the remedial action involves a specific regulated pollutant, e.g., lead.	5 CCR 1001-10 Reg 8	Applicable
Air Quality	Compliance with ozone depleting compound requirements	Ensure refrigerants are disposed of properly. Approved vessel recovery method must be used.	5 CCR 1001-19, Reg 15	Applicable
Solid Waste	Solid Waste Disposal Act	Requirements for disposal of solid wastes	6 CCR 1007-2	Applicable
TSCA	Disposal of PCBs	Ensure that any materials with = 50 ppm for PCBs are managed according to TSCA	40 CFR Part 761	Applicable
Hazardous Waste	Compliance with Colorado Hazardous Waste Act	Identification and characterization of hazardous waste.	40 CFR 261 6 CCR 1007-3, Part 261	Applicable
Generator Standards	Standards applicable to generators of hazardous waste	Generator prepares a manifest if hazardous remediation wastes are disposed of off-Site.	40 CFR 262 6 CCR 1007-3	Applicable
TSD Facility Standards	Temporary unit container and tank storage requirements	Requirements for operation of temporary tank and container storage areas.	40 CFR 264.553 6CCR 1007-3,264.553	Applicable
Land Disposal Restriction	Treatment standards for hazardous waste	Requirements for treatment and land disposal of hazardous waste	40 CFR 268 6CCR 1007-3, Part 268	Applicable
Universal Waste Management	Requirements for universal waste management	Governs batteries, pesticides and thermostats	40 CFR 273	Applicable
Used Oil Management	Requirements for used oil management	Implemented if used oil is managed	40 CFR 279	Applicable
Water	MPDES requirements for discharging waste water into surface water bodies	Requirements for discharge of storm water or treated wastewater into surface water bodies.	40 CFR Part 122 and 125 5CCR 1002-8	Applicable
low-level Waste Disposal	Low-level waste disposal	Requirements governing off-Site disposal of low-level radioactive waste.	10 CFR Part 61 6 CCR 1007-14	Applicable
Radiation Protection	Standards for radiation protection	Establishes the criteria for the protection of human health and the environment.	DOE Order 5400.5	Applicable
Radioactive Waste Management	Radioactive waste management	Requirements for the management and packaging of low-level waste.	DOE Order 5420.2A	Applicable

3.3. Project Closure

Project closure begins at the start of the project by keeping and maintaining proper files and records. The official and permanent project file is established and maintained by the Project Manager. Additional closure requirements will be developed as planning for decommissioning is completed. Acceptance and closeout tasks include, but are not limited to:

- Acceptance testing
- Vendor training
- Property Management Transfer and Dispositioning
- As-built drawings
- IWCP packages
- Subcontract close-out
- Project file consolidation and storage
- Project acceptance and transfer
- Project completion report
- Final project close-out

The forms used to complete the above listed closeout actions are contained in the Facility Disposition Program Manual, Appendix G. Records will be maintained in accordance with the Records Management Guidance for Records Sources, 1-V41-RM-001.

4. PERFORMANCE CRITERIA

Project success depends on several Critical Success Factors, and project performance to the work plan that completes the project mission. Performance criteria for the project include:

4.1. Critical Success Factors

Critical success factors for 444 Hazards Reduction are described below:

1. In FY98 RMRS achieved "Best in Class" in safety performance across the DOE complex. One of the success factors for this project is to continue that performance and specifically to have less than four non-recordable, zero recordable injuries, and zero lost time accidents.
2. Eliminate the high-risk safety areas by performing the activities defined in Section 2.1, Project Scope. Upon completion of Hazards Reduction activities, the areas left behind will contain only fixed equipment, equipment important to safety and to decommissioning, and distributed systems (e.g., electrical, steam, process lines).
3. To integrate landlord costs into the Hazards Reduction Project such that the 20 – 40% landlord cost reduction may be realized.
4. To integrate the Hazards Reduction activities with the Decommissioning activities by March, 1999 such that all HR activities are directly applicable to the necessary decommissioning preparation activities.

5. Satisfactory completion of all regulatory deliverables in accordance with the baseline project schedule.
6. Coordinate site resources such that planned activities are completed on schedule.
7. Characterizations performed in Hazard Reduction satisfy, when appropriate, the characterization requirements for the Decommissioning decision document.

Additional success factors will be identified as part of the planning for Decommissioning. Quantitative measurement criteria will be identified for those factors.

4.2. Relevant Site Performance Measures/Milestones

The latest version (November 4, 1998) of Comprehensive Performance Measures for Hazards Reduction include:

- Isolate approximately 500 pieces of equipment from energy sources in B444 that are non-essential for Hazard Reduction or D&D activities by June 1, 1999.
- Remove and properly disposition all approved pieces of equipment in B444. Approved pieces of equipment are those that have been approved for removal and disposition by the property management organizations and Kaiser-hill and RFFO by June 1, 1999.
- Package, remove, and properly disposition the following wastes from B444, including legacy wastes by September 30, 1999:
 - Approximately 2700 cubic meters of waste (2,300 cubic meters of which is low-level)
 - Approximately 168,000 pounds of depleted uranium
 - Fifty radioactive sources

Volumes are approximate but are intended to reflect the current total in B444. The schedule for the depleted uranium and the radioactive sources is dependent upon external approvals and regulatory controls and could affect completion of this milestone.

- All personnel in B444 that not essential to the B444 D&D project will be relocated out of the building by August 15, 1999.

Several other performance measures and milestones have been proposed which may impact Hazards Reduction. This has been identified as Work For Others (WBS 1.1.05.10.02.10) and is discussed in Section 2.1, Scope. These performance measures include:

- Remove all loose and portable property in the Limited Area of the Building 444 Cluster by September 30, 1999.
- Prepare for final disposition all items in the drums and crates in Ryder trailer 210457 (T210457) in the Protected Area and the 56 drums in Building 991 by September 30, 1999.
- Upon completion of Metrics 1 and 2 [the two above], remove the Limited Area encompassing the radiological Control Area (CA) of the Building 444 Cluster by September 30, 1999.

The impacts will be defined and described in the next revision of this PEP.

4.3. RFCA Milestones and Performance Measures

There are no RFCA milestones or performance measures for the 444 Cluster Removal Project.

4.4 Internal Project Milestones and Performance Measures

Additional milestones and performance indicators will be developed by the project to demonstrate progress towards project and site performance measure completion. These items will be used for internal project control, and for monthly reporting based on the requirements in Appendix J.

5. PROJECT RISK MANAGEMENT

5.1. Assumptions

As the 444 Cluster Removal Project progresses, different assumptions will be necessary. New assumptions will be added with each update of the PEP. Key assumptions in planning and implementing the 444 Cluster Removal Project are:

- Current application and interpretation of DOE Order and Regulatory Compliance documents.
- Security requirements and operational/surveillance procedures will continue through Hazards Reduction only.
- Current security access requirements to the contaminated area will be lifted at the completion of Hazards Reduction.
- No new or additional client operations (work for others) will be requested of the 444 Cluster facilities requiring an extension on the use of these facilities.
- Work for others will be integrated into the overall planning process. Impacts on project performance measures will be assessed prior to use of project resources.
- If work for others impacts use of facilities or project resources, then appropriate changes will be made to project performance measures, schedule and scope.
- If external factors impact use of facilities or project resources, then appropriate changes will be made to project performance measures, schedule and scope.
- An appropriate graded approach to all requirements will be applied to this project.
- Additional assumptions will be added as the technical basis for scope elements are refined.

5.2. Risks

Risks will change as the 444 Cluster Removal Project progresses. Additions or changes to identified risks will be made with subsequent updates of the PEP. Risks associated with this project include:

- This scope of work has not previously been attempted to this scale and while SMEs have been consulted in the development of scope for this project, many unknowns exist.
- This phase of stabilization and hazards reduction presents the greatest potential for workers for exposure to safety, radiological, chemical, hazardous material and environmental risks. Work stoppage could result should these risks fail to be appropriately anticipated, identified, investigated and mitigated.

- Recently imposed security requirements will impact the schedule in a number of ways. These include: restricted access to the facility, necessity to provide escorts, restricted number of personnel which can be escorted, potential necessity to evacuate the facility or work areas for security reasons, etc.
- Successful completion of this phase of stabilization and hazards reduction will be dependent on stability and consistency with respect to the application and interpretation of controlling work regulations, procedures and other work requirements.
- Additional risk is present in the project support activities of this project. This risk is due to the potential for encountering unanticipated operational impediments through the course of Stabilization and Hazards Reduction. An example of such risk is historically unreliable cost information associated with Hot & Cold Laundry and Analytical Services support. In the past, cost of these services has increased after planning for a project had been completed.
- Work interruptions by bargaining unit or subcontractor organizations are another potential risk to this project.
- Independent, work for others projects (e.g. repack of Be classified parts from the PA) were planned to be performed in the 444 Cluster after the decision was made to proceed with the Hazards Reduction Project. Performance of these projects are outside of the scope of the project and are assumed to 1) be separately funded and 2) have retained appropriate staff and resources. Predictably, these independent tasks may impact progress on Hazards Reduction by absorbing facility management, supervisory and technical support resources, by depleting the craft resource pool necessary for the completion of Hazards Reduction activities, and by halting or delaying work and/or characterizations in certain areas of the facility. In addition, B444 has one of the only dedicated beryllium repackaging and containment areas on site. Consequently, other beryllium contaminated repackaging or processing efforts may be requested, and if directed to be performed, will affect project schedule.

5.3 Risk Assessment

When detailed planning for the Hazards Reduction has been completed, the risks associated with Hazard Reduction will be assessed to determine a Target and Commitment EAC. Once the risks have been assessed, the number of risk events with high probability of occurrence and high impact will be tabulated. Multipliers will be determined using Table 5-1 based on the number of high/high risk (H/H) elements.

Table 5-1. EAC Cost Scaling Factors

HITS(H/H)	BASE PROBABILITY (E_B)	BASE EAC MULTIPLIER (E^x) FOR 75% CONFIDENCE EAC
10	10	2.178
9	20	1.651
8	30	1.443
7	40	1.286
6	45	1.252
5	50	1.215
4	55	1.179
3	60	1.138
2	65	1.094
1	70	1.049
0	75 (Target)	1.000

Target and Commitment EAC will be calculated using the following formulas:

$$\text{Target EAC} = \text{Base EAC} \times E^x$$

$$\text{Commitment EAC (90\% confidence)} = \text{Target EAC} \times 1.149$$

Table 5-2 contains a preliminary risk assessment for Hazard Reduction. Prevention and mitigation plans for risk factors with a H/H score are included in Table 5-3. These tables will be refined as planning for the project progresses. This methodology will also be used for Decommissioning activities. Additional information will be provided on target and commitment costs and schedule based on project risk assessment.

Table 5-2 444 Cluster Removal Project Risk Assessment

RISK FACTOR	ASSUMPTIONS AFFECTING RISK	Prob-ability	Impact	Score
1. Technology Risk To Accomplish Scope	a) Unproven and untested technology must be used vs assumed low-tech, conventional equipment	L	M	L/M
2. Schedule Risk	a) Significant scope requirement is overlooked.	L	H	M/M
	b) All work can not be completed during normal day shift hours	M	M	
	c) Delivery of critical long lead equipment items delays schedule	L	M	
	d) KH oversight and/or management reviews delay schedule	M	M	
	e) There will be delays due to weather	L	M	
	f) Recently imposed security requirements will negatively impact schedule	H	H	
	g) Integration of Hazard Reduction and Decommissioning activities will impact schedule	H	L	
	h) Time/resource requirements for reducing contaminated area will impact schedule	M	M	
3. Interfaces	a) Work for others will impact resource availability for Hazard Reduction work	H	H	M/H
	b) Work for others will delay Hazards reduction work or characterization in certain areas of the facility	M	H	
4. Performance and Procurement Strategy	a) External processing/disposal facility can not be found for non-essential radioactive sources	H	H	M/H
	b) Equipment in the non-contaminated areas of the buildings can not be released to PU&D	L	H	
	c) Material and equipment requested by LANL can not be stored external to Cluster buildings or shipped directly to LANL.	M	H	
	d) Depleted Uranium Stock can not be disposed of as LLW	M	H	
	e) Depleted Uranium turnings (chips) can not be recycled	L	H	
	f) Depleted Uranium oxide can not be relocated on site or recycled	M	H	
	g) Size of the contaminated area can not be cost effectively reduced/PPE requirements relaxed	M	M	
5. Estimate Accuracy	a) Greater than 2700 m ³ of removable LLW exists in the 444 cluster	H	M	H/L
	b) Less than 2700 m ³ of removable LLW exists in the 444 cluster	L	L	

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RISK FACTOR	ASSUMPTIONS AFFECTING RISK	Prob-Ability	Impact	Score
	c) there are 21 sources in the cluster, not 50 as reported earlier	H	L	
6. Permitting and Regulatory Risk	a) More than minimal permitting and regulatory involvement will be required for Hazards reduction	L	H	L/H
	b) NTS will not remain open and accept project remediation waste	L	H	
	c) Enviro-Care will not remain open and accept project LLMW	L	H	
	d) Areas will not be permitted or available to store Depleted Uranium Oxide (if required)	M	H	
7. Regulatory and Stakeholder involvement	a) There is significant regulatory and stakeholder opposition to Hazard Reduction	L	H	L/H
8. Funding Risk	a) Appropriate funding is not allocated to the project in a timely manner	M	H	M/H
	b) A significant scope requirement is overlooked	L	H	
9. Labor skills, buildup, availability, training requirements	a) Shortage of manpower, machinery, or subcontractor support services impacts project	H	H	M/H
	b) Waste inspectors are not available to support project	M	M	
	c) Experience and knowledge base is not maintained for the project	M	H	
	d) Resources can not be obtained in a timely manner and in support of schedule	M	H	
	e) Resources can not be trained or expedited training can not be obtained to support resource utilization	M	H	
10. Magnitude and complexity of contamination	a) Extent of Beryllium of contamination is greater than anticipated	L	M	L/M
	b) Extent of radioactive (depleted uranium) contamination is greater than anticipated	L	M	
	c) Unanticipated hazardous substances are discovered	M	M	

H = High or severe M = Medium or Moderate L = Low

Table 5-3: Potential Problem Analysis for 444 Cluster Removal Major Risks.

Potential Problem	P	S	Prevention	Mitigation
Recently imposed security requirements will negatively impact cost/schedule	H	H	These requirements are in place and impacts can not be prevented for Hazard Reduction. Sufficient resources may be obtained to prevent schedule impact but would increase cost. Actions included in mitigation will prevent impact on Decommissioning activities.	Evaluate impact of requirements and resources required to mitigate impact. Develop a plan and obtain resources to for mitigation (e.g. personnel with security authorization, escorts, etc.). Identify actions required to reduce security requirements (loose material removal and legacy waste repack). Adjust plan and schedule to prioritize these activities to the extent possible to reduce requirements ASAP. Include the mitigation plan in the project work plan.
Work for others will impact resource availability for Hazard Reduction work	H	H	Review available options for work for others. Identify other resources other than those assigned to the 444 Cluster who could be used to perform this work. Identify work locations outside of the 444 Cluster where this work could be performed.	Develop a plan to obtain additional resources to augment existing resources to the maximum extent possible. The plan should identify anticipated work for others, who should be contacted for assistance (Radiological Engineering, Radiological Operations, Health and Safety Professionals, sample collection personnel, sample analysis organizations, etc.), responsibilities, a general plan of action, and applicable RFETS procedures. Include mitigating work tasks in the IWCP as much as possible. Include the mitigation plan in the project work plan.
External processing and/or disposal facility can not be found for non-essential radioactive sources.	H	H	Explore options/solutions on a site wide basis for disposition of sources (e.g. LANL processing of sources) or use project funds to dispose of sources.	Consolidate sources in one location within the cluster to minimize impact on Hazard Reduction and initial Decommissioning activities. Pursue preventative measures indicated to resolve processing disposal issues prior to impact on Decommissioning.
Shortage of manpower, machinery, or subcontractor support services impacts project	H	H	Develop plan and allocate resources to have on stand-by to prevent impact. Have necessary arrangements in place to provide qualified personnel or to train personnel if necessary. Make arrangements for alternative equipment or support services contractors.	Develop a plan to obtain additional resources to augment existing resources to the maximum extent possible. The plan should identify anticipated work, who should be contacted for assistance (Radiological Engineering, Radiological Operations, Health and Safety Professionals, sample collection personnel, sample analysis organizations, etc.), responsibilities, a general plan of action, and applicable RFETS procedures. Include mitigating work tasks in the IWCP as much as possible. Include the mitigation plan in the project work plan.

6. METHOD OF ACCOMPLISHMENT

Project Planning, Compliance Planning, Work Planning, Routine Work Activities, Project Support, Follow On Planning, Follow On Support and Project Completion will be performed by the RMRS Project Team. Any work that is subcontracted will be performed under a fixed price subcontract. In this case, the subcontractor will be required to provide their own quality assurance (QA) and Safety personnel and will adhere to the IWCP package specification provided by RMRS. RMRS will perform QA and Safety oversight of any subcontractor(s).

All landlord functions will be performed by the RMRS project Team. This team includes various subcontract augmentees. These subcontracts are limited to specific duties of those individuals as they relate to the landlord functions.

The Combustible Removal activity will be performed by the RMRS project team. This activity is part of the waste removal activity (below) and the project team will continue to completion.

Chemical Removal is also a subset activity of the Waste Removal activity and will be performed by the project team. Sampling will be required from time-to time when unknown liquids are discovered. This sampling will be performed by the Site's Analytical Services Division personnel. The samples will be sent off-site for analysis at accredited laboratories. After analysis is received, the liquids will be managed in accordance with the established RCRA Permit and disposed of through appropriate channels and subcontracted services.

Equipment Removal of both non-accountable and relatively small accountable equipment will be packaged and removed by the RMRS project team. "Relatively small" is the equipment that can be put directly into crates for shipment to the Nevada Test Site. The larger equipment that requires special hoisting, rigging, and packaging to remove will likely be removed with a combination of RMRS project team personnel and subcontracted services. The project personnel will clean and disconnect the equipment, whereas hoisting, rigging, and loading onto trailers will likely be accomplished by subcontracted services. Some of the larger equipment that can be free-released may be removed by vendors or subcontractors that desire to purchase the equipment from PU&D.

Another concept that has been explored by the project team is the use of a metal recycler (melter) for the largest of equipment in the cluster. This will likely be for the large equipment that is inside the current contaminated area. A cost-benefit analysis will be performed to determine whether wasting, packaging, and shipping the equipment to the Nevada Test Site or packaging and shipping it to a recycler is more life-cycle economically beneficial to the project.

Removal of personnel from the cluster that are not part of the Hazards Reduction and then for the decommissioning phase will be accomplished by RMRS project team and site labor force personnel. Removal of sources will be a combination of project team personnel that will package and move the sources to the shipping dock and subcontracted services that will receive the sources for processing.

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Deactivation of Process Equipment will be accomplished by RMRS project team personnel. This includes draining of fluids, disconnecting equipment from energy sources, and application of fixative to contaminated areas in the cluster. As stated earlier, sampling of the drained liquids will be performed by the Site's Analytical Services Division staff. Analysis of the samples will be performed by an off-site accredited laboratory.

Removal of depleted uranium (DU) will be a combination of RMRS project personnel and subcontracted services. The project team will package the DU in accordance with the receiving site's acceptance criteria and move it to the shipping dock. It is anticipated that the DU stock items will be packaged as waste and shipped to the Nevada Test Site. The remaining DU will likely all have to be shipped to an off-site processing facility.

Removal of Legacy Waste will be accomplished by RMRS project team personnel. The activity involves taking previously packaged waste and repackaging it to be in compliance with the Nevada Test Site's (NTS) Waste Acceptance Criteria. After repackaging, the containers are sealed put on to a truck and shipped to NTS. All these actions are performed by project team personnel.

The Waste Packaging and Removal activity is the same as "Remove Legacy Waste" except that the feed waste has not previously been containerized.

The Contaminated Area will mostly be reduced by RMRS project personnel. That is, the radiological surveys, Radiological Engineering analysis and paperwork, Industrial Hygiene survey and analysis and final deposing will all be completed by project team personnel. Beryllium and other hazardous constituent analysis will be completed by approved off-site laboratories. The project team may commission the assistance of a qualified expert to provide sound technical justification for reducing the contaminated area survey requirements, and to analyze the characterization data accumulated.

Project Management and Planning will be performed by RMRS project team personnel.

Work for Others will be performed by the RMRS project team personnel. In general, this activity mirrors the actions required in the Remove Legacy Waste element. The elements that have been described to date (see Section 2, Project Scope) involve opening and inspecting existing containers and then repackaging the contents to meet NTS WAC and shipping the new containers to NTS.

Currently, the project team envisions that the demolition portion of decommissioning will be performed by subcontracted services. The remainder of decommissioning is envisioned to be completed by the RMRS project team personnel. However, these plans will likely change during the detailed decommissioning planning of the project.

All work with voltages over 480 volts will be performed by the Site's Plant Power organization.

7. ENVIRONMENTAL, HEALTH, SAFETY, AND QUALITY

7.1 Environmental Compliance

RMRS is fully committed to regulatory compliance and environmental cleanup and stewardship at RFETS. This commitment includes compliance with environmental laws and regulations; nuclear safety and management requirements; applicable agency agreements, and approved compliance schedules. RMRS is committed to conducting management and operations in a manner that gives priority to performance that attains regulatory compliance and the goals of Site closure.

Programs are in place to support compliance with environmental regulations from Title 40 Code of Federal Regulations (CFR) and Colorado environmental laws and regulations, nuclear regulations outlined in Title 10, finalized agency agreements, consent orders, applicable DOE Orders and DNFSB recommendations. To track and ensure compliance with external commitments, management systems and tools have been developed and are utilized. The ability to maintain compliance with DOE Orders for both environmental and nuclear activities is achieved largely through programmatic implementation and requests for exemption.

The ultimate goal of rapid, effective, and safe closure of the Site must be the prime consideration to ensure that activities and resources are optimally applied to achieve the Site Vision described in the Rocky Flats Cleanup Agreement. Compliance is a key element for success; therefore the commitment to compliance is constant under all funding scenarios. The implementation of this commitment involves balancing resources between baseline compliance and cleanup and closure.

It is the express intent of the Site to maintain compliance under any scenario. Activities at Rocky Flats comply with the requirements of the following (non-inclusive) list:

- RFCA
- Price Anderson
- Site Treatment Plan (STP)
- Federal Facility Compliance Agreement (FFCA)
- Residue Consent Agreement
- Toxic Substances Control Act (TSCA)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Resource Conservation and Recovery Act (RCRA)
- National Pollutant Discharge Elimination System (NPDES)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- McKinney Act
- Price-Anderson Amendments Act (PAAA)
- National Historic Preservation Act (NHPA)

- Occupational Safety and Health Act (OSHA)
- National Environmental Policy Act (NEPA)

Each project activity will be evaluated for compliance with applicable regulations prior to performing the activity. The extent of the evaluation will vary with the complexity of the activity. Evaluations will be performed by management and subject matter experts (SME's) from the project team, and when deemed necessary will also include SME's outside of the project team and involvement of appropriate RMRS compliance organizations. Additionally, a NEPA Environmental Checklist will be submitted through the Environmental Compliance Organization.

The project team will be conducting internal and external scoping meetings for both the Hazards Reduction and Decommissioning phases. The planned activities will be discussed with the attendees, which will include internal and external experts. These meetings are intended to enhance communication and provide some checks and balances to the project plan.

7.2 Safety

7.2.1 Integrated Safety Management

Prior to the start of any of the operational activities identified in the project schedule, management and supervision, working with appropriate craft personnel, will prepare a Job Hazard Analysis (JHA) and provide actions to be taken to eliminate or mitigate any identified hazards. Job walk downs to identify and mitigate hazards are an integral part of the IWCP process.

The **Five Core Elements of ISMS** will be applied to all work activities carried out through the course of this project. The **Five Core Elements of ISMS** are:

1. Define the Scope of Work
2. Identify and Analyze the Hazards
3. Identify and Implement Controls
4. Perform the Work
5. Provide Feedback

The Building 444 Hazards Reduction working plans include performing all of these functions. Table 7-1 identifies the application of **ISMS** processes for the project based on current information. This table will be updated, or activity specific exceptions made, if new information is encountered during detailed work planning or performance.

7.2.2 Integrated Work Control Process (IWCP)

Review of hazard assessment information will be completed to identify/verify potential hazards within the work area so that the IWCP can be developed to ensure that individuals assigned to work within an area

are properly trained and protected. The IWCP implements the Integrated Safety Management System (ISMS) and provides detailed guidance on how the five core elements of ISMS are to be integrated into work planning and execution.

IWCP ensures that work is screened consistently to uniform criteria and that hazards are appropriately analyzed and controlled. Specifically, IWCP:

- Describes the process to identify the nature of the work or activity.
- Prescribes the methods to identify hazards and define specific activity controls.
- Describes the process for identifying the proper level of planning (graded approach).
- Describes the process for establishing the appropriate work controls and documentation.
- Provides detailed description for developing operations and technical activity procedures.
- Describes processes and controls for work closeout.
- Provides a mechanism for feedback to ensure continuous improvement through the use of a Post Job Review Process, procedures reference library and lessons learned.

7.2.3 Project Health and Safety Plan (HASP)

The Project team Health & Safety Professionals have determined that a project specific HASP is not required and hence will not be developed. The project will utilize the RMRS HASP for general safety requirements and guidelines. However, project specific safety requirements will be developed when the activity execution instructions are developed.

Table 7-1. B444 Hazards Reduction activity based work planning requirements defined safety process.

Activity type	Work Definition Process	Hazard Analysis Process	Control Process (Includes Readiness Demonstration)	Work Performance Process	Feedback Process
Routine maintenance	MAL ISM	N/A	Pre-job briefing POD	1-G32-IWCP-5	1-MAN-013-SIOM ISM
Contamination zone characterization	IWCP RadCon Manual	SME review	Team hazard assessment POD Pre-job briefing	COOP	1-MAN-013-SIOM ISM
Excess Chemical Roundup/Sampling/Consolidating/Removal	MAL IWCP RadCon Manual	SME review	POD Pre-job briefing	Chemical Management Manual	1-MAN-013-SIOM ISM
Equipment De-Energization/Isolation	IWCP HSP 15.00	SME review	Team hazard assessment Readiness demonstration	COOP	1-P45-MA-001 1-MAN-013-SIOM ISM
Equipment Fluid Draining	IWCP RadCon Manual WSRIC WGI	SME review	Team hazard assessment POD Pre-job briefing	COOP	1-MAN-013-SIOM ISM
Contaminated equipment dismantlement *	IWCP Configuration Control RadCon Manual	Activity Control Envelope	SAR review Team hazard assessment POD Pre-job briefing	COOP	1-MAN-017-LL/GI-RM 1-MAN-013-SIOM ISM
Movement/Hoisting/Rigging/Packing/Blocking & Bracing of material and Equipment	IWCP WSRIC WGI	SME review DES-210	Team hazard assessment POD Pre-job briefing	COOP	1-MAN-013-SIOM ISM
Waste Removal/Packing including repackaging	IWCP WSRIC WGI	SME review	Team hazard assessment POD Pre-job briefing	COOP	1-MAN-013-SIOM ISM

*Dismantlement of equipment will be dependent upon disposal method selected and therefore packaging requirements.

7.3 Quality Assurance

7.3.1 Quality Assurance Criteria per 10 CFR 830.120

QA criteria listed in this project plan are the required elements to comply with DOE's quality requirements as defined in 10 CFR 830.120. The application and implementation of these criteria into items and services shall be consistent with the graded approach. The graded approach is a "process of basing the level of application of managerial controls applied to an item or work according to the intended use of the results and the degree of confidence needed in the quality of the results" (E-4, ANSI/ASQC, 1994). The graded approach is also a function of safety (risk) and security required to accomplish program objectives (10 CFR 830.120).

7.3.2 Quality Management

The project quality program implements requirements set forth in 10 CFR 830.120, which are flowed down through the RFETS-specific quality documents of K-H (K-H Team Quality Assurance Program, 12/15/97) and the company specific quality assurance programs.

7.3.3. Personnel Training and Qualification

Personnel shall be qualified to perform their respective tasks based on a combination of education, training, and experience. Education and professional experience shall constitute the primary means of qualification for activities that emphasize problem-solving strategies, where creativity and innovation are essential components of optimizing the activity or item

Fundamental education and experience are captured by transcripts and resumes, which are maintained by company specific human resources or the subcontractor, as applicable. Project-specific training records are managed within the project file and the K-H TSR (Training, Scheduling, and Records) database. Qualification requirements and records are also be maintained through the project manager, procurement (within contractual agreements), and the centralized training group within RMRS.

7.3.4 Quality Improvement

Quality improvement is realized through use of a systematic means of identifying, tracking, and correcting problems (deficiencies, non-conformances, issues, etc.). Problems may be identified by any project personnel, at any time, through formal documentation of issues as stated in 1-MAN-012-SCARM, *Site Corrective Action Requirements Manual*. Management and independent assessments will also be used to identify, track, and corrected. The extent of causal analysis and corrective action shall be commensurate with the significance of the failure or problem. "Lessons Learned" shall be communicated to staff from management where appropriate.

7.3.5 Documents and Records

Work-controlling documents, such as work plans (including Integrated Work Control Program (IWCP) packages, standard operating procedures, Job Hazards Analysis, etc., shall be controlled, where "control" is constituted by the following criteria:

- The documents are uniquely identified for reference purposes;

- The required reviews and approvals are accomplished; and,
- The personnel, who need the documents to perform work, receive the latest approved versions of the document(s).

The document control process is described in procedure MAN-063-DC, *Document Control Program Manual*.

Quality records, including digital data stored on computerized media, shall be managed to ensure that information is retained, retrievable, and legible. Active records will be maintained by project personnel, including subcontractors, in an organized and retrievable fashion, until such time that the records have served their purpose and become inactive.

8. WASTE MANAGEMENT AND MINIMIZATION

8.1 Waste Management

A project specific Waste Management Plan (WMP) will be developed for the Building 444 Cluster Removal Project and included as Appendix I to this PEP. The WMP will identify types and amounts of waste material that is expected to generated, and will address waste management activities from generation through storage/disposal. The initial issue of the WMP will address wastes expected to be generated during the Hazards Reduction phase. Updates to the WMP will be issued as the project progresses and additional information or circumstances are identified.

Hazards Reduction activities are expected to generate the types and quantities of waste shown in Table 8-1. Decommissioning activities are expected to generate the types of waste shown in Table 8-2. As planning for these phases progresses, the quantities shown in Table 8-1 will be refined.

8.2 Waste Minimization

In most cases, it will not be cost effective to reduce of the amount of LLW generated by survey and decontamination for free release. Therefore waste minimization efforts will focus on:

- Segregation of waste (e.g. lead will be separated from components) to minimize the amount of LLMW and/or RCRA waste that is generated.
- Recycling of metal waste when economically beneficial.
- Efficient packaging of waste to maximize the amount of waste in a given waste disposal container.
- The project team will consult with the Pollution Prevention organization in the planning phases for Hazard Reduction and Decommissioning to determine if other waste minimization techniques can be economically employed.

Table 8-1 Types of Waste Expected to be Generated During Hazard Reduction

Activity	Material Type(s)	Disposal/Disposition	Quantity (preliminary estimate)
Combustible Removal (WBS 1.1.05.10.02.01)	LLW	Disposal	Included in waste removal and packaging
Chemical Removal (WBS 1.1.05.10.02.02)	RCRA and LLMW	Disposal	300 containers
Equipment Removal (WBS 1.1.05.10.02.03)	LLW	Potential for recycle or transfer to others	Included in waste removal and packaging
Remove People and Sources (WBS 1.1.05.10.02.04)	Radiation Sources	On-site storage or off-site disposal	21 radioactive sources
Deactivate Process Equipment (WBS 1.1.05.10.02.05)	Waste oil, RCRA and LLMW	Disposal	1500 gals
Remove Depleted Uranium (WBS 1.1.05.10.02.06)	LLW, recycle	On site storage, Transfer to DOE, disposal, Recycle	170,000 lbs
Remove Legacy Waste (WBS 1.1.05.10.02.07)	RCRA, LLW and LLMW	Disposal	455 drums 24 crates 4x4x7
Waste Packaging and Removal (WBS 1.1.05.10.02.08)	LLW and LLMW	Disposal	2700 m ³
Reduce Contaminated Area (WBS 1.1.05.10.02.09)	LLW (minimal)	Disposal	minimal
Project Management and Planning (WBS 1.1.05.10.02.10)	LLW (minimal)	Disposal	minimal
Work For Others (WBS 1.1.05.10.02.11)	LLW and LLMW	Disposal Transfer to DOE	7 crates 79 drums

Table 8-2 Types of Waste Expected to be Generated During Decommissioning

Activity	Material Type(s)	Disposal/Disposition
Asbestos	LLW	Disposal
Chemical Removal	RCRA and LLMW	Disposal
Process Equipment Removal	RCRA and LLW	Disposal and/or Recycle
Sources	Radioactive Sources	On-site storage/recycle
Process Piping, duct, conduit and electrical power	LLW and LLMW	Disposal Recycle
Reduce Contaminated Area	LLW from surface decontamination	Disposal
Project Management and Planning	LLW PEP Waste	Disposal

PROJECT EXECUTION PLAN

9. STAKEHOLDER

Stakeholder involvement in the B444 Cluster Removal Project is mandated by several laws, is the policy of the DOE, and a project goal. The stakeholders to this project include regulators, the public, project workers (including subcontractors) and anyone affected by the project. Stakeholder involvement will increase as the project transitions through Hazards Reduction into Decommissioning and finally into Remediation.

9.1 Collaboration and Endorsement

All project plans will be reviewed and endorsed by appropriate parties such as the project manager, the safety organization(s), Radiological Engineering, facility management and others to ensure coordination and collaboration toward achievement of project goals. Continuing reviews, oversight, project meetings and project reports on the ongoing status of the project by project team members, management, the client (K-H), compliance organizations, internal support organizations, DOE and external parties such as special interest groups, CDPH&E and the DNFSB will ensure continuing endorsement of project activities.

The Hazards Reduction project team will use a graded approach to the somewhat limited stakeholder involvement in accordance with the Facility Disposition Program Manual requirements. The collaboration and endorsement will be expanded as the project phases into decommissioning. Specific identification and description will be included regarding public involvement associated with decision documents (e.g. IM/IRA, RLCP, etc.).

9.2 Ongoing Collaboration

The RMRS Project Manager is responsible for informing and involving project team members and stakeholders as appropriate through project progress reporting, Job Hazards Analysis and other operational and safety related reporting mechanisms. RMRS Closure Management will inform and involve RMRS Operations and Corporate Management and will share responsibility as appropriate for reporting to the integrating contractor, DOE and stakeholders.

The DOE is the principal external stakeholder for the Hazards Reduction phase. Arrangements have been made to conduct monthly meetings between project staff and DOE to report progress and appropriate issues and considerations. Representatives from CDPHE will be invited to participate on an informal basis. This public involvement process will be expanded when decommissioning planning is initiated. In addition, K-H offers DOE the opportunity to review select project documents for determining appropriate level of compliance with regulations and expectations.

10. ORGANIZATION AND RESPONSIBILITIES

10.1 Team Organization Structure

The organizational hierarchy for the Building 444 Cluster Removal Project is shown in Figure 10-1. This hierarchy will be in place for all phases of the project. Appendix F contains the organizational structure, along with names of key individuals for the current phase of the project. The information contained in Appendix F will be updated as the organizational structure changes, for later phases of the project, and when key individual changes are made.

PROJECT EXECUTION PLAN**10.2 Team Process**

The process used by the project team for execution of the Building 444 Closure project includes the following basic elements:

- Develop the work plan.
- Obtain project endorsement.
- Authorize work performance.
- Implement work.
- Measure and report work performance.
- Document work performance and results.
- Communicate.
- Close the project.

10.3 Responsibilities

Responsibilities for key personnel in the organization chain are shown in Table 10-1. Appendix F contains the names, contact information, and responsibilities for key individuals for the current phase of the project. The information contained in Appendix F will be updated as changes occur.

10.4 Team Interfaces

The definition of these interfaces, including delineation of responsibilities, will be expanded as the project proceeds.

10.4.1. Interfaces with other projects

- Classified Material Repack
- Waste packaging
- Beryllium Characterization
- Non-nuclear reconfiguration
- Y2K program

10.4.2. Interfaces with other site organizations

- Bargaining Unit
- Industrial Health and Safety
- PU&D
- Waste Customer Service Organization
- Security

- Training
- Laundry
- Trucking/Shipping
- Procurement
- Analytical Laboratories

10.4.3. Special considerations for interfaces between buildings

- Impact of project activities on day-to-day activities in surrounding buildings (439, 440, 441, 442, 443, 452, 460, 569, and 664)
- Heightened emergency preparedness and response awareness over the course of the project
- Special considerations for impacts on parking, and vehicle and pedestrian access routes through the duration of the project

10.4.4. Interfaces with DOE

- Oversight of the project
- Review of selected project documents
- Establishment of milestones and measures
- Communication with other stakeholders such as CDPHE

10.4.5. Interfaces with subcontractors

Subcontracts being considered or expected to be placed during the B444 Closure Project include:

- Radioactive metal recycling
- Recycling of depleted uranium chips (turnings)
- Characterization and Final Building Surveys
- Asbestos removal
- Building demolition
- Process equipment removal
- Shipping

Figure 10-1. B444 Cluster Removal Project Organizational Hierarchy

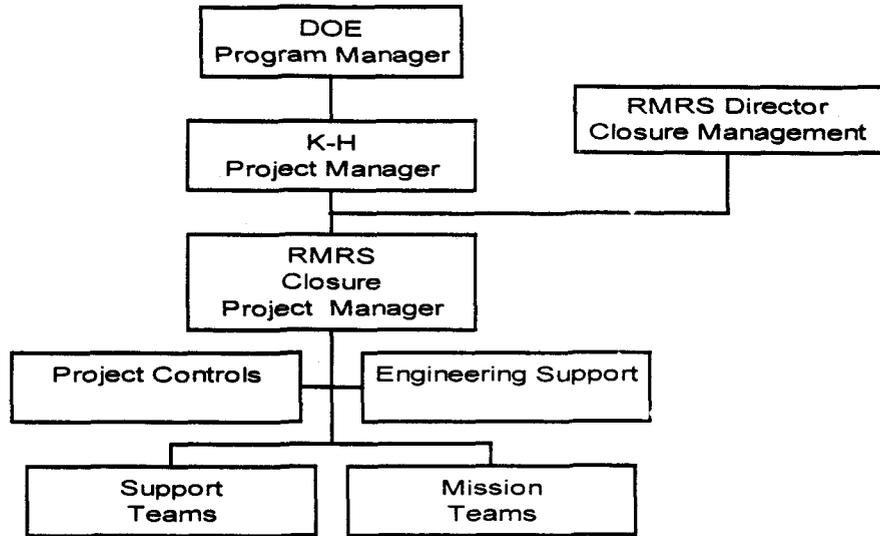


Table 10-1. B444 Cluster Removal Project Organizational Hierarchy Responsibilities

Position	Responsibilities
DOE Program Manager	DOE project owner, sponsor, and champion. Serves as primary point of contact with DOE and regulatory agencies.
K-H Project Manager	Provides K-H oversight for the project.
RMRS Director – Closure Management	RMRS executive level management responsibility for project completion
RMRS Closure Project Manager	Has overall line level management responsibility for the successful execution of the project.
Engineering Support	Responsible for tasks of engineering assessments, evaluations, walk downs and the development of engineering packages.
Project Controls	Maintains project schedule and budget. Controls the approved project funds and manages charge authorization.
Mission Teams	Primary responsibility for execution of project work activities as assigned by the project manager.
Support Teams	Responsible for providing specialized operational, compliance, oversight, coordination, liaison, and subject matter expertise support to the project.

11 PROJECT WORK BREAKDOWN STRUCTURE

All work at the RFETS is organized in accordance with the integrated site work breakdown structure (WBS). The WBS covers the entire project through project closure. The B444 Closure Project includes all work in the 1.1.05.10 leg of the Site WBS. The WBS structure depicted in this section is the Project Summary Work Breakdown Structure (PSWBS) and also indicates the level of each leg that will be reported to and tracked on the Site Integrated project baseline. Appendix A contains the Hazards Reduction Summary WBS and WBS Dictionary, which is used to manage the project. The WBS has only been developed below level 5 for the landlord (1.1.05.10.01) and the Hazards Reduction (1.1.05.10.02) legs.

B444 CLUSTER REMOVAL SUMMARY WBS

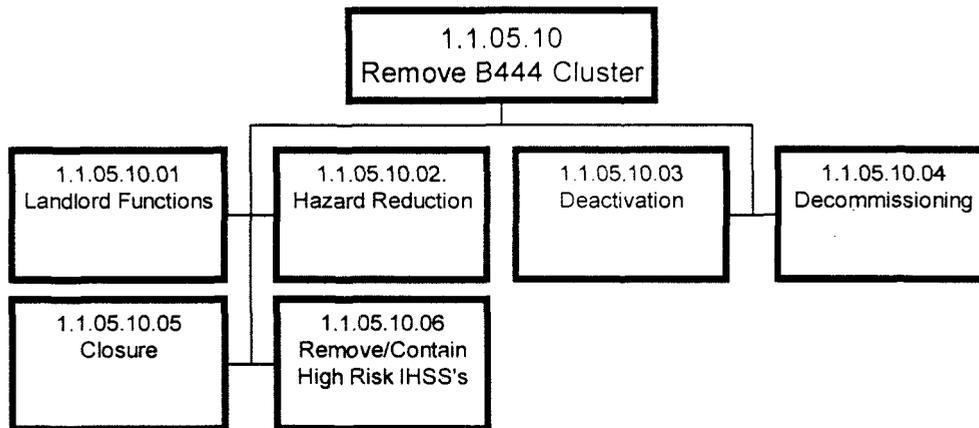


Figure 11-1. WBS Levels 4 and 5 for Removal of B444 Cluster

11.1 Landlord Functions

The Landlord Element (1.1.05.10.01) has been funded for execution during FY1999. Figure 11-2 shows the PSWBS elements for the Landlord element.

B 444 Cluster Landlord Functions WBS Levels 5 & 6

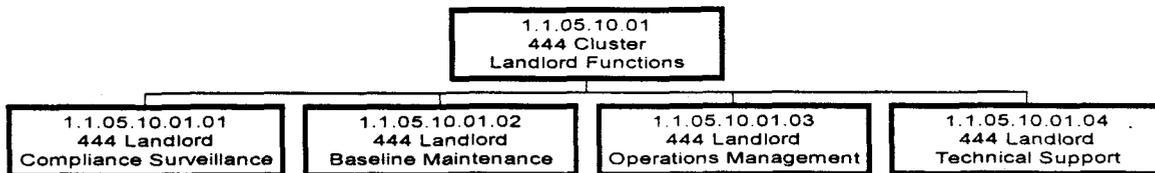


Figure 11-2. WBS Levels 5 and 6 for Removal of B444 Cluster.

11.2 Hazards Reduction

The Hazards Reduction Element (WBS 1.1.05.10.02) has been funded for execution during FY1999. Figure 11-3 shows the PSWBS for the Hazards Reduction work.

B444 CLUSTER REMOVAL SUMMARY WBS HAZARD REDUCTION LEVELS 5 & 6 of WBS

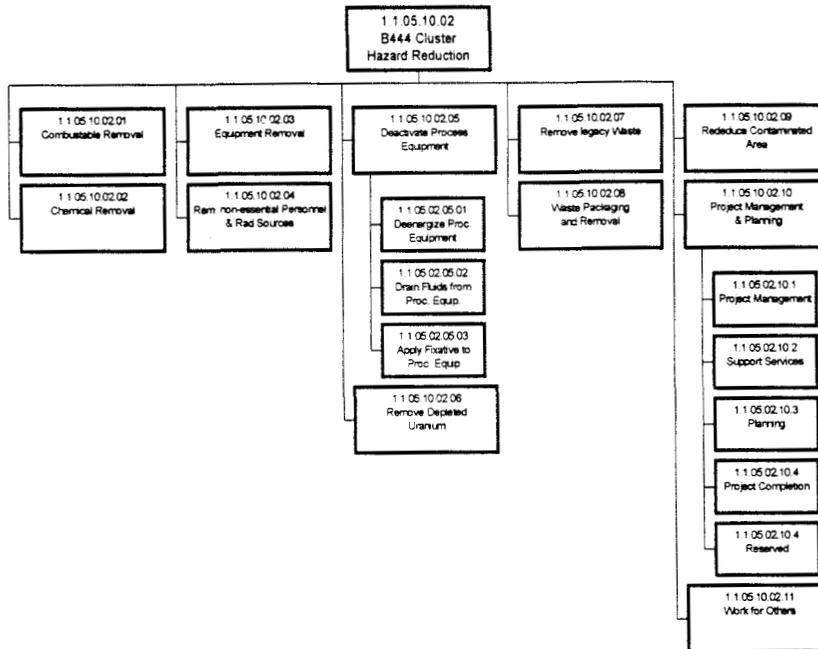


Figure 11-3. PSWBS for Hazards Reduction of B444 Cluster.

11.3 Decommissioning

The PSWBS for the decommissioning leg as currently envisioned for the Cluster is shown in Figure 11-4. Figure 11-5 shows lower levels of the WBS for one of the buildings in the Cluster – Building 444. As with the other legs, the DWBS will be included in Appendix A as each element is developed. These work elements will be the equivalent of “sets” that have been used in planning for decommissioning of other clusters on site (e.g. B771, B776).

444 CLUSTER DECOMMISSIONING WBS LEVELS 5 & 6

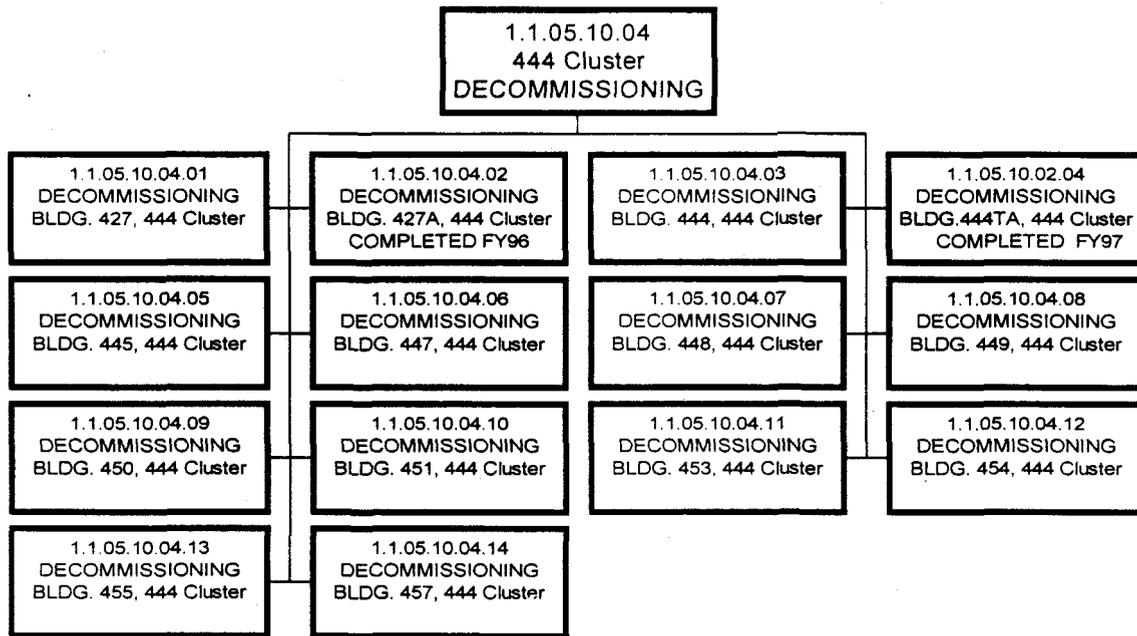


Figure 11-4. Decommissioning Levels 5 and 6 B444 Cluster Removal

BUILDING 444 DECOMMISSIONING LEVELS 6, 7, 8 & 9, WBS 1.1.05.10.04.03

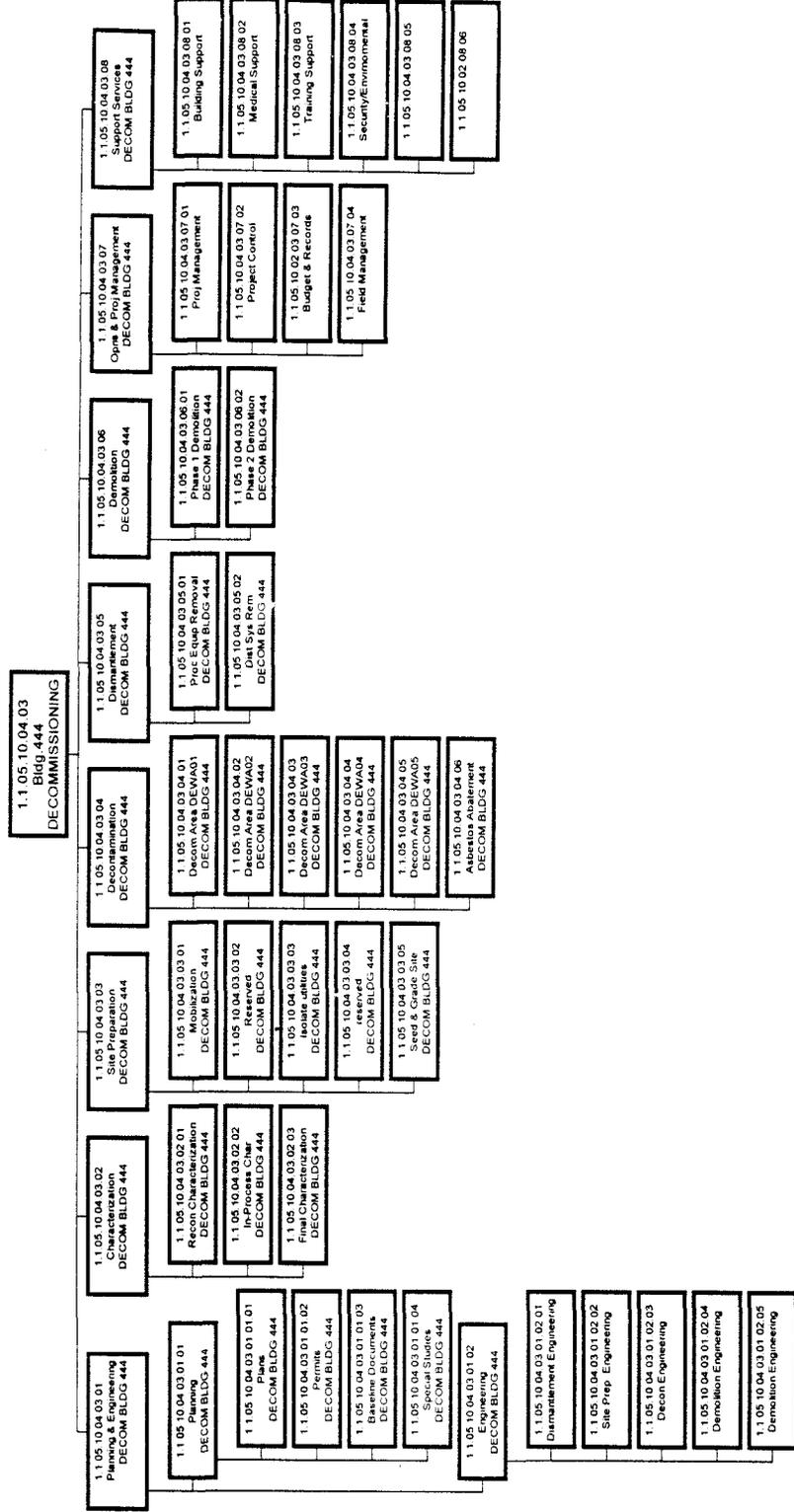


Figure 11-5 B444 Decommissioning PSWBS

PROJECT EXECUTION PLAN

12 BUDGET

12.1 Life Cycle Budget

The 444 Cluster Removal Hazards Reduction budget is based on the current Basis of Estimate, which has been reviewed by K-H, DOE and independent teams. Table 12-1 contains the Life Cycle Estimate for the B444 Cluster Removal Project. The WBS elements shown reflect figures from the Work Proposal Document Detailed Cost Plan and from roll-up of the Project's FY 1999 numbers, which are found in the Cost Plan (Section 12.2) and the Project Cost Estimate (Appendix C).

12.2 Cost Plan for B444 Cluster Removal Project

The Cost Plan for the B444 Cluster Removal Project is shown in Figure 12-1. The Cost Plan breaks down the budget and actuals for major WBS elements of the Project from previous years to completion. The current fiscal year is detailed by month for the applicable elements.

12.3 Basis & Validation

The fiscal year 1999 Hazards Reduction Project estimates are included in the Basis of Estimate Software Tool (BEST) database. These cost estimates were originally validated by individual teams with members that are not performing the work. As the plan for this project and the information contained in the PEP are refined, the Project estimate contained in BEST will be updated. This will occur as the major WBS elements in the PSWBS are subdivided and planned within progressively lower WBS elements by the SMEs and project team, and then validated.

12.4 Financial Work Authorization

The Project Manager will educate the project team, as appropriate, to the Financial Work Authorization discussion below. This will occur at the Project Team Meetings and through individual interactions with the Project Manager.

The Kaiser-Hill project control system uses three levels of authorization:

- 1) Authorization from DOE, RFFO to Kaiser-Hill,
- 2) Authorization from Kaiser-Hill to the prime subcontractors, and
- 3) Authorization from Kaiser-Hill and the prime subcontractors to lower-tier subcontractors.

Authorization from DOE, RFFO to Kaiser-Hill -- Work authorization from DOE, RFFO to Kaiser-Hill is performed at least once annually, just prior to the beginning of the new fiscal year (execution year). This authorization takes two forms: issue and approval of a PBS, and modification to the Kaiser-Hill contract to establish funding authority and allow Kaiser-Hill to incur costs. The PBS is issued at the project level, while funding authorization is made according to Budget & Reporting (B&R) code structure. (However, after FY98 essentially all funding *may* be one B&R code.) During the course of the execution year funding authorization is updated based either on release of incremental funding or as the result of a Site Change Control Board (SCCB) action.

Authorization from Kaiser-Hill to the Prime Subcontractors -- Subsequent to receiving authorization from DOE, RFFO, Kaiser-Hill issues work authorization to the prime subcontractors. This authorization takes the form of a contract modification referred to as a "Procurement Authorization Document," or PAD

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The subcontractor's ability to incur costs is limited to the amount of the PAD. Thus, the PAD is modified periodically throughout the execution year. The PAD is issued at the lowest work breakdown structure level by which the prime subcontractor(s) will collect and accrue cost. However, due to late authorization from Congress, continuing resolution *may* be issued to continue work until formal budget authorization.

Authorization from Kaiser-Hill and the Prime Subcontractors to Lower-tier Subcontractors --

These authorizations to so-called 3rd tier subcontractors take the form of purchase orders. Each purchase order establishes work scope, terms and conditions, and authorized cost.

Table 12-1 Life Cycle Estimate for B444 Cluster Removal Project

WBS Element	Activity Title	Thousands of Dollars
1.1.05.10.01	444 cluster landlord functions	6,836
1.1.05.10.01.01	Compliance surveillance, Landlord	0
1.1.05.10.01.02	Baseline maintenance, Landlord	0
1.1.05.10.01.03	Operations Management, Landlord	0
1.1.05.10.01.04	Technical Support, Landlord	0
1.1.05.10.02	444 Cluster stabilization/Hazard Removal	4,285
1.1.05.10.02.01	Combustible removal, Stab/Hazard Red	149
1.1.05.10.02.02	Chemical Removal, Stab/Hazard Red	180
1.1.05.10.02.03	Equipment removal, Stab/Hazard Red	149
1.1.05.10.02.04	People & Source Removal, Stab/Hazard Red	85
1.1.05.10.02.05	Process Equipment Deactivation, Stab/Hazard Red	424
1.1.05.10.02.05.01	De-energize Process Equipment	210
1.1.05.10.02.05.02	Drain Process Equipment Liquids	194
1.1.05.10.02.05.03	Apply Fixative Process Equipment	20
1.1.05.10.02.06	Depleted Uranium Removal, Stab/Hazard Rem	117
1.1.05.10.02.07	Legacy Waste Removal, Stab/Hazard Rem	405
1.1.05.10.02.08	Waste Packaging & Removal, Stab/Hazard Rem	600
1.1.05.10.02.09	Reduction of Contaminated Area, Stab/Hazard Rem	135
1.1.05.10.02.10	Project Mgt. & Planning, Stab/Hazard Removal	1,965
1.1.05.10.02.10.1	Proj Mgt, Proj Mgt & Planning	120
1.1.05.10.02.10.2	Support Services, Proj Mgt & Planning	1,752
1.1.05.10.02.10.3	Planning, Proj Mgt & Planning	73
1.1.05.10.02.10.4	Hazard Reduction Closeout activities	20
1.1.05.10.02.10.5	Reserved	0
1.1.05.10.02.11	Work for Others	119

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WBS Element	Activity Title	Thousands of Dollars
1.1.05.10.04	444 cluster Decommissioning	23,624
1.1.05.10.04.01	Decommissioning Building 427	0
1.1.05.10.04.02	Decommissioning Building 427A	50
1.1.05.10.04.03	Decommissioning Building 444	19,669
1.1.05.10.04.04	Decommissioning Building 444A	40
1.1.05.10.04.05	Decommissioning Building 445	52
1.1.05.10.04.06	Decommissioning Building 447	3,344
1.1.05.10.04.07	Decommissioning Building 448	52
1.1.05.10.04.08	Decommissioning Building 449	132
1.1.05.10.04.09	Decommissioning Building 450	105
1.1.05.10.04.10	Decommissioning Building 451	65
1.1.05.10.04.11	Decommissioning Building 453	10
1.1.05.10.04.12	Decommissioning Building 454	24
1.1.05.10.04.13	Decommissioning Building 455	65
1.1.05.10.04.14	Decommissioning Building 457	16
1.1.05.10.05	444 cluster Closure	18
1.1.05.10.06	Remediate/Contain 444 Cluster High Risk IHSSs	3,990
1.1.05.10	TOTAL	38,752

Table 12-1 (continued)

13 PROJECT SCHEDULE

Appendix B contains the project summary schedule at the PSWBS level of detail. This PSWBS schedule is a roll up of the project detail schedules and contains an activity for each WBS line reported in the Project Management report. Other schedules are used by the project for daily management of the work (reference Section 13.2, Working Plans).

The schedule is in Primavera software format and is loaded into the Site's baseline schedule as the 'Target' schedule. It is only changed by formal Baseline Change Proposal process.

The schedule is developed first, by the project's planning department developing the preliminary scope. This is followed by the Subject Matter Experts expanding the scope into Activity Detail Forms. These forms are translated into WBS elements and a logic is applied by the Project Team. The preliminary schedule is then assembled and updated, as appropriate. The schedule is then refined as pertinent information is received. This is an ongoing process until the schedule is baselined. At that time, a critical path can be extracted and the project team can track the schedule at the lowest level of the WBS on a daily basis.

Kaiser-Hill uses two levels of formal project schedules. The LCB level is a 'roll-up' of lower level working plans. Kaiser-Hill uses the LCB to integrate across projects, and as the performance measurement baseline.

The project team developed the LCB with high probability activity estimates. That is, the LCB activity duration estimates are made up of activities with a better than 80% probability of completion within the scheduled activity duration when required resource levels are allocated and maintained. P&I designates the LCB schedule at the beginning of each fiscal year as LCBZ. BCPs modify the LCBZ schedule, creating LCBT schedules throughout the year. The LCBT schedule is the performance measurement baseline. It keeps the data date as the start of the fiscal year, so activities remain at their early start or constrained time in the LCBT schedule.

13.1. Performance Measurement Baseline Schedule

The Performance Measurement Baseline Schedule is contained in Appendix B.

13.2. Working plans

The working level schedule, which contains detailed scope elements to the lowest level of the WBS, is used to track day-to-day progress. Plan-of-the-Day (POD) meetings are used to integrate the project schedule with Facility Management's Plan-of-the-Day format to authorize work in the cluster. In this way, the Facility and Project Management are both aware of all activities being performed in the cluster on a daily basis. Required authorization documentation is verified at the POD meetings. For example, Integrated Work Control Program packages (if used) and Radiological Work Permits are verified at the meetings.

The project team maintains a rolling three-week schedule that is a subset of the detailed project baseline schedule. This rolling schedule is "stated" and updated weekly, at times designated by the Project Manager. In addition, new information that is received at regularly scheduled project team meetings is also used to update the rolling and detailed project schedules.

14. PROJECT CONTROLS, REPORTING, & DOCUMENTATION

14.1. Work Instructions

The Kaiser-Hill P&I Standards and Work Instructions describe the project planning and control system. These Work Instructions are available on the P&I Intranet Home Page and through K-H Document Control.

14.2. Project Meetings

The following is a schedule of regular project meetings that are held to communicate project status, identify and mitigate obstacles and risks to successful project completion and to maintain open and effective lines of communication between all internal and external elements of the project team. Meeting minutes are logged and maintained in the project file.

Safety	Monthly
Plan of the Day	Daily
All Hands	Monthly
Project Status Meeting with Client	Weekly
Project Team Meeting	Weekly
Project Report Review Meeting	Monthly
Earned Value Review Meeting	Monthly

Monthly Project Review Meetings will provide status data consistent with the requirements in Appendix J.

14.3 Project Reports

Appendix C-2, extracted from the Facility Disposition Program Manual, was reviewed for applicability of documents and deliverables to this project. The results of that review are provided in Appendix I, Document List. This was completed by filling in the status of each line (deliverable) by hand in the "Comments" column of Appendix C-2.

A preliminary assignment of earned value (i.e. Table of values) for Hazards Reduction activities was made and summarized in the following Table 14-1. As the decommissioning planning progresses a similar table will be developed for decommissioning activities.

15. REFERENCE INFORMATION

15.1 Acronyms

ACP	Administrative Change Proposal
ACWP	Actual Cost of Work Performed
AECCM	Architectural Engineering/Construction/Construction Management
AHA	Activity Hazard Analysis
ALARA	As Low As Reasonably Achievable
B&R	Budget and Reporting
BAC	Budget At Completion
BCC	Baseline Change Control
BCP	Baseline Change Proposal
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BEST	Basis of Estimate Software Tool
BOE	Basis of Estimate
CA	Contaminated Area
CAA	Clean Air Act
CDD	Closure Description Document
CDH	Colorado Department of Health
CDPHE	Colorado Department of Public Health and Environment
CPB	Closure Project Baseline
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (The 'Superfund' Law)
COOP	Conduct of Operations
CSO	Customer Service Organization
CWA	Clean Water Act
CWB	Current Working Baseline
CWBS	Contract Work Breakdown Structure
D&D	Decontamination and Decommissioning
DOE	Department of Energy
DOT	Department of Transportation

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EAC	Estimate at Completion
EPA	Environmental Protection Agency
ER	Environmental Restoration
EW	Environmental Waste
FDPM	Facility Disposition Program Manual
FFCA	Federal Facility Compliance Act
FPCO	Final Project Close Out
FY	Fiscal Year
GFE	Government Furnished Equipment
GSA	Government Services Administration
HASP	Health and Safety Plan
HAZ	Hazardous Waste
HUD	Housing Urban Development
ICCB	Internal Change Control Board (Kaiser-Hill Chaired)
IHSS	Individual Hazardous Substance Site
IM/IRA	Interim Measure/Interim Remedial Action
IMC	Integrating Management Contractor
ISMS	Integrated Safety Management System
IWCP	Integrated Work Control Process
K-H	Kaiser-Hill
LLM	Low Level Mixed Waste
LLW	Low Level Waste
LO/TO	Lockout / Tagout
MAL	Master Activity List
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
NTS	Nevada Test Site
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
P3	Primavera Project Planner
P&I	Planning and Integration

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PA&T	Project Acceptance and Transfer
PA	Protected Area
PAAA	Price Anderson Amendment Act
PAD	Project Authorization Document
PBD	Project Baseline Document
PBS	Project Baseline Summary
PCB	Polychlorinated Biphenyls
pCi/l	picoCuries per liter
PDS	Process Delivery System
PEP	Project Execution Plan
PMB	Performance Measurement Baseline
PPE	Personnel Protective Equipment
PPR	Project Performance Reports
PU&D	Property Utilization and Disposal
P/WRE	Property / Waste Release Evaluation
QA	Quality Assurance
QAP	Quality Assurance Plan
QA/QC	Quality Assurance Quality Control Plan
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFCP	Rocky Flats Closure Project
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RMRS	Rocky Mountain Remediation Services
RWP	Radiological Work Permit
SCCB	Site Change Control Board (RFFO Chaired)
SEP	Solar Evaporation Ponds
SHAR	Site Hazardous Assessment Report
SME	Subject Matter Expert
STP	Site Treatment Plan
SWBS	Site Wide Baseline Status
SWDA	Solid Waste Disposal Act

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SWO	Solid Waste Operations
TRU	Transuranic Waste
TSCA	Toxic Substance Control Act
WAD	Work Authorization Document
WBS	Work Breakdown Structure
WGI	Waste Generator Instruction
WMP	Waste Management Plan
WSRIC	Waste Stream Residue Identification and Characterization

15.2 References

A partial list of references is provided below. This list will be updated as project planning progresses.

1. Kaiser-Hill Company, Planning and Integration, Rocky Flats Closure Project (RFCP) Project Management Plan, October, 1997
2. Rocky Flats Environmental Technical Site, 1997 TANK MANAGEMENT PLAN, June 30, 1997
3. Rocky Flats Plant Community Relations Plan, U.S. Department of Energy, December 1, 1991
4. Kaiser-Hill Company, LLC, ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE QUALITY ASSURANCE MANUAL, ADC-96-00042, 2/2/96
5. Site Quality Council, Quality Assurance Program Infrastructure Document List, Revision 2, 5/9/96
6. Kaiser-Hill, Rocky Flats Closures Project (RFCP) Project Management Plan, October, 1997

APPENDIX A

PROJECT SUMMARY WBS

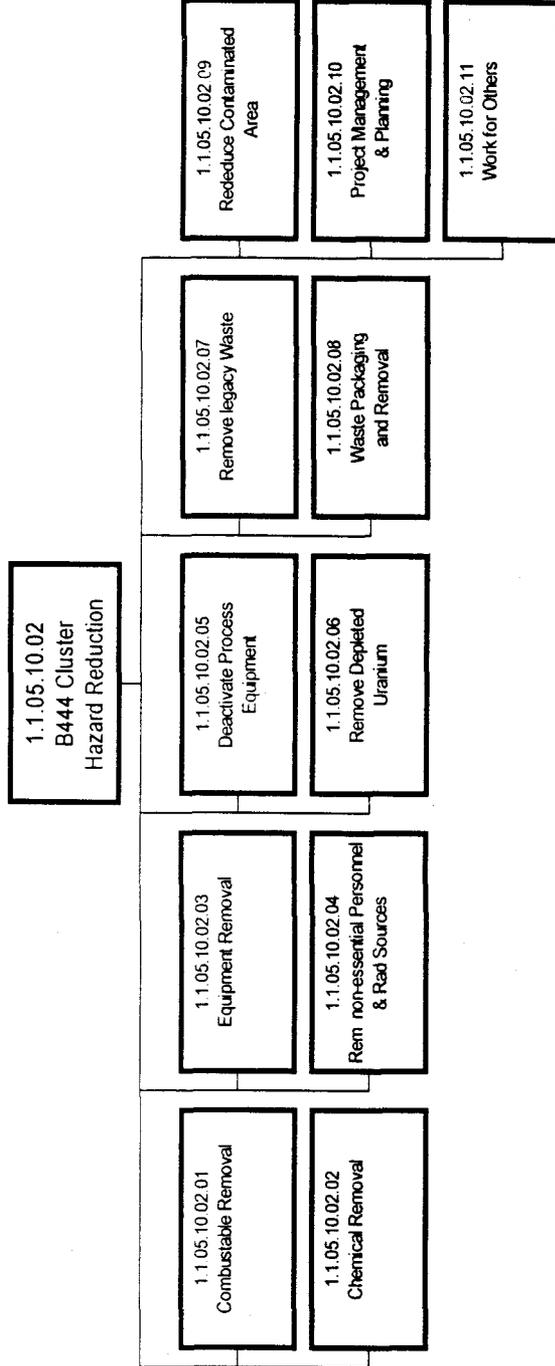
Appendix A Contents

Appendix A-1: 444 Cluster Summary Hazards Reduction WBS

**Appendix A-2: B444 Cluster Summary Hazards Reduction WBS
Dictionary**

B444 CLUSTER REMOVAL SUMMARY WBS

HAZARD REDUCTION LEVELS 5 & 6 of WBS 1.1.05.10.02



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Appendix A 1: Cluster 444 Removal WBS Dictionary Part 2:

1. PROJECT TITLE/SUB-PROJECT TITLE 444 Cluster Removal	2. DATE 10/15/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02	5. WBS ELEMENT TITLE 444 Cluster Hazard Reduction	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
<p>9. ELEMENT TASK DESCRIPTION:</p> <p>The objective of this WBS element is to accomplish Hazard Reduction of the entire B444 cluster. It is the summary element that provides the total data for the Hazard Reduction.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, matrixes cost, and subcontractor costs that are associated with Hazard Reduction.</p> <p>b. Technical Content: Includes all requirements for the accomplishment of Hazard Reduction. Elements of project are as follows:</p> <ol style="list-style-type: none"> 1. Reduction of combustibles to absolute minimum. 2. Elimination of excess chemicals in the cluster. 3. Removal of detectable quantities of Depleted Uranium. 4. Removal of equipment approved for removal. 5. Deactivation of non essential process equipment 6. Remove non-essential building occupants & Radioactive Sources 7. Removal of legacy waste 8. Packaging & removal of loose waste 9. Reduction of contaminated to a minimum area 10. Project Management & Planning 11. Work for Others <p>c. Work Statement: Work is detailed at the WBS level that it occurs. The next level of the WBS includes the following summary elements. Each of these elements contain sub elements as necessary to completely define the work</p> <ul style="list-style-type: none"> • 1.1.05.10.02.01 Combustible Removal. • 1.1.05.10.02.03 Equipment Removal • 1.1.05.10.02.05 Process Equipment Removal • 1.1.05.10.02.07 Legacy Waste Removal • 1.1.05.10.02.09 Reduce Contaminated Area • 1.1.05.10.02.1 Work for Others • 1.1.05.10.02.02 Chemical Removal, 444 Cluster • 1.1.05.10.02.04 People & Source Removal, 444 Cluster • 1.1.05.10.02.06 Depleted Uranium Removal, 444 Cluster • 1.1.05.10.02.08 Waste Packaging & Removal, 444 Cluster • 1.1.05.10.02.10 Project Management & Planning. <p>THIS IS A SUMMARY LEVEL WBS ELEMENT</p>		

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A.2.1 WBS 1.1.05.10.02.01 COMBUSTIBLE REMOVAL, STABILIZATION/HAZARD REMOVAL, 444 CLUSTER

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.01	5. WBS ELEMENT TITLE Combustible Removal	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
<p>9. ELEMENT TASK DESCRIPTION</p> <p>The objective of this element is to provide the cluster specific effort necessary to accomplish the combustible removal tasks for the hazard reduction of the 444 cluster.</p> <ul style="list-style-type: none"> a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with combustible removal. b. Technical Content: The scope of this item includes minimizing the risk of fire due to combustibles present in the cluster. This means removal of all combustible materials in the Cluster that can be eliminated without a Rocky Flats Cleanup Agreement (RFCA) Decision Document. Walls, ceilings, and floors that are permanent parts of the facilities do require a Decision Document to remove. Examples of combustible materials are: wood, paper, plastic, packaging materials, sound proofing, and combustible liquids. Removal of combustibles is accomplished by packaging them as low level waste, as Item Description Code (IDC) 326. • Work Statement: The work covers combustible removal tasks. These tasks are performed by geographical area at the next level of the WBS. <p>THIS IS A SUMMARY LEVEL WBS ELEMENT</p>		

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A.2.1 WBS 1.1.05.10.02.02 CHEMICAL REMOVAL, STABILIZATION/HAZARD REDUCTION, 444 CLUSTER

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.02	5. WBS ELEMENT TITLE Chemical Removal	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
9. ELEMENT TASK DESCRIPTION		
<p>The objective of this element is to provide the cluster specific effort necessary to accomplish the chemical removal tasks for the hazard reduction.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with removal of chemicals.</p> <p>b. Technical Content: Collect all existing chemical analytical data. For those chemicals that remain and/or are discovered during the Hazards Reduction activities, sample and disposition to the appropriate waste chemical collection location, external to the 444 Cluster. The element includes removal of unattached PCB contaminated ballasts and all known regulated materials, and those that are discovered during the Hazards Reduction activities. For example, the regulated materials that are discovered during the repackaging of legacy waste containers, and those liquids determined to be regulated during the draining of fluids operation.</p> <p>c. Work Statement: The work covers combustible removal tasks. . These tasks are further defined at the next level of the WBS.</p>		
THIS IS A SUMMARY LEVEL WBS ELEMENT		

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1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/26/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.03	5. WBS ELEMENT TITLE Equipment Removal	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
9. ELEMENT TASK DESCRIPTION		
<p>The objective of this element is to provide the cluster specific effort necessary to accomplish the equipment removal tasks for the hazard reduction of the 444 cluster.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with equipment removal.</p> <p>b. Technical Content: This element summarizes the equipment removal for the entire cluster. Excess materials and supplies used for the cluster mission are considered equipment for this project. This includes the removal of process equipment that is to be salvaged and turned into PU&D and it includes removal of equipment, declared as waste, that is not permanently attached to the cluster surfaces such as: computers, , and cabinets. The only accountable equipment remaining in the cluster after the completion of this activity, will be part of the decommissioning scope. There are currently nine separate work areas planned for this activity to include machine tools, equipment requiring an economic disposition plan, and other accountable government property. This activity also includes packaging and removal of various equipment that is being shipped to Los Alamos National Laboratory. The equipment being shipped offsite is generally funded externally unless it is beneficial to the project to expedite the action and fund it internally.</p> <p>c. Work Statement: The work covers equipment removal tasks. These tasks are performed by type of equipment or geographical area at the next level of the WBS.</p>		
THIS IS A SUMMARY LEVEL WBS ELEMENT		

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 11/04/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.04	5. WBS ELEMENT TITLE Remove non-essential personnel and Rad Sources	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
<p>1. ELEMENT TASK DESCRIPTION</p> <p>The objective of this element is to provide the cluster specific effort necessary to remove the non-essential personnel and the radioactive sources from the cluster.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with removal of non-essential personnel and radioactive sources.</p> <p>b. Technical Content: The scope of this element includes the removal of all non-essential building occupants. The list of building (cluster) occupants will be evaluated, and the personnel that are not directly supporting Hazards Reduction will be moved out of the cluster. It also includes the removal of all non-essential radioactive sources. There are 26 sources on record in the facility. Only five of these are currently required to maintain calibration of needed radiological instrumentation. Includes utilization of the following procedures and work rules.</p> <p style="padding-left: 40px;">Radioactive Source management Property transfer procedures Personnel movement procedure</p> <p>c. Work Statement: The work covers the relocation of personnel and the removal of approximately 21 radioactive sources. These tasks are further detailed at the next level of the WBS.</p> <p>THIS IS A SUMMARY LEVEL WBS ELEMENT</p>		

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 11/04/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.05	5. WBS ELEMENT TITLE Deactivate Process Equipment	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
<p>9. ELEMENT TASK DESCRIPTION</p> <p>The objective of this element is to provide the cluster specific effort necessary to deactivate process equipment in the cluster.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with deactivation of process equipment.</p> <p>b. Technical Content: This element includes three primary activities: De-energize, Drain, and Apply Fixative to process equipment. The resulting end-state places the equipment in a condition that allows for accelerated removal. This work covers the de-energizing of nearly 500 pieces of equipment, draining of 135 pieces of equipment totaling over 1500 gallons of fluid, and applying fixative to over 75 pieces of equipment and to several thousand square feet of building surfaces. Includes utilization of the following procedures and work rules.</p> <p style="padding-left: 40px;">Lock/out: tag/out procedure Liquid disposal procedures Fixative Application procedures Radiological control procedures Property transfer procedures Beryllium program requirements.</p> <p>c. Work Statement: These tasks are separated at the next level of the WBS as follows:</p> <ul style="list-style-type: none"> • 1.1.05.10.02.05.01 De-Energize process equipment • 1.1.05.10.02.05.02 Drain Process Equipment • 1.1.05.10.02.05.03 Apply Fixative to Process Equipment <p>THIS IS A SUMMARY LEVEL WBS ELEMENT</p>		

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.06	5. WBS ELEMENT TITLE Remove Depeted Uranium	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
<p>9. ELEMENT TASK DESCRIPTION</p> <p>The objective of this element is to provide the cluster specific effort necessary to accomplish the Depeted Uranium (DU) removal tasks .</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with removal and disposition of depleted uranium.</p> <p>b. Technical Content: This element includes the removal from the cluster of all depleted uranium (DU) stock, and packaged oxide, turnings (chips), and pieces. This includes approximately 172,000 pounds of stock, approximately 43 drums of oxide, 6 drums of chips, 13 drums of casting residuals, and the 2' x 2' x 2' steel crates of casting residuals. This will leave the cluster free of any quantities of DU stock. The major work areas are in Rooms 32, 101, 202, 204, 403, 405B, 501, and 502.</p> <p>c. Work Statement: These tasks are separated at the next level of the WBS as follows:</p> <ul style="list-style-type: none"> • 1.1.05.10.02.06.01 Remove DU stock • 1.1.05.10.02.06.02 Remove DU casting residuals • 1.1.05.10.02.06.03 Remove DU chips • 1.1.05.10.02.06.04 Remove DU oxide <p>THIS IS A SUMMARY LEVEL WBS ELEMENT</p>		

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.07	5. WBS ELEMENT TITLE Legacy Waste Removal	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
9. ELEMENT TASK DESCRIPTION		
<p>The objective of this element is to provide the cluster specific effort necessary to accomplish the legacy waste removal tasks.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with removal of legacy waste.</p> <p>b. Technical Content: . This element includes the disposition and removal of 455 drums of legacy waste in rooms 101, 201, 205, 444 Basement, and Building 447, and the repackaging of 24 crates of legacy waste. Nearly all this work will be performed in the Beryllium Shop (Room 106) due to the suspected beryllium contamination. The legacy drums and crates will be opened, inspected and repackaged into low level waste crates. The drums will be crushed and old crates cut up to fit into the newly repackaged crates. The newly generated crates will be sealed and either staged out of the cluster or shipped directly to a waste disposal facility.</p> <p>c. Work Statement: The work covers legacy waste removal tasks. These tasks are performed by geographical area at the next level of the WBS. Elements at the next level of the WBS are as follows:</p> <ul style="list-style-type: none"> • 1.1.05.10.02.07.01 LEWA 01 - Building 444 Room 205. • 1.1.05.10.02.07.02 LEWA 02- Building 444 Room 201 • 1.1.05.10.02.07.03 LEWA 03- Building 444 Room 101 • 1.1.05.10.02.07.04 LEWA 04 - Building 444 Basement • 1.1.05.10.02.07.05 LEWA 04 - Building 447 • 1.1.05.10.02.07.06 LEWA 04 - Legacy Waste Crates 		
THIS IS A SUMMARY LEVEL WBS ELEMENT		

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.08	5. WBS ELEMENT TITLE Waste Packaging and removal	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE
<p>9. ELEMENT TASK DESCRIPTION</p> <p>The objective of this element is to provide the cluster specific effort necessary to accomplish the waste packaging and removal tasks.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with waste packaging and removal.</p> <p>b. Technical Content: This includes removal from the cluster of an estimated 2700 cubic meters of the equipment and materials that are not essential to operations in the Cluster and that do not require a RFCA decision document to remove. That is, any objects that are not permanently fixed to cluster surfaces such as: pieces, parts, small tools, desks, chairs, shelves, supplies, molds, and ingots. These items are packaged into waste containers and either staged outside the cluster or shipped directly to an offsite disposal facility. It also includes removal of all non-essential compressed gas cylinders from the cluster.</p> <p>c. Work Statement: The work covers legacy waste removal tasks. These tasks are performed by geographical area at the next level of the WBS.</p> <p>THIS IS A SUMMARY LEVEL WBS ELEMENT</p>		

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction		2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.09		5. WBS ELEMENT TITLE Reduce Contaminated Area	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0		8. REVISION DATE
9. ELEMENT TASK DESCRIPTION			
<p>The objective of this element is to provide the cluster specific effort necessary to accomplish reduce the size of the contaminated area in the B444 Cluster buildings.</p> <p>a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with reducing the size of the contaminated area.</p> <p>b. Technical Content: This activity consists of reducing the areas identified as Contamination Areas within the 444 Cluster (as of October 1, 1998) to Radiological Buffer Areas, Radiological Material Areas, or Controlled Areas. Radiological Engineering and Radiological Operations will determine the requirements for accomplishing this task, in accordance with the Site's Radiological Control Manual and 10CFR 835.</p> <p>c. Work Statement: The work covers contaminated area reduction tasks. These tasks are performed by geographical area at the next level of the WBS.</p>			
THIS IS A SUMMARY LEVEL WBS ELEMENT			

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.10	5. WBS ELEMENT TITLE Project Management and Planning	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO AND AUTHORIZATION Revision 0	8. REVISION DATE

9. ELEMENT TASK DESCRIPTION

The objective of this element is to provide the cluster specific effort necessary to perform project management and planning activities.

- a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with project management and planning.
- b. Technical Content: This element includes the scope for project management, project controls, planning, and support services. This consists of day-to-day management of the project, project meetings, briefings, tours and walk-downs, management reports, administrative functions, compliance with the safety and environmental programs, presentations and charts that provide the technical, cost, and schedule status of the project. It also includes the general management of resources assigned to the project. It involves the justification of the materials and equipment required for the accomplishment of the project. The collection of planning and control data, the development, implementation, and maintenance of computerized costs, schedule, and milestone databases. Develop and submit all budget submittals for the project. Prepare and issue cost performance reports. Coordinate, prepare, and issue all project schedules.
- c. Work Statement: The work covers project management and planning activities.. These tasks are subdivided by function at the next level of the WBS.

THIS IS A SUMMARY LEVEL WBS ELEMENT

PROJECT EXECUTION PLAN

1. PROJECT TITLE/SUB-PROJECT TITLE B444 Cluster Removal/Hazard Reduction	2. DATE 10/19/98	3. CHARGE NO.
4. WBS ELEMENT CODE 1.1.05.10.02.11	5. WBS ELEMENT TITLE Work for Others	
6. PAGE NUMBERS Page 1 of 1	7. REVISION NO. AND AUTHORIZATION Revision 0	8. REVISION DATE

9. ELEMENT TASK DESCRIPTION

The objective of this element is to provide the cluster specific effort necessary to accomplish work for others.

- a. Cost Content: Contractor direct and indirect personnel costs, material costs, and subcontractor costs that are associated with work for others.
- b. Technical Content: This element includes all the activities that have been requested to be performed inside the cluster facilities. It includes inspection of 24 remaining crates for classified matter and repackaging into new crates, the continuance of packaging and shipment of loose waste from FY1998, inventory and repackaging of 13 drums inside the Protected Area "NTS Trailer," inventory and repackage of 2 drums originally destined for Los Alamos National Laboratory, inventory and repackage of seven crates in the "NTS Trailer," inventory and repackage of eight drums of beryllium and graphite in the "NTS Trailer," and inventory and repackage of over 50 drums with beryllium contaminated contents currently located in Building 991.
- c. Work Statement: Individual work efforts are identified on a task by task basis at the next level of the WBS.

THIS IS A SUMMARY LEVEL WBS ELEMENT

APPENDIX B- PROJECT SCHEDULES

Appendix B Contents

Summary Schedule - 3 sheets

Detailed Schedule - 11 sheets

OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP
 FY99

Activity ID	WBS	Orig Dur	Early Start	Early Finish
EQUIP REM ALL BLDG'S CLUS 444				
444H030000	1.1.05.10.02.03	180*	10DEC98	18AUG99
Equip Manage/removal coldside building 444				
REM PEOPLE & SOURCES ALL BLDG'S CLUS 444				
444H040000	1.1.05.10.02.04.01	11*	20MAY98	03JUN99
REM PERS & SOURCES HAZ RED C444				
REMOVE SOL PROCES EQUIP HAZ RED C444				
444H040200	1.1.05.10.02.04.02	11*	20MAY99	03JUN99
REM SOURCES HAZ RED C444				
DEACTIVATE PROC EQUIP ALL BLDG'S CLUS 444				
444H050000	1.1.05.10.02.05	191*	16NOV98	09AUG99
DEACTIVATE PROC EQUIPMENT HAZ RED C444				
DEENERGIZE PROC EQUIP HAZ RED C444				
444H050100	1.1.05.10.02.05.01	50*	01JUN99	09AUG99
DEENERGIZE PROC EQPT HAZ RED C444				
DRAIN PROCES EQUIP ALL BLDG'S CLUS 444				
444H050200	1.1.05.10.02.05.02	50*	01JUN99	09AUG99
DRAIN PROC EQPT HAZ RED C444				
FIXATIVE APP HAZ RED C444				
444H053000	1.1.05.10.02.05.03	34*	16NOV98	31DEC98
Apply Rad/Be Contam ctrl Fixative Bldg 444				
REMOVE DU FROM ALL BLDG'S CLUS 444				
444H060000	1.1.05.10.02.06	76*	01DEC98	16MAR99
DEPLETED URANIUM REMOVAL, HAZ RED, C444				
REM LEGACY WASTE ALL BLDG'S CLUS 444				
444H070000	1.1.05.10.02.07	164*	08DEC98	23JUL99
Legacy waste repack & removal Cluster 444				
WASTE PACK & REM HAZ RED C444				
444H080000	1.1.05.10.02.08	206*	01OCT98	15JUL99
WASTE PACKAGING & REMOVAL Cluster 444				
REDUCE CONTAM AREA 444				
444H090000	1.1.05.10.02.09	175*	10DEC98	11AUG99
REDUCE CONTAMINATED AREA Cluster 444				

Activity ID	WBS	Orig Dur	Early Start	Early Finish	FY99																		
					OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP							
PROJ MANAGEMENT & PLANNING HAZ RED C444																							
444H100000	1.1.05.10.02.10	261*	01OCT98	30SEP99																			
PROJECT MANAGEMENT HAZ RED C444																							
444H101000	1.1.05.10.02.10.01	261*	01OCT98	30SEP99																			
SUPPORT SERVICES HAZ RED C444																							
444H102000	1.1.05.10.02.10.02	261*	01OCT98	30SEP99																			
PLANNING HAZ RED C444																							
444H103000	1.1.05.10.02.10.03	148*	01OCT98	26APR99																			
HAZ REDUCTION CLOSEOUT																							
444H104000	1.1.05.10.02.10.04	20	01SEP99*	28SEP99																			
RESERVED																							
444H10-000	1.1.05.10.02.10.05	40	01APR99*	26MAY99																			
WORK FOR OTHERS HAZ RED CLUSTER 444																							
444H110000	1.1.05.10.02.11	144*	15MAR99	30SEP99																			

OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP
 FY99

Activity ID	WBS	Orig Dur	Early Start	Early Finish
RFETS VISION ACHIEVED				
ACHIEVE INTERMEDIATE SITE CONDITION				
REMOVE 444 CLUSTER				
COMPLIANCE SURVEIL LANDLORD C444				
444L198000	1.1.05.10.01.01	261	30SEP97	29SEP98
444L199000	1.1.05.10.01.01	261	30SEP98	29SEP99
BASELINE MAINTENANCE LANDLORD C444				
444L298000	1.1.05.10.01.02	261	30SEP97	28SEP98
444L299000	1.1.05.10.01.02	261	30SEP98	29SEP99
OPERATIONS MANAGE LANDLORD C444				
444L398000	1.1.05.10.01.03	261	30SEP97	29SEP98
444L399000	1.1.05.10.01.03	261	30SEP98	29SEP99
TECHNICAL SUPPORT LANDLORD C444				
444L498000	1.1.05.10.01.04	261	30SEP97	29SEP98
444L499000	1.1.05.10.01.04	261	30SEP98	29SEP99
COMBUSTABLE REMOVAL ALL BLDG CLUS 444				
444H010000	1.1.05.10.02.01	76*	15DEC98	30MAR99
444H0100	1.1.05.10.02.01	0		29SEP97

COMPLIANCE SURVEILANCE FY98, LANDLORD C444

COMPLIANCE SURVEILANCE FY99, LANDLORD C444

BASELINE MAINTENANCE FY98, LANDLORD C444

BASELINE MAINTENANCE FY99, LANDLORD C444

OPERATIONS MANAGEMENT FY98, LANDLORD CLUS 444

OPERATIONS MANAGEMENT FY99, LANDLORD CLUS 444

TECHNICAL SUPPORT FY98, LANDLORD C444

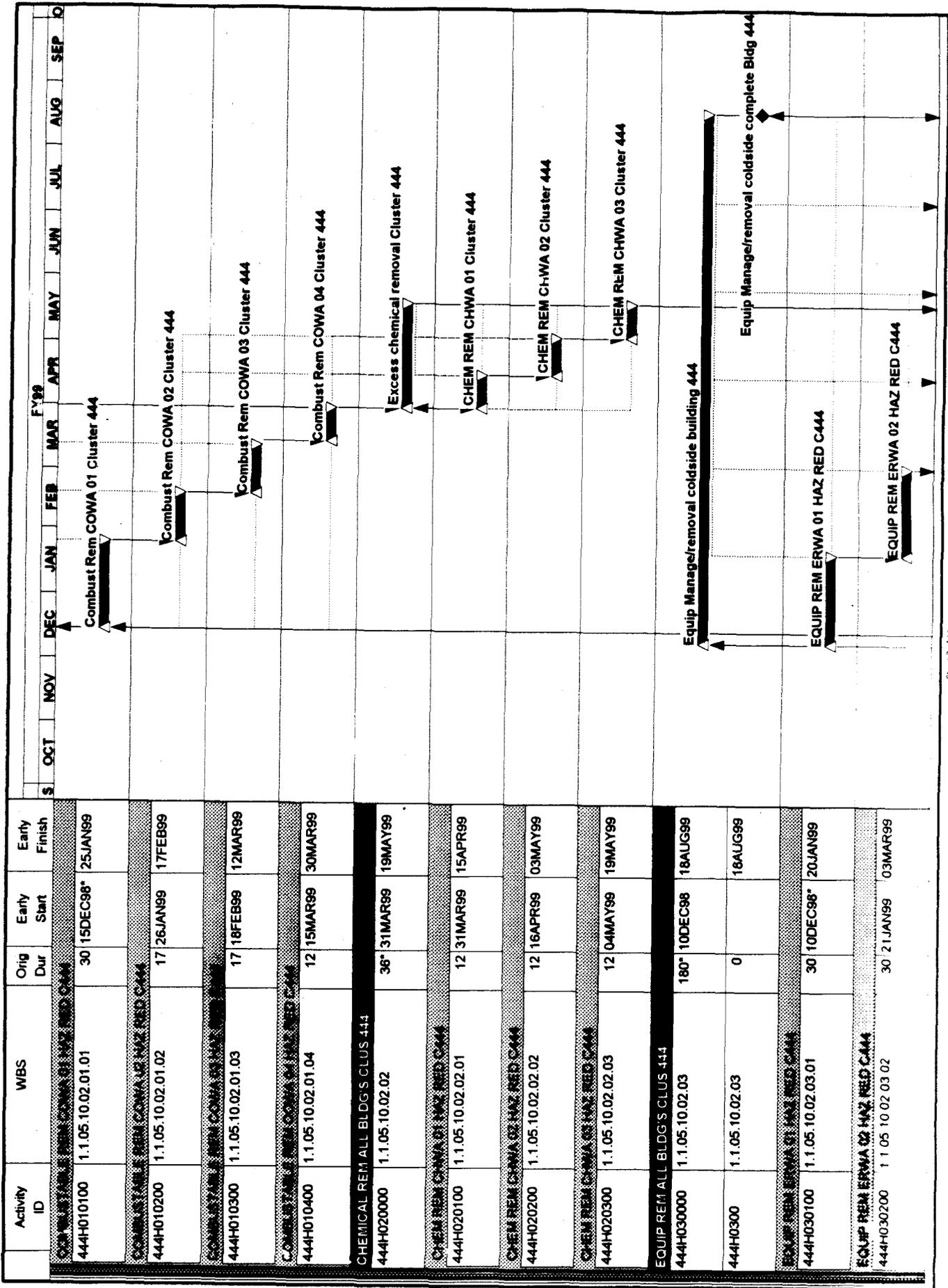
TECHNICAL SUPPORT FY99, LANDLORD C444

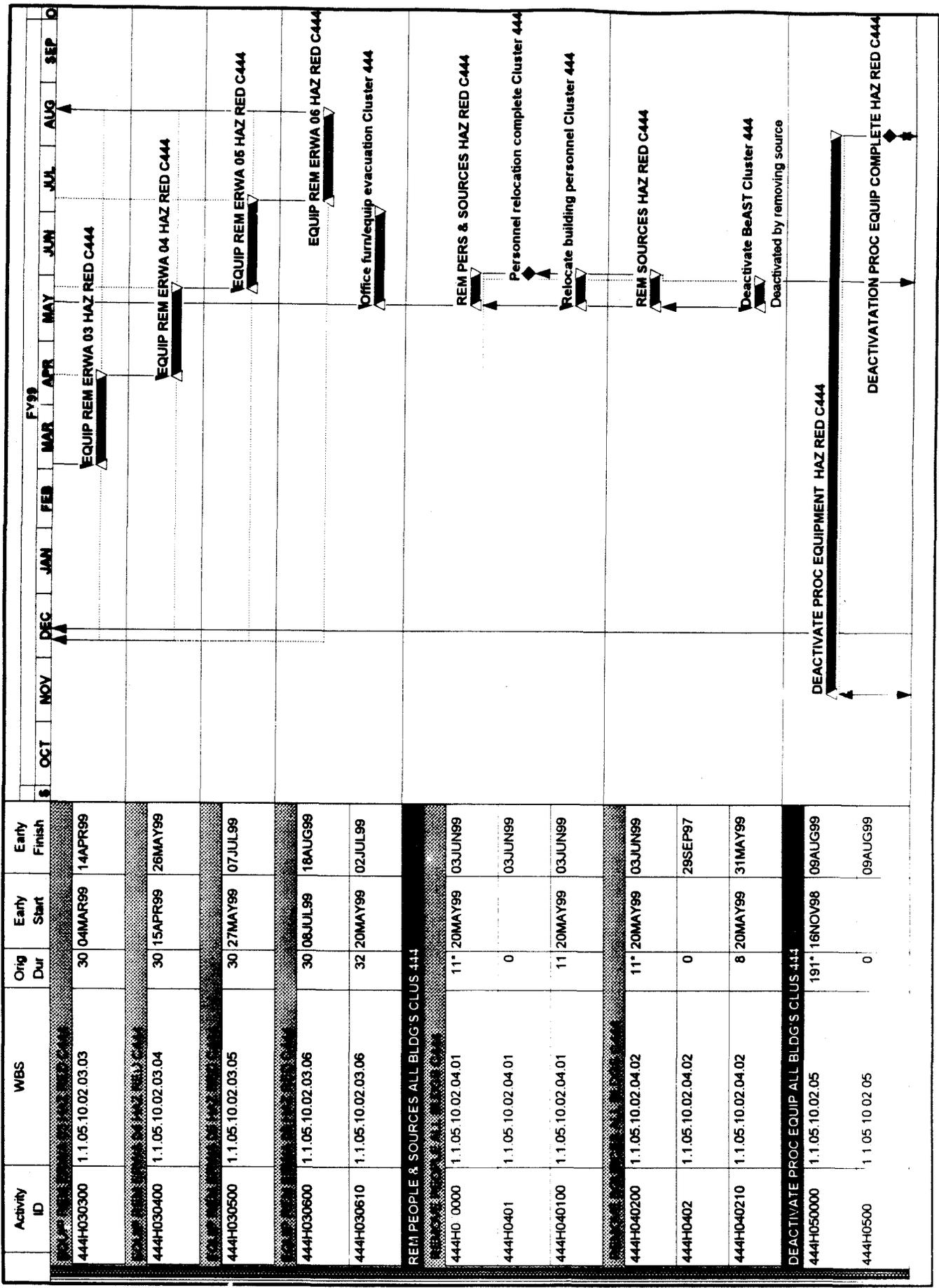
Combustable Loading removal. Cluster 444

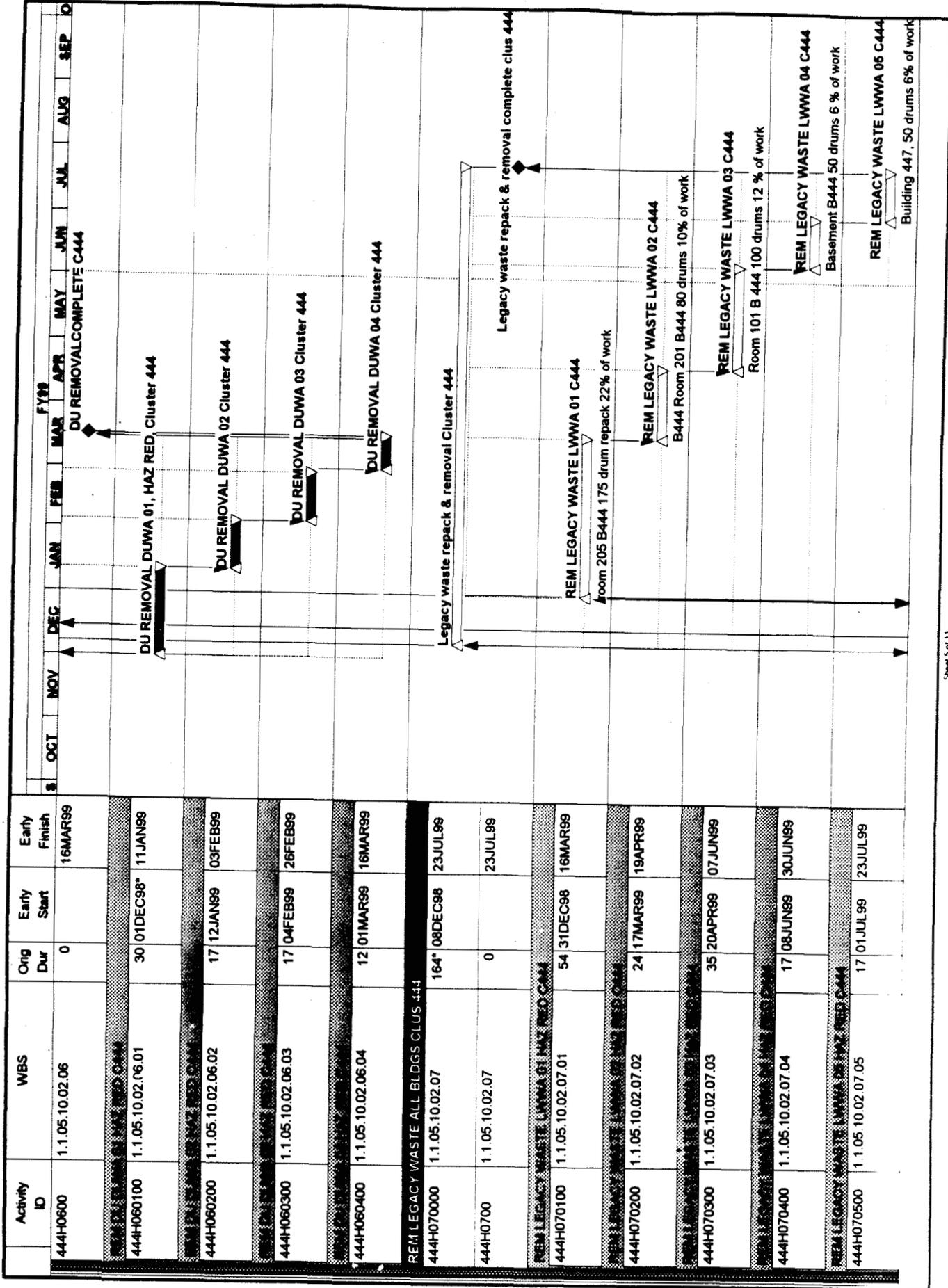


Project Start: 01MAY01
 Project End: 30SEP97
 Status Code: 0000
 WBS Code: 0000

444 CLUSTER
 STABILIZATION/HAZARD REDUCTION
 ALL ACTIVITIES









Activity ID	WBS	Orig Dur	Early Start	Early Finish	FY98											
					OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
444H110000	1.1.05.10.02.11	144*	15MAR99	30SEP99	WORK FOR OTHERS, HAZ RED, Cluster 444											
444H1100	1.1.05.10.02.11	0		30SEP99	WORK FOR OTHERS COMPLETE C444											
444H110100	1.1.05.10.02.11.01	20	15MAR99*	09APR99	WORK FOR OTHERS WOMP 01 C444 Repack drums & crates from PA Funding by Safeguards & Security											
444H110200	1.1.05.10.02.11.02	19	12APR99	08MAY99	WORK FOR OTHERS WOMP 02, HAZ RED, C444 Repack drums from B991 Currently no funding available											
444H110300	1.1.05.10.02.11.03	35	07MAY99	24JUN99	RESERVED WORK FOR OTHERS WOMP 03 C444											
444H110400	1.1.05.10.02.11.04	35	25JUN99	12AUG99	RESERVED WORK FOR OTHERS WOMP 04 C444											
444H110500	1.1.05.10.02.11.05	35	13AUG99	30SEP99	RESERVED WORK FOR OTHERS WOMP 05 C444											

APPENDIX C PROJECT COST ESTIMATE (BEST)

Appendix C Contents

Activity Cost Summary Report

Activity Cost Summary Report

Fiscal Year Filter '1999'
 Project Filter 'Base_FY99Rev0a'

PBS Filter ""
 SubProject Filter '064-125/441.444.690T Cluster Proj'
 Activity ID Filter ""
 WBS Code Filter '1.1.05.10.02'

Title/ActivityID/WBS Code	Hours	Cost (\$)
B444 Hazards Reduction	69,380.0	\$3,094,727.18
RN5A199F10 1.1.05.10.02 <i>Burdened Costs:</i>		\$3,824,045.56
Programmatic Support to Transition	2,660.0	\$320,108.24
RN5A199I10 1.1.05.10.02 <i>Burdened Costs:</i>		\$357,529.44
Report Totals Prime:	72,040.0	\$3,414,835.42
Burdened:		\$4,181,575.00

BEST Version: 3.0m

Activity Count 2

PBS: 014 014-Industrial Zone Closure Project
 WAD: 064 064-125/441,444,690T Cluster Project
 WBS No: 1.1.05.10.02
 Activity ID: RN5A199F10

Fiscal Year Filter '1999'
 Project Filter 'Base_FY99Rev0a'
 WAD Filter '064-125/441,44 Activity ID Filter ''
 PBS Filter '' WBS Code Filter '1.1.05.10.02''

Rocky Flats Closure Project
Baseline Cost Estimate

WBS No: 1.1.05.10.02 Title: 444 Cluster Stabilization/Hazard Removal

Activity ID: RN5A199F10 Description: B444 Hazards Reduction Rev. No.: 0
 Estimator: OBERMEYER Est. Date: 7/15/98 Rev Date:
 Acceleration Candidate

Cost Risk (C) - weighted average: 4.4
 Schedule Risk (S) - weighted average: 2.0
 Technical Risk (T) - weighted average: 2.0

Line Item	Description	Quantity	Units	BOE Type	Risk C S T	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials/ Sub Cost	Total Direct Cost	Burden Cost	Total Cost
AOPDD01	Hazards Reduction Project Execution	1,000	each	EE	4 1 1	190	190	5,373	17,425	22,798	2,380	25,179
AOPDD02	MOU Development	1,000	each	EE	4 1 1	100	100	2,828	1,000	3,828	1,253	5,081
AOPDD03	Data Collect Rqmts for Xilton to D&D	1,000	each	EE	4 1 1	30	30	848	600	1,448	376	1,824
AOPDD04	Building Conditions Walkdowns	1,000	each	EE	4 1 1	1,969	1,969	44,548	7,500	52,048	19,735	71,782
AOPDD05	Building Conditions Documentation	1,000	each	EE	4 1 1	1,637	1,637	45,921	4,500	50,421	20,343	70,764
AOPDD06	Reduced AB Request	1,000	each	EE	4 1 1	426	426	14,876	2,000	16,876	6,590	23,466
AOPDD07	Hazards Reduction Work Procedures	1,000	each	EE	4 1 1	204	204	5,769	7,000	12,769	2,556	15,325
AOPDD08	Hazards Reduction Work Packages	1,000	each	EE	4 1 1	451	451	13,548	35,913	49,461	6,002	55,463
AOPDD09	P/R/E Prev & Corr Mlce Rqmts	1,000	each	EE	4 1 1	923	923	27,584	6,000	33,584	12,220	45,804
AOPDD10	Room Turnover Checklists	1,000	each	EE	4 1 1	28	28	792	1,500	2,292	351	2,643
AOPDD11	Building Rad Surveys	1,000	each	EE	4 1 1	6,236	6,236	142,791	20,000	162,791	63,256	226,047
AOPDD12	Relocate Building Personnel	1,000	each	EE	5 3 3	1,495	1,495	32,982	3,500	36,482	14,611	51,093
AOPDD13	Office Furniture/Equipment Evacuation	1,000	each	EE	4 1 1	1,838	1,838	39,158	3,500	42,658	17,347	60,005
AOPDD14	Locker Room Cleanout	1,000	each	EE	4 1 1	639	639	13,305	6,000	19,305	5,894	25,199
AOPDD15	Utility Locker/Supply Cabinet Cleanout	1,000	each	EE	4 1 1	299	299	6,184	25	6,209	2,739	8,948
AOPDD16	Records Management/Disposition	1,000	each	EE	4 1 1	516	516	14,756	1,050	15,806	6,537	22,343
AOPDD17	Combustible Loading Removal	1,000	each	EE	4 1 1	8,781	8,781	179,744	13,500	193,244	79,627	272,871
AOPDD18	Excess Chemical Removal	1,000	each	EE	4 1 1	1,935	1,935	54,019	63,200	117,219	23,930	141,149
AOPDD19	Deactivate BeAST	1,000	each	EE	4 1 1	75	75	1,738	500	2,238	770	3,008
AOPDD20	Equipment Mgmt/Removal	1,000	each	EE	4 1 1	11,595	11,595	252,132	37,640	289,772	111,695	401,467
AOPDD21	Property Disposition/Management	1,000	each	EE	5 3 3	1,500	1,500	47,213	30,000	77,213	20,915	98,128
AOPDD22	Replace Be Hopper Bags	1,000	each	EE	5 3 3	679	679	20,104	15,000	35,104	8,906	44,010
AOPDD23	Waste Packaging and Removal	1,000	each	EE	5 3 3	9,388	9,388	212,405	308,215	520,620	94,095	614,716
AOPDD24	Hazards Reduction Completion Mgmt	1,000	each	EE	4 1 1	556	556	15,671	6,000	21,671	6,942	28,614
AOPDD25	RMRS Closure Project Mgmt Oversight	1,000	each	EE	4 1 1	0	0	0	10,000	10,000	0	10,000
AOPDD26	Hot & Cold Laundry Support	1,000	each	HC	2 2 1	130	130	2,716	115,000	117,716	1,203	118,919

PBS: 014 014-Industrial Zone Closure Project
 WAD: 064 064-125/441,444,690T Cluster Project
 WBS No: 1.1.05.10.02
 Activity ID: RN5A199110

Rocky Flats Closure Project
 Baseline Cost Estimate

Fiscal Year Filter: 1999
 Project Filter: Base_FY99Rev03
 WAD Filter: 064-125/441,444 Activity ID Filter: 'rn5a199110'
 PBS Filter: "" WBS Code Filter: '1.1.05.10.02'

RRRS No: 1.1.05.10.02 Title: 444 Cluster Stabilization/Hazard Removal

Activity ID: RN5A199110 Description: Programmatic Support to Transition
 Estimator: MICHELD Est. Date: 7/14/98 Rev Date: Rev. No.: 0

Cost Risk (C) - weighted average: 2.0
 Schedule Risk (S) - weighted average: 1.0
 Technical Risk (T) - weighted average: 1.0

Line Item	Description	Quantity	Units	BOE Type	C	S	T	Labor Hours/Unit	Labor Hours Total	Labor Cost Total	Materials Sub Cost	Total Direct Cost	Burden Cost	Total Cost							
R202S	Quality Assurance	1,000	each	EE	2	1	1	250	250	8,725	776	9,501	3,865	13,366							
R203S	Training & Qualification	1,000	each	EE	2	1	1	646	646	18,075	46,653	64,733	8,007	72,740							
R207S	Program Compliance	1,000	each	EE	2	1	1	800	800	28,744	51,656	80,400	12,734	93,134							
R208S	Environmental Compliance	1,000	each	EE	2	1	1	478	478	14,985	836	15,821	6,638	22,460							
R211S	PBI&R	1,000	each	EE	2	1	1	204	204	6,134	22,410	28,544	2,717	31,262							
R232S	Rad Compliance	1,000	each	EE	2	1	1	282	282	7,809	113,300	121,109	3,459	124,568							
Total for Activity RN5A199110:													2.0	1.0	1.0	2,660	84,472	235,636	320,108	37,421	357,529

R202S - Quality Assurance
 BOE
 Estimators Experience - Estimate based on information provided by RRRS PBI&R.
 Experience Item Desc -
 Breakdown of Cost Data:
 Item - 1) Labor 2) Subcontract
 Units - 1) Hours 2) Dollars
 Unit Cost Adjustment factor - None
 Revised Unit Cost - N/A
 Basis for adjustment - N/A

Resources

No	Department	Cost Element	Skill	Curve	Quantity	Units
1	R202S	Quality Assurance	750 STRAIGHT TIME BASE	S020 ENVIRONMENTAL SCIENTISTS	0000	None
2	R202S	Quality Assurance	ASH SUBCONTRACTED SRVS	ENVIRONMENTAL SCIENTISTS	Linear	Linear
						250,000 hours
						776,000 Dollars

R202S - Training & Qualification
 BOE
 Estimators Experience - Estimate based on information provided by RRRS PBI&R.
 Experience Item Desc -
 Breakdown of Cost Data:
 Item - 1) Labor 2) Subcontract
 Units - 1) Hours 2) Dollars

APPENDIX D PROJECT BASELINE SUMMARIES (PBSs)

Appendix D Contents

**Work Proposal Document –FY99+ Draft Rev 1007 dated
11/10/98 (17 pages)**

Work Proposal Document - FY99+ Draft 064

11/10/98
Rev 1007 Page 1 of 17

WPD Number	064	Rev Number	1007	Rev Date	7/23/1998
Title	125/441,444,690T Cluster Project				
Manager	Johnston, Brad	K-H Organization	Closure Projects		
RFFO P.O.C.	FITCH, WILLIAM	RFFO Org	Program Planning & Integra		

WBS ELEMENTS CONTAINED IN WPD

<u>WBS Element</u>	<u>WBS Description</u>
1.1.05.02.04	125/441 Cluster Decommissioning
1.1.05.02.04.01	Bldg 114 Decommissioning, 125/441 Cluster
1.1.05.02.04.02	Bldg 122S Decommissioning, 125/441 Cluster
1.1.05.02.04.03	Bldg 123 Decommissioning, 125/441 Cluster
1.1.05.02.04.04	Bldg 123S Decommissioning, 125/441 Cluster
1.1.05.02.04.05	Bldg 125 Decommissioning, 125/441 Cluster
1.1.05.02.04.06	Bldg 126 Decommissioning, 125/441 Cluster
1.1.05.02.04.07	Bldg 441 Decommissioning, 125/441 Cluster
1.1.05.02.04.08	Bldg T441A Decommissioning, 125/441 Cluster
1.1.05.02.05	125/441 Closure
1.1.05.02.06	Remediate/Contain 125/441 High Risk IHSSs
1.1.05.10	Remove 444 Cluster
1.1.05.10.01	444 Cluster Landlord Functions
1.1.05.10.01.01	444 Cluster Compliance Surveillance
1.1.05.10.01.02	444 Cluster Maintenance
1.1.05.10.01.03	444 Cluster Operations Tech Support
1.1.05.10.01.04	444 Cluster Operations Management
1.1.05.10.02	444 Cluster Stabilization/Hazard Removal
1.1.05.10.03	444 Cluster Deactivation
1.1.05.10.04	444 Cluster Decommissioning
1.1.05.10.04.01	Bldg 427 Decommissioning, 444 Cluster
1.1.05.10.04.02	Facility 427A Decommissioning, 444 Cluster
1.1.05.10.04.03	B444 Decommissioning, 444 Cluster
1.1.05.10.04.04	Bldg T444A Decommissioning 444 Cluster
1.1.05.10.04.05	Bldg 445 Decommissioning, 444 Cluster
1.1.05.10.04.06	Bldg 447 Decommissioning, 444 Cluster
1.1.05.10.04.07	Bldg 448 Decommissioning, 444 Cluster
1.1.05.10.04.08	Bldg 449 Decommissioning, 444 Cluster
1.1.05.10.04.09	Bldg 450 Decommissioning, 444 Cluster
1.1.05.10.04.10	Bldg 451 Decommissioning, 444 Cluster
1.1.05.10.04.11	Bldg 453 Decommissioning, 444 Cluster
1.1.05.10.04.12	Bldg 454 Decommissioning, 444 Cluster
1.1.05.10.04.13	Bldg 455 Decommissioning, 444 Cluster
1.1.05.10.04.14	Bldg 457 Decommissioning, 444 Cluster
1.1.05.10.05	444 Cluster Closure
1.1.05.10.06	Remediate/Contain 444 Cluster High Risk IHSSs
1.1.05.13.04	690T Cluster Decommissioning
1.1.05.13.04.01	Bldg 662 Decommissioning, 690T Cluster
1.1.05.13.04.02	Bldg 663 Decommissioning, 690T Cluster
1.1.05.13.04.03	Bldg T690A Decommissioning, 690T Cluster
1.1.05.25.04	PWTS Cluster Decommissioning
1.1.05.25.04.01	Bldg 231 Decommissioning, PWTS Cluster
1.1.05.25.04.02	Facility 428 Decommissioning, PWTS Cluster
1.1.05.25.04.03	Facility 429 Decommissioning, PWTS Cluster
1.1.05.25.04.05	Facility 231A Decommissioning, PWTS Cluster

<u>WBS Element</u>	<u>WBS Description</u>
1.1.05.25.04.06	Facility 231B Decommissioning, PWTS Cluster
1.1.05.25.05	PWTS Cluster Closure
1.1.05.30.01	Miscellaneous Industrial Zone IHSS Planning

WAD Scope Description

1.1.05.02.04 125/441 Cluster Decommissioning

Cluster Decommissioning includes the tasks of: Characterization; Site Preparation; Decontamination; Dismantlement; Demolition; and Project Management and Support Services. Specific decommissioning activities include: equipment removal; holdup removal; unneeded property disposition; decontamination; facility disassembly and dismantlement; and demolition. The end state of these elements will be achieved when the identified facilities have been completely demolished and the residual waste has been removed. For each project, a Project Completion Report will be provided in accordance with RFCA and other applicable requirements.

The 125/441 Cluster contains 9 facilities listed as containing 33,342 square feet in the Facility Information Management System. The cluster contains, as defined in the Decommissioning Program Plan, one Type 2 (in need of decontamination) building, 441, totaling 17,790 square feet, four Type 1 (free of contamination) buildings, 122S, 125, 126, and T441A, totaling 15,552 square feet, and 4 separate tanks.

Decommissioning activities are planned for individual facilities at level six of the WBS. Individual facilities may require all or parts of the technical scope described below. Small facilities may not have a level seven if the work for that activity is of sufficiently small scope.

Decommissioning Planning & Engineering prepares and maintains Project Plans and -- if necessary -- a Decommissioning Operations Plan; obtains permits and provides required notifications; obtains NEPA determinations, as necessary; conducts special studies on technical, cost, and schedule alternatives, as required; prepares baseline documents; obtains authorization basis and other approvals necessary for Decommissioning; provides technical recommendations on areas and methods to be used for decontamination after strip-out; develops plans and procedures, subject to applicable requirements. These activities also include obtaining IMC agreement on the level (site, cluster/project, building, or other) and scope of activity planning, performing engineering activities, and scheduling reconnaissance-level characterization, planning, funding, authorization basis, and approvals, such that decommissioning can begin in an area of the building as soon as deactivation is complete in that area of the facility.

Decommissioning Characterization includes conducting and documenting record reviews, surveys, and analysis to determine facility, system, and equipment condition and characteristics using parameters and scope necessary for comparison against Decommissioning completion criteria; performing pre-Decommissioning and post-Decommissioning characterization, reconnaissance-level characterization, and providing operational support for decontamination.

Decommissioning Site Preparation includes isolation of services, installation/removal of temporary services, asbestos removal, and completion of backfill, grading, and seeding per IMC guidance.

Decontamination removes contamination to meet closure and release criteria. It includes the characterization, packaging and transport to an on-site waste management facility of the waste generated during the operation. The scope of this activity is limited to the decontamination of the building surfaces and the installed building systems. Decontamination of process equipment and process systems to facilitate their removal is an internal part of the process equipment removal activity.

Dismantlement removes and disposes process equipment and remove/salvage building distributed systems in two distinct separate operations the duration and costs of which vary widely from building to building. This activity includes the characterizing, packaging, and transporting waste as required to an on site waste management facility.

Demolition includes removal of roofs and structures, and waste characterization, packaging and transportation to an onsite waste management facility. Unless otherwise stated, removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

Project & Operations Management includes all work related to the general management of the decommissioning of the facilities such as: issuance of project policy, general administrative work, project management reviews, presentations to management, and other work related to managing, planning, controlling, and reporting the project.

Decommissioning Support Services provide support services chargeable directly to the facility for decommissioning, such as security, analytical laboratory support, metrology laboratories, medical & health services, emergency preparedness, laundry, shipping & receiving, transportation, planning, records management, document control, standards applications, information resources management, quality, procurement, training, environmental compliance, environmental protection, environmental monitoring, disposition of excess property, engineering support services, project support services, construction support services, industrial hygiene and safety, radiation protection, equipment, supplies, special tools, support

provided by the building manager, surveillance and maintenance, and technology development. This does NOT include the programmatic or centralized components of any of these support activities (typically found in 1.1.07 or 1.1.08). For each project, a Project Completion Report will be provided in accordance with RFCA and other applicable requirements.

1.1.05.02.04.01 Bldg 114 Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 114 Bus Stop/Car Pool Shelter. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.02.04.02 Bldg 122S Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 122S, Paper Shredder Shed. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.02.04.03 Bldg 123 Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 123, Health Physics Building. The physical work will be accomplished at the level seven of the work breakdown structure and the specific work scope is detailed in the level seven elements. Level 6 technical scope is as described in the level 5 summary element above. Under Building soil will be characterized and the foundation and floor slab will remain. Tanks 080 and 081 will be removed as part of B123 scope. Various pits in and outside of the building will be decontaminated if required and filled to grade. Foundations, floor slab, pit liners and under building contamination, if present, will be addressed by WBS 1.1.05.02.06.

1.1.05.02.04.04 Bldg 123S Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 123S, Hazardous Waste Storage Shed. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.02.04.05 Bldg 125 Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 125, Standards Lab Building. Removal of all items will be to ground level and all foundations will remain. Removal of Tank 079, Liquid Nitrogen Storage, is also included in this element. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under Building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.02.06.

1.1.05.02.04.06 Bldg 126 Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 126, Source Storage Shed. Removal of all items will be to ground level and all foundations will remain. Tank 278, compressed air, south of 126 will be removed as part of B126 scope. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.02.04.07 Bldg 441 Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building 441, Office Building. The physical work will be accomplished at the level seven of the work breakdown structure and the specific work scope is detailed in the level seven elements. Level 6 technical scope is as described in the level 5 summary element above. Under Building soil will be characterized and the foundation and floor slab will remain. All floor slab penetrations will be capped. Foundations, floor slab and under building contamination, if present, will be addressed by WBS 1.1.05.02.06.

1.1.05.02.04.08 Bldg T441A Decommissioning, 125/441 Cluster

This element decommissions, by removal, Building T441A, Office Trailer, its associated entry structures, trailer skirting and disconnects plant power to the building including any transformers that are for the sole purpose of supplying power to T441A. Foundations will remain.

1.1.05.02.05 125/441 Closure

Cluster Closure includes the tasks associated with the appropriate portions of the Project Closure Report being placed in the Operating Unit Administrative Record. Additional description can be found in the RFCA Implementation Guidance Document. The end state of this element is achieved when the documentation is transmitted to the Administrative Record.

Closure activities verify that the surface soil in the cluster area meets acceptable risk levels agreed upon with regulatory agencies after completion of soil remediation, deactivation, decommissioning and demolition. This includes: 1) review of existing data and records for the cluster to determine past activities and potential contamination; 2) development of a work plan to scope the work required; 3) collection and analysis (see note above on analytical lab support) of verification samples from the surface soils in the cluster area to determine if acceptable levels have been met; and 4) obtaining regulatory approval. Scope includes all support services, such as environmental, safety, health, and quality, as necessary.

1.1.05.02.06 Remediate/Contain 125/441 High Risk IHSSs

This work element includes the environmental restoration activities that remediate and contain High Risk IHSSs activities in this cluster. The IHSSs are categorized as either High or Low risk. The High hazard IHSSs will be remedied, excavated, or contained. The Low hazard IHSSs will undergo administrative close-out in the NA/NFA (1.1.06.28). These activities

include remediation and/or containment, identification of contaminants for certification prior to disposal, and packaging of waste and transportation to storage or disposal; establishment of necessary authorization basis for all activities; and obtaining other necessary approvals and permits. The remediation/containment of the IHSSs are divided as follows: IHSS Planning/Authorization, Remediation/Disposition and Final Regulatory Approval. The end state of this element will be achieved when final approval is granted from regulators.

1.1.05.10 Remove 444 Cluster

This element includes all activities required to operate, remove from service, and eliminate the entire B444 Cluster and all facilities contained within it. The B444 Facility Cluster consists of the following facilities:

- B.427 Emergency Generator for B444
- B.427A Diesel Fuel Storage Tank (427), no # Storage Shed (W of B452)
- B.444 Manufacturing Building, no # Carpenter Shop (NE of B439)
- T.444A Showers/Lockers, no # Maintenance Storage (NE of B439)
- B.445 Carbon Storage, no # RMRS Maintenance (NE of B439)
- B.447 Manufacturing Building, Propane Tank #064 (W of B444)
- B.448 Uranium Storage, Nitrogen Tank #066 (E of B444)
- B.449 Oil and Paint Storage, Nitrogen Tank #067 (S of B444)
- B.450 B.444 Zone 1 Filter Plenum, Argon Tank #069 (E of B444)
- B.451 B.447 Zone 2 Filter Plenum, Nitrogen Tank #070 (N of B444)
- B.453 Oil Storage
- B.454 B.447 Cooling Tower
- B.455 B.444 Zone 2 Filter Plenum
- B.457 B.447 Cooling Tower

Part of all of the following IHSSs are within the area of this cluster:

- 116.1 - Building 447, West Loading Dock
- 116.1 - Building 444, South Loading Dock
- 121.0 - Old Process Waste Lines
- 136.1 - Cooling Tower Pond W of B444
- 136.2 - Cooling Tower Pond E of B444
- 147.1 - Process Waste System
- 157.2 - Rad Site South
- 182.0 - Building 444/453 Drum Storage Area
- 189.0 - Nitric Acid Tanks
- 207.0 - Inactive Building 444 Acid Dumpsters
- 208.0 - Inactive Building 444/447 Waste Storage
- UBC - B444 Under Building Contamination, Building 444 is also within the area of the cluster.

1.1.05.10.01 444 Cluster Landlord Functions

The B444 Cluster Landlord Functions element ensures that the Cluster facilities and immediate area around the B.444 Cluster facilities are maintained in a safe, secure, environmentally compliant, and operable status in support of RFCA milestones, performance measures, and other risk reduction efforts. Landlord activities ensure the facilities are maintained in a safe and operable conditions until such time as the facilities are deactivated. This scope includes all necessary support services, such as environmental, safety, health, quality, and analytical laboratory support, as necessary, obtaining permits and NEPA determinations, as necessary, and does NOT include any mission work. The Cluster Landlord Functions includes compliance surveillance, baseline maintenance, operations management, and operations technical support as follows: Compliance Surveillance, Baseline Maintenance, Operations Management, Operations Technical Support.

Operations Management - The scope for Operations Management activities includes ensuring building functional operations, surveillance, and maintenance activities are carried out in an adequate manner, thus maintaining safe operations and regulatory compliance of the facilities. Also included is integration management and support as required of tenet and project activities performed within the cluster facilities.

Maintenance - Maintenance will be focused on vital safety systems to ensure the facilities can be entered and work can be conducted without interruption. This is a minimal maintenance support package which only addresses the required activities to maintain the safety envelope. As areas in each facility are closed, systems and support will also be curtailed and resources will be shifted to closing other areas.

Operations Technical Support - This includes the support functions required to complete work at the Site and includes Radiological Engineering, Health and Safety, Quality Assurance, etc. These disciplines will be required when efforts begin to change the Authorization Basis for the buildings.

Compliance Surveillance - Surveillance will be conducted to ensure safety systems and regulatory compliance are maintained. This includes as required daily or weekly inspection of the Resource Conservation and Recovery Act (RCRA) regulated units, air monitoring systems, radiological surveys, and fire suppression systems.

Landlord activities are performed with a bias toward cluster closure. When landlord activities are able to achieve

incremental efficiencies, or building or site conditions prevent scheduled landlord task performance, available resources are applied to pre-planned activities that result in mortgage reduction. These activities are "bias toward closure" and result in baseline costs reductions by improving access, eliminating requirements for operational performance, and eliminating or further reducing the surveillance and maintenance activities currently required. Specific pre-planned activities include, but are not limited to: Empty storage cabinets; Relocate classified tooling and parts; Remove radiological check sources; Complete housekeeping cleanup; Release excess equipment and material to PU&D; and De-energize and secure HVAC units and other Utilities Equipment not needed for Decommissioning. Performance of these tasks is explicitly a part of the Landlord scope. The WAD manager on a case-by-case basis authorizes specific tasks for work. Each task must be considered carefully to ensure there is no adverse impact on downstream work or planned activities. Building Management maintains a prioritized list of such tasks.

1.1.05.10.01.01 444 Cluster Compliance Surveillance

This element includes activities associated with Compliance Surveillance, which ensures compliance of the cluster buildings/structures with the authorization basis and with regulatory, safeguards, conduct of operations, and other requirements. Examples include: Magnahelic Surveillance, DOP Testing, HEPA Filter Surveillance, Fan Surveillance, Flow Pressure Controller Surveillance, Emergency Generator Surveillance's, Fire Detection System Surveillance, LS/DW Testing, Safety Shower & Eye Wash Surveillance, Flammable Cabinet Inspection, Fire Wall/Door Inspection, RCRA Inspections, Radiological Control Surveys, Fire Protection, and Egress Route Inspection. This work scope consists of audits, inspections, and assessments, and the tracking and documentation of surveillance's.

1.1.05.10.01.02 444 Cluster Maintenance

This element includes activities associated with Cluster baseline Maintenance which provides necessary and sufficient preventive and corrective maintenance to maintain equipment in buildings/structures in the cluster in a safe, secure, and environmentally compliant status. Activities include planning and execution of Maintenance A, B, and C Packages, Preventative Maintenance (except lubrication of equipment), and calibration of meters, gauges, and instruments. Maintenance and calibration activities will be performed to a level that ensures Vital Safety System operability. Building availability will be maintained at a level necessary to support the achievement of defined risk reduction activities and performance measures. General enhancements through maintenance activities are considered low priority and are pursued only if a justified cost-benefit or safety improvement can be realized.

1.1.05.10.01.03 444 Cluster Operations Tech Support

This element includes activities associated with Operations Technical Support which provides technical, safety, health, and quality support for the building baseline(s) including Shift Technical Advisor, Engineering Support, Dosimetry, Radiological training, Bioassay, and Radiological Operations Support not related to compliance surveillance, as well as Emergency Preparedness, Operations Review Committee, Operations Drills, and miscellaneous Technical Support. Radiological Operations examples include Rad Ops Technicians, Rad Ops Foreman, Step Off Pad Support, Contamination Control, Routine Contamination Control Survey, Health Physics and Instrumentation, and Radiological Work Permits.

1.1.05.10.01.04 444 Cluster Operations Management

This element includes activities associated with Operations Management and oversight, which manages operations in cluster buildings/structures and control day-to-day operations. Examples include provision of Shift Manager, Shift Operations Orders, procedure support, training/qualification, utilities supervision, laundry, general cleaning/moves, waste sampling, custodial support and snow removal in the immediate area of the facilities. Landlord activities also manage the LO/TO program, facilitate environmental and safety programs, commitments tracking, performance indicators, and provide attendance at training for personnel, budget management and Operations Orders administration.

1.1.05.10.02 444 Cluster Stabilization/Hazard Removal

This element includes the sub-tasks of Characterization, Planning & Project Management, Authorization Basis Changes, and Physical Hazard Reduction. These activities are necessary to remove the cluster facilities from operation and prepare them for turnover - possibly to another contractor - for decommissioning. Specific activities include; developing a Project Execution Plan (PEP), work summary plans, and Integrated Work Control Plans (IWCP) for removal of remaining hazardous materials. Activities may include inventory and removal of unattached hazardous materials from the facilities and immediate areas, such as regulated hazardous chemicals, Uranium and Beryllium materials, fix loose Beryllium contamination, removal of gas cylinders, roof repairs over critical areas that create immediate hazards, Asbestos abatement and/or encapsulation, and repack of existing waste crates in questionable condition. RCRA unit closures will be completed where possible.

1.1.05.10.03 444 Cluster Deactivation

The Rocky Flats Cleanup Agreement defines that no deactivation activity occurs in these buildings.

1.1.05.10.04 444 Cluster Decommissioning

Cluster Decommissioning includes the task elements of Characterization; Site Preparation; Decontamination; Dismantlement; Demolition; and Project Management and Support Services. Specific decommissioning activities include equipment removal; holdup removal; unneeded property disposition; decontamination; facility disassembly and dismantlement; and demolition. Completion of these elements will be achieved when the identified facilities have been completely demolished and the residual waste has been removed. A Bldg. 444 Cluster Decommissioning Project Execution Plan (PEP) will be prepared as an initial step to this project. The PEP will define the specific work to be included, documentation to be produced, and sequence of steps to be performed. A Project Completion Report will be provided at the

end of the project in accordance with RFCA and other applicable requirements.

The B444 Cluster contains 21 facilities listed as containing 198,463 square feet in the Facility Information Management System. The cluster contains, as defined in the Decommissioning Program Plan, six Type 2 (in need of decontamination) buildings, B444, B447, B448, B450, B451, and B455, totaling 190,694 square feet, Type 1 (free of contamination) buildings, B427, B427A, B445, B449, B453, and three maintenance areas, totaling 7,769 square feet, 2 cooling towers, B454 and B457, totaling 600 square feet and 5 separate tanks.

Decommissioning activities are planned for individual facilities at level six of the WBS. Individual facilities may require all or just some of the technical scope described below.

Planning and Engineering covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with decommissioning. The scope of this includes, but is not limited to, activities such as; Preparation and maintenance of the Project Execution Plan (PEP), Decommissioning Operations Plan (DOP), Proposed Action Memorandum (PAM), Interim Measures/Interim Remedial Actions Document (IM/IRA), RCRA Unit Closure Plan, Health and Safety Plan (HASP), Integrated Cork Control Procedures (IWCP), Quality Assurance Plan (QAP), Waste Management Plan, Training Plan, utility relocation design documents, building demolition design documents, equipment removal design documents, and design engineering inspection. Also included is preparation of required procedures and permits, including, Quality Assurance/Quality Control (QA/QC) procedures. Determination of the specific documents, procedures and permits required for the B.444 Cluster Decommissioning will be determined and documented as a part of the initial PEP.

Characterization covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with the characterization process for decommissioning. Under Characterization, costs will be collected under the following sub-categories; Scoping, Reconnaissance, In-process, and Final Characterization Survey, which includes independent verification, if determined to be required. This element does not cover characterization associated with IHSS remediation, which is part of Environmental Restoration (ER).

Site Preparation covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with preparing the site for decommissioning. The scope of this element may include, but is not limited to, activities such as; Establishment of laydown, shipping, and material processing areas; set-up of size reduction, monitoring, and waste staging areas and step-off pads, and removal of stored wastes.

Decontamination covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with decontamination for decommissioning. The scope of this element may include, but is not limited to, activities such as decontamination of building interior/exterior surfaces, equipment, drains, gloveboxes, tanks, process piping, and ductwork. In addition, it includes removal of any remaining hazardous and toxic substances, including; asbestos, lead/lead based paints, and PCB removals, associated with decommissioning.

Dismantlement covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with dismantlement of equipment and systems for decommissioning. The scope of this element may include, but is not limited to, activities such as; stripout, size reduction and removal, and if determined to be required, removal of process equipment (gloveboxes, tanks, process piping, ducting, etc.), distributed utilities (power/lighting, heating, water, sewer, etc.), and isolation of selected building structures and structural elements from the rest of the site infrastructure.

Demolition covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with the demolition and disposal of clean construction rubble and debris generated. The scope of this element may include, but is not limited to, activities such as; demolition and disposal of roofs, structural and non-structural building elements, foundations (if applicable), connecting structures (tunnels, breezeways, walkways and scaffolds, etc.) of the building/structure undergoing demolition. Additionally this element includes excavation of contaminated soils (if applicable), back filling, grading, and seeding, as appropriate. This element also includes packaging, pre-certification*, and movement to an identified pickup point; i.e. building loading dock, etc. of contaminated wastes generated during the overall decommissioning effort. Any additional movement or treatment, storage, and disposal of contaminated (hazardous and/or radiological) materials, after they have been packaged and staged at the pickup point, for the types of hazardous and /or toxic wastes generated as a result of the overall decommissioning effort performed per the elements above; site preparation, characterization, decontamination, dismantlement, etc., are not included in this element. These waste disposal costs are the sole responsibility of Waste Management.

*NOTE: Pre-certification of waste materials is defined as the degree or amount of waste inspection and certification required, on the part of the specific D&D Project, to assure that there is a reasonable probability that the packaged wastes will not be returned to the project to additional work. Pre-certification does not involve the more sophisticated techniques of waste certification, such as Non-Destructive Assay, headspace sampling, etc. These sophisticated certification techniques are the responsibility of Waste Management.

Project and Operations Management covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with the Project Management of the decommissioning effort as a whole. This includes, but is not limited to, activities such as; Project Management, Construction Management, Oversight, Project Engineering, Project Administration, Project Controls and Reporting, Finance, and Accounting, Training Coordination, Project Records Management, Document Control, etc.

Support Services covers all task specific direct labor, equipment, materials, supplies, and subcontract costs associated with support of the decommissioning effort. The scope of this element may include, but is not limited to, support and remaining landlord activities and services such as; Utilities Operation, Surveillance's, Maintenance, Training, Procurement & Contract Administration, Security & Fire Protection, QA/QC, Waste Management and Inspection, Transportation and Construction Equipment, Radiological Operations and Engineering, Radiation Control Technician (RCT) support, Medical and Health, Safety and Industrial Hygiene, Shipping/Receiving and Warehousing, Legal, Regulatory Interface, Laundry, Small Tools and Personal Protective Equipment, Analytical Laboratory support, Toxic and Hazardous Material Handling, Excess Property/Property Management, Telecommunications and Information Resources support, Finance and Administration, Planning and Integration, and other support services to be defined.

Once decommissioning has begun any Landlord activities, required to be performed, will become the decommissioning responsibility under the Support Services sub-task. The cost of continuing landlord tasks occurring during decommissioning will be collected under a separate charge number.

1.1.05.10.04.01 Bldg 427 Decommissioning, 444 Cluster

This element decommissions, by removal Building 427, Emergency Generator building. The physical work consists of removing and disposing of the generator and dismantling the building. This element also includes the removal of the following buildings and tanks; no # Carpenter Shop (NE of B439); no # Maintenance Storage (NE of B439); no # RMRS Maintenance Shop (NE of B439); Tank 064 Propane (W of B444); Tank 066 Nitrogen (E of B444); Tank 067 Nitrogen (S of B444); Tank 069 Argon (E of B444); Tank 070 Nitrogen (N of B444). Level 6 technical scope is as described in the level 5 summary element above. Above ground Diesel storage tank associated with B427 will also be removed under this WBS element. Old underground diesel storage tank is WBS 1.1.05.10.04.02 B427A. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.02 Facility 427A Decommissioning, 444 Cluster

This tank was remediated under the UST line item, WBS 1.1.07.02.17. It was completed in fiscal year 1996.

1.1.05.10.04.03 B444 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 444 Manufacturing Building. The physical work consists of decontamination of the installed equipment and demolishing the building. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.04 Bldg T444A Decommissioning 444 Cluster

This element decommissions, by removal, Building T444A, its associated entry structures, trailer skirting and disconnects plant power to the building including any transformers & poles that are for the sole purpose of supplying power to T444A. It includes the removal to ground level of the sanitary sewer connection and the capping of the sewer line at ground level, foundations will remain.

1.1.05.10.04.05 Bldg 445 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 445 Carbon Storage. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.06 Bldg 447 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 447 Manufacturing Facility. The physical work consists of decontamination of the installed equipment and demolishing the building. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.07 Bldg 448 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 448 Uranium Metal Storage. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.08 Bldg 449 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 449 Oil & Paint Storage Shed. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.09 Bldg 450 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 450 Filter Plenum. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed

in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.10 Bldg 451 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 451 Filter Plenum Building. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.11 Bldg 453 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 453 Oil Storage Shed. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.12 Bldg 454 Decommissioning, 444 Cluster

This element decommissions, by removal, B454 Cooling Tower for Building 447. The physical work consists of decontamination of the installed equipment and demolishing the structure. The foundation and floor slab will remain. Foundations, floor slab and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.13 Bldg 455 Decommissioning, 444 Cluster

This element decommissions, by removal, Building 455 Filter Plenum. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill. Under building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.04.14 Bldg 457 Decommissioning, 444 Cluster

This element decommissions, by removal, B457 Cooling Tower for Building 447. The physical work consists of decontamination of the installed equipment and demolishing the structure. The foundation and floor slab will remain. Foundations, floor slab and under building contamination, if present, will be addressed by WBS 1.1.05.10.06.

1.1.05.10.05 444 Cluster Closure

Cluster Closure includes the tasks associated with the appropriate portions of the Project Closure Report being placed in the Operating Unit Administrative Record. Additional description can be found in the RFCA Implementation Guidance Document. Completion of this element is achieved when the closure documentation is transmitted to the Administrative Record.

Closure activities verify that surface soils in the cluster area meet acceptable risk levels agreed upon with regulatory agencies after completion of soil remediation, deactivation, decommissioning and demolition. This includes: 1) review of existing data and records for the cluster to determine past activities and potential contamination; 2) development of a work plan to scope the work required; 3) collection and analysis (see note above on analytical lab support) of verification samples from the surface soils in the cluster area to determine if acceptable levels have been met; and 4) obtaining regulatory approval. Scope includes all support services, such as environmental, safety, health, and quality, as necessary.

1.1.05.10.06 Remediate/Contain 444 Cluster High Risk IHSSs

This work element includes the environmental restoration activities that remediate and contain High Risk IHSS activities in this cluster. The IHSSs are categorized as either High or Low risk. The High hazard IHSSs will be remediated, excavated, or contained. The Low hazard IHSSs will undergo administrative closeout in the NA/NFA (1.1.06.28). These activities include: remediation and/or containment, identification of contaminants for certification prior to disposal, and packaging of waste and transportation to storage or disposal, establishment of necessary authorization basis for all activities; and obtaining other necessary approvals and permits. The remediation/containment of the IHSSs are divided as follows: IHSS Planning/Authorization, Remediation/Disposition, and Final Regulatory Approval. Completion of this element will be achieved when final approval is granted from regulators.

1.1.05.13.04 690T Cluster Decommissioning

Cluster Decommissioning includes the tasks of: Characterization; Site Preparation; Decontamination; Dismantlement; Demolition; and Project Management and Support Services. Specific decommissioning activities include: equipment removal; holdup removal; unneeded property disposition; decontamination; facility disassembly and dismantlement; and demolition. The end state of these elements will be achieved when the identified facilities have been completely demolished and the residual waste has been removed. For each project, a Project Completion Report will be provided in accordance with RFCA and other applicable requirements.

The 690T Cluster contains 5 remaining facilities listed as containing 9,986 square feet in the Facility Information Management System. The cluster contains, as defined in the Decommissioning Program Plan, three Type 1 (free of contamination) buildings, 662, 663 and T690N totaling 9,986 square feet, and 2 separate tanks.

1.1.05.13.04.01 Bldg 662 Decommissioning, 690T Cluster

This element decommissions, by removal, Building 662, Plant Power Shop. The physical work consists of removing and disposing of the snop equipment and dismantling the building. This element also includes the removal of the following

buildings and tanks: no # Storage shed (W of 452); no # Morgan Storage Shed 1 (NE of 663); no # Morgan Storage Shed 2 (NE of 663); Tank 036 Diesel no. 1 (W of 663); and Tank 037 Propane (W of 663). Level 6 technical scope is as described in the level 5 summary element above. Under Building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.13.06.

1.1.05.13.04.02 Bldg 663 Decommissioning, 690T Cluster

This element decommissions, by removal, Building 663, Storage & Shipping building. The physical work consists of removing and disposing of the equipment and dismantling the building. Level 6 technical scope is as described in the level 5 summary element above. Under Building soil will be characterized and the foundation and floor slab will remain. Foundations, floor slab, and under building contamination, if present, will be addressed by WBS 1.1.05.13.06.

1.1.05.13.04.03 Bldg T690A Decommissioning, 690T Cluster

This element decommissions, by removal Building T690N, Office Trailer, its associated entry structures, trailer skirting, and disconnects plant power to the building including any transformers & poles that are for the sole purpose of supplying power to T690N. It includes the removal to ground level of the sanitary sewer connections and the capping of the sewer line at ground level. Foundations will remain.

1.1.05.25.04 PWTS Cluster Decommissioning

Cluster Decommissioning includes the tasks of: Characterization; Site Preparation; Decontamination; Dismantlement; Demolition; and Project Management and Support Services. Specific decommissioning activities include: equipment removal; holdup removal; unneeded property disposition; decontamination; facility disassembly and dismantlement; and demolition. The end state of these elements will be achieved when the identified facilities have been completely demolished and the residual waste has been removed. For each project, a Project Completion Report will be provided in accordance with RFCA and other applicable requirements.

1.1.05.25.04.01 Bldg 231 Decommissioning, PWTS Cluster

This element decommissions, by removal, Building 231 Process Waste Tank Pump. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.25.04.02 Facility 428 Decommissioning, PWTS Cluster

This element decommissions, by removal, Building 428 Waste Collection Tank and Pump. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.25.04.03 Facility 429 Decommissioning, PWTS Cluster

This element decommissions, by removal, Building 429 Process Waste Pit. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.25.04.05 Facility 231A Decommissioning, PWTS Cluster

This element decommissions, by removal, Building 231A 250,000 Gallon waste tank. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.25.04.06 Facility 231B Decommissioning, PWTS Cluster

This element decommissions, by removal, Building 231B 950,000 gallon waste tank. Removal of all items will be to ground level and all foundations will remain. It is assumed that the debris will not be contaminated. Debris will be properly salvaged or disposed in a proper landfill.

1.1.05.25.05 PWTS Cluster Closure

The Scope of Work for Cluster Closure activities in the PWTS Cluster is the same as those described under 1.1.05.02.05, 125/441 Cluster Closure activities.

1.1.05.30.01 Miscellaneous Industrial Zone IHSS Planning

Characterize IHSSs/PACs within this WAD to support remedial decisions. Characterization activities include preparation of documents (i.e. SAPs, HASPs, QAPjPs, FIPs), sampling, sample analysis, data validation, data evaluation, and summary report preparation. Preparation of draft decision documents for remedial actions is also included.

Assumptions and Conditions

WBS Element - 1.1.05.10 444 Cluster

No additional DOE Order or Regulatory Compliance issues requiring additional workscope to achieve compliance will be imposed on landlord functions.

No changes to security requirements necessitating additional workscope to achieve compliance will be imposed on landlord functions.

No changes to operational/surveillance procedures necessitating additional workscope to achieve compliance will be imposed on landlord functions

No new or additional client operations will be requested of the B444 Cluster facilities requiring an extension on the use of these facilities.

At the end of November (11/22/98) DOE will approve ending the 24-hour surveillance in B444, initiated in September of 1998, with completion of technical security measures.

WAD Specific Safety Plan

The five core safety management functions of ISM (listed below) collectively integrate safety management at the Site. The definitions for these functions are contained in the Site Integrated Safety Management System Manual.

1. Define the scope of work
2. Identify and analyze the hazards
3. Identify and implement controls
4. Perform the work
5. Feedback/improvement

The B444 Cluster Projects consist of: landlord functions to maintain minimum surveillance and maintenance activities required to ensure regulatory compliance and safe operations of ongoing activities in the facilities; Hazard Reduction activities to systematically close rooms, areas, and entire facilities; and deactivation, decommissioning and closure activities.

These landlord, hazard reduction, deactivation, decommissioning and closure activities will be planned and conducted using the principles of ISM and existing Site infrastructure programs. Specific methods used to ensure that the principles of ISM are followed include the Integrated Work Control Program (IWCP), Enhanced Work Planning, Job Safety Analysis, Operational Safety Analysis, Health and Safety Plans, Management Assessments, and Operating Procedures. Each of these formalized steps address hazards and control of the hazards and are reviewed by management and the appropriate technical and safety disciplines. Prior to performing specific tasks, briefings are conducted, as required by Conduct of Operations, IWCP, and Enhanced Work Planning, with all involved personnel to ensure an understanding of identified hazards and the methods for control. During these briefings, management and task leads also provide specific information related to lessons learned from past performance of these, or similar, tasks.

Specific hazards include Be and Uranium contamination as holdup material and as general dust in infrequently accessed areas. Cyanide is also present in specific controlled areas.

Technical Strategy

1.1.05.10.01 444 Cluster Landlord Functions

The 444 Cluster is part of the RFETS Nuclear Facilities scheduled for closure. The technical and administrative processes and lessons which result from this closure will be utilized to validate the schedule, budget, and waste estimates for other facilities (e.g. B881). Closure will also provide risk reduction and more significantly, will reduce overall site landlord costs.

The technical strategy is to consolidate remaining facility and support operations to a bare minimum required to function through the D&D phase. As there are significant amounts of waste and hazardous materials in the facility it will be used as a waste repack center, and a significant hazards reduction and waste cleanup effort will be done prior to initiation of D&D.

1.1.05.10.02 444 Cluster Stabilization/Hazard Removal

The specific work logic for Hazards Reduction will be identified after a Project Execution Plan is developed. However, it is expected that some of the first activities will be: combustible removal/waste packaging, fixate to loose Be contamination, and excess hazardous equipment, chemicals, and materials removal. A specific concern is the dealing with Cyanide and related contamination within the facility.

Hazards Reduction of the buildings will proceed under the guidance of the Rocky Flats Cleanup Agreement (RFCA), which provides a general outline for building disposition. Hazards Reduction of the 444 Cluster is consistent with the Ten Year Plan (TYP) for the Industrial Area of the RFETS.

Hazards Reduction activities will use in-house and subcontractor support to assist in the development of authorization basis documentation, any characterization processes, and the initial hazards reduction of the buildings.

1.1.05.10.04 444 Cluster Decommissioning

The overall Technical Strategy is to reduce building activities and hazards to a level that allows significant reductions in surveillances and surveys and other landlord functions in preparation for Decommissioning and Demolition.

Decommissioning planning will be done in a staged process beginning with a transition and integration strategy incorporating the primary and support facilities and also integrating hazards reduction, remaining required landlord operations, and lessons learned from B123 and similar efforts.

As hazard reduction activities are completed a preliminary transition to D&D planning effort will also be used to map out the D&D strategy. This initial strategy will integrate facility cleanup, hazards reduction and D&D with not only B.444 but also its support facilities, it will also review and absorb the lessons learned from B.123 and similar D&D efforts. The end result of this preliminary planning will be a blueprint to be used for the D&D Project Execution Plan (PEP). Once this format is completed a formal PEP will be prepared including details on the documents, permits, authorizations, steps, methods, processes, schedules, and costs required to successfully execute D&D.

Efforts will be taken to incorporate new techniques and technologies to increase effectiveness and safety of the D&D process, and to reduce associated risks. Waste packaging and removal, radioactive and chemical contaminate characterization, and Be management will be specific focuses for use of new technologies.

1.1.05.10.06 Remediate/Contain 444 Cluster High Risk IHSSs

The specific methods for remediation/containment of B444 Cluster IHSSs including identification, selection of a course of action, remediation/containment, contaminant certification, packaging, and final processing will be determined and presented in a Project Execution Plan that will also cover the necessary authorizations and permitting.

1.1.05.25.04 PWTS Cluster Decommissioning

1.1.05.25.05 PWTS Cluster Closure

1.1.05.30.01 Miscellaneous Industrial Zone IHSS Planning

All elements of WAD 65 - Environmental Restoration Projects support the environmental restoration of the site including the Inner Buffer Zone (IBZ), Industrial Area (IA), and the Nuclear Production Zone (NPZ) clusters. Restoration of IHSSs/PACs/UBCs/Plumes and OUs will be done in accordance with RFCA and consistently with the ER Ranking and supports the RFCA Vision statement and the site's closure goals. The closure strategy, identified through RFCA looks for reduction of risk to human health and the environment, being ultimately protective of surface water, and reduction of landlord costs. In general, high risk IHSSs/PACs/Plumes will be restored in the buffer zone first and work in towards the industrial area to reduce risk and reduce the contaminated footprint of the site. As buildings are D&D, restoration activities will follow until the site meets the remediation goals.

Privatization/Commercialization Strategy

N/A

REGULATORY DRIVERS

WBS Element 1.1.05.10.01 444 Cluster Landlord Function

A. Regulatory Drivers

1. OSHA Occupational Safety & Health Administration
2. NFPA National Fire Protection Act
3. 10 CFR 50.72 Immediate Notification
4. 10 CFR 50.73 Licensee Event Reports
5. 10 CFR 73.71 Security Event Reports
6. 10 CFR 830 Nuclear Safety Management
7. 10 CFR 835 Occupational Radiation Protection
8. 29 CFR 1910.106 Code of Federal Regulations for Flammable and Combustible Liquids
9. 29 CFR 1910.141 Health, Safety and Sanitation
10. 29 CFR 1910.151 Medical Service and First Aid
11. CDH NOV, 6/92 Agreement and Stipulated Order on Consent (CDH June 1992 Notice of Violation [NOV] Consent Order), includes the Hazardous Waste Compliance Program

B. DOE Orders/Guidance

1. DOE 4330.4A Maintenance Management Program
 2. DOE 5000.3B Occurrence Reporting and Processing of Operational Information
 3. DOE 5400.1 Environmental Protection Program
 4. DOE 5423.1A Sanitation
 5. DOE 5480.11 Radiation Protection for Occupational Workers
 6. DOE 5480.1B Environment, Safety, Health Program for DOE Operations
 7. DOE 5480.19 Conduct of Operations
 8. DOE 5480.20 Personnel Qualification and Training
 9. DOE 5480.21 Undetermined Safety Question Determinations
 10. DOE 5480.24 Nuclear Criticality Safety
 11. DOE 5480.4 Environmental, Safety and Health
 12. DOE 5480.5 Safety of Nuclear Facilities
 13. DOE 5483.1B Occupational Safety and Health
 14. DOE 5500.2B Emergency Notification Reporting and Response Levels
 15. DOE 5500.10 Emergency Preparedness
 16. DOE 5700.6C Quality Assurance
- 1.1.05.02.04 125/441 Cluster Decommissioning & 1.1.06.22.04 T690 Cluster Decommissioning
- A. Regulatory Drivers:
1. Clean Air Act (CAA). Establishes the minimum standards for pollutant limitations and periodic monitoring and reporting for air emissions.
 2. CFR 61; Subpart H National Emission Standards for Emissions of Radionuclides other than Radon from DOE Facilities (also called Rad-NESHAPS). This regulation provides the radionuclide dose standard for air emissions, and prescribes requirements that must be met by the facility.
 3. 5-CCR-1001-10; Colorado Air Regulation 1, Emission Control Regulations for Particulate, Smoke, Carbon Monoxide and Sulfur Oxides. Establishes emission limitations for smoke, carbon monoxide, and sulfur oxide emissions.
 4. 5-CCR-1001-10; Colorado Air Regulation 3, Air Pollutant Emission Notices and Emission Permits. Provides APEN, construction permits, and operating permits requirements.
 5. 5-CCR-1001-10; Colorado Air Regulation 7, Regulation to Control Emissions of Volatile Organic Compound. Controls volatile organic compounds.
 6. 5-CCR-1001-10; Colorado Air Regulation 8, Control of Hazardous Air Pollutants. Provides state authority for enforcing requirements of 40 CFR 61, Subpart H.
 7. 5-CCR-1001-10; Colorado Air Regulation 15, Regulations to Control Emissions of Ozone Depleting Compounds. Requires the registration of refrigeration and air conditioning systems which use ozone depleting compounds.
 8. Clean Water Act (CWA). Establishes the minimum standards for pollutant limitations and periodic monitoring and reporting for surface water quality.
 9. National Environmental Policy Act (NEPA). Requires reviews of projects for any environmental impacts.
 10. National Emission Standards for Asbestos, 40 CFR 61, Subpart M Occupational Exposure to Asbestos and Construction Standards, 29 CFR 1926.58. These regulations describe the controls necessary to safely inspect, abate, and remediate asbestos.

11. National Pollution Discharge Elimination System (NPDES). Establishes water quality standards and effluent emissions and requires monitoring and reporting against established limits. RFETS is covered by permit number CO-0001333.

12. Occupational Safety 29 CFR 1910, 1926, and 1960. These parts establish requirements to ensure the health and safety of the worker.

13. Safe Drinking Water Act (SDWA). Establishes drinking water standards and the methods to analyze compliance.

14. Resource Conservation and Recovery Act (RCRA). These regulations require that hazardous wastes shall be managed from "cradle to grave", including proper characterization, accumulation, handling, storage and treatment of the waste. Other hazardous waste regulations/documents include:

- Code of Federal Regulations (40-CFR-260-268)
- Colorado Code of Regulations (6-CCR-1007, 260-268)
- NVO-325; Nevada Test Site Waste Acceptance Criteria
- WPP-DOE69; Waste Acceptance Criteria for the Waste Isolation Pilot Plant
- 49 CFR Parts 171 & 172; Hazardous Materials Regulations
- 7-CCR-1101.14; Underground Storage Tank Regulations
- CO-7890010526; RFETS RCRA Permit and Compliance Documents

B. DOE Orders/Guidance:

1. DOE 3790.1A, Federal Employee Occupational Safety Health Program. This order provides places and conditions of employment that are as free as possible from recognized hazards that cause or are likely to cause illness or physical harm.

2. DOE 5400.1, General Environmental Protection Program. Provides guidelines for measuring, calculating, and reporting the effects of operations on the environment.

3. DOE 5400.5, Radiation Protection of Public and the Environment. Provides guidelines for monitoring and assessing radiation exposure to workers and the general public in order to minimize the level of exposure.

4. DOE 5400.3, Hazardous and Radioactive Mixed Waste Program. This Order establishes the DOE hazardous and radioactive mixed waste policies and requirements and implements the requirements of the Resource Conservation and Recovery Act within the framework of the environmental programs established under DOE 5400.1.

5. DOE 5820.2A, Radioactive Waste Management. The purpose of this Order is to establish policies, guidelines, and minimum requirements by which DOE manages its radioactive and mixed waste and contaminated facilities.

6. DOE 232.1 (5000.3B), Occurrence Report/Processing of Operations Information. Requires timely reporting of events that could adversely affect health, safety, environment, security or safeguards.

7. DOE 4330.4B, Maintenance Management Program. Provides the requirements to ensure a safe and reliable maintenance program.

8. DOE 5400.4, Environmental Protection, Safety and Health Protection Standards. Provides a listing of ES&H standards.

9. DOE 5480.19, Conduct of Operations for DOE Facilities. Provides well developed guidelines for industrial operations practices.

10. DOE 5480.20, Training and Qualification. Establishes the training program requirements.

11. DOE 5480.21, Unreviewed Safety Questions. Sets forth the definition and basis for determining the existence of a USQ.

12. DOE 5480.22, Technical Safety Requirements. Delineates the criteria, content, scope, format, approval process, and reporting requirements.

13. DOE 5480.23, Nuclear Safety Analysis Reports. Requires facilities to establish and evaluate the adequacy of safety bases of the facilities.

14. DOE 5633.3A, Control & Accountability of Nuclear Material. Provides guidelines for periodic measurement and inventorying of special nuclear material.

15. DOE 5700.6C, Quality Assurance. Establishes quality requirements needed for non-nuclear operations within a DOE facility.

16. DOE Rule 10CFR Part 830.120, Price Anderson Amendments Act. Establishes quality requirements needed for nuclear operations within a DOE facility.

17. FAR/DEAR, Federal Acquisition Regulations/DOE Acquisition Regulations. Guidelines for acquisition of services and supplies.

C. Other:

1. Master Activity List (MAL). Identifies the authorized documents that enable work to be planned or worked for a given activity.

2. Rocky Flats Cleanup Agreement.

FISCAL YEAR STATEMENT OF WORK

Baseline Statement of Work for Fiscal Year 1998

Baseline Statement of Work for Fiscal Year 1999

1.1.05.10.01 444 Cluster Landlord Functions

Perform B444 Cluster Landlord Activities including Operations Management, Maintenance, Operations Technical Support, and Compliance & Surveillance. Continue room closures and other landlord cost reduction activities as resources permit. Continue to support waste repackaging and other building client operations as required.

Implement a Chronic Beryllium Disease Prevention Program (CBDPP) in the B444 Cluster facilities. The activities for implementation include, at least in part; Baseline inventory and sampling, hazards assessment, exposure monitoring, exposure reduction and minimization, training, record keeping, performance feedback, and program administration and oversight in accordance with the site CBDPP. This program will provide the facilities with adequate Industrial Hygiene coverage and equipment necessary to perform the functions required by this program. Hazards assessments, work planning, and exposure monitoring will be performed as required and activities will be evaluated to ensure exposure to Beryllium is minimized. The scope of this program is to extend for one year only and falls under the Landlord function as an element of facility surveillance's.

1.1.05.10.02 444 Cluster Stabilization/Hazard Removal

Initiate Hazard Reduction work. Hazards reduction includes the tasks of: Development of a Project Execution Plan, developing work summary plans, Integrated Work Control Packages (IWCP), for removal or containment of hazardous chemicals and other materials, holdup removal, and emptying storage areas to reduce fire loading. Activities may include inventory and removal of unattached hazardous materials from the facilities and immediate areas, such as regulated hazardous chemicals, cyanide, beryllium, and various gas cylinders. RCRA unit closures may be completed. An economic disposition determination shall be made for unneeded property. This is intended to be a two year activity preparing the cluster for transition to D&D.

As noted above there are several possible specific activities currently identified to be handled by the hazards reduction effort. All activities will be preplanned and authorized with a Hazards Reduction PEP acting as the primary guidance and integration tool.

1.1.05.10.04.03 B444 Decommissioning, 444 Cluster

Initiate preparation and integration planning for transition to D&D.

1.1.05.30.01 Miscellaneous Industrial Zone IHSS Planning

Industrial Area Characterization

Preparation of a comprehensive industrial area characterization plan will be prepared. The plan will be a comprehensive strategy for complete characterization of the industrial area soils and groundwater, but will not include specific IHSS characterization plans such as Sampling and Analysis Plans or Field Implementation Plans. It will however, develop a strategy for sampling the IHSSs, PACs, and UBCs based on the latest D&D planning and strategy. It will also include a strategy for defining the Industrial Area Plume and how to approach characterizing and locating plume contaminant sources.

Characterization of Bowman's Pond will be performed. This will include development of a SAP, HASP, QAPjP, and FIP. Sampling, analysis, data validation, and data evaluation will be performed. A summary data report will be prepared to support a remedial decision. The draft decision document will be developed and submitted to the regulators for review and approval.

Baseline Statement of Work for Fiscal Year 2000

1.1.05.10.01 444 Cluster Landlord Functions

Perform B444 Cluster Landlord Activities including Operations Management, Maintenance, Operations Technical Support, and Compliance & Surveillance. Continue room closures and other landlord cost reduction activities as resources permit. Continue to support waste repackaging and other building client operations as required.

1.1.05.10.02 444 Cluster Stabilization/Hazard Removal

Complete Hazards Reduction program in accordance with the Hazards Reduction Project Execution Plan.

MILESTONES

Proposed Milestones for Fiscal Year 1999

<u>WBS Element</u>	<u>Milestone Description</u>	<u>Type</u>	<u>PM Number</u>	<u>Due Date</u>
1.1.05.10.01	B444 Cluster Transition to D&D Plan	Internal		9/30/99
1.1.05.10.02	B444 Cluster Hazards Reduction Project Execution Plan	Internal		12/1/98
1.1.05.30.01	Draft Decision Doc For Bowmans Pond To Agencies	Internal		8/30/99
1.1.05.30.01	RC-0020 FY99-M7 Dev Compr Plan - Char IA Soil/GW	RFCA		9/30/99

Proposed Milestones for Fiscal Year 2000

<u>WBS Element</u>	<u>Milestone Description</u>	<u>Type</u>	<u>PM Number</u>	<u>Due Date</u>
1.1.05.30.01	FY00 Report on Pre-Remedial Investigation of I/A	Internal		9/29/00

Proposed Milestones for Fiscal Year Outyear

<u>WBS Element</u>	<u>Milestone Description</u>	<u>Type</u>	<u>PM Number</u>	<u>Due Date</u>
1.1.05.02.06	Complete Characterization of B123 UBC	Internal		3/30/01
1.1.05.02.06	Complete Remediation of B123 UBC	Internal		9/28/01
1.1.05.30.01	FY01 Report on Pre-Remedial Investigation of I/A	Internal		9/28/01
1.1.05.30.01	FY02 Report on Pre-Remedial Investigation of I/A	Internal		9/30/02
1.1.05.30.01	FY03 Report on Pre-Remedial Investigation of I/A	Internal		9/30/03

PERFORMANCE MEASURES

FISCAL YEAR SPECIFIC ASSUMPTIONS AND CONDITIONS

See General Assumptions.

IMPACT OF DIRECTED FUNDING REDUCTION ON WORK SCOPE

Reduction in compliance with Authorization Basis mandated operational and safety requirements, activities and surveillance. Reduction in the number of hazard reductions accomplished and a resultant continuation of current landlord requirements and costs.

DETAILED COST PLAN

Baseline Cost Plan for Fiscal Year 1998

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.02.04.02	\$5,338	EW0560600
1.1.05.02.04.03	\$467	EW0560600
1.1.05.10.01	\$2,306	EW0560700
1.1.05.10.02	\$75	EW0560600
1.1.05.13.04	\$68	EW0560600
Totals	\$8,254	

Baseline Cost Plan for Fiscal Year 1999

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.10.01	\$1,819	EW0560700
1.1.05.10.02	\$4,210	EW0560600
1.1.05.10.04.03	\$250	EW0560600
1.1.05.30.01	\$844	EW0540000
Totals	\$7,123	

Baseline Cost Plan for Fiscal Year 2000

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.10.01	\$1,400	EW0560700
1.1.05.10.04.03	\$2,000	EW0560600
1.1.05.30.01	\$1,000	EW0540000
Totals	\$4,400	

Baseline Cost Plan for Fiscal Year 2001

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.10.01	\$1,311	EW0560700
1.1.05.10.04.01	\$66	EW0560600
1.1.05.10.04.02	\$10	EW0560600
1.1.05.10.04.03	\$8,692	EW0560600
1.1.05.10.04.04	\$14	EW0560600
1.1.05.10.04.05	\$26	EW0560600
1.1.05.10.04.06	\$1,669	EW0560600
1.1.05.10.04.07	\$26	EW0560600
1.1.05.10.04.08	\$66	EW0560600
1.1.05.10.04.09	\$52	EW0560600
1.1.05.10.04.10	\$32	EW0560600
1.1.05.10.04.11	\$5	EW0560600
1.1.05.10.04.12	\$12	EW0560600
1.1.05.10.04.13	\$32	EW0560600
1.1.05.10.04.14	\$8	EW0560600
1.1.05.30.01	\$1,000	EW0540000
Totals	\$13,022	

Baseline Cost Plan for Fiscal Year 2002

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.10.04.01	\$66	EW0560600
1.1.05.10.04.02	\$10	EW0560600
1.1.05.10.04.03	\$8,727	EW0560600
1.1.05.10.04.04	\$14	EW0560600
1.1.05.10.04.05	\$26	EW0560600
1.1.05.10.04.06	\$1,675	EW0560600
1.1.05.10.04.07	\$26	EW0560600
1.1.05.10.04.08	\$66	EW0560600
1.1.05.10.04.09	\$53	EW0560600
1.1.05.10.04.10	\$33	EW0560600
1.1.05.10.04.11	\$5	EW0560600
1.1.05.10.04.12	\$12	EW0560600
1.1.05.10.04.13	\$33	EW0560600
1.1.05.10.04.14	\$8	EW0560600
1.1.05.10.06	\$116	EW0540000
Totals	\$10,870	

Baseline Cost Plan for Fiscal Year 2003

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.02.04.01	\$7	EW0560600
1.1.05.02.04.02	\$10	EW0560600
1.1.05.02.04.04	\$161	EW0560600
1.1.05.02.04.06	\$10	EW0560600
1.1.05.02.04.07	\$161	EW0560600
1.1.05.02.04.08	\$31	EW0560600
1.1.05.02.06	\$93	EW0540000
1.1.05.10.04.01	\$0	EW0560600
1.1.05.10.04.02	\$0	EW0560600
1.1.05.10.04.03	\$34	EW0560600
1.1.05.10.04.04	\$0	EW0560600
1.1.05.10.04.05	\$0	EW0560600
1.1.05.10.04.06	\$7	EW0560600
1.1.05.10.04.07	\$0	EW0560600
1.1.05.10.04.08	\$0	EW0560600
1.1.05.10.04.09	\$0	EW0560600
1.1.05.10.04.10	\$0	EW0560600
1.1.05.10.04.11	\$0	EW0560600
1.1.05.10.04.12	\$0	EW0560600
1.1.05.10.04.13	\$0	EW0560600
1.1.05.10.04.14	\$0	EW0560600
1.1.05.10.06	\$3,990	EW0540000
1.1.05.13.04.01	\$31	EW0560600
1.1.05.13.04.02	\$31	EW0560600
1.1.05.13.04.03	\$31	EW0560600
Totals	\$4,598	

Baseline Cost Plan for Fiscal Year 2004

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.02.06	\$964	EW0540000
1.1.05.10.05	\$18	EW0560600
Totals	\$982	

Baseline Cost Plan for Fiscal Year 2005

<u>WBS Element</u>	<u>BCWS (\$000)</u>	<u>B&R Code</u>
1.1.05.02.05	\$18	EW0560600
Totals	\$18	

APPENDIX E

B444 CLUSTER FLOOR PLAN DRAWINGS/CONTAMINATED AREAS

Appendix E Contents

Drawing 30444-1-M BLDG 444, 445, 449, 427, 453, 454, and 455

Drawing 30444-2-M Basement and Mezzanine Plan

Drawing 30447-1-M BLDG 447 and 448

Note: Cross hatched areas on drawings indicate locations of areas currently designated as being within the Contaminated Area (CA).

APPENDIX F ORGANIZATIONAL STRUCTURE

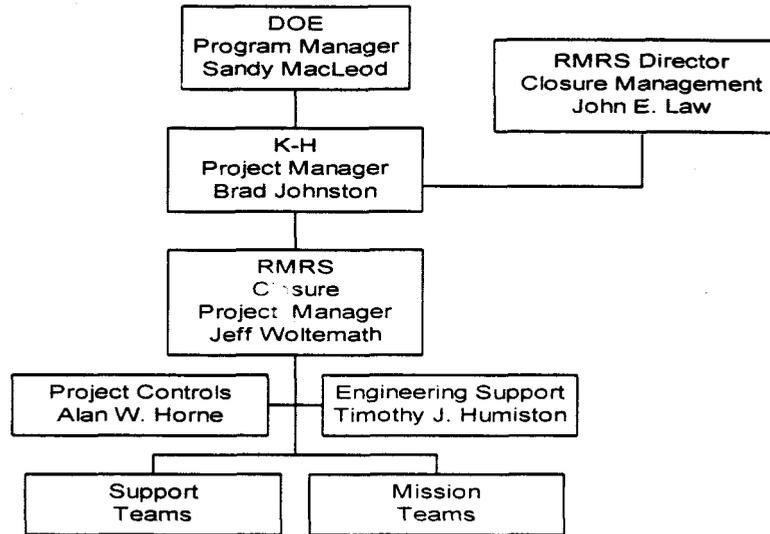
Appendix F Contents

444 Closure Project Organizational Hierarchy

444 Closure Project Organization Chart

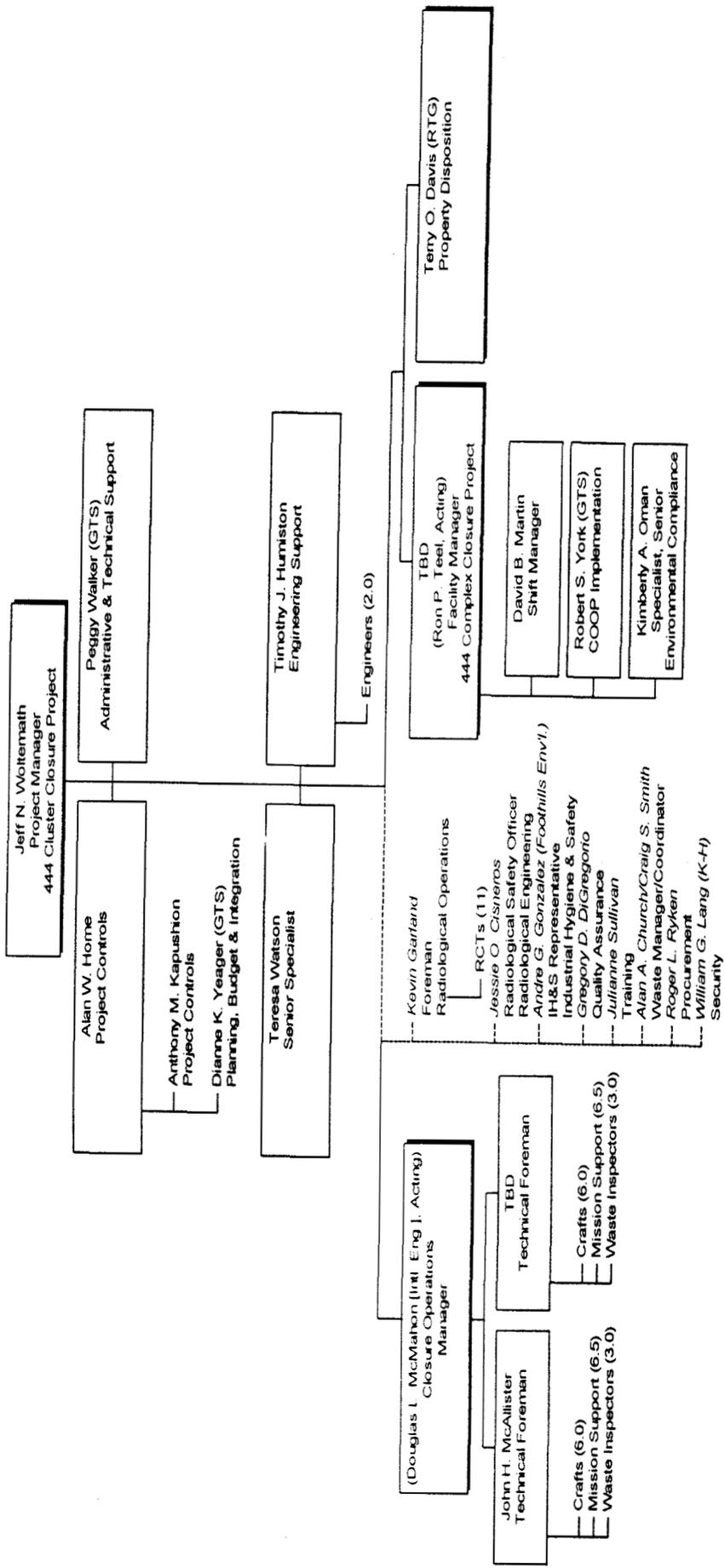
Contact List for Key Project Personnel

444 Closure Project Organization Hierarchy



PROJECT EXECUTION PLAN

444 CLUSTER REMOVAL PROJECT



Contact list for Key Project Personnel

Position	Name	Phone #	Page	FAX	BLDG.
Waste Customer Service Manager	Church, Alan A.	x 7825	212-6560		T664A
Radiological Safety Officer	Cisneros, Jessie O.	x 6452	212-6349	x 6783	444
Property Disposition	Davis, Terry, O.	x 4961	N/A		T891B
Quality Assurance	DiGregorio, Gregory	x 5688	212-6206		T893B
Foreman, Radiological Operations	Garland, Kevin	x 4310	212-3840		T900D
IH&S Representative	Gonzales, Andre G.	x 6727	212-6636	x 5513	444
Environmental Compliance	Hopkins, Ted	x 7652	212-6082	x 4641	116
Project Controls	Horne, Alan W.	x 5644			122
Engineering Support	Humiston, Tim	x 2700	212-5876	x 8244	T130
Maintenance Planning	Johnson, Ted	x 6448	212-5697	x 3711	881
K-H Project Manager	Johnston, Brad	x 5125	212-5431	x 3090	130
Project Controls	Kapushion, Antony	x 4228			750
Security	Lang, William G.	x 5332	212-4007		115
RMRS Director Closure Management Division	Law, John E.	x 4842	212-6540	x 5198	T893B
DOE Program Manager	MacLeod, Sandy	x 3367	888-290-7955		460
Shift Manager	Martin, David B.	x 8214	212-5683	x 5513	444
Technical Foreman	McAllister, John H.	x 4237	212-5667	x 5513	444
Closure Operations Manager	McMahon, Douglas L.	x 2633	212-6567	x 5513	444
Environmental Coordinator	Oman, Kimberly	x 7129	212-5688	x 5513	444
Property Disposition	Reynolds, Richard	x 7434	212-6238	x 8244	T130F
Procurement	Ryken, Roger L.	x 9890	N/A		116
Waste Manager Coordinator	Smith, Craig S.	x 6530	212-6596		T130J
Training	Sullivan, Julianne	x 7146	212-4269		776
Facility Manager	Teel, Ron P.	x 6127	212-5652	x 5513	444
Administrative and Technical Support	Walker, Peggy	x 2674	212-6367	x 4413	444
Technical Support	Watson, Teresa	x 7376	212-6361	x 5513	444
RMRS Closure Project Manager	Woltemath, Jeff	x 2688	212-6531	x 5513	444
Plannig, Budget & Integration	Yeager, Dianne	x 2577	N/A	x 5513	444
COOP Implementation	York, Robert S.	x 5380	212-6365	x 5513	444

APPENDIX G 444 CLUSTER RADIOACTIVE SOURCES

Appendix G Contents

TABLE G-1 - List Of Radioactive Sources

PROJECT EXECUTION PLAN**TABLE G-1 - List Of Radioactive Sources**

RFETS ID	NUCLIDE	ACTIVITY (micro curries)	STATUS
21	Co-60	57518	Out-of-Service
26	Co-60	132	Out-of-Service
37	Cs-137	1000	Out-of-Service
82	Co-60	164	Out-of-Service
83	Cf-252	4	Out-of-Service
151	Co-60	2717922	Out-of-Service
297	Cf-252	23.3	Out-of-Service
363	Cf-252	0.73	Out-of-Service
475	Co-60	1566	Out-of-Service
507	Cf-252	221.7	Out-of-Service
2210	Sb-124	60550	Active
2254	Sr-90	0.01	Active
2601	Tl -204	20	Out-of-Service
2673	Pu-239	0.01	Active
3671	Sr-90	0.01	Active
3677	Pu-239	0.01	Active
3973	Ir-192	0	Out-of-Service
3974	Cs-137	0	Out-of-Service
3975	Cs-137	0	Out-of-Service
3976	Cs-137	0	Out-of-Service
3977	Cs-137	0	Out-of-Service
3978	Cs-137	0	Out-of-Service
3979	Cs-137	0	Out-of-Service
3980	Cs-137	0	Out-of-Service
3981	Cs-137	0	Out-of-Service
3989	Cs-137	0	Out-of-Service

APPENDIX H

WASTE MANAGEMENT PLAN



Rocky Mountain
Remediation Services, L.L.C.

... protecting the environment

ROCKY FLATS 444 CLUSTER REMOVAL PROJECT

WASTE MANAGEMENT PLAN

INITIAL ISSUE HAZARDS REDUCTION

(LATER)

Prepared By:

Date:

APPENDIX I DOCUMENT LIST

Appendix I Contents

Pages 130 through 143 of the Facility Disposition Program Manual, Appendix C-2, "Project Strategies, Plans, and Deliverables".

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

APPENDIX C-2
Project Strategies, Plans, and Deliverables Matrix

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold	Point**	Planned Date of Completion	Date Completed	Comments***
1	II	D-10	Acceptance Criteria, Quality Assurance Plan				X						TBD
2	II		Access Reduction Authorization Requirements										TBD
3	CO	B-10	Accounting Closeout (ACO)				X						TBD
4	II		Activity Hazard Analysis Report										Y
5	E	J-12	Additional Decontamination Required (letter)										TBD
6	I		Administrative Record, Establish Record System	RFCA			X		X				TBD
7	II	C-2	Architect/Engineer Correspondence					X					Y
8	II		Asbestos Abatement DOE approval to start				X						TBD
9	II		Asbestos Abatement Plan					X					TBD
10	II		Asbestos Abatement Plan: Letter of submittal to State					X					TBD
11	I		Asbestos Characterization Report					X					TBD
12	II		Auditable Safety Analysis					X					TBD
13	II		Authorization Basis for Decommissioning					X					Y
14	II		Authorization Basis Implementation Plan										TBD
15	II		Authorization Basis, Landlord function transition plan										TBD
16	II		Authorized Activities List, Cluster Decommissioning Project										TBD
17	A	B-8*	BCP Log/BCPs				X						TBD

* = Minimum Requirement for a Project, ** Refer to Approval Matrix, *** State Revision to Documents in Comments
 Phase of Project: I = Scoping, II = Planning, III = Phase II Planning & Engineering, E = Execution, CO = CloseOut
 Section

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point**	Planned Date of Completion	Date Completed	Comments**
18	II	E-7	Bid Estimates-Equipment, construction, A/E				X					DFD
19	II	G-4	Bid Evaluations				X					DFD
20	S		Building description and history									Y
21	S		CERCLA Implementation, from RCRA to CERCLA									TRSD
22	E	E-8	Change Order Estimates				X					DFD
23	S		Characterization Cost Estimate, Hazardous Material Characterization and Radiological Characterization									Y
24	S		Chemical Inventory Report					X				Y
25	I		Chemical Management Plan, Chemical Final Report					X				Y
26	S	D-3	Conceptual Design Report				X					N
27	II	E-3	Conceptual Design Report Estimate				X					N
28	A	H-11	Construction Communications				X					DFD
29	II	H-4	Construction Field Changes				X					DFD
30	A	H-17	Construction Miscellaneous				X					Y
31	II	H-1	Construction Notification				X					"
32	E	H-10	Construction Redlines				X					"
33	II	H-7	Construction Transmittal				X					"
34	S		Cost estimate of project									Y
35	E	H-2	Daily Status Reports/Logs				X					Y
36	II	B-7	Davis-Bacon Submittal & Determination	1-900000-ADM-9.05, Davis Bacon Process	Procurement Systems Volume I & II		X					DFD
37	II		Decision Document Transmittal Letter to CDPHE from DOE	RFCA				X				DFD

** - Minimum Requirement for a Project, ** Refer to Approval Matrix, *** State Revision to Documents in Comments Phase of Project: I = Scoping, II = Planning, III = Phase II Planning & Engineering, E = Execution, CO = CloseOut

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project Site?	Admin. Record?	Project Milestone / Hold Point?	Planned Date of Completion	Date Completed	Comments***
** = Minimum Requirement for a Project, * Refer to Approval Matrix, *** State Revision to Documents in Comments Phase of Project: I = Scoping, II = Phase I Planning, III = Phase II Planning & Engineering, E = Execution, CO = Close Out												
38	II		Decision Document Transmittal Letter to DOE from K-H	RFCA				X				
39	II	J-6	Decision Document, Based on Facility Type I, II, III (DOP, IM/IRA, PAM)	RFCA			X	X	X			DFO
40	II		Decision Document, Response to comments from Internal, DOE and CDPHE	RFCA				X				DFO
41	II		Decision Document: DOP Comment Resolution	RFCA				X				"
42	II		Decision Document: DOP for review and comment	RFCA				X				"
43	II		Decision Document: DOP, NEPA values section (Section 9.4) prepared by NEPA group for inclusion	RFCA				X				"
44	II		Decision Document: DOP, Public comment resolution RFCAB	RFCA				X				"
45	II		Decision Document: DOP, Submittal of the comment resolution	RFCA				X				"
46	II		Decision Document: Review Comment Record	RFCA				X				"
47	II	J-8	Decision to Execute Project: letter (FDD-3)				X		X			"
48	S	J-1	Decision to prepare initial Project Scope: letter (FDD-1)				X		X			DFO
49	S		Decision to Prepare Project Execution Plan (FDD-2)	Parker Directive Memo Std 16					X			TBD
50	I	J-3	Decision to Proceed with detail planning (letter)						X			TBD
51	II		Decommissioning Project Close-out Plan				X		X			TBD
52	S	J-5	Decommissioning Project Initiation Notification Letter				X	X	X			DFO
53	II		Decontamination Plan	DPP				X				TBD

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point?	Planned Date of Completion	Date Completed	Comments***
54	E	J-15*	Demolition Certificate				X	X				
55	E		Demolition Closeout Report						X			D & D
56	II		Demolition Plan	DPP								"
57	II		Demolition Standard Form 118					X				"
58	S		Detailed Project Description									"
59	II		Disposal of Govt. Property in accordance with AEA notification letter *****									Y
60	A	C-1	DOE Incoming/Outgoing Correspondence									Y
61	E		DOE Notification prior to Demolition				X					Y
62	S	D-9	Drawings, Calculations, Specifications									Y
63	II		Emergency Response Plan				X					D & D
64	II		Engineering Change Request (ECR) Evaluation									Y
65	S	D-4	Engineering Design Criteria									TBD
66	S	E-4	Engineering Design Criteria Estimate				X					Y
67	II		Engineering Design Packages				X					D & D
68	E	D-7	Engineering Design Revisions, Engineering Change Request (ECR), Reviews & Approvals, Field Change Orders (FCO),				X					"
69	II		Engineering Package for Asbestos Abatement									Y
70	II		Engineering Package for Demolition									D & D
71	II		Engineering Package for Strip-out									"
72	S	D-8	Engineering Studies-VE, cost/benefit analysis, etc.									"
73	II	D-1	Engineering Summary Reports				X					"
							X					"

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

Section	No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point?	Planned Date of Completion	Date Completed	Comments**	
														Phase of Project: I = Scoping, II = Phase I Planning, III = Phase II Planning & Engineering, E = Execution, CO = CloseOut
86	E			Final Survey - Post-Demolition (Characterization Report)	RFCA	MARSSIM, RFETS Characterization Protocols			X					
87	S	J-11		Final Survey - Pre-Demolition (Characterization Report)	RFCA	MARSSIM, RFETS Characterization Protocols		X	X					030
88	E			Final Survey Pre-Demolition Closeout Report Response to Comments					X					"
89		B-2*		Funding Release Documents-Directives (older projects, CNARCNAF, DOE Funding Release, etc.)				X						"
90		H-13		GFE Information										Y
91	I			Hazard Baseline Document Review Project File				X						N/A
92	II			Health & Safety Program, Subcontractor										TBD
93	II			Health and Safety Plan (HASP)					X					Y, D&P
94	II			Health and Safety Plan Site Specific					X					"
95	II			Health and Safety Plan Subcontractor					X					"
96	S			Historical Release Report (HRR)					X					"
97	S			HUD/GSA Economic Evaluation					X					"
98	S			HUD/GSA Review	DOE Order 4300.1C, Disposal of Real Property									T&D
99	II			HUD/GSA Risk Evaluation										"
100	S			Idle Equipment Inventory										"
101	II			HSS or OU Remediation Plan/ Characterization Report					X					Y
102	E	H-5		Inspection Reports/Acceptance Criteria				X						Y Future

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point**	Planned Date of Completion	Date Completed	Comments***
103	E	G-7	Inspections/Other Reports									
104			Integrated Hazard Assessments (AHA, ASA, JHA, JSA, etc.)				X					Y
105	II		Integrated Safety Management Plan									Y
106	II	H-19	Integrated Work Control Program (IWCP) Work Package				X					TBD
107	A	C-4	Internal-User, H&S, Inter-dept. correspondence									Y
108	II		Justification for Continued Operation (JCO) Plan	1-MAN-018-NSM			X					Y
109	A	B-5	Key/Critical Decision Requests & Approvals. Includes LOA for older projects				X					N
110	II		Lead Compliance Plan									N
111	I		Lead Sampling, Building Inspection					X				TBD
112	S		Letter requesting characterization of painted surfaces					X				Y
113	S		McKinney Act Determination: Memorandum from DOE to Kaiser Hill									Y
114	S		Milestones for project									Y
115	II		Mobilization Plan									Y
116	A	I-1	Monthly MCS Reports/VARS (current/final)									D&D
117	A	I-2*	Monthly Project Summary Report (PSR) (current/final)				X					Y
118	S		NEPA Environmental Checklist				X					Y
119	II		NEPA Air Quality requirements for the Decision Document, memo of description	10CFR 1021				X				Y
120	S		NEPA Checklist					X				Y

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point**	Planned Date of Completion	Date Completed	Comments***
121	S	B-3	NEPA Documentation- *Checklist, CX, ADM, EA, FONSI, EIS, ROD				X	X				Y
122	S		NEPA Migratory Bird Clearance					X				TBD
123	II	H-3	Non Conformance Reports				X					D&D
124	E		Notification to State prior to Demolition									"
125	A	D-12	Nuclear Safety Documentation				X					TBD
126	CO		Operable Unit final technical memorandum; transmittal letter					X				Y Future
127	S	B-1*	ORD/Project Initiation/Request Documents/User Functional Requirements				X					N
128	CO	B-9*	Partial and/or Final Project Closeout (FPCO)				X					Y
129	I	H-8	Pay Requests				X					Y
130	I		PCBs, Memo regarding PCBs evaluation					X				TBD
131	A	I-3	Performance Indicators				X					Y
132	A		Performance Measure Completion Report									Y
133	A	B-12	Permits/compliance documentation				X					Y
134	A	H-16	Photos				X					Y
135	II		Pollution Prevention Plan									Y
136	S	D-5	Preliminary Design Basis Documentation Title I Design Title I Review-EO, Comments, Meeting Minutes, Comment/Resolution details, Design Review Record				X					TBD
137	II		Preliminary Hazards Analysis (PHA)									N
138	A	A-5*	Presentations, Briefings, Special Briefings, etc. (current/final)				X					N

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point?	Planned Date of Completion	Date Completed	Comments***
* = Minimum Requirement for a Project, ** Refer to Approval Matrix, *** State Revision to Documents in Comments												
Phase of Project: I = Scoping, II = Planning, III = Phase II Planning & Engineering, E = Execution, CO = CloseOut												
139	A	G-5	Procurement Contracts, POs, Change Orders				X					Y
140	A	C-3	Procurement correspondence				X					Y
141	A	G-8	Procurement Invoices				X					Y
142	A	G-1	Procurement Status Report-Request and POs				X					Y
143	A	H-9	Procurement, its Schedules, and Deliveries				X					Y
144	CO	H-18	Project Acceptance & Transfer				X					TBD
145		F-1*	Project Baseline Schedule & Milestones, Revisions				X					Y
146	E	H-8	Project Beneficial Occupancy Notice				X					Y
147		A-2	Project Chronology-Listing of important events, approvals, reviews, special meetings, decision, actions, etc.				X					TBD
148	CO	A-6*	Project Closure Comments-Lessons Learned, other final information				X					Y
149	CO		Project Completion (Critical Decision K-H to DOE (tr))				X					Y
150	CO		Project Completion Report									Y
151		E-1	Project Data Sheet (PDS) Detailed Estimate- Required for Line Items				X	X				Y
152	S	F-2*	Project Detailed Working Decommissioning Schedule - level 5 or greater detail				X					N
153	S	B-6*	Project Execution Plan (PEP)				X					Y
154	A	A-3	Project Issue Reports				X	X	X			Y
155	A	I-4	Project Issues Reports (current/closed)				X					N
156	II		Project Staffing Plan				X					N

APPENDIX C-2 - PROJECT STRATEGIES, PLANS AND DELIVERABLES MATRIX

No.	Phase of Proj.	Proj. File No.	DELIVERABLE	DRIVING DOCUMENT	IMPLEMENTING DOCUMENT	Controlled Document?	Project File?	Admin. Record?	Project Milestone / Hold Point	Planned Date of Completion	Date Completed	Comments***
157	S	A-1	Project Team Organization Chart, Roles and Responsibilities, Core Team and Support Team				X					Y
158	S		Project Team Organization Structure and responsibilities: Letter to CDPHE					X				Did
159	CO	I-5	Project/Lessons Learned Summary Report				X					Y
160	II		Property Disposition Management Plan									Y
161	A	G-2	Purchase Requirements				X					Y
162	S		Quality Assurance Program Description					X				TBD
163	II		Quality Assurance Review					X				"
164	II		Quality Program Subcontractor									"
165	E		Rad Survey Closeout radiological survey plan					X				Did
166	E		RCRA Closure Certification	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10							I.
167	II		RCRA Closure Description Document	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				
168	II		RCRA Closure Go Ahead Letter	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				
169	E		RCRA Closure Notification 45 Day	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				
170	II		RCRA Closure Plan Cover Letter forwarded to CDPHE from DOE	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				
171	II		RCRA Closure Plan Response to Comments	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				
172	II		RCRA Closure Plan Transmittal Letter	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				
173	II		RCRA Closure Plan, State Approval	RFETS Part B Permit RFCA, Attachment 10	RFETS Part B Permit RFCA, Attachment 10			X				Y



APPENDIX J D&D MONTHLY PROJECT REVIEW INSTRUCTIONS

Appendix J Contents

D&D Monthly Project Review Instructions

D&D MONTHLY PROJECT REVIEW INSTRUCTIONS

GENERAL INSTRUCTIONS

Following are general instructions regarding the material to be prepared and presented at the monthly project review by the performing organization/project teams for active FY-99 D&D projects, e.g. 779:

- Initial D&D projects to be reviewed are 779,886,444, and 207.
- Presentations by the project teams will be done using view graphs with 10 hard copies of the material available for the audience.
- Each presentation should take about 30 to 45 minutes and will be held in Room 120 (War Room) in Building 130 starting at 7:30 AM. As a general rule, the review meetings will be held the *third Wednesday* of every month.
- It is expected that the K-H and RMRS D&D Project Managers will make the presentation with support, as required, by project team members, e.g., RMRS, DWRC. Other than the K-H and RMRS Project Managers, participation by other project team members should be limited to 1 or 2 persons.
- This is a monthly project review for the K-H D&D Management. No RFFO or other outside parties, e.g., CDPHE, are to attend or to be invited. The Thursday 3:00 PM D&D meeting is the forum for project reviews with those parties.
- Selected examples of the requested presentation material are attached. These made up examples are for demonstration purposes only.
- D&D Management may ask questions at any time during the presentation.

PRESENTATION FORMAT

The project team will present the following project information in the order shown and by the designated project team member :

SAFETY PERFORMANCE – RMRS PM

Each project will be expected to report on its Recordable Case Rate, Lost Workday Case Rate, Lost Workday Severity Rate, Authorization Basis Violations, Radiological Violations, Criticality Safety Infractions and Occurrences, and any other safety or radiological issues/concerns. Each project should compare its safety performance, for the above mentioned safety indicators, to the K-H site targets.

PERFORMANCE MEASURES – RMRS PM

Current status of specific K-H regular and Super Stretch Performance Measures associated with or supported by the project being presented. This would include, but not be limited to, detailed information regarding current status, issues/concerns, trends, forecasted completion date, required corrective actions, etc.

CORRECTIVE ACTIONS – RMRS PM

If applicable, this item would cover both Closed and Open project specific Corrective Actions (CA):

- For *Closed* Corrective Actions, identify what project specific CA was closed; when and what completion documentation was submitted; and, to whom.

- For *Open* Corrective Actions, review the scope of the project specific CA, current status, due date, forecasted completion date, issues/concerns, and required completion documentation.

(Note: At a minimum, Corrective Actions will be indicated when safety, cost, schedule, external milestone performance, and production thresholds are at risk or have been exceeded.)

PERFORMANCE INDICATORS – K-H PM

Each project will be expected to report on the following project performance indicators:

- **COST PERFORMANCE** – Period, Year To Date (YTD), and projected year-end cost performance including Cost Variance (CV), Cost Performance Index (CPI), and Estimate at Completion.
- **SCHEDULE PERFORMANCE** – Period, YTD, and projected year-end schedule performance including Schedule Variance (SV) and Schedule Performance Index (SPI).
- **MILESTONE PERFORMANCE** – Period, YTD, and projected year-end milestone performance of all external D&D and CPI assigned construction projects. This would include all RFFO, DNFSB, and RFCA milestones. Performance would be shown as a Milestone Performance Index (MPI) which is a comparison of external milestones accomplished to external milestones planned to be completed.
- **PRODUCTION INDICES** – The product of a project's scope of work is the accomplishment of "physical work", e.g. lineal feet of piping/duct removed, cubic feet of glove box packaged, cubic meters of building rubble shipped. Period and YTD performance of this physical work needs to be reported as a family of project specific, discrete, and measurable Production Indices for all D&D Projects. This would be a graphical or tabular comparison of project specific units of work accomplished to project specific units of work planned.

(Note: A Production Index for Level of Effort tasks, e.g. Project Management, would NOT be developed and presented.)

- **BASELINE SCHEDULE PERFORMANCE** - Period and YTD actual performance to the project's activity level Baseline Critical Path Schedule including total float and other key schedule elements. A current "Time Now" or performance period line needs to be indicated and the Critical Path stashed to the Time Now line. If the project is behind schedule or a risk of falling behind schedule, the Project Manager needs to present detailed plans/recommendations to mitigate this behind or potentially behind schedule condition.

60 DAY AND 120 DAY LOOK AHEAD – RMRS PM

This section of the review is a 60-day and 120 day look ahead of the project's schedule, cost, milestone performance, procurement actions, waste projections, Performance Measures, staffing plans, and any other project specific items of interest.

ISSUES AND CONCERNS – RMRS PM

This section of the review is for the project team to present any issues and/or concerns that need D&D Management attention or assistance in solving, e.g. Safety, Authorization Basis, RFCA, QA/QC, etc.

PROJECT STATUS ASSESSMENT – K-H PM

This section will provide a candid verbal assessment of the project's status. This may be nothing more than a simple evaluation of critical project factors or it could be a detailed quantitative and qualitative risk assessment of critical project factors.

AGREEMENTS AND COMMITMENTS – K-H PM

This part of the review will define any new Agreements and Commitments (A&Cs) identified during the project team's presentation. In addition, the status of A&Cs from previous meetings will be reviewed at this time. An A&C could be as simple an item as the commitment by the RMRS PM to provide a copy of the project's critical path schedule to A. Parker by the 15th of next month.