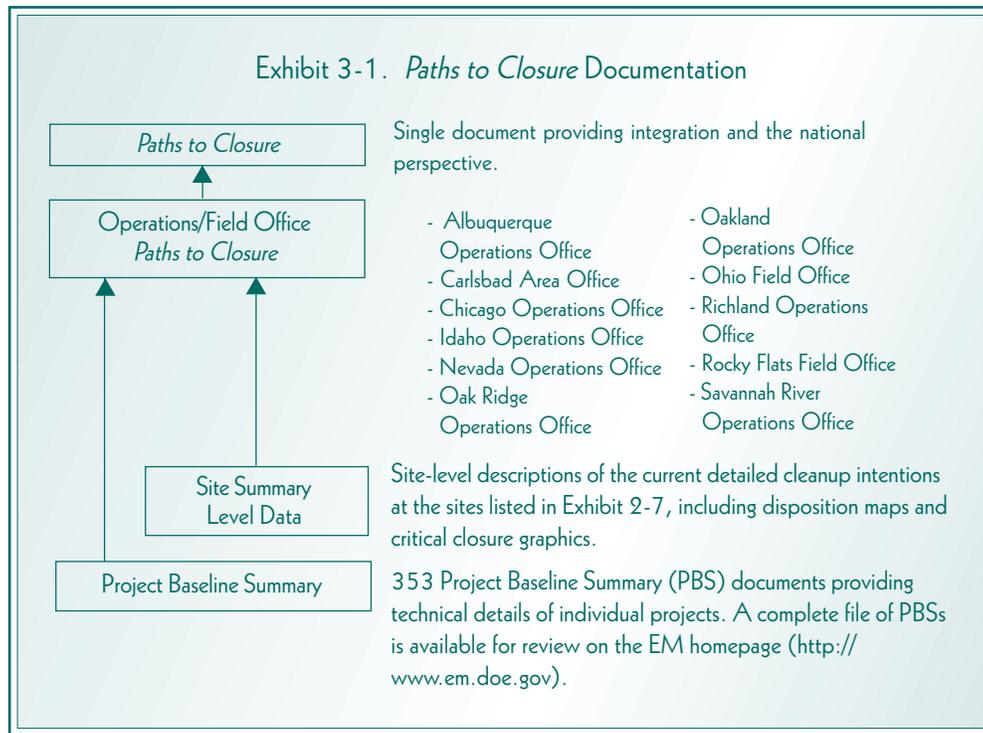


Chapter 3

Environmental Management Site Cleanup Summaries



The current scope of the Environmental Management cleanup mission is described in many documents and management tools. Each product provides a different degree of detail and integration ranging from this document, *Paths to Closure*, that presents a national compilation of the cost, scope, and schedule challenges associated with the EM cleanup mission to the 353 individual Project Baseline Summaries (PBSs) that present the cost, scope, and schedule elements of each project. Exhibit 3-1 illustrates the relationship between these and other products.



All of the documents and PBSs are further supported by site baselines and other detailed information maintained by the sites. This chapter and Appendix E present summaries of each Operations/Field Office’s environmental management strategy. This chapter presents summaries of the Rocky Flats Field Office, the Richland Operations Office, and the Savannah River Operations Office. The summary of the Rocky Flats Field Office is described here because

it illustrates a near-term closure effort with a challenging critical closure path. Rocky Flats must achieve significant enhanced performance goals if the site is to achieve the goal of closure by 2006. The Richland and Savannah River summaries are shown here because they illustrate the complexity of the cleanup effort associated with two other major DOE sites. Appendix E presents the EM cleanup summaries of the other eight Operations/Field Offices. The selection of Rocky Flats, Savannah River, and Richland as examples for Chapter 3 does not imply any priority between these sites and the others discussed in Appendix E.

The Rocky Flats Field Office, the Richland Operations Office, and the Savannah River Operations Office summaries that follow contain a discussion of the EM mission managed by the Operations/Field Office. The discussion is broken into five sections: a general overview; a discussion of end state assumptions; the cost and completion dates for the sites and projects; a work scope summary; and the critical closure paths and programmatic risks of the strategy managed under the Operations/Field Office. Additional information on all of the Operations/Field Offices can be found in the site versions of *Paths to Closure*.

Included as part of each work scope summary is a “Conceptual Summary Disposition Map.” These maps show a summary of each office’s current conceptual life-cycle approaches for managing EM wastes, nuclear materials, and contaminated media — from their current status, through storage, treatment, and disposal — to achieve the assumed site end states described in the relevant site strategy. In some cases, these conceptual approaches include shipping and off-site treatment and disposal. The Conceptual Summary Disposition Maps represent a “roll-up” from site-, waste-, material-, and media-specific maps. Volumes are approximate and have been rounded to two significant figures. The maps represent data approved as of February 1998. Since then, EM has carried out an effort to reconcile discrepancies and improve data quality. Although these improvements will not appear in *Paths to Closure* until the next update, they are reflected in the current “working” data set that EM continually updates as sites make changes.

Conceptual Summary Disposition Maps compile information for the sites that report through the Operations or Field Offices. The maps do not reflect Headquarters-directed or national-level strategies for each site, Operations Office, or Field Office. Within each map, activities are organized into “streams,” which are defined as groups of materials, media, or wastes having similar

origins, management requirements, or barriers to disposition. The following seven waste, material, and media categories are depicted in the maps:

- High-level waste (HLW)
- Transuranic waste (TRU)
- Mixed low-level waste (MLLW)
- Low-level waste (LLW)
- Environmental restoration activities (ER)
- Spent nuclear fuel (SNF)
- Nuclear materials

As has always been the case for this planning effort (reflected in December 1996 and October 1997 guidance to sites) implementation of each element of the EM program is contingent upon the completion of whatever evaluation is required under the National Environmental Policy Act (NEPA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or other statutes.

Decisions that remain to be made include those resulting from two DOE Environmental Impact Statements (EISs). Decisions on disposition of certain nuclear materials will be made pursuant to the Department's *Management of Certain Plutonium Bearing Residues and Scrub Alloys at the Rocky Flats Environmental Technology Site Environmental Impact Statement*. Until these decisions are made, the Conceptual Summary Disposition Maps reflect the "to be decided" (or "TBD") status of those materials.

Decisions on five waste types have been or will be made pursuant to the Department's May 1997 *Final Waste Management Programmatic Environmental Impact Statement* (WM PEIS). This nationwide NEPA analysis examined the potential environmental impacts of managing more than 2 million cubic meters of wastes from past, present, and future DOE activities. The Final WM PEIS identified preferred alternatives for transuranic waste treatment and storage, high-level waste storage, and hazardous waste treatment. The Department has identified preferred management strategies for mixed low-level waste treatment and disposal and low-level waste treatment and disposal. Preferred sites for these management activities have not yet been identified. In this chapter, assumptions regarding low-level and mixed low-level wastes are subject to change based on future Records of Decision (RODs). The Department has committed to publicly identify its preferred sites at least 30 days prior to issuing any ROD for these two waste streams. As of February 1998, one ROD has been issued from the WM PEIS process for transuranic waste treatment and storage. The Conceptual Summary Disposition Maps show specific disposition of transuranic waste, consistent with this ROD.

The Conceptual Summary Disposition Maps' depiction of environmental restoration activities differ from other waste or material management activities. Disposition paths for environmental restoration activities begin with "Contaminated Media" and show a "Response Strategy" for the media. Those strategies may or may not be based on decisions regarding environmental restoration wastes resulting from the CERCLA, NEPA, and Resource Conservation and Recovery Act (RCRA) processes. Where such decisions have not yet been made, environmental restoration planning was based upon assumptions that are being evaluated under CERCLA, NEPA, and/or RCRA, and may change as more media characterization data become available, as comments are received from local stakeholders through public involvement processes, or as the regulatory agencies review and evaluate the various cleanup alternatives.

3.1 Rocky Flats Field Office Summary

The Rocky Flats Environmental Technology Site (RFETS) is located approximately 15 miles northwest of Denver, Colorado. Construction of the site started in 1951. Facilities at the site are located on approximately 385 acres of an industrial area, surrounded by a buffer zone of approximately 5,800 acres of prairie terrain. RFETS has over 700 permanent structures that were built to support its mission. The primary mission of the site was the manufacture and assembly of nuclear and nonnuclear weapons components, as well as to recover plutonium. In January 1992, the nuclear weapons production mission of the site was terminated formally; the nonnuclear mission of the site was completed in October 1994. The only remaining mission of the site is cleanup and remediation. The potential risks to health and safety at RFETS arise principally from the large amounts of special nuclear materials (SNM), residues contaminated with plutonium, and radioactive wastes that are stored at the site.



3.1.1 End State

Intermediate site condition expectations for RFETS were developed through a detailed discussion, negotiation, and approval process that resulted in the Rocky Flats Cleanup Agreement (RFCA). Approved in July 1996, this agreement establishes a legally binding relationship between the U.S. Department of Energy (DOE), the Environmental Protection Agency, and the Colorado Department of Public Health and Environment that governs cleanup at the site.

According to the RFCA, planned cleanup levels will permit open space use of the site's buffer zone, and the industrial area will be cleaned up for restricted open space or industrial reuse. Approximately 100 acres of the

site will be capped where complete remediation is technically or economically infeasible. The caps will reduce water infiltration and direct runoff in the area, thereby preventing migration of contaminants. Additional cleanup may be conducted should technological advances or increased funding allow.

Post-closure stewardship requirements for the site have not yet been determined. DOE is currently participating in discussions with the community to determine when it will be appropriate to make long-term stewardship decisions and what the future use of the site should be. DOE expects that discussions about future use may continue for several years before community sentiment is well understood and the site is ready to investigate implementation. Additional information about the RFETS intermediate site condition and long-term stewardship can be found in the Rocky Flats version of *Paths to Closure*.

3.1.2 Cost and Completion Date

The Rocky Flats Field Office has separated its closure activities into 29 discrete projects. The Project Baseline Summary (PBS) developed for each project sets forth detailed strategies for completion of the project and programmatic information that includes cost, schedule, scope, end state, and interim milestones. Exhibit 3-2 presents a summary of the Rocky Flats cost and schedule information for these projects. Additional information is available in each PBS.

The estimated EM life-cycle cleanup cost for the Rocky Flats Environmental Technology Site is \$6.3 billion (constant 1998 dollars). The Rocky Flats cost estimate includes several years of long-term surveillance and monitoring. These costs will be incurred after cleanup activities are completed. Given the uncertainty associated with outyear costs, specifically the cost and duration of stewardship activities, these costs will continue to be refined.

While the March 1997 baseline indicates that the site completion date for the RFETS is 2010, both EM Headquarters and the Rocky Flats Field Office have undertaken the challenge of completing all closure work by the year 2006. To accomplish that challenge, significant enhanced performance goals must be achieved. The management approach, scheduling impacts, technical development, and intersite integration needed to accomplish this goal of completion by 2006 are discussed in more detail in the Rocky Flats Field Office version of *Paths to Closure*. The Rocky Flats Field Office is in the process of revising the 2010 baseline to reflect the commitment to the 2006 goal. The documentation for a 2006 baseline will be completed by the end of this calendar year.