



KAISER-HILL

ROCKY FLATS CLOSURE PROJECT

PROJECT MANAGEMENT PLAN

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Acronyms

ACWP	Actual Cost of Work Performed (Actuals)
BCP	Baseline Change Proposal
BCWP	Budgeted Cost of Work Performed (Earned Value)
CA	Cost Account
CAD	Corrective Action Decision
CAM	Cost Account Manager
CAO	Carlsbad Area Office
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPB	Closure Project Baseline
D&D	Decontamination and Decommissioning
DEAR	Department of Energy Acquisition Regulation
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
EAC	Estimate-at-Completion
ER	Environmental Restoration
ETC	Estimate-to-Complete
EV	Earned Value
GFS/I	Government Furnished Services/Items
IHSS	Individual Hazardous Substance Site
ISM	Integrated Safety Management
IWCP	Integrated Work Control Program
K-H	Kaiser-Hill Company, L.L.C.
LLMW	Low-Level Mixed Waste
LLW	Low-Level Waste
PA	Protected Area
PBD	Project Baseline Description
PCSD	Project Control System Description
PMP	Project Management Plan
QAP	Quality Assurance Program
RAM	Responsibility Assignment Matrix
REA	Request for Equitable Adjustment
RFCA	Rocky Flats Cleanup Agreement
RFCP	Rocky Flats Closure Project
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
ROD	Record of Decision
SNM	Special Nuclear Material
S&S	Safeguards and Security
TRM	Transuranic Mixed
TRU	Transuranic
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WBS	Work Breakdown Structure
WIPP	Waste Isolation Pilot Plant

1.0 Introduction

On Jan. 24, 2000, the Department of Energy (DOE) and Kaiser-Hill Company, L.L.C. (K-H) signed a closure contract for the Rocky Flats Environmental Technology Site (RFETS). The contract includes a target completion date of Dec. 15, 2006 and a target cost of \$3.963 billion.

The Rocky Flats closure contract includes specific provisions relating to the submission of a revised Closure Project Baseline (CPB) on June 30, 2000. Section H.1.04(e) of the closure contract requires K-H to submit:

- An update to the previous baseline (Revision 3a)
- K-H's system for calculating earned value

The updated CPB incorporates:

- The closure contract's statement of work to achieve physical completion, as defined in the closure contract
- All agreed changes to the previous CPB through June 30, 2000 (The CPB does not include DOE change directives that have yet to be negotiated or anticipated, nor does it include anticipated, but not yet received new directives.)
- An alignment between project costs and expected fee within the annual funding level anticipated in the closure contract
- Disposition of Ernst & Young's findings on the previous CPB
- A level of detail the same or greater than the previous CPB

The CPB provides the details for how the closure project will be accomplished. The CPB includes:

- A detailed description of the scope of work
- A logic-based schedule of all work activities
- A cost (includes basis of estimates for the cost) for all project activities

The table below lists the elements that comprise the CPB.

CLOSURE PROJECT BASELINE (Configuration Controlled)	PROJECT MANAGEMENT PLAN		
	Technical and Project Approach Programmatic Risk Management Approach Project Controls and Earned Value System Project Cluster Map Work Breakdown Structure Responsibility Assignment Matrix	K-H Organization Roles and Responsibilities Critical Path Schedule Summary Schedule Summaries Cost Summary Key Milestones Summary Earned Value Activity List	
	SCOPE	SCHEDULE	COST
	Project Baseline Descriptions (PBDs)	CPB Schedule	CPB Cost Estimate Report
SUPPORTING DOCUMENTS			Activity Costs and Basis of Estimates

The CPB implements the contract between K-H and DOE and is contractually independent of agreements between DOE and other agencies (e.g., Rocky Flats Cleanup Agreement [RFCA]). The contract contains change provisions to allow DOE to direct K-H to work to a revised set of completion criteria.

The CPB incorporates all activities required to achieve the completion criteria contained in the contract and listed below:

Contract Completion Criteria

- a. All buildings are demolished, except continuing water treatment facilities or other structures with a DOE-declared continuing mission
- b. All Individual Hazardous Substance Sites (IHSSs) are remediated or dispositioned in accordance with the RFCA as amended Oct. 1, 1999
- c. All wastes are removed except for some materials that can be left in place, recycled, or used as fill materials in accordance with regulatory requirements
- d. Closure caps are used for the remediation of two old landfills, the 700 Area, and the solar ponds, or these areas are otherwise remediated in accordance with the RFCA as amended Oct. 1, 1999
- e. Building foundations, utilities, or other remaining structures, paved roads, and/or parking lots are covered by a minimum of 3 feet of fill after final grade
- f. Surface water on site meets health-based standards based on open space use as calculated using methodology and toxicity assumptions utilized for the July 19, 1999, surface water action level
- g. Water leaving the site in Woman and Walnut creeks meets the water quality standards established as of Oct. 1, 1999, by the Colorado Water Quality Control Commission

The CPB is separate from Government-Furnished Services/Items (GFS/I). GFS/I delivery requests will be provided quarterly per contract requirements. Supporting documentation for GFS/I need dates will be provided as requested based upon current or forecasted schedule performance.

Requests for Equitable Adjustments (REAs) are also separate from the CPB. REAs will stand on their own merits based on current schedule performance with scope changes documented by comparison to the closure contract.

For the purposes of this Project Management Plan (PMP), the term closure or project closure refers to that specific period when the closure contract completion criteria described in the preceding paragraphs is achieved. Following project completion, there will be several activities still occurring at the site, including but not limited to long-term monitoring, remedial action maintenance, contract close-out, management of employee benefit programs, and litigation activities. The scope of work of these activities are post-closure activities and are not included as part of this PMP or CPB.

2.0 Technical Scope of Work

The Rocky Flats Closure Project (RFCP) requires a comprehensive and integrated technical approach to fulfill the closure contract completion criteria. The overall technical approach of the RFCP covers four key mission areas:

1. Stabilization and removal of Special Nuclear Material (SNM) including plutonium residues, metals, oxides, and holdup from the site
2. Disposition all site facilities except those with a continuing DOE-declared mission
3. Treatment and disposal of waste including transuranic (TRU), transuranic-mixed (TRM), low-level waste (LLW), low-level mixed waste (LLMW), hazardous, and sanitary
4. Remediation of the environment (soil, surface water, and groundwater) to cleanup standards prescribed in the closure contract

During recent years, site activities have focused primarily on the removal of plutonium materials and wastes from the site. However, as the site progresses in the stabilization and offsite shipment of SNM, there will be an increasing focus on disposition of facilities and shipment of wastes followed by environmental remediation activities.

2.1 SNM Stabilization and Shipment

The goal of SNM stabilization and shipment activities is to complete processing and offsite shipment of plutonium residues and SNM. Removal of SNM from the site will allow closure of the Protected Area (PA) at the site. The early reduction of the PA followed by the closure of the PA is a key strategy of the CPB. Closing of the PA will signify the elimination of the principal site nuclear and radiological hazards to the worker and the public. The strategy to complete SNM stabilization and shipment activities also responds to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-1. As SNM activities are completed, significant numbers of trained, qualified, and appropriately cleared personnel as well as funding can be redeployed to conduct other key activities. As the PA is reconfigured and the need for safeguards and security protection is reduced, the funding that was spent on safeguards and security activities will be redirected to fund building remediation activities in the CPB.

2.2 Facility Deactivation, Decommissioning, and Demolition Strategy

Nuclear buildings with significant contamination and hazards will undergo deactivation. Deactivation activities remove a plutonium building from operation, place the building in a safe and stable condition, and eliminate or mitigate hazards to ensure adequate protection to the workers, the public, and the environment. Deactivation also includes removal of contaminated systems, system components, or equipment for the purpose of accountability of SNM and nuclear safety.

Buildings free of contamination, or without significant contamination, will not undergo deactivation as defined in the RFCA. These buildings will undergo building stabilization. Building stabilization involves the activities necessary to remove a building from operation and place the building in a safe and stable condition that eliminates or mitigates hazards and ensures adequate protection to the workers, the public, and the environment.

Decommissioning activities remove a building from the site in a safe manner that minimizes hazards and ensures adequate protection to the workers, the public, and the environment. Regulatory approval for decommissioning precedes the physical execution of decommissioning tasks. The decommissioning process results in each building and its contents being dispositioned in accordance with applicable regulations and requirements, whether as waste, recycled material, or reused property.

When decommissioning activities are completed, the facility enters the demolition phase of the project. Demolition of the walls, roofs, non-structural and structural components, foundations and connecting structures (tunnels, breezeways, overhead walkways, etc.) of the building will be performed consistent with the contract completion criteria.

2.3 Waste Treatment and Disposal

The goal of waste treatment and disposal is to provide safe and compliant management of waste in onsite storage facilities, safe and compliant treatment of mixed wastes at onsite and offsite locations, and safe and compliant disposal at approved offsite repositories. These three functions (storage, treatment, and disposal) are performed at varying levels of complexity depending on the particular waste type that requires management. Waste types include LLW, LLMW, TRU, TRM, hazardous, and sanitary.

2.4 Environmental Restoration

The goal of Environmental Restoration (ER) is to clean up the site to be protective of human health and the environment, consistent with the physical completion criteria of the closure contract. Cleanup activities will proceed as accelerated actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and in accordance with the RFCA. These accelerated actions will be completed and finalized, such that all Corrective Action Decision/Record of Decision (CAD/ROD) will require no further remedial action. Site remediation will be complete by Dec. 15, 2006, such that activities occurring afterward will be limited to only long-term environmental monitoring and remedial-action maintenance activities.

2.5 Integrated Safety Management

K-H has established and implemented an Integrated Safety Management (ISM) program in response to DNFSB Recommendation 95-2. The ISM Department of Energy Acquisition Regulation (DEAR) clause was negotiated into the closure contract and requires ISM to be implemented for RFETS work activities. The program meets the contractual requirements of the Federal Rules 48 CFR 970.1002 and 970.5204, DEAR, and DNFSB Recommendation 95-2.

K-H has proactively led ISM program development and sitewide implementation through the Integrated Work Control Program (IWCP) (1-MAN-071-IWCP). Chapter One of the K-H ISM Manual and the IWCP have incorporated the policy and infrastructure for the ISM program to be clearly implemented across the site and among facilities, work activities, and subcontractors. The use of IWCP for all site work incorporates ISM into all work activities, including planning and hazard analysis.

2.6 Safeguards and Security

K-H manages a Safeguards and Security (S&S) program that continues to protect SNM; classified and sensitive unclassified matter; government property; and employees; in accordance with Federal statutes, DOE Policies and Orders, and site policies and procedures. All levels of personnel, from the K-H president to individual contributors, are responsible for adhering to the S&S program policies and procedures. K-H will suspend operations if it is determined that SNM or classified matter is not adequately protected or controlled per established S&S procedures or if sufficient cause exists to believe theft or diversion of SNM or classified matter has occurred.

The K-H policy is to implement and maintain an S&S program to control, account for, and protect special and other nuclear material, classified matter, and government property. The program uses a graded approach determined by risk analyses of facilities and assets requiring protection in accordance with DOE Orders and Design Basis Threat. Performance tests, self-assessments, and inspections are used in the risk analyses to characterize the necessary security systems as well as to ensure that security systems operate as characterized.

2.7 Quality Assurance

Maintaining adequate and appropriate quality assurance and control during the conduct of contract work activities remains a K-H priority. The site Quality Assurance Program (QAP) Manual defines the quality management system for the RFCP. The quality management system is a performance-based program designated to ensure that the criteria of the Nuclear Safety Management Rule 10 CFR Part 830.120, Quality Assurance Requirements, and DOE Order 414.1A, Quality Assurance are managed, performed, and assessed. The quality management system involves management and individual contributions from all organizations producing items, performing activities, and independently verifying that items and activities comply with specific requirements. The site QAP Manual is consistent with DOE G-830.120-Rev. 0, Implementation Guide for use with 10 CFR 830.120 Quality Assurance.

The site QAP Manual describes the roles, responsibilities, and activities for implementing the requirements of 10 CFR 830.120 and DOE Order 414.1A. Since 10 CFR 830.120 and DOE Order 414.1A include identical criteria, K-H has incorporated the requirements into a single program document. The primary distinction between the two requirements is enforceability and applicability. From the perspective of applicability and enforceability, 10 CFR 830.120 applies to nuclear facilities and nuclear activities (activities with the potential to cause radiological harm), and DOE Order 414.1A applies to non-nuclear facilities, activities, and services.

2.8 Environmental Stewardship

K-H is committed to protecting, preserving, and enhancing the environment and the health and safety of employees. Environmental protection and enhancement is a core principle at the RFETS and is demonstrated through implementation of the site environmental stewardship program and continued compliance with governing laws, permits, and compliance agreements. This commitment includes providing adequate management systems and tools to ensure compliance with environmental laws and regulations, nuclear safety and management requirements, applicable agency agreements, milestones, and approved compliance schedules.

3.0 Project Management and Integration

To optimize the performance of closure activities and gain efficiencies within the site organization, the RFCP has been re-engineered around six mission project groups and four support organizations.

The six mission project organizations include:

- Building 371/374 Closure Project
- Building 707 Closure Project
- Building 771 Closure Project
- Building 776/777 Closure Project
- Material Stewardship Project
- Remediation, Industrial Decontamination and Decommissioning (D&D), and Site Services Project

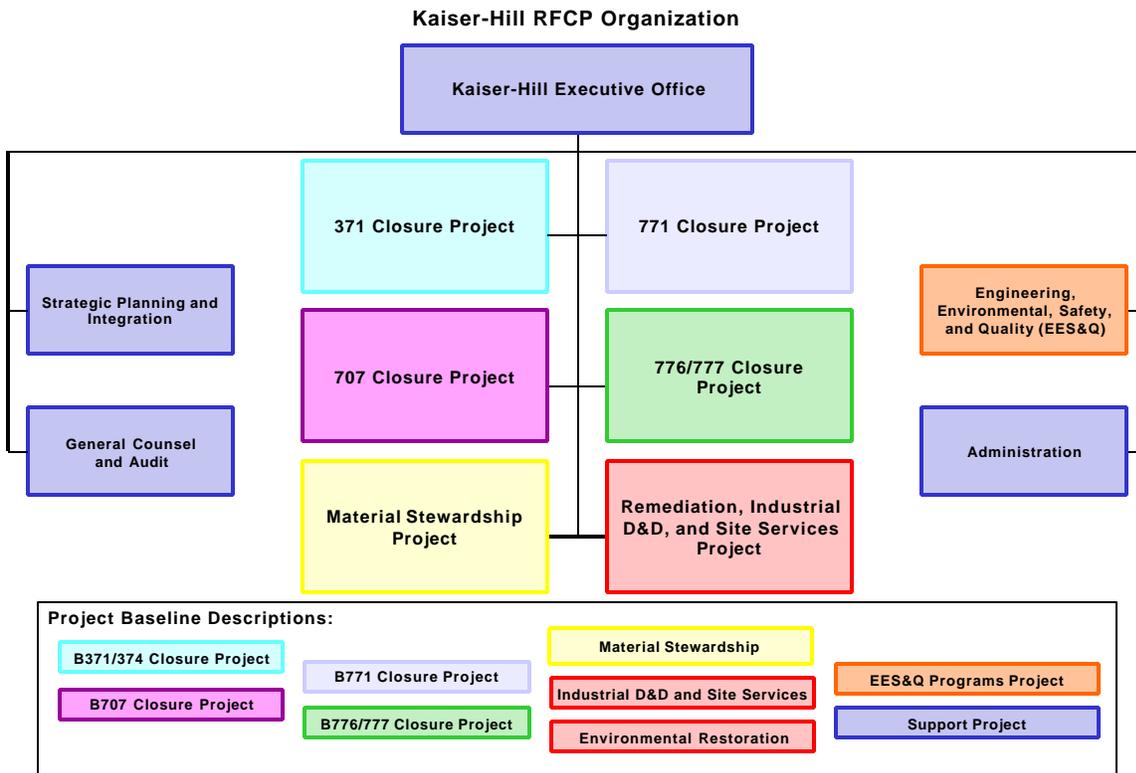
The four support organizations include:

- Engineering, Environmental, Safety, and Quality Programs
- Strategic Planning and Integration
- General Counsel and Audit
- Administration

For the CPB, nine projects have been logically defined within the Work Breakdown Structure (WBS) to plan, cost, and schedule all the activities of the RFCP. Therefore, nine Project Baseline Descriptions (PBDs) have been developed and included within the CPB. The nine PBDs include:

- Building 371/374
- Building 707
- Building 771
- Building 776/777
- Material Stewardship
- Industrial D&D and Site Services
- Environmental Restoration
- Engineering, Environmental, Safety, and Quality Programs
- Support Project (combines Strategic Planning and Integration, General Counsel and Audit, and Administration organizations)

The following figure illustrates the K-H RFCP organization and color codes the 10 organizations to the nine PBDs. The WBS in Appendix A of this PMP is also color-coded to illustrate project ownership of PBDs.



Primary project management responsibilities of K-H are as follows:

- Develop a life-cycle plan for the project that includes technical and budget resource requirements and obtaining formal agreements and commitments with and between all project team members
- Assemble the requisite resources from within the existing subcontractors and/or offsite resources, as appropriate
- Ensure that all site integration interfaces are properly managed and executed and that the appropriate resources are applied when and where needed
- Assign work scope and allocate a balanced, prioritized budget with agreed-upon performance measures and incentives to the subcontractors on the project team
- Provide oversight of subcontractor performance, ensure work quality, control budgets, and adhere to agreed-upon scope and schedule
- Serve as the single point of contact for all internal and external interfaces relating to the project and manage the interfaces to ensure that project execution is efficient and effective

Appendix B summarizes the roles and responsibilities of the K-H RFCP organization. A Project Cluster Map is included as Appendix C and depicts which projects have responsibility for which facilities.

3.1 Work Breakdown Structure

The closure project work scope is organized into a WBS. The WBS is aligned with the project structure to streamline closure activities and minimize non-mission work and unnecessary interfaces. The contract scope of work is organized accordingly in the nine PBDs that are further broken down into more detailed Cost Accounts (CAs).

K-H Project Managers are responsible for PBD performance. The Project Managers have the authority, within the constraints of the K-H/DOE Rocky Flats Field Office (RFFO) contract, to assemble project teams, assign work scope, and allocate budget as defined for the project. K-H Project Managers are also authorized to take corrective actions, when and if necessary, to complete the respective projects as defined in commitments to DOE RFFO and K-H management. Project Manager responsibilities include:

- Approve the scope and technical description within the PBD
- Approve estimates and budgets
- Manage PBD activities to maintain schedules and critical paths
- Approve the Responsibility Assignment Matrix (RAM) for activities within the PBD
- Validate the incorporation of lessons learned
- Approve the allocation of site critical resources within the PBD
- Determine contingency allocation
- Approve subcontract strategies
- Approve change proposals
- Report PBD status monthly and quarterly
- Develop Estimates-at-Completion (EAC), as required
- Develop Estimates-to-Complete (ETC), as required
- Integrate an understanding of risk factors into the phases of planning and execution
- Support the development of programmatic risk mitigation plans

K-H Project Managers have delegated activity management to each Cost Account Manager (CAM). The CAM has the responsibility and authority to plan and budget work, control resources, and execute activities within the approved technical, schedule, and cost baseline of the cost account. A summary of CAM responsibilities related to project management include:

- Develop and maintain the scope and technical description for each CA
- Develop and maintain CA estimates and budgets
- Develop and maintain CA schedule and critical paths
- Develop and maintain the RAM for work activities within the CA
- Incorporate lessons learned in CA planning
- Participate in planning with the Project Manager to allocate site critical resources to the CA
- Coordinate contingency allocation at the CA level, at the direction of the Project Manager
- Develop subcontract strategies for the CA
- Develop and submit for approval any required change proposals
- Maintain interlogic ties to other CAs of the RFCP
- Report status monthly and quarterly
 - Analyze cost variances, identify root drivers, and implement corrective actions, as needed

- Analyze schedule variances and total float, identify root drivers, and implement corrective actions, as needed
- Analyze resource availability versus resource requirements and develop work arounds or recovery plans, as appropriate
- Approve purchase requisitions
- Approve invoices
- Report accrued costs

The project WBS down to the CA level is included in Appendix A and the CPB Organizational Breakdown Structure/Responsibility Assignment Matrix is included in Appendix D.

4.0 Baseline Components

The RFCP CPB comprises three integrated baselines. The WBS is the central unifying feature that ties the technical baseline, cost baseline, and schedule baseline together. The CPB is managed and controlled consistent with the WBS. Each baseline is described below.

4.1 Technical Baseline

The RFCP technical baseline is comprised of all the work activities to achieve the closure contract completion criteria as defined in Section 1.0. These work activities have been logically grouped into nine PBDs.

A PBD is a planning and execution document that identifies the project scope of work (including requirements and assumptions), the areas and facilities included in the project, summary budget and schedule information, and the project's organization and responsibilities. Complete copies of all nine PBDs comprising the CPB have been submitted under separate cover.

4.2 Schedule Baseline

The RFCP schedule baseline is a life-cycle schedule that contains all the work scope included in the RFCP. A site Summary Schedule and CPB Critical Path Schedule to achieve the closure contract completion criteria in 2006 is included in Appendix E of this PMP. The CPB schedule baseline comprises the following schedules:

- Complete detailed closure project schedule
- Project summary schedules
- Project critical path schedules
- Mission work selected cost account critical path schedules
- Summary milestone schedule

A complete schedule is included under separate cover and constitutes the CPB schedule baseline.

4.3 Cost Baseline

A complete CPB cost estimate is included under separate cover and constitutes the cost baseline. The required, total annual funding by project is included in the Individual Project-Specific Cost Summaries in Appendix F.

4.4 Closure Project Baseline and Working Plan

K-H is committed to completing the RFCP within the contract target cost (\$3.963 billion) and schedule (project completion by Dec. 15, 2006) by actively managing to a more aggressive, internal working plan. If K-H were to continue at its current cost and schedule rate, the contract completion criteria would be delivered in 2007 at a cost of approximately \$4.2 billion.

The K-H working plan seeks to further accelerate the project at a reduced cost. The working plan reflects a cost goal of \$3.3 billion and a schedule goal of project completion by Dec. 15, 2005. In both cases, the same work is addressed and completed. The scheduled activities and logic ties are identical. In conformance with the project objectives, the working plan anticipates

efficiencies (many yet to be identified or realized) that will result in an accelerated schedule and lower cost.

In addition to the cost and schedule information contained in the working and performance baselines, safety performance information will be monitored, reported, and published monthly. This information will include trends of key safety performance measures.

5.0 Programmatic Risk Management

Programmatic risk management is an integral part of K-H's management of the RFCP. Achieving accelerated project completion within aggressive schedule and budget targets requires the identification, management, and mitigation of potential risks. K-H has established a Programmatic Risk Management Plan to identify and mitigate project risks. A brief summary is discussed below.

5.1 Project Risks

The RFCP CPB describes how the completion criteria, as described in the closure contract, will be achieved by the contract target completion date of Dec. 15, 2006, for a contract target cost of \$3.963 billion. The RFCP is a complex undertaking, with a number of unknowns. Therefore, there is some uncertainty in the cost and duration of work activities and the timely availability of offsite material and waste receiver sites. Further, a number of closure activities have never been performed before. Thus, there is substantial programmatic risk (as opposed to health or other risks) associated with meeting the contract target completion date and cost. The term risk, as used here, refers to a quantitative expression (i.e., a number) that is obtained by multiplying the probability of an event taking place during the closure project by the severity of the impact of the event on the project.

There are three main sources of programmatic risk (hereafter referred to as risk) to the RFCP: events, schedule, and cost.

Risk Events -- These risks are potential occurrences that can have a deleterious impact on project scope, cost, and schedule. Events can be external or internal to the closure project. For example, an adverse external event might be the unavailability of a government-supplied waste or material receiver site, such as Waste Isolation Pilot Plant (WIPP).

Schedule and Cost Uncertainties -- The CPB consists of a schedule of activities that are logically linked with a specified duration and cost constructed through a structured estimating process. All estimates contain some uncertainty that can be bounded within a predictable range. Since the closure of Rocky Flats is, in many respects, a first-of-its-kind project, the schedule and cost estimates for some activities are subject to a large amount of uncertainty.

These three sources of risk can be individually, and then collectively quantified, and the impact on the closure project target completion date and target cost can be assessed through analytical techniques.

It is important to note that GFS/I are defined in the closure contract. As part of CPB planning, GFS/I have been identified as risks to the project. However, they are not considered in K-H's risk assessment because K-H's ability to control the delivery of GFS/I is out of K-H's control.

5.2 Risk Mitigation Strategy

The process by which K-H will manage these risks is as follows:

Risk Events

- Identify the risk events that have the greatest probability of impacting the project
 - Identify the risks by consulting with the project managers and subject matter experts
 - Estimate the risk of each event
 - Rank order the risks
- Develop mitigation plans for the highest risk events
 - Prepare a risk mitigation project plan
- Develop alternatives and then select the best alternative (usually, the most favorable from a cost and schedule impact perspective)
- Develop an alternative plan (prepare revised scopes, costs, and schedules)
- Constantly monitor the environment for signs of change in a risk event
- Implement the alternative plan if a change occurs

A key component of K-H's programmatic risk management strategy is to develop risk mitigation plans for all event risks of concern associated with contract completion. These plans address the expected impact of the risk on the RFCP and identify intervention strategies to mitigate the risk or its impact. Intervention strategies include risk avoidance (actions to decrease the probability of a risk event occurring) and risk reduction (actions to minimize the impact of the risk). In addition, the risk mitigation plan includes an analysis of the cost-effectiveness of implementing mitigation strategies as well as key decision points. Risk mitigation plans, as developed, will be routinely submitted with each Quarterly Critical Assessment.

Cost and Schedule Uncertainty

- Identify the work activities that have the greatest probability of impacting the project due to the cost and/or schedule uncertainty
 - Identify the estimating ranges for the work activities by consulting with the project managers and subject matter experts
 - Use analytical tools to develop and predict expected estimating values
 - Rank order the work activities by analyzing the impact to the project critical path or total project cost
- Develop mitigation plans for work activities that have the greatest potential impact
 - Reallocate resources to the work activity
 - Accelerate a work activity
- Constantly monitor the work activities for signs of adverse change
- Implement the mitigation plan if a change occurs

More detailed information of the management of programmatic risk can be found in the RFCP Programmatic Risk Management Plan.

6.0 Project Control System and Reporting

The control and reporting system used for all activities is defined and documented in the RFCP Project Control System Description (PCSD). The RFCP PCSD has been established in accordance with contract requirements to provide direction and guidance towards the establishment and maintenance of a cost-effective and efficient performance measurement system.

The RFCP PCSD provides a consistent approach to be used throughout the RFCP. The primary function of the system is to ensure planning and management of closure activities is conducted using sound project management principles and in a timely and cost-effective manner. The system focuses on establishing and controlling baselines. The WBS is used to manage associated technical, cost, schedule, and funding documentation. This information constitutes the detailed technical, cost, and schedule baselines.

In accordance with the K-H closure contract, the PCSD contains four primary components: baseline development, project performance, baseline change management, and the earned value system. These four areas are briefly described in subsequent sections.

6.1 Baseline Development

The Baseline Development section of the PCSD documents the process used to develop and maintain the closure project WBS and the technical, schedule, and cost baselines. The WBS identifies the work scope and successively subdivides that work into increasingly detailed and manageable subsidiary work components. The WBS includes nine PBDs (as previously identified in Section 3.0) and provides mechanisms to integrate the work scope, cost estimates, and schedules into technical, cost, and schedule baselines.

6.2 Project Performance

There are several elements comprising project performance including funds management, cost collection, and accounting; work authorization; performance analysis; and reporting. Project performance is a significant component of the project control system, particularly given a RFCP measurement system that moves away from performance measures to one that uses earned value. A more complete discussion of the use of earned value is included in Section 6.4.

6.3 Baseline Change Management

The RFCP baseline consists of a technical component (consistent with the contract statement of work), a schedule component (commencing on Feb. 1, 2000, and completing on Dec. 15, 2006), and a cost component (reflecting contract target cost plus fee).

Changes to the RFCP cost, schedule, and technical baselines are modified, as required, through a formal, documented change control process. The following depicts the baseline change control thresholds for technical, schedule, and cost changes.

- DOE Headquarters \$40 million or 20 percent of the project costs on an annual basis
- DOE RFFO \$20 million or 10 percent of the project costs on an annual basis
Change to Target Cost
Change to Target Date
- K-H <\$20 million
Addition of non-closure funded work
Any other changes up to the Contracting Officer level

A more comprehensive description of all these elements is included in the RFCP PCSD.

Baseline Change Proposals

The following Baseline Change Proposals (BCP) have been processed and approved from Feb. 1, 2000 through June 2000. These changes have been included in the CPB. The change proposal, Transfer U.S. Forest Services Support from Kaiser-Hill to DOE, was approved by the DOE on March 3, 2000. Two technology deployment (EM50) project change proposals have been approved by K-H in June 2000 and have been transmitted to DOE for informational purposes under separate cover.

New Project #	CP	CP Category	Title	Funding and BCWS Approved \$K	ECOR
C	2000-2001	BCP	Technology Deployment (EM50) Projects (FY00 and FY01)	5766	EW40
G	2000-2002	BCP	Technology Deployment (EM50) Reactive Barrier Systems Monitoring and Maintenance	100	EW40
H	2000-1172	BCP	Transfer U.S. Forest Services support from Kaiser-Hill to the DOE	-12	EW05

Contract Modifications

Since the contract was signed on Jan. 24, 2000, K-H has received directions from the DOE RFFO Contracting Officer in several areas that may require modifications to the closure contract. The work scope modifications may create corresponding changes to the target cost and schedule.

One significant area is WIPP Waste Acceptance Criteria (WAC) Revision 7 compliance. These Waste Analysis Plan (WAP) requirements, if fully implemented, will require substantial increases in target cost and schedule. Therefore, K-H has made certain assumptions in the CPB that will allow cost-effective and timely WIPP waste shipments without compromising safety and environmental stewardship. DOE RFFO, DOE Carlsbad Area Office (CAO), and K-H are working together to identify alternate ways to accomplish the requirements of WIPP WAP. At this time, K-H cannot forecast the impact of the final determination for the application of this

requirement to the RFCP. Therefore, the CPB reflects current costs to support TRM shipments to WIPP. Appendix G includes additional information regarding specific assumptions used in the CPB for WIPP WAP.

6.4 Earned Value System

K-H has established an Earned Value (EV) system to measure RFCP performance consistent with the requirements of the closure contract. The EV measurements will be taken using the K-H standards and procedures. The EV method provides a quantitative dollar value of work scope completed to facilitate assessment of project status.

EV will be taken each quarter per the agreed-upon methodology and entered into the project controls system. Actual costs and accruals also will be collected. The system will calculate the cost and schedule variance for the site. The cost variance calculation will be done on all site activities following the traditional formula: Budgeted Cost of Work Performed [Earned Value] - Actual Cost of Work Performed [Actuals] (BCWP-ACWP).

The closure contract calls for the schedule variance (earned value) calculation to follow a non-traditional approach. The EV activities identified during baseline development will be the basis of K-H schedule variance calculation. Appropriate EV methodologies have been selected for each individual scope of work. The two approved EV methods are the milestone method and level of effort. The PCSD and the K-H standards and procedures contain a more thorough discussion on the EV system and its processes.

The EV is earned only when the activity is 100 percent complete. The schedule variance will be a comparison between the dollar amount of mission EV planned to be 100 percent complete versus the actual mission EV that is 100 percent completed each quarter. Project progress reporting to DOE RFFO for provisional fee consideration purposes will be done on a quarterly basis. The reports will utilize the data in the K-H project controls system.

As stated in the closure contract Section B.6(d)(2), earned value for each predetermined work activity will only be included in the schedule variance calculation when work is 100 percent complete. In the event that technical and/or operational situations arise justifying a non-material adjustment to the completion definition (e.g., piping can be more readily removed during building decommissioning), K-H will take 100 percent EV for the work activity based on the adjusted work activity. K-H also retains the right to reuse an area or set in a building that has been declared 100 percent complete for activities such as interim drum or equipment storage. A proposed EV matrix is included in Appendix I.

7.0 References

1. Rocky Flats Closure Contract No. DE-AC34-00RF01904, Jan. 24, 2000.
2. Rocky Flats Closure Project, Project Control System Description, Revision 0, March 2, 2000.
3. Rocky Flats Environmental Technology Site Programmatic Risk Management Plan Handbook, Revision 1, Feb. 18, 2000.
4. Rocky Flats Cleanup Agreement, July 19, 1996.
5. Project Baseline Description, Building 371/374 Closure Project, June 30, 2000.
6. Project Baseline Description, Building 707 Closure Project, June 30, 2000.
7. Project Baseline Description, Building 771 Closure Project, June 30, 2000.
8. Project Baseline Description, Building 776/777 Closure Project, June 30, 2000.
9. Project Baseline Description, Industrial Building Decommissioning and Demolition and Site Services Project, June 30, 2000.
10. Project Baseline Description, Material Stewardship Project, June 30, 2000.
11. Project Baseline Description, Environmental Restoration Project, June 30, 2000.
12. Project Baseline Description, Engineering, Environmental, Safety and Quality Programs Project, June 30, 2000.
13. Project Baseline Description, Support Project, June 30, 2000.

