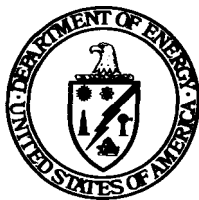


*Office of Civilian Radioactive Waste Management*

---



# ***Program Cost and Schedule Baseline***

---

---

***January 1990***

***U.S. Department of Energy  
Office of Civilian Radioactive Waste Management  
Washington, DC 20585***

---

**MASTER**

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED *Se*

## **DISCLAIMER**

**This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.**

---

## **DISCLAIMER**

**Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.**

**OFFICE OF  
CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
CHANGE CONTROL BOARD DIRECTIVE**

PAGE 1 OF 2

DCP TITLE \_\_\_\_\_ DCP NUMBER DCP 13A  
DOCUMENT NUMBER N/A REVISION NUMBER 0  
DOCUMENT TITLE Program Cost and Schedule Baseline (PCSB)

**DCP DISPOSITION:**

APPROVED	<input type="checkbox"/>
APPROVED WITH CONDITIONS	<input checked="" type="checkbox"/>
DISAPPROVED	<input type="checkbox"/>
ACTION DEFERRED	<input type="checkbox"/>

**CONDITIONS:**

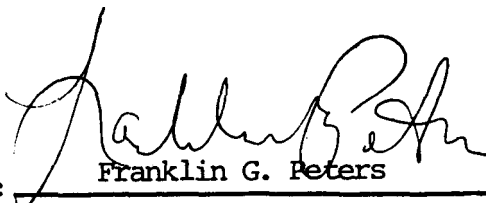
1. To assure that a firm basis exists for the entire Program schedule, responsible PCCB members shall, within 2 months of DCP approval, provide RW-123 with the revised basis and completion criteria for the milestones found in the Attachment hereto. This basis should identify the activity scope and assumptions associated with the milestones, at a level of detail equivalent to the Program Schedule Development exercise.
2. To assure that all milestones contained in this baseline are controlled at an appropriate level, the program shall move as  
(Continued on separate sheet)

**IMPLEMENTATION DIRECTION:**

1. The PCCB Executive Secretary shall issue the Program Cost and Schedule Baseline.
2. The Associate Director for Program Administration and Resources Management (ADPARM) shall coordinate the development of the baseline dates for the intermediate milestones contained in the PCSB without dates, so that a completed PCSB can be approved by July 1990. This DCP (July 1990) will also establish milestone responsibility to the branch level. The July 1990 DCP can include milestone additions, deletions, and changes as appropriate.
3. The ADPARM shall, in coordination with the other PCCB members, develop, by January 11, 1990, a transition plan from the current 3-tier CCB structure to a 2-tier CCB structure.

Attachment

SIGNATURE: \_\_\_\_\_

  
Franklin G. Peters

**CCB CHAIRMAN**

DATE: \_\_\_\_\_

1/4/90

expeditiously as possible toward a 2-tier change control board (CCB) structure and allocate the milestones among those boards.

3. The following changes to baseline dates shall be made to correct oversights in the preparation of the evaluation summary:

Milestones R5291 - "Submit Updated LA to Receive and Possess Waste."  
Change baseline date from 30JUL07 to 30APR08.

Milestone R4185 - "Start Repository Final Procurement and Construction Design." Change baseline date from 30JAN01 to 30OCT01.

Milestone TA01 - "Start Legal Weight Truck Cask Final Design." Change baseline date from 31JAN90 to 18JAN90.

Milestone MI007 - "Start Waste Acceptance at Simple Receipt Facility."  
Change baseline date from 26JAN98 to 31JAN98.

## **Attachment**

### **CHANGES TO THE DCP TO ISSUE THE PCSB (CP-13A)**

The following changes to the PCSB are required to maintain consistency with the Scientific Investigation Plan, dated November 30, 1989. Changes to the Scientific Investigation Plan were specified by cognizant AD's on November 22, 1989.

#### **Changes to be Consistent with the Near-Term Decision Plan:**

1. R1210 - Issue WMSR Document - Volume IV (Repository). Change date to 15MAR90. (2 1/2 months later than DCP).
2. M1009 - Issue WMSR Document - Volume III (MRS). Change date to 16APR90. (1/2 month later than DCP).
3. RR003 - Issue Waste Package Postclosure Compliance Strategy Document - Delete from DCP.
4. R6110 - Issue Draft Revision of ESF Requirements - Change date to 29JUN90. (5 months sooner than DCP)
5. RN433 - Complete Repository Design Requirements Document - Include in Appendix C Part 2 (date TBD).
6. Add milestone - "Complete Repository Program Plan" - 14DEC90.

#### **Changes to be Consistent with the Plan Through Repository LA:**

##### **Repository**

1. R5108 - Issue Repository EIS Notice of Intent. Change baseline date to 30OCT97. (4 years and 4 months later than DCP).
2. R5142 - Issue Repository EIS Implementation Plan. Change baseline date to 30FEB98. (4 yrs and 4 months later than DCP).

## TABLE OF CONTENTS

	<u>Page</u>
1.0 <u>INTRODUCTION</u>	
1.1 Purpose . . . . .	1
1.2 Scope . . . . .	1
1.3 Relationship to Other OCRWM Cost/Schedule Information . . . . .	4
2.0 <u>COST AND SCHEDULE BASELINE DATA</u>	
2.1 Cost Baseline . . . . .	9
2.2 Schedule Baseline . . . . .	9
3.0 <u>REPORTING</u>	
3.1 General Reporting Requirements . . . . .	15
3.2 Cost Reporting . . . . .	15
3.3 Schedule Reporting . . . . .	15
4.0 <u>MONITORING</u>	
4.1 Monitoring Requirements . . . . .	16
4.2 Cost Thresholds . . . . .	16
4.3 Schedule Thresholds . . . . .	17
5.0 <u>CORRECTIVE ACTION</u>	
5.1 Project Reviews . . . . .	18
5.2 Corrective Action . . . . .	18
5.3 Baseline Change . . . . .	19

## List of Figures and Tables

## Page

Figure 1	
Concept of Program Cost and Schedule Baseline . . . . .	2
Figure 2	
Cost/Schedule Baseline Monitoring and Control Process . . . . .	3
Figure 3	
Composition of Schedule Baseline Milestones . . . . .	6
Figure 4	
Relationship of Cost Baseline to Other Cost Documents . . . . .	7
Figure 5	
Relationship of Schedule Baseline to Other Schedule Documents . . . . .	8
Figure 6	
Repository Work Breakdown Structure . . . . .	10
Figure 7	
Transportation Breakdown Structure . . . . .	11
Figure 8	
Summary of Program Schedule Baseline . . . . .	13
Figure 9	
Program Cost and Schedule Baseline Barchart . .	14
Table 1	
Criteria for Baseline Milestone Change Control Board Assignment . . . . .	5

## Appendices

- Appendix A    Near-Term Cost Baseline
- Appendix B    Long-Term Cost Baseline
- Appendix C    Repository Schedule Baseline
- Appendix D    MRS Schedule Baseline
- Appendix E    Transportation Schedule Baseline



## 1.0 INTRODUCTION

### 1.1 PURPOSE

The overall purpose of cost and schedule baseline management is to ensure that the Civilian Radioactive Waste Management (OCRWM) Program's cost and schedule plan are controlled in an orderly, efficient, and documented manner. Baseline control of the Program's cost and schedule will result in changes that only take place with OCRWM senior management approval, by way of the change control process. The Program Management System (PMS) Manual describes how the Program Cost and Schedule Baseline (PCSB) is integrated into the OCRWM management system.

This PCSB document identifies the components of Program cost and schedule that will be subject to change control by DOE-Headquarters and establishes their baseline values. This document also summarizes the management components of the cost and schedule baseline, including reporting, monitoring, and corrective action. Detailed PCSB reporting, monitoring, and corrective action procedures will be issued as an Office of Program Administration and Resource Management (OPARM) administrative procedure.

### 1.2 SCOPE

There is a two-part scope to the cost and schedule baselines: a short-term baseline and a long-term baseline. The short-term baseline covers Program activities through repository license application submittal, start of MRS waste acceptance, and start of transportation system operation. The long-term baseline covers the cost and schedule for the entire OCRWM Program and extends through the completion of the Program's life cycle (i.e., the decommissioning of the repository). The cost categories and milestones subjected to baseline control over the long-term baseline are significantly less detailed than those in the short-term baseline. The concept of this two-part baseline showing the relationship of the parts is graphically depicted in Figure 1.

The short-term baseline will be actively managed to control both Project Office and Headquarters activities. The baseline management process is summarized in Figure 2. Management of this baseline will consist of: (a) compliance with established reporting requirements; (b) monitoring and analysis of the impacts of current performance on future milestones; (c) development and implementation of corrective action plans to mitigate variances with the baseline; and (d) maintenance of the cost and schedule baselines including activities related to the evaluation of change proposals.

The primary purpose of the long-term cost and schedule baselines is to develop a reference cost and schedule which is consistent with the scope and time frame of the Program's technical baseline. This long-term baseline will be used largely to analyze the cost and schedule impacts associated with change proposals to the technical baseline. By subjecting the Program's long-term cost and schedule to baseline management, formal documentation on how and why Program costs or schedule have changed over time will be provided.

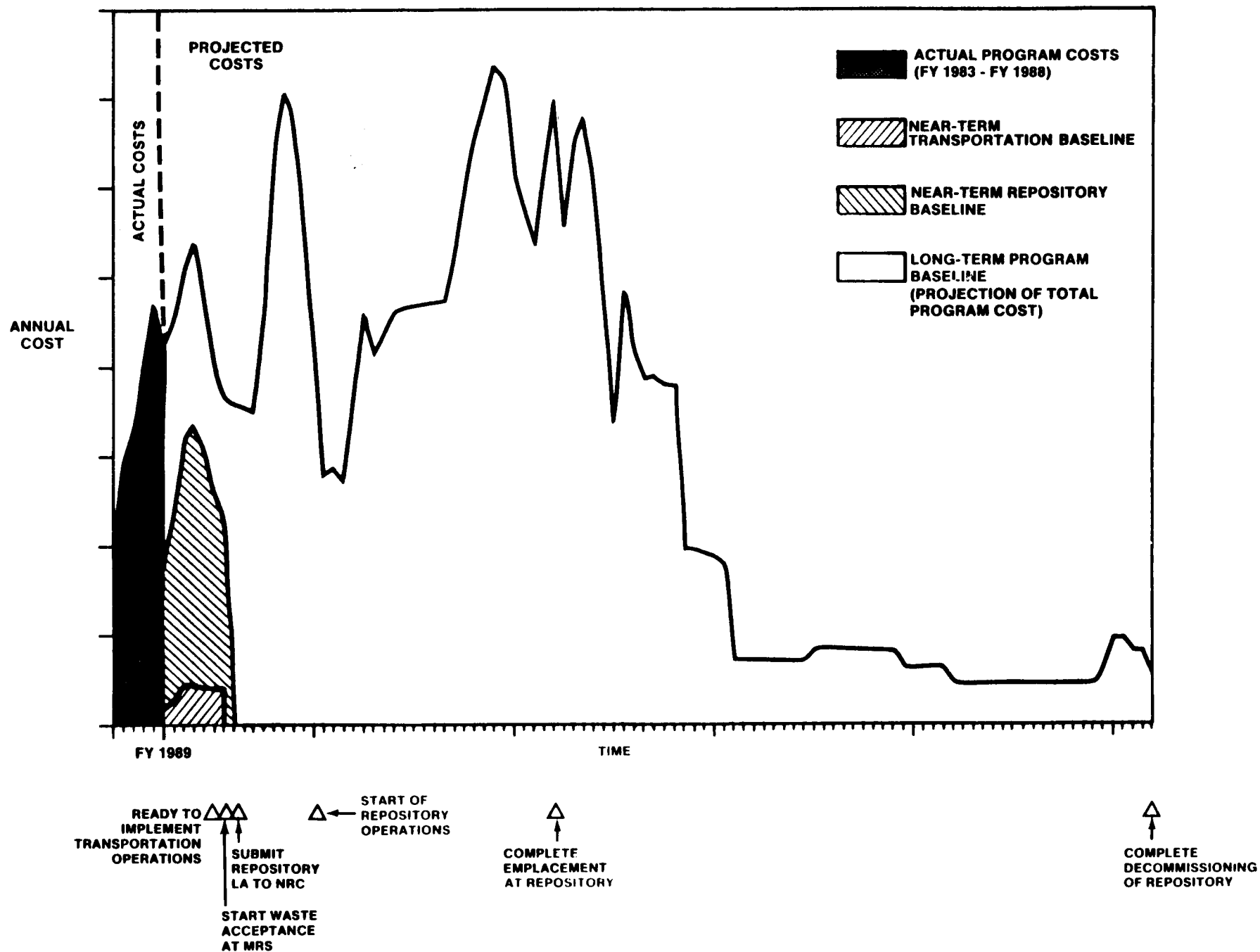
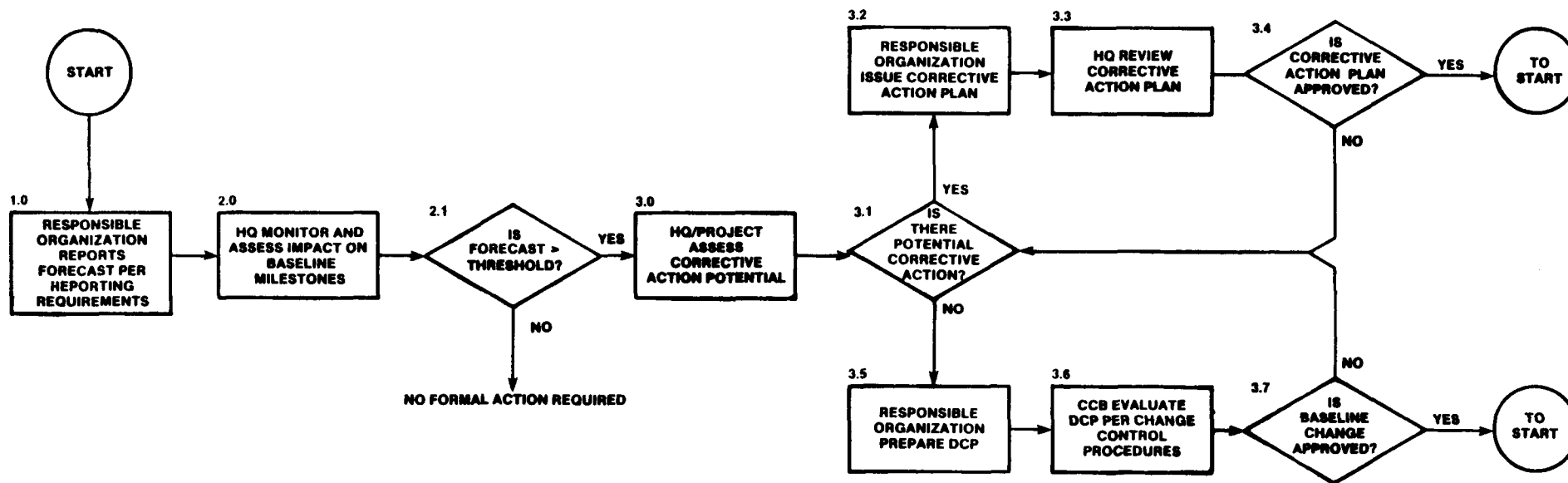


Figure 1. Concept of program cost and schedule baseline.



0233-0011DS

**Figure 2. Cost/schedule baseline monitoring and control process.**

Changes to the cost and schedule baseline will be evaluated by either the Program Change Control Board (PCCB) or the Program-Elements Change Control Board (PE-CCB), depending on established criteria and thresholds. Upon approval by either the PCCB or PE-CCB, all changes to the PCSB shall be issued by the PCCB. Criteria for determining which CCB will have responsibility for evaluating each milestone change are presented in Table 1. Criteria for evaluation of changes to the cost baseline are presented in Section 5.0. Figure 3 graphically presents the composition of the schedule baseline milestones, distinguishing between short-term and long-term schedule baselines, responsible organization, and change control responsibility.

### 1.3 RELATIONSHIP TO OTHER OCRWM COST/SCHEDULE INFORMATION

The PCSB is OCRWM's primary mechanism for cost and schedule control. The PCSB will be the source of reference cost and schedule information released outside of OCRWM. Other OCRWM management plans that contain costs or milestones should acknowledge that the baseline costs or schedule information is contained in the PCSB. It will also be the basis for internal planning and performance measurement.

Figure 4 shows the relationship of the cost baseline to internal and external reporting. The cost baseline will define the reference case for project budget formulation. The cost baseline will also be the starting point for the Total System Life Cycle Cost (TSLCC) analysis. Both of these cost activities may generate new costs that may require changing the cost baseline. The project offices will maintain more detailed project-level cost baselines. Applicable changes to the program cost baseline should be incorporated into the project cost baselines. Actual and forecast costs will be reported by the projects in monthly progress reports; these costs will be summarized by OPARM in summary reports on program cost and schedule.

Figure 5 shows the relationship of the schedule baseline to internal and external reporting. The schedule baseline will be the basis for externally-released schedule information in the Project Decision Schedule, and the semi annual Site Characterization Progress Reports. The schedule baseline will define the reference case schedule for project budget formulation. The projects will maintain more-detailed project-level schedule baselines. Applicable changes to the program schedule baseline should be incorporated into the project schedule baselines. Forecast dates for program baseline milestones will be reported in the OCRWM milestone tracking system. Forecast dates for project-responsibility program baseline milestones will be reported by the projects in monthly progress reports. Baseline and forecast schedule baseline milestone status will be summarized by OPARM in summary reports on program cost and schedule.

Table 1

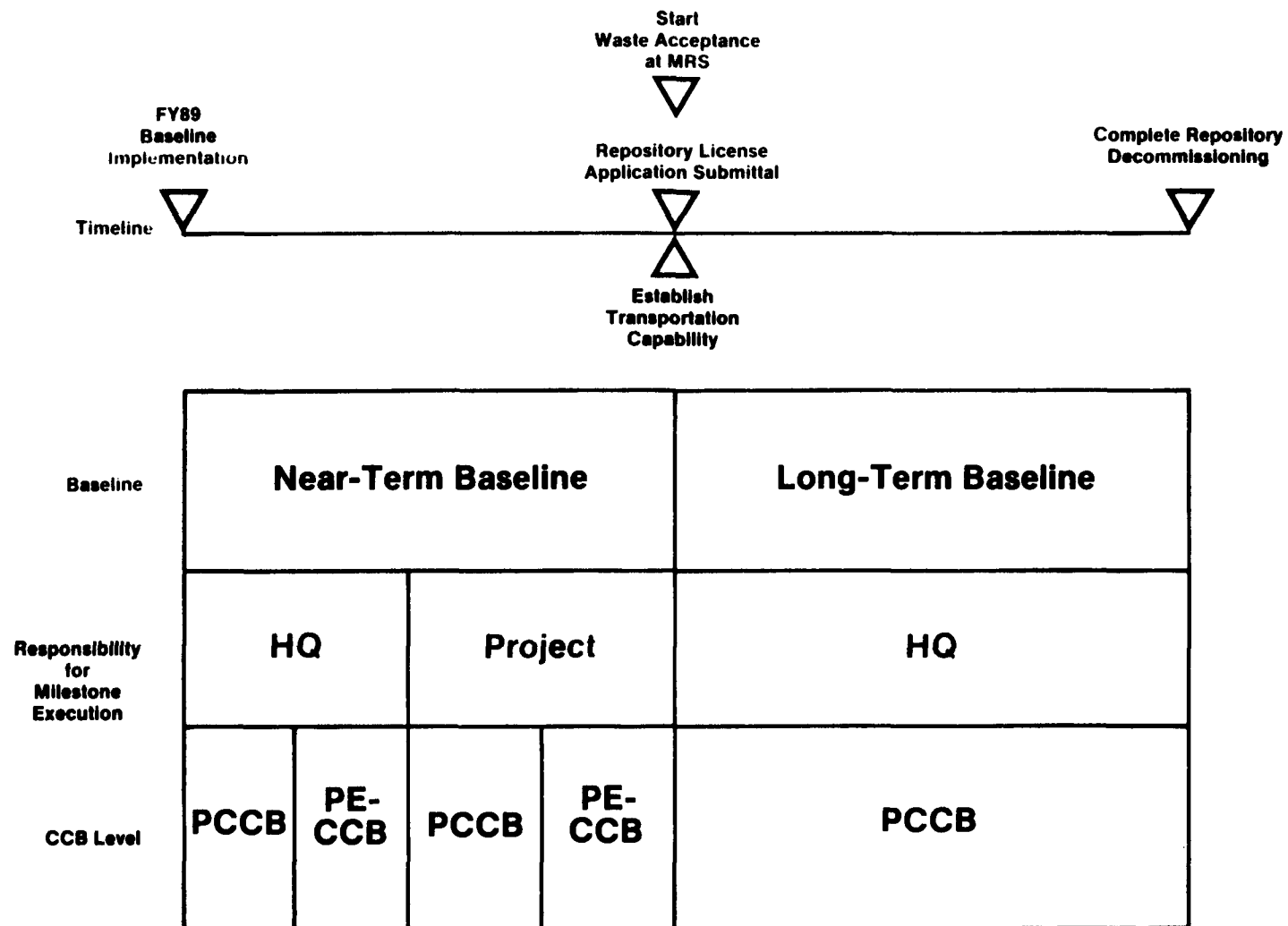
CRITERIA FOR CHANGE CONTROL BOARD ASSIGNMENT  
OF BASELINE MILESTONE CHANGES

Criteria for PCCB-Controlled Baseline Milestones

1. The milestone is mandated by the NWPA, as amended; or
2. The milestone is presented in the Mission Plan Amendment; or
3. The milestone is related to a major systems acquisition decision that is approved by the DOE Acquisition Executive per DOE Order 4700.1; or
4. The milestone is a major engineering, or regulatory interface with other Waste Management system elements; or
5. The milestone is related to issuance or revision of a program-level planning document such as the Waste Management System Requirements (WMSR) document; or
6. The milestone is on the program critical path to operation of the Waste Management System.

Criteria for PE-CCB-Controlled Milestones

1. The milestone is related to issuance or revision of a program element-level planning document; or
2. The milestone is on or near a program-element critical path; or
3. The milestone is related to a major specific event defined by a program-element planning document, such as the Volume IV of the WMSR (Mined Geological Disposal System Requirements).



**Figure 3.** Composition of schedule baseline milestones.

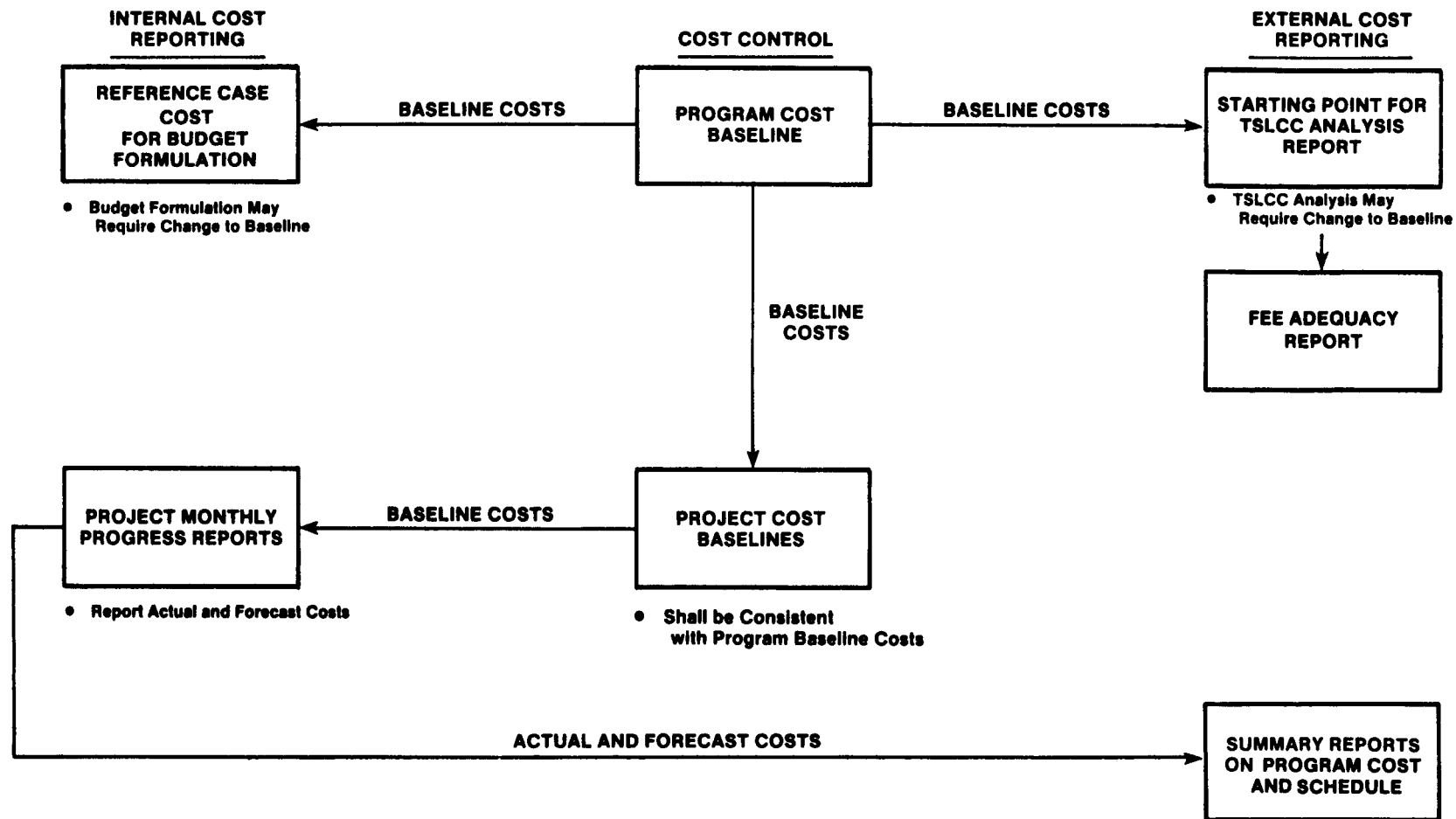


Figure 4. Relationship of cost baseline to other cost documents.

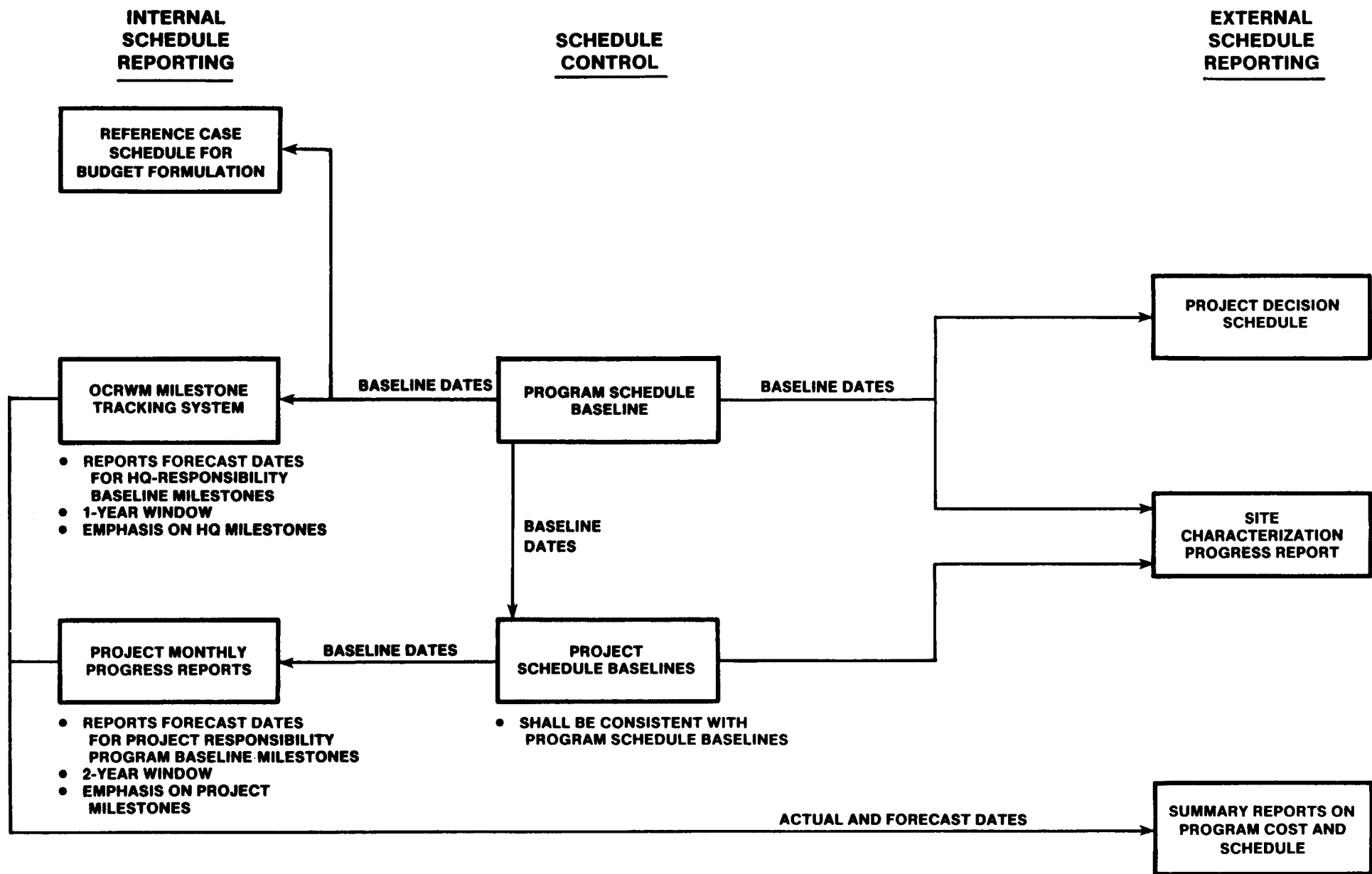


Figure 5. Relationship of schedule baseline to other schedule documents.



## 2.0 COST AND SCHEDULE BASELINE DATA

This section describes the baseline data that will be subject to change control. The baselined data are presented in appendices to this document.

### 2.1 COST BASELINE

The cost baseline will be a controlled list of planned costs expressed on both an annual and cumulative cost basis. The near-term cost baseline is delineated by Level 4 of the work breakdown structure (WBS) for the repository, MRS and transportation program elements. The WBS's for these program elements are presented in Figures 6 and 7 for reference. The Program WBS Dictionary should be consulted for the detailed breakdown of work scope and products. The near-term cost baseline is documented in Appendix A (TBD). As shown in Figure 1, the near-term cost baseline is a subset of the long-term baseline, extending for only a few years and, as such, is highlighted to focus baseline management activities on the part of the program that is best defined. The long-term cost baseline consists of annual and cumulative costs for summary-level program activities extending over the entire life-cycle of the program. The long-term cost baseline is documented in Appendix B (TBD). The long-term cost baseline is the reference program cost upon which cost impacts for all change proposals should be measured.

The long-term cost baseline is expressed on the basis of constant dollars since many of the cost categories occur over a substantial portion (or all) of the program's 100-year lifecycle; year-of-expenditure (or "current") dollars have little meaning for such lengthy time periods. The near-term cost baseline is expressed in terms of both constant and year-of-expenditure dollars. The near-term cost baseline is expressed in year-of-expenditure dollars to provide consistency with budget estimates, while it is alternatively stated in constant dollars to provide consistency with the long-term cost baseline.

### 2.2 SCHEDULE BASELINE

The schedule baseline will be a controlled list of milestones and milestone information. Milestones in the schedule baseline should be those events which satisfy the criteria described in Table 1, that need to be defined and controlled to allow effective program planning and control. The repository schedule baseline is documented in Appendix C. The MRS schedule baseline is presented in Appendix D. The transportation schedule baseline is documented in Appendix E. Figure 8 presents the program schedule baseline milestones and their relationship to major program activities. Figure 9 presents listing of all baselined milestone dates. The following information will be baselined for each milestone in the schedule baseline:

Milestone Description - The milestone description is a concise description of an event. The milestone description should be appropriate for publication outside of DOE. The first word of the milestone description should be a verb.

Milestone Identification - The milestone identification is a unique identification number. The first character of the identification should be R, M, or T for repository, MRS, or Transportation.

Milestone Responsibility - The milestone responsibility is the cognizant organization for performing the activity associated with the milestone.

Cognizant Change Control Board - The cognizant OCRWM Change Control Board will be specified. Milestones will be controlled by either the OCRWM Program Change Control Board (PCCP) or the OCRWM Program Elements Change Control Board. (PE-CCB)

Milestone WBS - The milestone WBS is the work breakdown structure assignment for the activity associated with the milestones. Milestones will be assigned to Level 4 of the Program WBS. The WBS coding structure shall be consistent with the Program WBS dictionary.

Milestone Completion Criteria - The milestone completion criteria presents a description of the milestone scope of work. It also describes actions taken which signal the completion of the milestone and the responsible organization. Where applicable, the completion criteria will identify major prerequisites for the milestone.

LEVEL  
2

LEVEL  
3  
LEVEL  
4

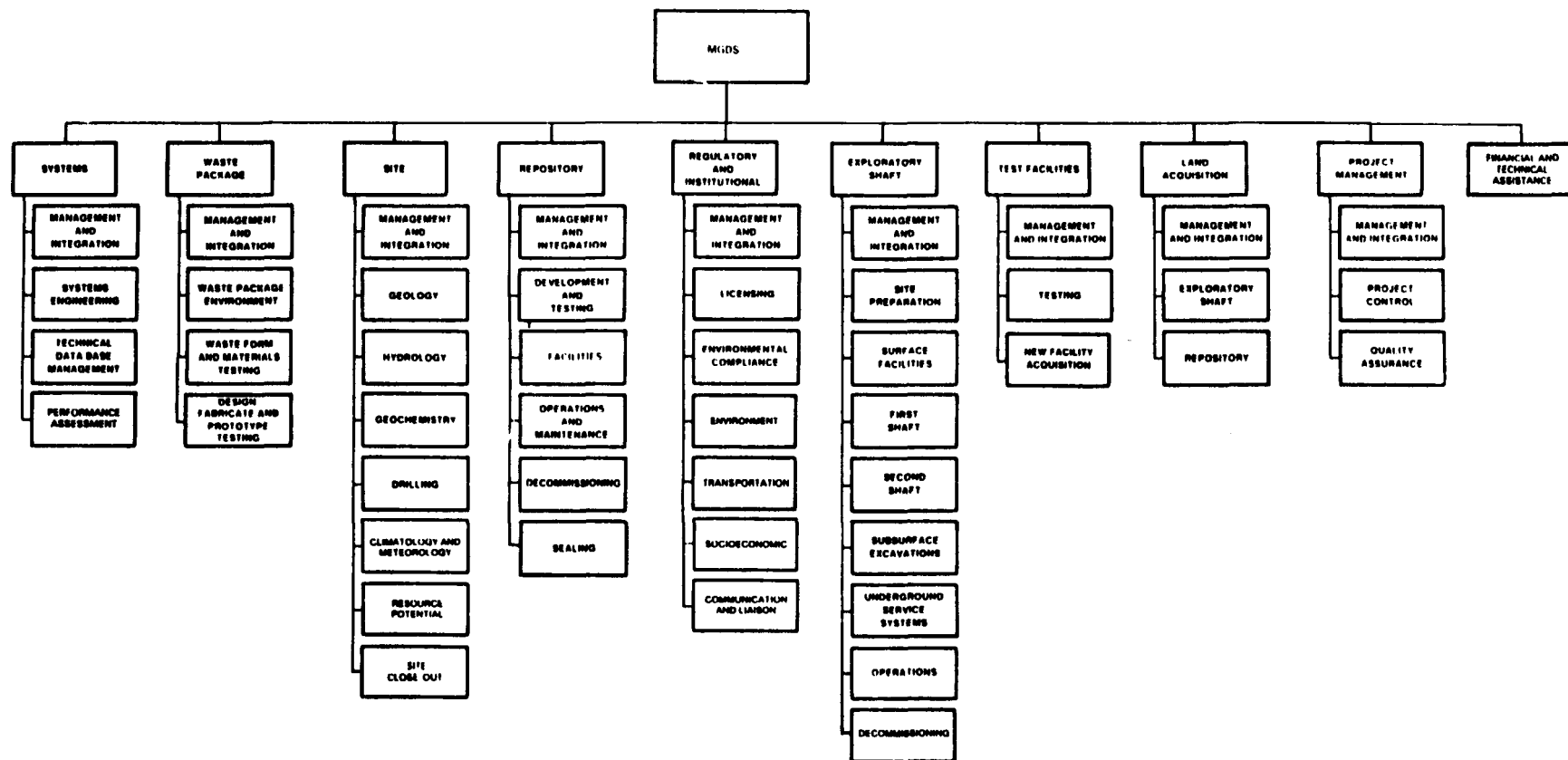


Figure 6. MGDS Work Breakdown Structure.

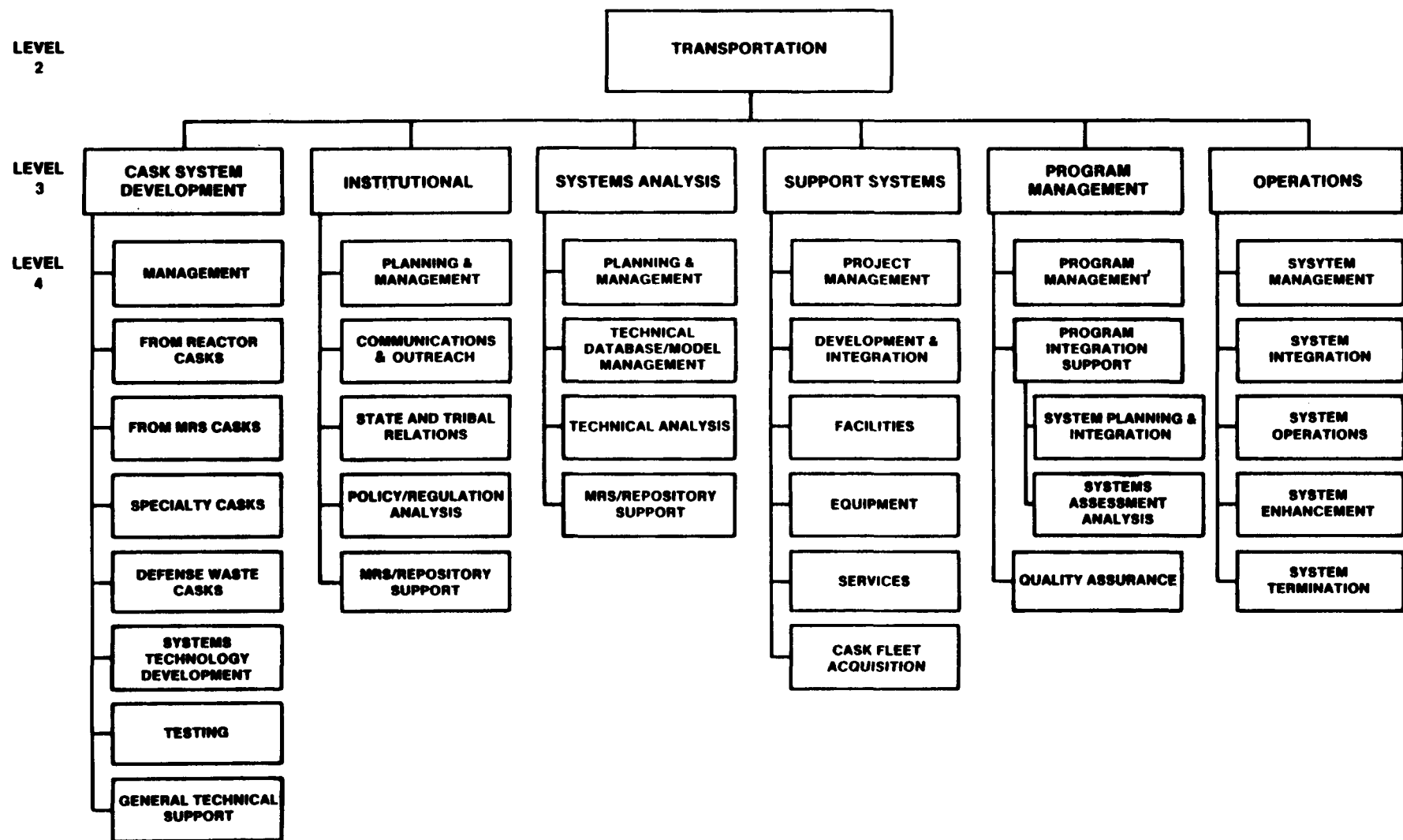


Figure 7. Transportation Work Breakdown Structure.

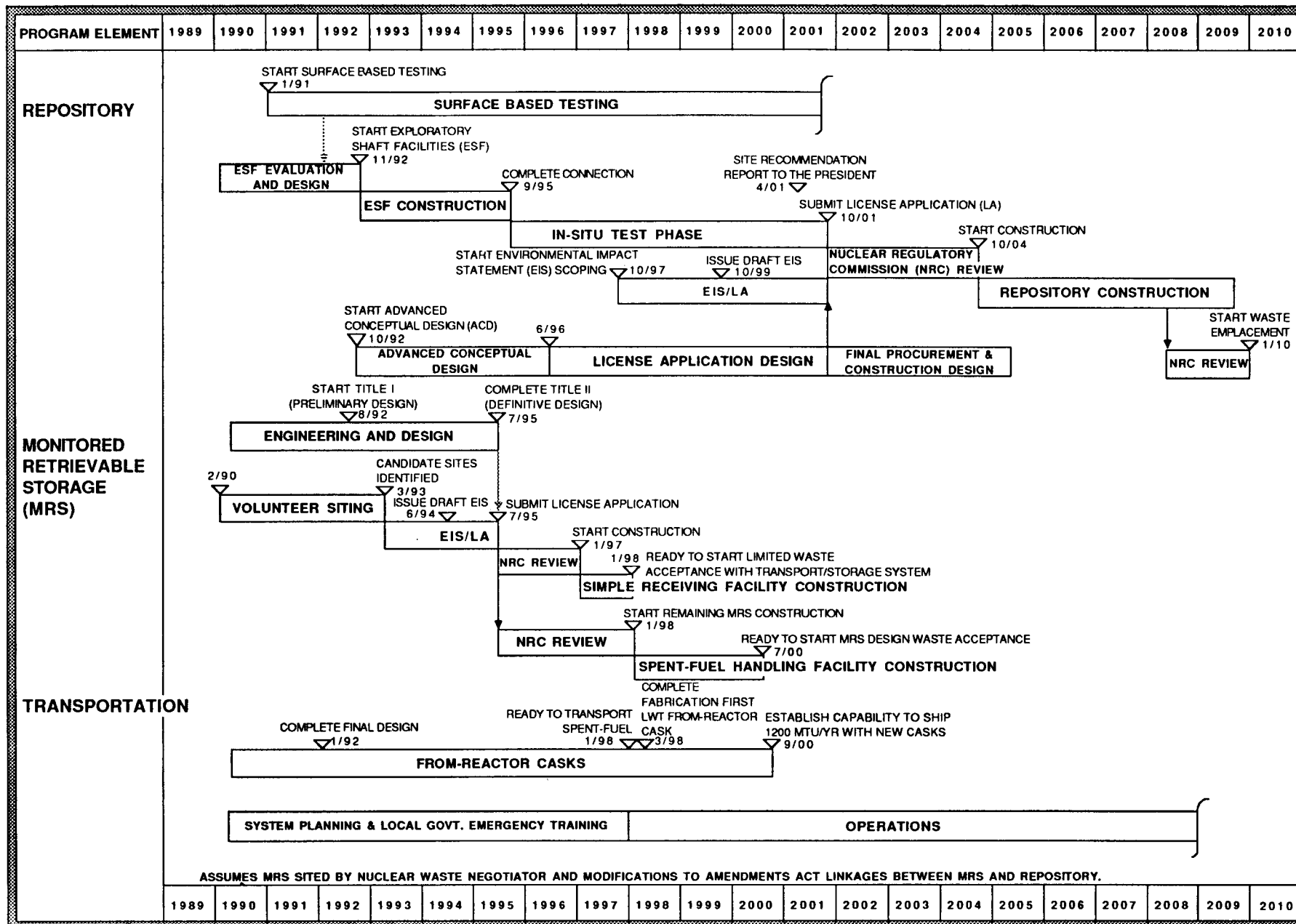


Figure 8. Summary of the Program Schedule Baseline

12/19/89



### 3.0 REPORTING

This section describes status reporting of the PCSB. This first step in management process is shown as step 1.0 in Figure 2.

#### 3.1 GENERAL REPORTING REQUIREMENTS

Regular, up-to-date reporting on the status of cost and schedule performance is required to assess compliance with the PCSB and to surface forecast cost and schedule status to senior management. Project Offices are required to submit monthly progress reports to OCRWM-HQ which contain cost and schedule performance data for their areas of responsibility. In addition to being consistent with the reporting requirements contained in DOE Order 4700.1, these requirements will satisfy OCRWM reporting needs for monitoring performance against the PCSB and for any other cost or schedule-related information needs as detailed in OPARM administrative procedures. OCRWM-HQ will use the HQ milestone tracking system to report schedule status for HQ-responsibility baseline milestones.

#### 3.2 COST BASELINE REPORTING

Project Offices responsible for components of the cost baseline will report baseline, actual and forecast costs (estimates at fiscal year completion and to the end of the near-term baseline) at Level 4 of the WBS. Project Offices will do variance analysis of the costs per OPARM administrative procedures.

#### 3.3 SCHEDULE BASELINE REPORTING

Project Offices responsible for PCSB milestones will report baseline, actual and forecast dates for those milestones that have baseline dates in a two-year window from the issuance date of the project progress report. Status reporting of headquarters-responsibility PCSB milestones will utilize the headquarters milestone tracking system. Responsible organizations will do variance analysis of these milestones per OPARM administrative procedures for cost and schedule control. This variance analysis should forecast the impact to other baseline milestones. The forecast date is defined as the current expected date that the project would complete the milestone unless a change to the cost, schedule, or technical baseline is approved.

## 4.0 MONITORING

### 4.1 MONITORING REQUIREMENTS

This section describes monitoring of the PCSB. Monitoring is shown as steps 2.0 and 2.1 in Figure 2.

The contents of the monthly progress reports from the Project Offices will be monitored and analyzed each month by OPARM. The monitoring will assess if responsible organizations have complied with the PCSB reporting requirements. The data reported by these organizations will then be analyzed by using the reported status of baseline milestones and the critical path networks developed by the Program Control Division, OPARM. Of particular concern will be the impact of milestones within the reporting window on milestones outside the current period reported. The analysis will determine if the forecast values exceed the established cost or schedule thresholds presented below.

### 4.2 COST THRESHOLDS

The near-term cost baseline thresholds that require either corrective action plan development or change proposal submittal are presented below. Since the near-term cost baseline is structured at Level 4 of the WBS, it is necessary to specify the thresholds down to that level.

WBS Level	Fiscal Year Estimate-At-Completion Threshold			Near-Term Baseline Estimate-At-Completion Threshold		
	<u>Completion Threshold</u>			<u>Near-Term Threshold</u>		
	<u>%</u>		<u>\$</u>	<u>%</u>		<u>\$</u>
Level 2	5	or	5 million	3	or	50 million
Level 3	10	or	1 million	7	or	10 million
Level 4	15	or	500 thousand	10	or	5 million

Change proposals involving cost impacts that violate the Level 4 WBS threshold (for either annual cost or estimated cost at the completion of the near-term baseline), but not the Level 3 WBS threshold, will be subject to the jurisdiction of the OCRWM Program Elements Change Control Board (PE-CCB). Change proposals whose cost impacts violate either the Level 3 or Level 2 WBS thresholds will be subject to the jurisdiction of the OCRWM Program Change Control Board (PCCB). The thresholds are stated on the basis of a percentage from the cost baseline or an absolute dollar amount, whichever is the larger.



Change proposals including cumulative impacts on the long-term cost baseline of \$50 million or greater, will be subject to the jurisdiction of the PCCB, change proposals involving cumulative impacts on the long-term cost baseline of less than \$50 million will be subject to the jurisdiction of the PE-CCB.

#### 4.3 SCHEDULE THRESHOLDS

The schedule baseline thresholds that require either corrective action plan development or change proposal submittal are presented below:

<u>Type of Milestone</u>	<u>Threshold</u>
Short-term, Critical Path	1 Month
Short-term, Not Critical Path	3 Month
Long-term, Critical Path	6 Month
Long-term, Not Critical Path	12 Month

Baseline milestones will be classified as critical path or not critical path at HQ's discretion. This classification will be maintained by OPARM separately from the baseline and will be only for the purpose of determining schedule thresholds. This classification will be periodically reviewed by OPARM and the responsible organizations.

## 5.0 CORRECTIVE ACTION

The monitoring and analysis described in 4.0 will identify problems related to cost and schedule that will need to be brought to the attention of OCRWM management. Significant problems that arise (i.e., forecast deviations from the cost and schedule baseline that exceed threshold values) will trigger a formal process whereby OCRWM-HQ and the Project Offices work together to try and resolve the problem.

This section describes the corrective action process for controlling the program cost and schedule. This process is shown as steps 3.1 to 3.7 in Figure 2.

### 5.1 PROJECT REVIEWS

The Quarterly Project Review will be the primary focus for initiating corrective action for project-responsibility milestones. Prior to the quarterly review, OPARM will provide a listing of all forecast variances to the cost and schedule baseline. Variances that exceed thresholds will be noted. At the meeting, HQ and the project will review and assess corrective action potential for each variance. If there is corrective action potential, the project will be directed to prepare a corrective action plan, which will be submitted to HQ for approval. If there is not corrective action potential, the Project will prepare a change proposal in order to change the baseline in a controlled manner to eliminate the variance.

### 5.2 CORRECTIVE ACTION

Corrective action plans will be prepared to eliminate or minimize the forecast variance from the cost or schedule baseline. Corrective action plans will be prepared by the organization responsible for the milestone. This corrective action may require a change to other items in the cost, schedule or technical baseline; or it may require some other change in the planning basis but not require a baseline change. OCRWM may, at its discretion, establish a committee comprised of OCRWM and project personnel to formulate the corrective action plan. The corrective action plan should describe the baseline variance, the specific workaround actions, the effect of the workaround on the variance and the cost, schedule, and technical impact. Corrective action plans will be approved by the cognizant Division Director or Associate Director, as appropriate. OCRWM does not need to approve corrective action plans that mitigate variances below the established threshold values.

Corrective action plans requiring a change to other items in the cost, schedule, or technical baseline will be processed in accordance with the appropriate change control procedure.

### 5.3 BASELINE CHANGE

If there is not a corrective action potential or if the corrective action plan process is not effective in mitigating the variance from the cost and schedule baseline, then a change proposal to the baseline should be originated. This will assure that program changes are made in a controlled fashion. Administrative procedures for processing change proposals (for baselines and other controlled documents) are explained in the Program Change Control Procedure and the Program Element Change Control Procedure documents. Changes to the cost and schedule baselines may be initiated as a result of technical baseline changes or may be due to cost and schedule circumstances which are independent of the technical baseline. Organizations assigned responsibility for milestones (project or headquarters) will be responsible for initiating document change proposals. Responsibility for headquarters-responsibility milestones will be based on the organizational responsibilities in the PMS Manual.

Appendix A. Near-term Cost Baseline

This appendix will be added to the PCSB in the future.

## Appendix B. Long-Term Cost Baseline

This appendix will be added to the PCSB in the future.

Appendix C. Repository Schedule Baseline  
Part 1 - Milestones with dates

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

## WBS: Systems - Systems Engineering

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RPK02	15Mar90	112	H	PECCB

### MILESTONE DESCRIPTION

Issue Waste Management System Requirements Document Volume IV - (Repository)

### MILESTONE COMPLETION CRITERIA

This milestone will be completed when the document is approved by DOE and issue for use.

## WBS: Waste Package - Management and Integration

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYM04	15Aug90	121	P	PECCB

### MILESTONE DESCRIPTION

Complete Waste Package Program Plan

### MILESTONE COMPLETION CRITERIA

This program will be a separate LLNL published document that will contain much of the information in chapters 7 and 8.3.4 of the SCP. It will address all requirements in 10CFR60 and the NWPA of 1982. The purpose of the document is to provide a stand-alone document addressing the waste package through its entire life cycle, including confirmation testing after emplacement. although most of the material is already documented, this plan will provide a reference for interested parties. The YMPO will submit the plan to HQ for review.

## WBS: Waste Package - Waste Package Environment

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R2201	30Jul98	122	P	PCCB

### MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Provide Engineering Barrier System Data to Waste Package License Application Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the results of 18 months of engineering barrier system test data have been provided to waste package license application design.

WBS: Waste Package - Design, Fabricate & Proto. Testing

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM233	01Oct92	124	H	PCCB

MILESTONE DESCRIPTION

Start Waste Package Advanced Conceptual Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes design work to begin. Prerequisites include a readiness review.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT074	30Jun96	124	H	PCCB

MILESTONE DESCRIPTION

Start Waste Package License Application Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes design work to begin. Prerequisites include a readiness review.

WBS: Site - Management and Integration

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYJ04	28Sep90	131	P	PECCB



PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE DESCRIPTION

Issue Report and Recommendation on Prioritization of Surface-Based Testing

MILESTONE COMPLETION CRITERIA

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYJ05	30Oct90	131	H	PECCB

MILESTONE DESCRIPTION

Complete Report on Prioritization of Surface-Based Testing

MILESTONE COMPLETION CRITERIA

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYI06	30Oct90	131	P	PECCB

MILESTONE DESCRIPTION

Complete All Prerequisites for New Surface-Based Testing

MILESTONE COMPLETION CRITERIA

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYI08	02Jan91	131	H	PECCB

MILESTONE DESCRIPTION

Start New Surface-Based Testing

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the Secretary concurs on the start of new surface-based testing. New surface-based testing is constrained by applicable QA qualification and site

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

access.

WBS: Site - Drilling

MILESTONE NUMBER	BASLINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYI03	15Jun90	135	P	PECCB

MILESTONE DESCRIPTION

Complete Drill Rig Acceptance Testing

MILESTONE COMPLETION CRITERIA

This milestone will be completed when the drill rigs for deep UZ drilling have been accepted by DOE.

MILESTONE NUMBER	BASLINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP509	29Mar94	135	P	PCCB

MILESTONE DESCRIPTION

Complete Deep Unsaturated Zone Hydrologic Hole Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the geophysical logs have been completed on the last deep UZ borehole.

WBS: Repository - Management and Integration

MILESTONE NUMBER	BASLINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYM05	14Dec90	141	P	PECCB

MILESTONE DESCRIPTION

Complete Repository Program Plan

MILESTONE COMPLETION CRITERIA

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RN430	01Oct92	141	H	PCCB

## MILESTONE DESCRIPTION

Start Repository Advanced Conceptual Design

## MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes design work to begin. Prerequisites include a readiness review.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM458	30Jun96	141	H	PCCB

## MILESTONE DESCRIPTION

Start Repository License Application Design

## MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes design work to begin. Prerequisites include a readiness review.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R4185	30Oct01	141	H	PCCB

## MILESTONE DESCRIPTION

Start Repository Final Procurement and Construction Design

## MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes design work to begin. Prerequisites include a design review.

WBS: Repository - Facilities

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
---------------------	---------------	-----	-----------------------------	------------------

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

R4390 30Oct04 143 H PCCB

MILESTONE DESCRIPTION

Start Repository Construction

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes construction activities to begin. Prerequisites include a readiness review, NRC construction authorization, and DOE acceptance of required design packages.

WBS: Repository - Operations and Maintenance

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R4490	30Jan10	144	H	PCCB

MILESTONE DESCRIPTION

Start Repository Waste Emplacement

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes waste emplacement operations to begin. Prerequisites include a design review.

WBS: Reg. & Institutional - Licensing

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYL04	16Apr90	152	P	PECCB

MILESTONE DESCRIPTION

Submit Draft Report on Alternative LA Strategies for Review

MILESTONE COMPLETION CRITERIA

MILESTONE	RESPONSIBLE	COGNIZANT
-----------	-------------	-----------

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

NUMBER	BASELINE DATE	WBS	ORGANIZATION	CCB
RYL06	17Sep90	152	H	PECCB

MILESTONE DESCRIPTION

Provide Recommendation to RW-1 on Alternative LA Strategies for Review

MILESTONE COMPLETION CRITERIA

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5200	30Apr01	152	H	PCCB

MILESTONE DESCRIPTION

Issue Site Recommendation Report to the President

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the site recommendation report is submitted by DOE to the President. The report will provide a comprehensive statement of the basis for site recommendation, including the FEIS and the other information identified in section 114(a)(1)(a-g) of the NHPA.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5181	30Oct01	152	H	PCCB

MILESTONE DESCRIPTION

Submit License Application to the NRC

MILESTONE COMPLETION CRITERIA

This milestone will be complet when the LA is approved by DOE and submitted to the NRC is accordance with 10 CFR 60.22, requesting authorization to start repository construction.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5291	30Apr08	152	H	PCCB

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE DESCRIPTION

Submit Updated LA to Receive and Possess Waste

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by the substantial completion of the construction of the surface and underground facilities needed for operations and the submittal of the updated license application to the NRC, in accordance with 10 CFR 60.24.

WBS: Reg. & Institutional - Environmental Compliance

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5102	30Dec90	153	P	PCCB

MILESTONE DESCRIPTION

Obtain Yucca Mountain Site Access

MILESTONE COMPLETION CRITERIA

This milestone will be complete when all site access prerequisites for initiation of new site characterization have been met; including permits, land access, endangered species compliance, etc.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5108	30Oct97	153	H	PECCB

MILESTONE DESCRIPTION

Issue Repository EIS Notice of Intent

MILESTONE COMPLETION CRITERIA

This milestone will be complete when notice of document availability is published in the Federal Register.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5142	28Feb98	153	H	PECCB

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE DESCRIPTION

Issue Repository EIS Implementation Plan

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the document is approved and issued by DOE.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5151	30Oct99	153	H	PCCB

MILESTONE DESCRIPTION

Issue Draft Environmental Impact Statement

MILESTONE COMPLETION CRITERIA

This milestone will be complete when notice of the document availability is published in the Federal Register.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5161	31Mar01	153	H	PCCB

MILESTONE DESCRIPTION

Issue Final Environmental Impact Statement

MILESTONE COMPLETION CRITERIA

This milestone will be completed when notice of document availability is published in the Federal Register.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R5190	30Apr01	153	H	PCCB

MILESTONE DESCRIPTION

Issue Record of Decision

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when "a concise public record

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

of decision" identifying all alternatives as found in 40 CFR  
1505.2 is published in the Federal Register.

WBS: Exploratory Shaft Facility - Mgmt. & Integration

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYK04	29Jun90	161	P	PECCB

MILESTONE DESCRIPTION

Issue Draft Revision of ESF Requirements

MILESTONE COMPLETION CRITERIA

This milestone will be completed when document is approved and issued by YMP.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYK05	16Nov90	161	P	PECCB

MILESTONE DESCRIPTION

Provide Recommendation on ESF Configuration

MILESTONE COMPLETION CRITERIA

This milestone will be completed when recommendation and supporting documentation are provided to RW-1.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R6101	30Mar91	161	P	PCCB

MILESTONE DESCRIPTION

Start Final ESF Title II Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when YMP authorizes design work to resume following evaluation of ESF alternatives.  
Prerequisites include a readiness review.



PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

WBS: Exploratory Shaft Facility - Site Preparation

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM645	30Jun92	162	P	PCCB

MILESTONE DESCRIPTION

Start ESF Site Preparation

MILESTONE COMPLETION CRITERIA

This milestone will be complete when YMP authorizes ESF site preparation activities to begin. Prerequisites include a readiness review.

WBS: Exploratory Shaft Facilities - First Shaft

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM652	30Nov92	164	P	PCCB

MILESTONE DESCRIPTION

Start ESF Shaft Collar Construction

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the YMP authorizes construction to begin. Prerequisites include readiness review and acceptance of required design packages.

WBS: Exploratory Shaft Facilities -Subsurf. Excavation

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RR659	30Sep95	166	P	PCCB

MILESTONE DESCRIPTION

Complete Shaft Connection

MILESTONE COMPLETION CRITERIA

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

-----  
 This milestone will be complete when the drift connecting ES-1 to ES-2 is complete. This milestone marks the beginning of the in-situ test phase as defined by the Mission Plan.  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM656	30Nov97	166	P	PECCB

-----  
 MILESTONE DESCRIPTION

Complete Geologic Drifting

-----  
 MILESTONE COMPLETION CRITERIA

-----  
 This milestone will be complete when the DOE Construction Manager notifies the Program Office that geologic drifting is complete and ready for DOE acceptance. Includes drifting to Drill Hole Wash, Ghost Dance Fault, and Imbricate Fault.  
 -----

WBS: Project Management - Quality Assurance

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RYH02	30Aug90	193	H	PCCB

-----  
 MILESTONE DESCRIPTION

Complete Required OCRWM QA Qualification Audits

-----  
 MILESTONE COMPLETION CRITERIA

-----  
 This milestone will be met when all required QA qualification audits for new site characterization are complete.  
 -----

Appendix C. Repository Schedule Baseline  
Part 2 - Milestones without dates

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

WBS: Systems - Systems Engineering

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM261		112	P	PCCB

MILESTONE DESCRIPTION

Submit Draft Yucca Mountain Mined Geologic Disposal System Description

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when report SAND86-163 A description of the MGDS proposed for Yucca Mountain is submitted to HQ for review and approval. The system description document will consist of a detailed description of the physical system (repository, waste package, natural system) that will be used to accomplish radioactive waste disposal and a discussion of the way parts will interact to meet regulatory requirements. The YM Project Baseline is the recipient of this document, and the requirements are in the OCRWM SEMP.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM120		112	P	PCCB

MILESTONE DESCRIPTION

Submit Draft Yucca Mountain MGDS Requirements

MILESTONE COMPLETION CRITERIA

The deliverable will be met by submitting a report SAND84-1882 to HQ. The report contains the requirements that must be met by the prospective MGDS. This document is the basis for development of design requirements and system engineering to ensure site characterization design and performance assessment meet regulatory and programmatic requirements. HQ review and approval is required. The YM Project Baseline is the recipient of this report and the report format is according to the OCRWM SEMP.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM194		112	P	PCCB

MILESTONE DESCRIPTION

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Submit Draft Update of System Requirements for LAD

## MILESTONE COMPLETION CRITERIA

This deliverable will be the reissue of an updated SR to individuals on controlled distribution, including HQ. The reissued SR will be reviewed during LAD as requirements change or new legislative, regulatory or programmatic requirements are incorporated. The revised SR will be reissued and will represent the system requirements for the recipient document, the LAD. The requirements are found in the OCRWM SEMP.

WBS: Systems - Total System Performance Assessment

MILESTONE NUMBER	BASLINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM263		114	P	PECCB

## MILESTONE DESCRIPTION

Issue Report of Waste Package Performance Assessment for ACD

## MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of a draft report to HQ. This draft report will become a chapter in the draft ACD report. The report will describe the waste package performance analysis and assessment, including the results and qualitative description of the uncertainty in the assessment and results. The report will be published as chapter of the final advanced conceptual design report.

MILESTONE NUMBER	BASLINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RR784		114	P	PECCB

## MILESTONE DESCRIPTION

Issue Repository ACD Preclosure Safety Analysis Report

## MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by the submission of a SAND report to HQ for review and approval. This report will contain the preclosure radiological safety analysis results and a discussion of those results. This report will be a starting point for going into LAD and is required by regulations.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT517		114	P	PECCB

MILESTONE DESCRIPTION

Complete Retrieval Compliance Analysis

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when YMPO submits a SAND report on retrievability compliance to HQ.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP652		114	P	PECCB

MILESTONE DESCRIPTION

Issue Report on Pre-waste Emplacement Groundwater Travel Time to Support DEIS

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by issuing the report on pre-waste emplacement GWTT to support DEIS. The document will be transmitted to HQ from the YMPO.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT251		114	P	PECCB

MILESTONE DESCRIPTION

Update Calculations for Pre-Waste Emplacement GWTT to Support the LA

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by issuing the final report on pre-waste emplacement GWTT in support of LA. The document will be transmitted to HQ from the YMPO. The recipient document may be a position paper, and the requirements are in the SCP.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM068		114	P	PECCB

MILESTONE DESCRIPTION

Issue Report on Repository Preclosure Performance Assessment for LAD

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by the submission of a series of SLTRS and/or SAND documents containing info. on preclosure radiological safety for both normal opern. and for accidents. The recipient document is the LA, and since this supports a QA level-1 activity, it is required by the QA document such as NVO 196-17.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP226		114	P	PECCB

MILESTONE DESCRIPTION

Complete System Post-Closure Performance Assessment Code Development to Support LA

MILESTONE COMPLETION CRITERIA

A letter report will be submitted to HQ listing the performance assessment codes that have been certified for use in performing calculations to support the preparation of performance based position papers. The report will summarize the range of applicability of the codes as established in the formal documentation of verification and validation. The recipient document may be a position paper and the requirements are in the SCP.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT600		114	P	PECCB

MILESTONE DESCRIPTION

Issue Report on Waste Package Performance Assessment for LAD

MILESTONE COMPLETION CRITERIA

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

-----  
 This deliverable will be met by submission of a draft report to HQ. This report will be published separately or may become a chapter of the draft LAD report. The report will describe the waste package performance analysis and assessment, including the results and quantitative and qualitative description of the uncertainty in the assessment and results. The report will be published as a chapter of the LAD report or by LLNL.  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP224		114	P	PECCB

## MILESTONE DESCRIPTION

-----  
 Complete Subsystem Postclosure Performance Assessment Calculations to Support LA

## MILESTONE COMPLETION CRITERIA

-----  
 This milestone will be satisfied when a report is submitted to HQ which documents the completion of performance assessment calculations for subsystem post-closure. The recipient document may be a position paper and the requirements are in the SCP.  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT523		114	P	PCCB

## MILESTONE DESCRIPTION

-----  
 Complete Total System Performance Assessments for LA

## MILESTONE COMPLETION CRITERIA

-----  
 This milestone will be satisfied by a letter from the project to HQ stating that the total system performance assessment is complete and performance confirmation may begin.  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT601		114	P	PECCB

## MILESTONE DESCRIPTION

-----  
 Complete Waste Package PA Code Verification and Validation



# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

## MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of a letter report to HQ. This report will describe the verification and partial validation of the deterministic performance assessment codes used in the waste package LAD. The V&V work will include V&V of code applicability to the range of applications planned for LAD analysis. This report will be published by LLNL in UCRL 50000 series format with full YMPO distribution in support of this milestone.

WBS: Waste Package - Waste Package Environment

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT525		122	P	PECCB

## MILESTONE DESCRIPTION

Begin ESF Waste Package System Test Data Collection

## MILESTONE COMPLETION CRITERIA

This milestone will be met when the project begins collection of the critical path in-situ waste package test data per approved test procedures.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM271		122	P	PECCB

## MILESTONE DESCRIPTION

Issue Draft Report on Waste Package Environment for LA

## MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of a draft report to HQ. The report will document the results of studies to establish the processes and characteristics that develop within the post-emplacement waste package environment. This report is needed to define the waste package environment for license application. The report will be issued by LLNL in a format UCID series 50000 format with full YMP distribution in support of this milestone.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

=====

WBS: Waste Package - Waste Form & Materials Testing

=====

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM265		123	P	PECCB

MILESTONE DESCRIPTION

-----

Select Container Material for ACD

MILESTONE COMPLETION CRITERIA

-----

This deliverable will be met by submission of a draft report to the YMPO who will subsequently transmit document to HQ. This report will document the metal barrier selected for development of ACD. A UCRL 50000 series will be issued with full YMP distribution expected.

=====

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT221		123	P	PECCB

MILESTONE DESCRIPTION

-----

Identify Alternate Container Materials to be Studied During ACD

MILESTONE COMPLETION CRITERIA

-----

This deliverable will be met by submission of a draft report to HQ. This report will define which alternate design concepts will be further studied during the ACD phase. A LLNL L-50000 series report will be issued with full YMP distribution expected.

=====

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM269		123	P	PECCB

MILESTONE DESCRIPTION

-----

Complete Spent Fuel Waste Form Testing for ACD

MILESTONE COMPLETION CRITERIA

-----

This milestone will be met when spent fuel testing for the advanced conceptual design is completed. Completion of this milestone will be documented in the monthly reports.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT220		123	P	PCCB

MILESTONE DESCRIPTION

Complete Final Selection of Material for Barrier for LAD

MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of a draft report to HQ. This report will consist of a comparison of the single metal barrier alloy chosen from the metal barrier alloy chosen from the alternate design concepts task. The comparison will be made in the light of the site environmental characteristics report (L104). The results will be the final selection of materials barriers. This report will be published in the formal UCRL series format. Limited and controlled distribution is planned.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R2310		123	H	PECCB

MILESTONE DESCRIPTION

Provide Final Glass Model Data to Performance Assessment to Support the DEIS

MILESTONE COMPLETION CRITERIA

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP270		123	P	PECCB

MILESTONE DESCRIPTION

Complete Integrated Tests of Waste Package Components to Validate Modeling Calculations

MILESTONE COMPLETION CRITERIA

This milestone will be met when the integrated testing to support a repository license application and to validate the models to be used in predicting materials interactions are

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

completed. This work is needed to support preparation of the draft EIS. Completion of the milestone will be documented in a letter from YMP to HQ.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R2312		123	H	PECCB

MILESTONE DESCRIPTION

Complete Input from Spent Fuel Model to PA to Support DEIS

MILESTONE COMPLETION CRITERIA

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP112		123	P	PECCB

MILESTONE DESCRIPTION

Complete West Valley Glass Waste Form Testing for Design

MILESTONE COMPLETION CRITERIA

This deliverable will be met by the submission of a draft report to YMP, who will subsequently transmit to HQ. This report describes the results of WVDP glass testing used as input to performance assessment models. This report will be issued in formal UCRL series 50000 format with full YMP distribution.

WBS: Waste Package - Design, Fabricate & Proto. Testing

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM013		124	P	PCCB

MILESTONE DESCRIPTION

Submit Draft Reference Waste Package Design Requirements

MILESTONE COMPLETION CRITERIA

This milestone will be met by the submission of the revised

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

waste package design requirements for advanced conceptual design (ACD) to HQ for review and approval. The document will describe waste package ACD requirements using DOE guidance. The document will be issued, distributed and controlled by the YMPO. Upon approval, the document will be incorporated into the YMP baseline and will be subject to configuration management controls.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT515		124	P	PCCB

## MILESTONE DESCRIPTION

Waste Package ACD Freeze

## MILESTONE COMPLETION CRITERIA

This milestone will be completed when the 50% design review is completed.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM267		124	P	PCCB

## MILESTONE DESCRIPTION

Submit Draft Waste Package Design Requirements for LAD

## MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of a draft in report to HQ for review and approval. This report will describe the waste package LAD requirements using DOE guidance. This report will be published by LLNL in a UCID series format in support of this deliverable. Limited controlled distribution is planned.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM259		124	P	PCCB

## MILESTONE DESCRIPTION

Complete Waste Package ACD Report

## MILESTONE COMPLETION CRITERIA

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

-----  
 This deliverable will be met by submission of a draft report to HQ. This report will document completion of the waste package advanced conceptual design needed for testing and evaluation of a prototype. This report will be issued as an informal LLNL UCID with limited internal, external and YMP distribution in support of this milestone.  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM245		124	P	PECCB

## MILESTONE DESCRIPTION

Complete Fabrication of Prototype Waste Package

## MILESTONE COMPLETION CRITERIA

-----  
 This deliverable will be documented in a letter from the TPO-LLNL to YMPO, who will subsequently inform HQ. Completion will be noted upon receipt of a fabricated structural advanced conceptual design waste package prototype.  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM262		124	P	PECCB

## MILESTONE DESCRIPTION

Complete Engineering Tests of ACD Prototype Waste Package

## MILESTONE COMPLETION CRITERIA

-----  
 This deliverable will be documented in a letter report to HQ. The tests will comment upon receipt of design prototypes from milestone M245. The tests will subject the waste package to the thermal and structural environment in which it is expected to perform in the repository. The documentation of these results will be submitted in milestone P203 (LLNL).  
 -----

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM270		124	P	PCCB

## MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Complete Waste Package Input to Repository LAD

MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of a draft report to HQ. It represents a design freeze to allow LAD performance assessment. This report will be published by LLNL in a UCID series format with limited distribution in support of this deliverable.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RM275		124	P	PECCB

MILESTONE DESCRIPTION

Complete Waste Package LAD Report

MILESTONE COMPLETION CRITERIA

This deliverable will be met by submission of waste package license application design drawings and specifications to HQ. This report will be published in an appendix to be added to the total repository LAD.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R2485		124	H	PCCB

MILESTONE DESCRIPTION

Start Waste Package FPC Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when DOE authorizes design to begin. Prerequisites include a readiness review.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
R2490		124	H	PCCB

MILESTONE DESCRIPTION

Complete Waste Package FPC Design Report

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

## MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the final procurement and construction design (FPCD) report is prepared by the cognizant project office, approved by the Project Office Manager, accepted by HQ, concurred by DOE/MA and approved by the Director, OCRWM.

WBS: Site - Management and Integration

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT602		131	P	PECCB

## MILESTONE DESCRIPTION

Provide In-Situ Test Data for DEIS

## MILESTONE COMPLETION CRITERIA

This milestone represents a planning date to determine the availability of site characterization data for the DEIS. Data will be provided for the DEIS before and after this milestone as available and as required.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT603		131	P	PECCB

## MILESTONE DESCRIPTION

Provide In-Situ Test Data for LA

## MILESTONE COMPLETION CRITERIA

This milestone represents a planning date to determine the availability of site characterization data for the LA. Data will be provided for the LA before and after this data as available and as required.

WBS: Site - Geology

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RR845		132	P	PECCB



PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE DESCRIPTION

Issue Recommendation on Whether to Proceed with Deep Seismic Survey

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by the timely submission of a formal letter to HQ from the YMPO requesting to proceed with the additional deep seismic surveys. The request will be submitted after a detailed evaluation of the deep seismic surveys already completed to determine if the results warrant further work. If no additional work is warranted, a letter will be submitted to HQ from the YMPO to recommend termination of the effort (8.3.1.17.4).

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RT278		132	P	PECCB

MILESTONE DESCRIPTION

Begin Surface-Based Geophysics Activities

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the project begins the first new surface-based geophysics activities.

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
RP780		132	P	PECCB

MILESTONE DESCRIPTION

Issue Final Geologic Map of Yucca Mountain

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by submittal of a geologic map of Yucca Mountain to DOE for review and approval. The map will illustrate bedrock units and structures. It will consist of three 1:12,000 sheets illustrating the southern, southwest, and northwest sectors of the area (8.3.1.4.2.2.1)

MILESTONE NUMBER	BASELINE DATE	WBS	RESPONSIBLE ORGANIZATION	COGNIZANT CCB
---------------------	---------------	-----	-----------------------------	------------------

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

**PECCB**

## ----- Issue Report on Preliminary Regional Tectonic Model

This milestone will be satisfied by issuance of a report to HQ from the YMPO describing one or more preliminary tectonic models which set forth and evaluate the rate, timing, and nature of quarternary deformation at the site, and the relation of that deformation to the regional tectonic setting.

[illegible]

## Issue Report on Potential for Faulting at the Surface Facilities

This report will present the results of assessments of stability of the site surface with respect to fault displacement at location proposed for facilities important to safety. Particular objectives are to develop the characterization parameters (8.3.1.17-36) with the indicated level of confidence. SNL will deliver report to YMPO, who will subsequently make info. available to HQ (8.3.1.17.2.1.1).

[illegible]

## Issue Report on Probabilistic Seismic Hazard Update

This milestone will be satisfied with a report to the YMPO, who will subsequently notify HQ, which includes a data set as defined in SCP, which can be used to assess the seismic hazard of Yucca Mountain and vicinity (8.3.1.17.3). This report will provide probabilities of any given acceleration at the site from all relevant sources in the region and will satisfy related

[illegible]

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

information needs for the EIS.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM368               |               | 132 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Preliminary Site Geologic Description

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by issuance of a preliminary report to HQ describing one or more stratigraphic and structural models of the site area. The preliminary description will incorporate geologic map, subsurface descriptions and reports, surface and borehole geophysics to aid in preliminary descriptions of the rock characteristics of the site area.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM379               |               | 132 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Structure of Yucca Mountain Based Gravity, Magnetism, and Seismic Data

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a report issued from the USGS to the YMPO, who will subsequently notify HQ, which summarizes the structure surrounding YM as modeled from gravity and magnetic data. The report will provide an analysis of possible faulting within the Yucca Mountain block. The report supports the information need for preclosure tectonics data collection and analysis (8.3.1.17.3).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RR478               |               | 132 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Probability of Future Volcanic Activity

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE COMPLETION CRITERIA

A report which includes the revised probability calculations of future volcanic activities will be delivered to HQ by the YMPO. This data/info. will be used to support the LA (8.3.1.8.1.1.4).

WBS: Site - Hydrology

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RP932               |               | 133 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report of Conceptual Model of Saturated Zone in Yucca Mountain

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by the release of a USGS interpretive report to YMPO summarizing all reliable data and interpretations that describe the saturated flow system within the boundaries of the accessible environment. The description will include physical and hydraulic characteristics of rock units and structural features, such as faults. Concepts of flow, such as porous-media and fracture-network, will be discussed and their application to the site hypothesized.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT526               |               | 133 | P                           | PECCB            |

MILESTONE DESCRIPTION

Begin ESF Bulk-Permeability Test Data Collection

MILESTONE COMPLETION CRITERIA

This milestone will be met when the project begins collection of test data per approved procedures.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT527               |               | 133 | P                           | PECCB            |

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE DESCRIPTION

Begin ESF Infiltration Test Data Collection

MILESTONE COMPLETION CRITERIA

This milestone will be met when the project begins collection of test data per approved procedures.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RP897               |               | 133 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on the Hydrologic Description of the Saturated Zone for Input to the DEIS

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a preliminary report from the USGS to the YMPO, who will subsequently inform HQ, which will integrate data collection, synthesis and modeling activities from site hydrology, fractured rock hydrology, saturated zone hydrochemistry and regional hydrology for input to DEIS (8.3.1.2.3).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT388               |               | 133 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Analysis of Hydrologic Properties of Tuff Matrix for Input to the DEIS

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a preliminary report from the USGS to the YMPO, who will subsequently inform HQ, which will contain a summary of all the matrix hydrologic data, a summary of the methodology used to collect the data, and an error analysis. This report will point to the availability of geostatistical model to determine matrix hydrologic properties in 3 dimensions. This report will be for input to the DEIS (8.3.1.2.2.3).

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RP708               |               | 133 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Evaluation of the Hydrologic Description of the UZ for Input to the DEIS

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a preliminary report from the USGS to the YMPO, who will subsequently inform HQ, which will focus on integrating all of the UZ activities to describe fluxes, velocities, and flow paths within the UZ. This effort will concentrate on the site system. This report will be for input to the DEIS (8.3.1.2.2.9 and 1).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT514               |               | 133 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on the Assessment of the Effects of Faulting on Flux Rates

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a report to YMPO estimating the effects that the creation of scarps, the diversion of drainage, the change in the dip of beds, or the juxtaposition of beds due to fault offset would have on average percolation flux at the top of the Topopah Spring Welded Unit.

WBS: Site - Geochemistry

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM377               |               | 134 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Solubility of Radionuclides in Yucca Mountain Water

MILESTONE COMPLETION CRITERIA

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

A report will be submitted to HQ from the YMPO which summarizes the solubility studies on the EPA list radionuclides, both the experimental and the calculations (8.3.1.3.5.1).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT513               |               | 134 | P                           | PECCB            |

## MILESTONE DESCRIPTION

Issue Report on Retardation Sensitivity Analysis

## MILESTONE COMPLETION CRITERIA

TBD

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM390               |               | 134 | P                           | PECCB            |

## MILESTONE DESCRIPTION

Issue Report on Geochemical/Geophysical Model of Unsaturated Zone

## MILESTONE COMPLETION CRITERIA

A report will be submitted to HQ by the YMPO which describes the geochemical model of the unsaturated zone based on the understandings developed up to that time. The data will be used to support the LA (8..1.3.7.1.2).

WBS: Site - Drilling

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT279               |               | 135 | P                           | PECCB            |

## MILESTONE DESCRIPTION

Begin Trenching

## MILESTONE COMPLETION CRITERIA

This milestone will be satisfied with the initiation of

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

surveying for the Midway Valley and/or Forty Mile Wash trenches.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT275               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Begin Shallow Unsaturated Zone Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be met with the initiation of rig activity for either one of the unsaturated zone neutron holes, one of the small or large plot rainfall simulation holes, one of the calcite-silica (PH) series holes, or one of the Forty Mile Wash neutron holes.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R3502               |               | 135 | P                           | PCCB             |

MILESTONE DESCRIPTION

Begin Multi-Purpose Bore-Hole Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the project begins drilling either one of the two multi-purpose boreholes.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT286               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Begin Geologic Hole Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be met with the beginning of drilling for either one of the geologic core holes, vulcanism holes, the in-situ-stress hole, ESF series holes, or the repository facility holes.



PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT531               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Begin Deep Unsaturated Zone Hydrologic Hole Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be met with the beginning of drilling for either UE-25 VSP#1 or one of the UZ boreholes.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT532               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Begin Systematic Program Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the project begins drilling to gather information for investigation 8.3.1.4.3 (phase 1). The objective of this program is to acquire physical rock samples, analytical data and a basic description of the subsurface geology from which to determine the X-D distribution of rock properties underlying Yucca Mountain.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT530               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Begin Water Table Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be met with the beginning of drilling for one of the WT boreholes.

| MILESTONE | RESPONSIBLE | COGNIZANT |
|-----------|-------------|-----------|
|-----------|-------------|-----------|

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| NUMBER | BASELINE DATE | WBS | ORGANIZATION | CCB   |
|--------|---------------|-----|--------------|-------|
| RP501  |               | 135 | P            | PECCB |

MILESTONE DESCRIPTION

Complete Shallow Unsaturated Zone Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be met when required sampling or geophysical logging (as applicable) is completed on the last of either one of the unsaturated zone neutron holes, one of the small or large plot rainfall simulation holes, one of the calcite-silica (PH) series holes, or one of the Forty Mile Wash neutron holes.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT501               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Geologic Drilling

MILESTONE COMPLETION CRITERIA

This milestone will be met when the required geophysical logs have been completed on the last of either one of the geologic core holes, vulcanism holes, the in-situ-stress hole, or the repository facility holes.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT291               |               | 135 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Trenching

MILESTONE COMPLETION CRITERIA

This milestone will be met when all Midway Valley and Forty Mile Wash trenches have been constructed.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

=====

|       |     |   |       |
|-------|-----|---|-------|
| RP516 | 135 | P | PECCB |
|-------|-----|---|-------|

=====

MILESTONE DESCRIPTION

-----  
Complete Systematic Program Drilling

MILESTONE COMPLETION CRITERIA

-----  
This milestone will be when the geophysical logs have been completed on the last SD borehole.

=====

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT500               |               | 135 | P                           | PECCB            |

=====

MILESTONE DESCRIPTION

-----  
Complete Water Table Drilling

MILESTONE COMPLETION CRITERIA

-----  
This milestone will be met when the geophysical logs have been completed on the last deep water table borehole.

=====

WBS: Site - Climatology and Meteorology

=====

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT533               |               | 136 | P                           | PECCB            |

=====

MILESTONE DESCRIPTION

-----  
Issue Report on Extreme Weather Phenomena and Expected Recurrence Intervals

MILESTONE COMPLETION CRITERIA

-----  
This milestone will be satisfied when the YMPO transmits the report to HQ for review and approval. The report will include information on extreme weather phenomena that have occurred historically and relate these occurrences to site-specific conditions. Statistical recurrence intervals for various meteorological data will be cited. Information in this report is meant to assist in repository surface and underground facilities design (8.3.1.12.4).

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RP935               |               | 136 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report Summarizing Modern Flooding Events

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a summary report with interpretations with all steam flow data collected during the investigation.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM366               |               | 136 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Quaternary Climate of Yucca Mountain

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a report to DOE that will summarize the paleoclimate data in formats that can be utilized by investigations of future climatic changes and paleohydrology.

WBS: Site - Resource Potential

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT040               |               | 137 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Effects of Water Withdrawals on the Local Flow System

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a report to YMPO identifying the potential effects of repository related water withdrawals on the local flow system at Yucca Mountain. The report will include modifications of the preclosure ground-water path and the lowering of the potential metric surface. The effects will be identified and quantified to establish any mitigating measures

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

that might be required (8.3.1.16.2.1.4).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT082               |               | 137 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Natural Resource Potential at Yucca Mountain

MILESTONE COMPLETION CRITERIA

A preliminary report will be prepared and issued to HQ by the YMPO which identifies the natural resource potential (mineral and energy) for the site, with primary emphasis on evaluating the likelihood of inadvertent human interference and intrusion. The information represented by this milestone will be used to support the EIS.

WBS: Repository - Management and Integration

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RN433               |               | 141 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Repository Design Requirements Document

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when SAND85-0260 is updated and submitted to HQ for review and approval. Comments received from the YMPO will be incorporated by SNL into SAND85-0260 "repository design requirements to support the advanced conceptual design studies for the Yucca Mountain mined geologic disposal system". The document will be used to support the initiation of the ACD effort. The requirements for the RDR are in the OCRWM SEMP and the ACD plan.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RR848               |               | 141 | P                           | PECCB            |

MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Issue Retrieivability Compliance Strategy Plan

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the deliverable SAND report on retrievability compliance strategy, is submitted to HQ for review and comment by the YMPO.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RR770               |               | 141 | P                           | PCCB             |

MILESTONE DESCRIPTION

Repository ACD Freeze

MILESTONE COMPLETION CRITERIA

Project initiates 50 % design review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT508               |               | 141 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Seismic Design Study of the Waste Handling Building for ACD

MILESTONE COMPLETION CRITERIA

Submission of a report on seismic analysis of the waste handling building for ACD to YMPO for review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM042               |               | 141 | P                           | PCCB             |

MILESTONE DESCRIPTION

Submit Draft Repository Design Requirements for LAD

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by submittal of a SAND report

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

to HQ by the YMPO for review and approval. The subsystem design requirements will be updated and revised based on the review of the ACD. The recipient process is the LAD.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RR774               |               | 141 | P                           | PCCB             |

MILESTONE DESCRIPTION

Complete Repository ACD Report

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a report submitted for review and approval to HQ from the YMPO. The report will cover the design review of the completed reference configuration for ACD developed based on results of the special studies performed to date for ACD or surface facilities. The requirements to perform ACD are in the PMP.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT509               |               | 141 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Seismic Design Study of the Waste Handling Building for LAD

MILESTONE COMPLETION CRITERIA

Submission of a report on seismic analysis of the waste handling building for LAD to YMPO for review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT120               |               | 141 | P                           | PCCB             |

MILESTONE DESCRIPTION

Repository LAD Freeze

MILESTONE COMPLETION CRITERIA

Project initiates 50% design review.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT123               |               | 141 | P                           | PCCB             |

MILESTONE DESCRIPTION

Complete Repository LAD Report

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a LAD report submitted by YMPO for review and approval by HQ.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R4190               |               | 141 | H                           | PCCB             |

MILESTONE DESCRIPTION

Complete Repository FPCD Report

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the design report is prepared by the cognizant project office, approved by the Project Office Manager, accepted by HQ and approved by the Director, OCRWM.

WBS: Repository - Development and Testing

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R4201               |               | 142 | P                           | PECCB            |

MILESTONE DESCRIPTION

Provide Recommendation on Horizontal vs. Vertical Emplacement

MILESTONE COMPLETION CRITERIA

This milestone will be completed when the recommendation and supporting documentation is provided to RW-1.



PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RR274               |               | 142 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Emplacement/Retrieval System Demonstration

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by submitting a SAND report to HQ by the YMPO for review that describes the results and implications of the equipment proof-of-principle demonstrations. The LA is the recipient. The DOE position paper on retrieval requires this activity.

WBS: Repository - Operations and Maintenance

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RN242               |               | 144 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Preliminary Repository Operations Plan

MILESTONE COMPLETION CRITERIA

This milestone will be complete with the submission of a preliminary report to YMPO for review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT510               |               | 144 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Final Repository Operations Plan

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when YMPO submits repository operations plan to HQ.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| NUMBER | BASELINE DATE | WBS | ORGANIZATION | CCB  |
|--------|---------------|-----|--------------|------|
| R4492  |               | 144 | H            | PCCB |

MILESTONE DESCRIPTION

Begin Repository Design Capacity Operations

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when phase 2 facilities have reached a capacity of 300 MTU per year HQ authorizes repository to begin receipt of the full capacity of 3400 MTU per year (including defense and commerical waste).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R4493               |               | 144 | H                           | PCCB             |

MILESTONE DESCRIPTION

Complete Repository Waste Emplacement

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when all requirements for emplacement to design capacity are met and HQ authorizes termination of emplacement operations.

WBS: Repository - Decommissioning

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R4590               |               | 145 | P                           | PCCB             |

MILESTONE DESCRIPTION

Start Repository Decommissioning

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when all requirements for initiating repository decommissioning are met and HQ authorizes start of decommissioning.

| MILESTONE | RESPONSIBLE | COGNIZANT |
|-----------|-------------|-----------|
| PAGE 31   |             |           |

RUN DATE = 20-Dec-89  
TIME = 10:45

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| NUMBER | BASELINE DATE | WBS | ORGANIZATION | CCB  |
|--------|---------------|-----|--------------|------|
| R4591  |               | 145 | H            | PCCB |

MILESTONE DESCRIPTION

Complete Repository Decommissioning

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when all requirements for completion of repository decommissioning are met and HQ authorizes completion of decommissioning.

WBS: Sealing

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM461               |               | 146 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Sealing Requirements for ACD

MILESTONE COMPLETION CRITERIA

This milestone will be met when the project submits a letter to HQ stating that the design criteria or sealing components has been input to the RDR for use in ACD. Criteria will include requirements for various sealing components and identifies criteria for other repository components such as for drainage pattern in the repository and shaft locations.

WBS: Reg. & Institutional - Licensing

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R5270               |               | 152 | H                           | PCCB             |

MILESTONE DESCRIPTION

President Recommends Site

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the president recommends the site for development as a repository.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R5271               |               | 152 | H                           | PCCB             |

MILESTONE DESCRIPTION

Site Designation Effective

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the site designation waiting period is completed after presidential recommendation of the site.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R5290               |               | 152 | H                           | PCCB             |

MILESTONE DESCRIPTION

Receive Construction Authorization

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the NRC makes a favorable determination regarding safety, environmental protection, common defense and security (10CFR 60.31) and issues the construction authorization to the Secretary of Energy.

WBS: Reg. & Institutional - Environment

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM393               |               | 154 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on 5 Year Summary of Meteorological Conditions.

MILESTONE COMPLETION CRITERIA

A report will be submitted to and approved by YMPO which will document the previous five years of data collection (which began 01 December 1985). HQ will be notified by letter from the YMPO.

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT249               |               | 154 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Environmental Topical Reports for DEIS

MILESTONE COMPLETION CRITERIA

This milestone is a summary milestone which represents completion of all topical report inputs to DEIS which will be prepared by the YMPO and sent to HQ. This milestone will signify that all required environmental data to develop and support the DEIS document has been acquired by the Project Office.

WBS: Reg. & Institutional - Transportation

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RR905               |               | 155 | P                           | PECCB            |

MILESTONE DESCRIPTION

Select Repository Access Routes for the DEIS

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by a letter from YMPO to HQ documenting the rail access spur routing selection, and other repository access related determinations necessary for the EIS and repository LAD.

WBS: Reg. & Institutional - Socioeconomic

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT322               |               | 156 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Report on Socioeconomic Information for the DEIS

MILESTONE COMPLETION CRITERIA

# PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

A summary report documenting the completion of the socioeconomic data needed for the EIS will be submitted to HQ by the YMPO. The report will discuss baseline conditions, impact and mitigation strategies. Attainment of this milestone will signify the completion of project office contributions to this part of the DEIS.

## WBS: Reg. & Institutional - Communication & Liaison

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R5031               |               | 157 | H                           | PCCB             |

### MILESTONE DESCRIPTION

Complete Consultation and Communication Agreement with Nevada

### MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when a C and C agreement is signed by the State of Nevada and the Secretary of the DOE.

## WBS: Exploratory Shaft Facility - Mgmt. & Integration

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT511               |               | 161 | P                           | PECCB            |

### MILESTONE DESCRIPTION

Complete ESF 50% Title II Design Review

### MILESTONE COMPLETION CRITERIA

The YMPO will document in a letter to HQ that at 50% of Title II design a review was conducted. Results of the review will be transmitted to HQ.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT270               |               | 161 | P                           | PECCB            |

### MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Complete ESF 90% Title II Design Review

MILESTONE COMPLETION CRITERIA

The YMPO will document in a letter to HQ that at 90% of Title II design a review was conducted. The results of the review will be transmitted to HQ.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT271               |               | 161 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ESF Title II Design Report

MILESTONE COMPLETION CRITERIA

This is a summary milestone which represents the completion of subsurface Title II engineering by Fenix & Scisson (M613), and the completion of surface Title II engineering by Holmes & Narver (M642), and the subsequent review and approval of the total package by YMPO, and includes the Title II design report. The Title II design summary will be trasmitted to HQ.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RP750               |               | 161 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ESF Title III Design

MILESTONE COMPLETION CRITERIA

This milestone will be considered complete when the A/Es (F&S and H&N) complete all as-built drawings after completion of ESF related construction.

WBS: Exploratory Shaft Facility - Surface Facilities

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM646               |               | 163 | P                           | PECCB            |

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE DESCRIPTION

Complete Construction of ESF Surface Facilities

MILESTONE COMPLETION CRITERIA

YMPO will document in a letter to HQ that ESF surface facilities construction has completed.

WBS: Exploratory Shaft Facilities - First Shaft

| MILESTONE<br>NUMBER | BASLINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|--------------|-----|-----------------------------|------------------|
| RM087               |              | 164 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start Sinking ES-1 Below Collar and ES-1 Hoist Operational

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when the YMPO notifies the contractor to start sinking the ES-1 below 100 ft. At this point, the sinking plant for the ES-1 will be constructed and operational.

| MILESTONE<br>NUMBER | BASLINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|--------------|-----|-----------------------------|------------------|
| RM089               |              | 164 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ES-1 Upper Breakout Room Mining

MILESTONE COMPLETION CRITERIA

The construction manager will document in a letter to YMPO that all construction in ES-1 upper breakout room (520' level) is complete.

| MILESTONE<br>NUMBER | BASLINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|--------------|-----|-----------------------------|------------------|
| RT153               |              | 164 | P                           | PECCB            |

MILESTONE DESCRIPTION



PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Complete ES-1 Excavation to Main Test Level

MILESTONE COMPLETION CRITERIA

The construction manager will document in a letter to YMPO that ES-1 has been excavated to the main test level. The YMPO will subsequently notify HQ of this progress.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM654               |               | 164 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ES-1 Construction

MILESTONE COMPLETION CRITERIA

YMPO will document by letter to HQ that ES-1 has been excavated to total depth and that all shaft internals and liner have been installed.

WBS: Exploratory Shaft Facilities - Second Shaft

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM647               |               | 165 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start ES-2 Shaft Collar Construction

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when YMPO notifies the contractors to proceed with ES-2 construction. The YMPO will also document, by letter to HQ that ES-2 construction has started.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM099               |               | 165 | P                           | PECCB            |

MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

Start Sinking ES-2 Below Collar and ES-2 Hoist Operational

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied when when the YMPO notifies the contractor to start sinking the ES-2 below 100 ft. At this point, the ES-2 sinking plant will be constructed and operational.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM093               |               | 165 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ES-2 Main Test Level Breakout Mining

MILESTONE COMPLETION CRITERIA

The construction manager will document in a letter to YMPO that the ES-2 main level breakout mining is complete.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM643               |               | 165 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ES-2 Construction

MILESTONE COMPLETION CRITERIA

YMPO will document in a letter to HQ that ES-2 liner and internals are complete and ES-2 is accepted for operations.

WBS: Exploratory Shaft Facilities -Subsurf. Excavation

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RM655               |               | 166 | P                           | PCCB             |

MILESTONE DESCRIPTION

Complete Main Test Level Test Bed Drifting

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

MILESTONE COMPLETION CRITERIA

The construction manager will document in a letter to the YMPO that the core panel mining is complete on the MTL. The YMPO will subsequently notify HQ of the progress by memo.

WBS: Exploratory Shaft Facilities - Operations

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT520               |               | 168 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete ESF Integrated Data System QA Check-Out

MILESTONE COMPLETION CRITERIA

LANL will document in a letter to the YMPO that the phase 2 IDS system is completed and has been checked out by QA. The YMPO will subsequently notify HQ of the progress by memo.

WBS: Project Management - Quality Assurance

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| RT499               |               | 193 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete LANL QA Program Qualification Audit

MILESTONE COMPLETION CRITERIA

This milestone will be satisfied by the successful completion of the LANL QA program qualification audit. The results of this audit will yield no significant findings, thereby allowing all work to proceed in compliance with all affecting QA requirements.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| R9310               |               | 193 | H                           | PCCB             |

MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - REPOSITORY MILESTONES

-----  
-----  
Complete YMP QA Program Qualification Audit

-----  
MILESTONE COMPLETION CRITERIA  
-----

This milestone will be met when the final QA audit prior to NRC certification is complete.

Appendix D. MRS Schedule Baseline

# PROGRAM SCHEDULE BASELINE - MRS MILESTONES

WBS: MRS - Design and Engineering

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| MPK04               | 16Apr90       | 31  | H                           | PCCB             |

## MILESTONE DESCRIPTION

Issue Waste Management System Requirements Document Volume III - (MRS)

## MILESTONE COMPLETION CRITERIA

This milestone will be completed when the document is approved by DOE and issued for use.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| MC12                | 29Dec90       | 31  | P                           | PECCB            |

## MILESTONE DESCRIPTION

Start MRS Conceptual Designs

## MILESTONE COMPLETION CRITERIA

This milestone will be complete when DOE authorizes design to begin.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M1002               | 29Sep92       | 31  | P                           | PCCB             |

## MILESTONE DESCRIPTION

Start MRS Title I Design

## MILESTONE COMPLETION CRITERIA

This milestone is complete when the DOE authorizes Title I design work to begin. Prerequisites include a readiness review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - MRS MILESTONES

M1003 29Jul93 31 P PCCB

MILESTONE DESCRIPTION

Start MRS Title II Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when Title I is approved and DOE authorizes Title II design to begin.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M1004               | 28Jul95       | 31  | P                           | PCCB             |

MILESTONE DESCRIPTION

Complete MRS Title II Design

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the final design report is accepted by the DOE.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M1005               | 27Jan97       | 31  | P                           | PCCB             |

MILESTONE DESCRIPTION

Start Simple Receipt Facility Construction

MILESTONE COMPLETION CRITERIA

This milestone is complete when DOE authorizes construction activities to begin. Prerequisites include a readiness review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M1006               | 26Jan98       | 31  | P                           | PCCB             |

MILESTONE DESCRIPTION

Start MRS Spent Fuel Handling Building Construction

MILESTONE COMPLETION CRITERIA

PROGRAM SCHEDULE BASELINE - MRS MILESTONES

-----  
 This milestone will be complete when DOE authorizes construction activities to begin. Prerequisites include a readiness review.  
 -----

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M1007               | 31Jan98       | 31  | P                           | PCCB             |

-----  
 MILESTONE DESCRIPTION

Start Waste Acceptance at Simple Receipt Facility

-----  
 MILESTONE COMPLETION CRITERIA

This milestone is complete when DOE authorizes operations to receive and possess wastes. Prerequisites include a readiness review.

-----

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M1008               | 26Jul00       | 31  | P                           | PCCB             |

-----  
 MILESTONE DESCRIPTION

Start Waste Acceptance at Spent Fuel Handling Building

-----  
 MILESTONE COMPLETION CRITERIA

This milestone is complete when DOE authorizes operations to begin. Prerequisites include a readiness review.

-----  
 WBS: MRS - Regulatory

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M3001               | 29Mar93       | 33  | H                           | PECCB            |

-----  
 MILESTONE DESCRIPTION

Issue MRS EIS Notice of Intent

-----  
 MILESTONE COMPLETION CRITERIA

This milestone will be complete when DOE publishes a Notice of Intent in the Federal Register.



PROGRAM SCHEDULE BASELINE - MRS MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M3002               | 30Jun94       | 33  | H                           | PCCB             |

MILESTONE DESCRIPTION

Issue MRS DEIS

MILESTONE COMPLETION CRITERIA

This milestone will be complete when notice of document availability is published in the Federal Register.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M3003               | 30Jul95       | 33  | H                           | PCCB             |

MILESTONE DESCRIPTION

Issue MRS FEIS

MILESTONE COMPLETION CRITERIA

This milestone will be complete when notice of document availability is published in the Federal Register.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M3004               | 30Jul95       | 33  | H                           | PCCB             |

MILESTONE DESCRIPTION

Submit MRS License Application to the NRC

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the document is approved and issued by the DOE.

WBS: MRS - Environmental

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - MRS MILESTONES

M5001 28Dec92 35 H PCCB

MILESTONE DESCRIPTION

Complete Environmental Assessments for Sites

MILESTONE COMPLETION CRITERIA

This milestone is completed when the DOE submits a final report to the Nuclear Negotiator for inclusion in a proposed agreement to Congress. If a draft EA is prepared, the milestone is complete when the final EA including a comment response document is submitted to the Nuclear Negotiator.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| M5002               | 29Mar93       | 35  | H                           | PCCB             |

MILESTONE DESCRIPTION

Candidate Sites Identified

MILESTONE COMPLETION CRITERIA

The proposed agreement between the potential host and the negotiator and EA is forwarded to the congress for enactment. The milestone is complete when the agreement is enacted.

Appendix E. Transportation Schedule Baseline

Part 1 - Milestones with dates

E-1.1

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

WBS: Cask System Development - From-Reactor Casks

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| TA01                | 18Jan90       | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start Legal Weight Truck (LWT) From-Reactor Cask Final Design(s).

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE authorizes LWT from-reactor cask final design work to begin.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1298               | 30Jan92       | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Legal Weight Truck (LWT) From-Reactor Cask Final Design(s) and Submit NRC Applications.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the final design report(s) for LWT from-reactor cask is accepted by DOE, and submitted by the cask contractor to the NRC for review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1297               | 30Sep96       | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start Fabrication of LWT From-Reactor Cask Fleet.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the cask fleet contract has been awarded and DOE authorizes fabrication to begin.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

T1296 30Mar98 412 P PECCB

MILESTONE DESCRIPTION

Complete Fabrication of First New LWT From-Reactor Cask.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the fabrication contractor notifies DOE that fabrication of the first new LWT from-reactor cask has been completed and is ready for DOE acceptance.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1295               | 30Sep00       | 412 | P                           | PCCB             |

MILESTONE DESCRIPTION

Establish Capability to Ship 1200 MTU/YR with New LWT From-Reactor Casks.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when enough LWT from-reactor casks have been fabricated and accepted by the DOE to begin shipping 1200 MTU/YR from reactors.

WBS: Cask System Development - From-MRS Casks

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1399               | 28Feb95       | 413 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start From-MRS Cask Preliminary Design(s).

MILESTONE COMPLETION CRITERIA

This milestone will commence when the DOE authorizes from-MRS cask preliminary design work to begin. Prerequisites for the start of from-MRS cask preliminary design(s) are: the decision on the need and scope of from-MRS cask design development, preprocurement planning, an issuance of an RFP(s), and contract awarding.

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1398               | 30Jan98       | 413 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete From-MRS Cask Preliminary Design(s) and Start Final Design.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the from-MRS cask preliminary design report is accepted by the DOE, and the DOE has notified the contractor to proceed with the final design development.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1397               | 30Jan00       | 413 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete From-MRS Cask Final Design(s).

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the from-MRS cask final design report is accepted and submitted by the cask contractors to the NRC for review.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1396               | 31Jul02       | 413 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start Fabrication of From-MRS Cask(s) Prototypes.

MILESTONE COMPLETION CRITERIA

This milestone will commence when DOE authorizes prototype fabrication.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

T1395 30Sep05 413 P PECCB

MILESTONE DESCRIPTION

Start Fabrication of From-MRS Cask Fleet.

MILESTONE COMPLETION CRITERIA

This milestone will commence when DOE authorizes fabrication of from-MRS cask fleet. This will occur after the NRC has issued a certificate of compliance and the cask fleet contract has been awarded.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1394               | 30Oct06       | 413 | P                           | PCCB             |

MILESTONE DESCRIPTION

Establish Capability to Ship From MRS 400 MTU/YR Using From-MRS Casks.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the DOE fabrication contractor notifies DOE that fabrication and delivery of enough from-MRS casks to ship 400 MTU/YR has been complete and is ready for DOE acceptance.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1393               | 30Oct11       | 413 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Fabrication of From-MRS Fleet.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the fabrication contractor notifies DOE that fabrication of all the needed from-MRS casks has been completed and is ready for DOE acceptance.

WBS: Cask System Development - Systems Tech. Develop.

| MILESTONE | RESPONSIBLE | COGNIZANT |
|-----------|-------------|-----------|
|-----------|-------------|-----------|

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

| NUMBER | BASELINE DATE | WBS | ORGANIZATION | CCB   |
|--------|---------------|-----|--------------|-------|
| T1699  | 30Jun91       | 416 | P            | PECCB |

MILESTONE DESCRIPTION

Initiate Development of Selected Concepts of Interim Transportation/Storage Capability.

MILESTONE COMPLETION CRITERIA

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1698               | 30Jun93       | 416 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete MRS Transport/Storage System Final Design and Submit NRC Application.

MILESTONE COMPLETION CRITERIA

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1697               | 30Jan95       | 416 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start Fabrication of Prototype MRS Transport/ Storage System.

MILESTONE COMPLETION CRITERIA

WBS: Institutional - Policy/Regulation Analysis

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T2499               | 30Jul97       | 424 | P                           | PECCB            |

MILESTONE DESCRIPTION



PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

Emergency Training Complete for Initial Shipments.

MILESTONE COMPLETION CRITERIA

WBS: Support Systems - Facilities

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T4399               | 30May92       | 443 | P                           | PECCB            |

MILESTONE DESCRIPTION

Start Cask Maintenance Facility Title I Design.

MILESTONE COMPLETION CRITERIA

This milestone will commence when the DOE authorizes design work to begin.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T4398               | 30Jul95       | 443 | P                           | PECCB            |

MILESTONE DESCRIPTION

Complete Cask Maintenance Facility Title II Design.

MILESTONE COMPLETION CRITERIA

This milestone will be complete when the final design report is accepted by DOE. Title II design work will include revisions to the Title I design, the preparation of final drawings, specs, cost estimates, and bidding documents.

WBS: Management - Program Integration Support

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| TPK06               | 30May90       | 452 | H                           | PECCB            |

MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

-----  
 Issue Waste Management System Requirements Document Volume II -  
 (Transportation).  
 -----

MILESTONE COMPLETION CRITERIA

-----  
 This milestone will be completed when the document is approved  
 by DOE and issued for use.  
 -----

WBS: Operations - System Operations

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T6398               | 31Jan98       | 463 | P                           | PECCB            |

MILESTONE DESCRIPTION

-----  
 Ready to Transport Spent Fuel.

MILESTONE COMPLETION CRITERIA

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T6399               | 31Mar98       | 463 | P                           | PCCB             |

MILESTONE DESCRIPTION

-----  
 Implement Transportation Operations Using First New LWT  
 From-Reactor Casks.

MILESTONE COMPLETION CRITERIA

-----  
 This milestone will be complete when the DOE authorizes  
 transportation operations to begin. Commencement may occur after  
 readiness review has confirmed the transportation system  
 operational, and new LWT from-reactor casks are available.  
 -----

Appendix E. - Transportation Schedule Baseline

Part 2 - Milestones without dates

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

WBS: Cask System Development - From-Reactor Casks

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1205               |               | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Approve NAC Rail-Barge Preliminary Design

MILESTONE COMPLETION CRITERIA

Nuclear Assurance Corp. (NAC) will submit to Idaho Operations Office, Civilian Radwaste Branch (CRWB), a preliminary design package with drawings, a schedule for fabrication, a cost estimate, and a technical report. After a review, CRWB will issue a letter to NAC stating that the preliminary design has been approved and authorizing work to begin on the final design. The milestone will be considered complete when OCRWM headquarters is notified by letter from CRWB that the design approval letter has been issued to NAC (section 8. milestone log).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1204               |               | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Approve G.A. Legal Weight Truck Cask Preliminary Design

MILESTONE COMPLETION CRITERIA

General Atomics (GA) will submit to Idaho's Civilian Radwaste Branch (CRWB) a preliminary design package with drawings, a cost estimate, a schedule for fabrication, and a technical report. After review of the design package, CRWB will issue a letter to GA stating that the preliminary design has been approved and authorizing work to begin on the final design. The milestone will be considered complete when OCRWM headquarters is notified by letter from CRWB stating that the design approval letter has been issued to GA (section 8. milestone log).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1234               |               | 412 | P                           | PECCB            |

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

MILESTONE DESCRIPTION

Approve WEC Legal Weight Truck Cask Preliminary Design

MILESTONE COMPLETION CRITERIA

Westinghouse Electric Corp. (WEC) will submit to Idaho Operations Office, Civilian Radwaste Branch (CRWB) preliminary design drawings, a cost estimate, a schedule for fabrication, and a package with technical report. After a review, CRWB will issue a letter to WEC stating that the preliminary design has been approved and authorizing work to begin on the final design. The milestone will be considered complete when OCRWM headquarters is notified by letter from CRWB that the design approval letter has been issued to WEC (section 8.milestone log).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1255               |               | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Approve B & W Rail-Barge Cask Preliminary Design

MILESTONE COMPLETION CRITERIA

Babcock & Wilcox (B&W) will submit to Idaho Operations Office, Civilian Radwaste Branch (CRWB), a design package with drawings, a cost estimate, a schedule for fabrication, and a technical report. After review of the design package, CRWB will issue a letter to B&W stating that the preliminary design has been approved and authorizing work to begin on the final design. The milestone will be considered complete when OCRWM headquarters is notified by letter from CRWB that the design approval letter has been issued to B&W (section 8. milestone log).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1250               |               | 412 | P                           | PECCB            |

MILESTONE DESCRIPTION

Approve NUPAC Rail-Barge Preliminary Design

MILESTONE COMPLETION CRITERIA

Nuclear Packaging Corp. (NUPAC) will submit to Idaho Operations Office, Civilian Radwaste Branch (CRWB), a preliminary design package with drawings, a schedule for fabrication, a cost

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

estimate, and a technical report. After reviewing the package, CRWB will issue a letter to NUPAC stating that the design has been approved and authorizing work to begin on the final design. The milestone will be considered complete when OCRWM headquarters is notified by letter from CRWB that the design approval letter has been issued to NUPAC (section 8. milestone log).

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1210               |               | 412 | H                           | PECCB            |

MILESTONE DESCRIPTION

Determine Need for Development of Overweight Truck Casks

MILESTONE COMPLETION CRITERIA

An effort is underway by the American Association of State Highway Officials (AASHTO) to determine the feasibility of creating a uniform state permit for overweight truck (OWT) shipments. This model permit study will assist in the decision to design this type of cask. This milestone will be considered complete when the AASHTO task force and the OCRWM study are completed and OCRWM headquarters decides whether to develop the design and informs by letter the Idaho Operations Office of its decision.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1211               |               | 412 | P                           | PCCB             |

MILESTONE DESCRIPTION

Submit Application for Legal Weight Truck Cask Certification of Compliance to the NRC.

MILESTONE COMPLETION CRITERIA

The final designs for each design contractor will be approved by Idaho Operations Office, CRWB prior to submittal of the applications. Each design contractor will submit a certification of compliance application to the NRC for review and approval. The applications will include the necessary documentation to comply with federal regulation 10CFR71. This milestone will be considered complete when CRWB submits a letter to OCRWM headquarters stating that the applications have been submitted to the NRC.

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1212               |               | 412 | P                           | PCCB             |

MILESTONE DESCRIPTION

Submit Application for Rail-Barge Cask Certification of Compliance to the NRC.

MILESTONE COMPLETION CRITERIA

The final designs for each design contractor will be approved by CRWB prior to the submittal of the applications. Each design contractor will submit a certificate of compliance application to the NRC for review and approval. The applications will include the necessary documentaton to comply with federal regulation 10CFR71. This milestone will be considered complete when CRWB submits a letter to OCRWM headquarters stating that the applications have been submitted to the NRC.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1254               |               | 412 | H                           | PECCB            |

MILESTONE DESCRIPTION

Determine the Need to Proceed with Multiple Legal Weight Truck Cask Designs and Prototype Casks.

MILESTONE COMPLETION CRITERIA

A decision to fabricate and test legal weight truck cask prototypes will be made by OCRWM headquarters based on preliminary NRC reviews of the certification applications and design optimization analyses. This decision will pertain to one or more of the designs submitted as part of the certification applications to the NRC. The milestone will be considered complete when OCRWM headquarters either:(1)submits a letter to the Idaho Operations Office, CRWB, stating which designs are authorized to proceed with prototype fabrication and testing, or (2) directs the Idaho Operations Office, by letter, not to proceed with prototype fabrication and testing.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1208               |               | 412 | P                           | PCCB             |

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

MILESTONE DESCRIPTION

Receive NRC Certification for Legal Weight Truck Cask Design.

MILESTONE COMPLETION CRITERIA

This milestone will be considered complete when the NRC submits to a contractor a certificate of compliance and Idaho Operations Office, CRWB, notifies OCRWM headquarters by letter stating that the certificate has been received by the contractor.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1265               |               | 412 | H                           | PECCB            |

MILESTONE DESCRIPTION

Determine the Need to Proceed with Multiple Rail-Barge Cask Designs and Development of Prototype Casks.

MILESTONE COMPLETION CRITERIA

A decision to fabricate and test rail-barge cask prototypes will be made by OCRWM headquarters based on preliminary NRC reviews of the certification applications and design optimization analyses. This decision will pertain to one or more of the designs submitted as part of the certification applications to the NRC. The milestone will be considered complete when OCRWM headquarters either:(1)submits a letter to the Idaho Operations Office, CRWB, stating which designs are authorized to proceed with prototype fabrication and testing, or (2)directs the Idaho Operations Office , by letter, not to proceed with prototype fabrication and testing.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1230               |               | 412 | P                           | PCCB             |

MILESTONE DESCRIPTION

Receive NRC Certification for Rail-Barge Cask Design.

MILESTONE COMPLETION CRITERIA

This milestone will be considered complete when the NRC issues to any contractor a certificate of compliance and Idaho Operations Office, CRWB, notifies OCRWM headquarters by letter stating that the certificate has been received by the contractor.



PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

WBS: Cask System Development - Specialty Casks

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1400               |               | 414 | H                           | PECCB            |

MILESTONE DESCRIPTION

Determine Need for Development of Non-Standard Fuel Casks.

MILESTONE COMPLETION CRITERIA

A decision will be made by OCRWM headquarters on the development of a non-standard fuel cask. This milestone will be considered complete when the decision is made, and as appropriate, OCRWM headquarters will establish and issue a development plan.

WBS: Cask System Development - Defense Waste Casks

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T1500               |               | 415 | H                           | PECCB            |

MILESTONE DESCRIPTION

Issue RFP for Defense HLW Cask Design Contract

MILESTONE COMPLETION CRITERIA

A request for proposal (RFP) will be prepared and issued for proposal solicitation of defense HLW cask design development contracts. This milestone will be considered complete when OCRWM headquarters submits a notice of the RFP to the Commerce Business Daily.

WBS: Institutional - State & Tribal Relations

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T2305               |               | 423 | P                           | PECCB            |

MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

Complete Cooperative Agreement with Midwest Council of State Governments (COSG)

MILESTONE COMPLETION CRITERIA

A cooperative agreement document will be signed by the Chicago Operations Office, Transportation Program Office (TPO), and COSG. The milestone will be considered achieved when the completion of this agreement is reported by TPO in the Project Manager's Progress Report (section 8. milestone log) and issued to OCRWM headquarters.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T2307               |               | 423 | P                           | PECCB            |

MILESTONE DESCRIPTION

Extend Cooperative Agreement with Commercial Vehicle Safety Alliance (CVSA)

MILESTONE COMPLETION CRITERIA

The Chicago Operations Office, Transportation Program Office (TPO) will sign and issue a cooperative agreement document that extends the previous agreement with CVSA. The milestone will be achieved when the completion of this agreement is reported by TPO in the Project Manager's Progress Report (section 8. milestone log) and issued to OCRWM headquarters.

WBS: Institutional - Policy/Regulation Analysis

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T2406               |               | 424 | H                           | PECCB            |

MILESTONE DESCRIPTION

Review Progress on Development of Overweight Truck Cask Model Permit.

MILESTONE COMPLETION CRITERIA

OCRWM headquarters will analyze the feasibility of states developing uniform OWT permit procedures to allow overweight shipments on all state and interstate highways. This milestone will be considered complete when OCRWM headquarters submits an article describing the status of this effort in the OCRWM

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

Bulletin.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T2408               |               | 424 | P                           | PECCB            |

MILESTONE DESCRIPTION

CVSA Completes State Highway Model Inspection Procedures.

MILESTONE COMPLETION CRITERIA

The Commercial Vehicle Safety Alliance (CVSA) will complete the procedures for inspecting highway vehicles transporting spent fuel. This milestone will be considered complete when the CVSA model state highway inspection procedure is issued to OCRWM headquarters for use in state inspection of truck shipments.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T2407               |               | 424 | H                           | PCCB             |

MILESTONE DESCRIPTION

Initiate Training Assistance to States for Local Governments and Indian Tribes.

MILESTONE COMPLETION CRITERIA

OCRWM headquarters will determine the level of training assistance, identify routes and jurisdictions, and initiate training assistance to local government and Indian tribes for emergency response and routine transportation safety. This milestone will be considered complete when technical assistance and funds are made available to state governments for training local governments and Indian tribes.

WBS: Systems Analysis - Technical Database/Model Mngt.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T3290               |               | 432 | P                           | PECCB            |

MILESTONE DESCRIPTION

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

Issue Phase 2 Infrastructure Study Report.

MILESTONE COMPLETION CRITERIA

The Chicago Operations Office, Transportation Program Office, will submit a report of the findings and conclusions of the Phase 2 Infrastructure Study. This milestone will be considered complete when the report is issued to OCRWM headquarters.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T3208               |               | 432 | H                           | PECCB            |

MILESTONE DESCRIPTION

Determine Utility Infrastructure Policy.

MILESTONE COMPLETION CRITERIA

After the completion of infrastructure studies on outside reactor fence infrastructures, a determination of the infrastructure improvements that will be supported by OCRWM will be made. This milestone will be considered complete when OCRWM headquarters issues a policy statement outlining the specific infrastructure improvements OCRWM intends to support.

WBS: Systems Analysis - MRS/Repository Support

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T3404               |               | 434 | H                           | PCCB             |

MILESTONE DESCRIPTION

Develop Strategy for Transportation Environmental Support Document

MILESTONE COMPLETION CRITERIA

An annotated outline of the objective and scope of work of the Transportation Environmental Support Document (TESD) will be written by OCRWM headquarters. The outline will describe the major transportation issues and planning assumptions to be described in the TESS. This milestone will be considered complete when the TESS annotated outline is issued to OCRWM branch chiefs for review and comment.

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T3403               |               | 434 | P                           | PCCB             |

MILESTONE DESCRIPTION

Approve Transportation Environmental Support Document

MILESTONE COMPLETION CRITERIA

The Chicago Operations Office, Transportation Program Office, will submit the Transportation Environmental Support Document (TESD) to OCRWM headquarters. This milestone will be considered complete when the TESP is approved by OCRWM headquarters.

WBS: Support Systems - Development & Integration

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T4214               |               | 442 | H                           | PECCB            |

MILESTONE DESCRIPTION

Complete Preliminary Operations System Function Description and Performance Requirements.

MILESTONE COMPLETION CRITERIA

A transportation operations functional description document containing a matrix of detailed function descriptions and performance criteria for each function will be submitted to OCRWM headquarters from the Transportation Program Office (TPO). This milestone will be considered complete when the TPO submits the final document to OCRWM headquarters and OCRWM headquarters approves it.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T4205               |               | 442 | P                           | PECCB            |

MILESTONE DESCRIPTION

Issue Recommended Functions Allocation

MILESTONE COMPLETION CRITERIA

A recommended allocation of operation system functions to

# PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

transportation program elements will be submitted to OCRWM headquarters from the Transportation Program Office (TPO). This milestone will be considered complete when the TPO submits the final recommendation report to OCRWM headquarters and OCRWM headquarters approves it.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T4208               |               | 442 | H                           | PECCB            |

## MILESTONE DESCRIPTION

Determine Preliminary Transportation and Fleet Options.

## MILESTONE COMPLETION CRITERIA

After a preliminary study of the system options to support transportation, a report describing from-reactor fleet options and a shipment strategy will be submitted. This milestone will be considered complete when the Chicago Operations Office submits the fleet options report to OCRWM headquarters.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T4206               |               | 442 | H                           | PECCB            |

## MILESTONE DESCRIPTION

Determine Support System Functions and Technical Requirements.

## MILESTONE COMPLETION CRITERIA

After the OCRWM waste management system requirements document is revised to allocate operations functions to all program elements, the transportation support systems requirement and description document which describes the facility, equipment, and service functions and technical requirements for the transportation system will be developed. This milestone will be considered complete when Chicago Operations Office submits the document to OCRWM headquarters and OCRWM headquarters reviews and approves it.

WBS: Support Systems - Facilities

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

T4308 443 H PCCB

MILESTONE DESCRIPTION

Decision on Cask Maintenance Facility System Development

MILESTONE COMPLETION CRITERIA

A decision on the location and configuration of a cask maintenance facility (CMF) will be made using a development plan to describe the timely design and testing of the CMF. This milestone will be considered complete when OCRWM headquarters approves the CMF development plan.

WBS: Management - Program Integration Support

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T5203               |               | 452 | H                           | PCCB             |

MILESTONE DESCRIPTION

Issue Draft Transportation Plan.

MILESTONE COMPLETION CRITERIA

A draft document titled the transportation plan will be compiled, written, and published by OCRWM headquarters.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T5217               |               | 452 | H                           | PECCB            |

MILESTONE DESCRIPTION

Issue Transportation Plan.

MILESTONE COMPLETION CRITERIA

The draft document will be revised to incorporate public comments. The document will be published by OCRWM headquarters.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
|---------------------|---------------|-----|-----------------------------|------------------|

PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

T5206

452

H

PCCB

MILESTONE DESCRIPTION

Update Design Envelopes for Transportation to Repository Interfaces.

MILESTONE COMPLETION CRITERIA

Transportation operations functions and repository & cask design requirements will be examined to identify interfaces. A stand-alone document updating the cask data in the OGR/B-2, Appendix B.2 (Generic Requirements for a Mined Geologic Disposal System) will be developed to support the repository advanced conceptual design. The cask data will be suitable either as a baseline change proposal to OGR/B-2 or a part of the Waste Management System Requirements (WMSR) document. This milestone will be considered complete when the document is approved by OCRWM headquarters and incorporated into the above described documents.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T5205               |               | 452 | H                           | PECCB            |

MILESTONE DESCRIPTION

Determine the Preferred Business and Management Options for Transportation Operations.

MILESTONE COMPLETION CRITERIA

A determination of which sector (private versus public) will operate the transportation system will be made by OCRWM headquarters. This milestone will be considered complete when Chicago Operations Office submits a recommendation report and OCRWM headquarters reviews and approves the report.

WBS: Operations - System Management

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T6108               |               | 461 | H                           | PECCB            |

MILESTONE DESCRIPTION

Approve Operational Procedures for Future R & D Shipments.



PROGRAM SCHEDULE BASELINE - TRANSPORTATION MILESTONES

MILESTONE COMPLETION CRITERIA

The operational procedures for spent fuel and high level waste shipments from West Valley to Idaho National Engineering Laboratories (INEL) will be developed by Idaho Operations Office, CRWB. CRWB will submit the document to OCRWM headquarters for review and approval. OCRWM headquarters will approve the document and notify CRWB of the approval via an authorization letter stating that the operating procedures may be used for R&D shipments.

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T6109               |               | 461 | P                           | PECCB            |

MILESTONE DESCRIPTION

Initiate NFS Shipments from West Valley to INEL.

MILESTONE COMPLETION CRITERIA

The readiness review board will finalize a report that states that the transportation program is ready to begin Nuclear Fuel Services (NFS) shipments to Idaho National Engineering Laboratories (INEL). This milestone will be considered accomplished when a report from the Readiness Review Board is issued to Idaho Operations Office, Civilian Radwaste Branch (CRWB).

WBS: Operations - System Integration

| MILESTONE<br>NUMBER | BASELINE DATE | WBS | RESPONSIBLE<br>ORGANIZATION | COGNIZANT<br>CCB |
|---------------------|---------------|-----|-----------------------------|------------------|
| T6101               |               | 462 | P                           | PECCB            |

MILESTONE DESCRIPTION

Award Cask Fleet Contract.

MILESTONE COMPLETION CRITERIA

The Chicago Operations Office will issue a request for proposal, negotiate contract cost and schedule, and select a contractor for fabrication of from-reactor casks. The milestone will be considered complete when the Chicago Operations Office informs OCRWM by letter of the contractor selection.