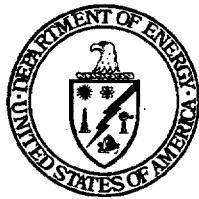


*Office of Civilian Radioactive Waste Management*

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

## ***Revision 5***

***(A00000000-00811-1701-00001)***

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***September 1995***

**MASTER**

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

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Office of Civilian Radioactive  
Waste Management

QA: N/A  
Page: 1 Of: 1

BCCB CHANGE DISPOSITION SUMMARY RECORD

| 1. BCP No.     | 1a. BCP Rev. | 1b. BCP Title                                     | 1c. Current BCCB Level |
|----------------|--------------|---|------------------------|
| BCP-01-95-0219 | 1            | Rev.5 to the OCRWM Program Cost and Schedule- YMP | Program-Level 1        |

2. DISPOSITION RECOMMENDATION:

| BOARD MEMBER         | RECOMMENDATION(S)                           |
|----------------------|---|
| Donald Horton, RW-3  | Approve                                     |
| James Bresee, RW-10  | Approve                                     |
| Ronald Milner, RW-30 | Approve with Conditions (Comments resolved) |
| Samuel Russo, RW-40  | Approve with Conditions (Comments resolved) |
| Weasly Barnes, YMSCO | Approve                                     |
|                      |   |
|                      |   |
|                      |   |
|                      |   |

DIRECTIVE

3. CHANGE DISPOSITION:

\* See Field No. 5.

APPROVE  DEFER\*  
 APPROVE WITH CONDITIONS\*  CANCEL\*  
 DISAPPROVE\*  ENDORSED TO BOARD LEVEL \_\_\_\_\_

4. BCCB CHAIRPERSON SIGNOFF AND DISPOSITION DATE:

PRINT NAME: Lake H. Barrett, RW-2

SIGNATURE: 

DATE 09/19/95

5. \*CHAIRPERSON'S JUSTIFICATION/CONDITIONS/LIMITATIONS

YMSCO shall incorporate all resolved comments in the Project Cost and Schedule Baseline.

See Continuation Page \_\_\_\_\_

6. DIRECTIVE/IMPLEMENTING INSTRUCTIONS FOR IMPACTED DOCUMENT(s)

YMSCO shall issue the revised YMP Cost and Schedule Baseline.

RW-35 shall incorporate the YMP Cost and Schedule Baseline in the Revision 5 of the Program Cost and Schedule Baseline.

RW-30 shall develop a consistent approach concerning cost contingency and Basis of Cost Estimate across the Program.

YMSCO shall execute multi-year baseline starting FY95.

See Continuation Page \_\_\_\_\_

7. DIRECTIVE/IMPLEMENTING INSTRUCTIONS FOR IMPACTED CONFIGURATION ITEM(s)

N/A

See Continuation Page \_\_\_\_\_

Office of Civilian Radioactive  
Waste Management

QA: N/A  
Page: 1 Of: 1

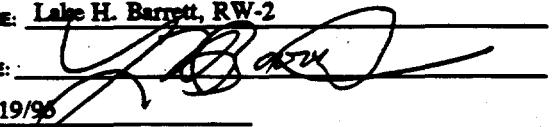
BCCB CHANGE DISPOSITION SUMMARY RECORD

|                                     |                          |  |  |
|-------------------------------------|--------------------------|--|--|
| 1. BCP No:<br><b>BCP-03-95-0002</b> | 1a. BCP Rev.<br><b>1</b> | 1b. BCP Title<br><b>Revisions to WAST Project Milestones &amp; Costs</b> | 1c. Current BCCB Level<br><b>Program-Level 1</b> |
|-------------------------------------|--------------------------|--|--|

2. DISPOSITION RECOMMENDATION:

| BOARD MEMBER         | RECOMMENDATION(S)                  |
|----------------------|------------------------------------|
| Donald Horton, RW-3  | Approve                            |
| James Bresce, RW-10  | Approve                            |
| Ronald Milner, RW-30 | Approve with Conditions (Resolved) |
| Samuel Rousse, RW-40 | Approve                            |
| Weasly Barnes, YMSCO | Approve with Conditions (Resolved) |
|                      |                                    |
|                      |                                    |
|                      |                                    |
|                      |                                    |

DIRECTIVE

|  |                    |   |
|--|--------------------|---|
| 3. CHANGE DISPOSITION:<br><input type="checkbox"/> APPROVE <input type="checkbox"/> DEFER*<br><input checked="" type="checkbox"/> APPROVE WITH CONDITIONS* <input type="checkbox"/> CANCEL*<br><input type="checkbox"/> DISAPPROVE* <input type="checkbox"/> ENDORSED TO BOARD LEVEL _____ | * See Field No. 5. | 4. BCCB CHAIRPERSON SIGNOFF AND DISPOSITION DATE:<br>PRINT NAME: <u>Lake H. Barrett, RW-2</u><br>SIGNATURE: <br>DATE <u>09/19/95</u> |
|--|--------------------|---|

5. CHAIRPERSON'S JUSTIFICATION/CONDITIONS/LIMITATIONS

RW-40 shall incorporate all resolved comments into the WAST Project Cost and Schedule Baseline.

See Continuation Page \_\_\_\_\_

6. DIRECTIVE/IMPLEMENTING INSTRUCTIONS FOR IMPACTED DOCUMENT(s)

RW-40 shall issue the revised WAST Project Cost and Schedule Baseline.

RW-35 shall incorporate the WAST Project Cost and Schedule Baseline in the Revision 5 of the Program Cost and Schedule Baseline.

RW-30 shall develop a consistent approach concerning cost contingency and Basis of Cost Estimate across the Program.

RW-40 shall execute multi-year baselines starting FY95.

See Continuation Page \_\_\_\_\_

7. DIRECTIVE/IMPLEMENTING INSTRUCTIONS FOR IMPACTED CONFIGURATION ITEM(s)

N/A

See Continuation Page \_\_\_\_\_

Office of Civilian Radioactive  
Waste Management

QA: N/A  
Page: 1 Of: 1

BCCB CHANGE DISPOSITION SUMMARY RECORD

|                |              |   |                        |
|----------------|--------------|---|------------------------|
| 1. BCP No.     | 1a. BCP Rev. | 1b. BCP Title                                       | 1c. Current BCCB Level |
| BCP-00-95-0020 | 0            | Baselining of Prior Project and Program Integration | Program-Level 1        |

2. DISPOSITION RECOMMENDATION:

| BOARD MEMBER         | RECOMMENDATION(S)                           |
|----------------------|---|
| Donald Horton, RW-3  | Approve                                     |
| James Bresce, RW-10  | Approve                                     |
| Ronald Milner, RW-30 | Approve                                     |
| Samuel Rousso, RW-40 | Approve with Conditions (Comments Resolved) |
| Wesley Barnes, YMSCO | Approve                                     |
|                      |   |
|                      |   |
|                      |   |
|                      |   |

DIRECTIVE

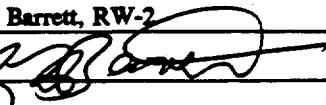
3. CHANGE DISPOSITION:

\* See Field No. 5.

APPROVE  DEFER\*  
 APPROVE WITH CONDITIONS\*  CANCEL\*  
 DISAPPROVE\*  ENDORSED TO BOARD LEVEL \_\_\_\_\_

4. BCCB CHAIRPERSON SIGNOFF AND DISPOSITION DATE:

PRINT NAME: Lake H. Barrett, RW-2

SIGNATURE: 

DATE 09/19/95

5. CHAIRPERSON'S JUSTIFICATION/CONDITIONS/LIMITATIONS

RW-35 shall move Contractor Award Fee to the Project Level and incorporate all resolved comments in the Revision 5 of the Program Cost and Schedule Baseline Document.

See Continuation Page \_\_\_\_\_

6. DIRECTIVE/IMPLEMENTING INSTRUCTIONS FOR IMPACTED DOCUMENT(s)

RW-35 shall publish the OCRWM Program Cost and Schedule Baseline, Revision 5, incorporating the approved YMP Cost and Schedule Baseline, approved WAST Cost and Schedule Baseline and this approved BCP.

RW-30 shall provide recommendations for baseline change thresholds by October 15.

See Continuation Page \_\_\_\_\_

7. DIRECTIVE/IMPLEMENTING INSTRUCTIONS FOR IMPACTED CONFIGURATION ITEM(s)

N/A

See Continuation Page \_\_\_\_\_

**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
PROGRAM CHANGE CONTROL BOARD  
REVISION/CHANGE RECORD**

(1) DOCUMENT NUMBER: DOE/RW-0253

(2) DOCUMENT TITLE: PROGRAM COST AND SCHEDULE BASELINE

| (3)<br>REVISION<br>DATE/<br>NUMBER | (4)<br>DCP/BCP<br>NUMBER | (5)<br>REVISION/CHANGE DESCRIPTION   | (6)<br>PAGES<br>AFFECTED |
|------------------------------------|--------------------------|--|--------------------------|
| 3/11/91<br>REV. 1                  | 32                       | This complete revision incorporates the initial cost baseline, updated schedule information, and DOE Notice 4700.4 guidance.   | ALL                      |
| 11/1/91<br>REV. 2                  | 50                       | This includes the addition of the YM Site Characterization Project (YMP) annualized, escalated, Total Project Cost by third level WBS (Table A-1), a revision to the YMP Summary of Cost Baseline Estimates (Table 1 and Page 5), the modification of one Level 0 Milestone title (KD-3 on pages 9, 11, and B-8), the deletion of one Level 1 Milestone (RR569 on page B-8), the revision of one Level 1 Milestone Description (RM656 on page 11 and page B-9), the revision of the Milestone Completion Criteria on two Milestones (R6610 and RM656 on page B-9), and a revision to one WBS element name (ESF in Table 1, Table A-1, and page B-7).   |                          |
| 9/20/92<br>REV. 3                  | 58                       | This revision to both the YMP and MRS Project adds 24 Milestones, deletes 12 Milestones (6 of which because they were completed), updates 15 Milestone dates, changes 14 Milestone Descriptions, and modifies 18 Completion Criteria. Milestones were changed to reflect the enacted FY 1992 budget and the current technical program. In addition, MRS Project Milestones that are Key Decisions as defined by DOE 4700.1 have been identified and Energy System Acquisition Review (ESAR) Milestones have been added for those years in which Key Decisions do not occur. The Yucca Mountain Project (YMP) Funding Profile in the Cost Baseline (Table A-1) has been changed to reflect the FY 1992 enacted budget plus carryover from prior years, and the Out Year Funding Estimates from 1993 through 2001 have been deleted pending enactment of the FY 1993 appropriation and receipt of FY 1994 OMB passback. Also, Milestones and cost categories have been reordered to be consistent with the new OCRWM Program Work Breakdown Structure (DOE/RW-0325P), and the PCSB administrative procedures (pages 1-14) have been modified to be consistent with recent revisions to other programmatic documents. | ALL                      |

**OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
PROGRAM CHANGE CONTROL BOARD  
REVISION/CHANGE RECORD**

(1) DOCUMENT NUMBER: DOE/RW-0253

(2) DOCUMENT TITLE: PROGRAM COST AND SCHEDULE BASELINE

| (3)<br>REVISION<br>DATE/<br>NUMBER | (4)<br>DCP/BCP<br>NUMBER | (5)<br>REVISION/CHANGE DESCRIPTION  | (6)<br>PAGES<br>AFFECTED         |
|------------------------------------|--------------------------|---|----------------------------------|
| 4/13/94<br>REV. 3/DCN 01           | BCP-00-<br>93-0005       | This BCP generated a Document Change Notice (DCN) which removed the rail/barge cast system development and its milestones, removed the existing technology cask acquisition program and its milestones, and revised the GA-4/9 cask system development milestone.   | Pages 1, 7, 9, 11, D-1, D-2, D-3 |
| 11/21/94<br>REV. 4                 | BCP-00-<br>94-0005       | This revision replaces the OCRWM cost and schedule baselines with interim cost and schedule baselines reflecting the current Program Approach. This Approach added the development of the Multi-Purpose Canister (MPC) System, deleted Monitored Retrievable Storage (MRS) facility development, added the initial deployment (in 1998) of MPCs to utility sites for on-site storage, delayed a fully operational Transportation System to 2010, rephased YMP testing, and increased the geological repository waste retrieval period to approximately 100 years from initiation of emplacement. The MRS Project was changed to the WAST Project. The MRS Project TPC of \$1,332 million was replaced with an the WAST Project interim TPC of \$686.0 million. The Yucca Mountain Site Characterization Project TPC of \$6.319 billion was replaced with an interim TPC of \$4.950 billion. References to DOE and OCRWM documents and OCRWM organizational titles were updated. | ALL                              |

| OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT<br>PROGRAM CHANGE CONTROL BOARD<br>REVISION/CHANGE RECORD |  |   |                          |  |
|---|--|---|--------------------------|--|
| (1) DOCUMENT NUMBER: DOE/RW-0253  |  |   |                          |  |
| (2) DOCUMENT TITLE: PROGRAM COST AND SCHEDULE BASELINE  |  |   |                          |  |
| (3)<br>REVISION<br>DATE/<br>NUMBER  | (4)<br>DCP/BCP<br>NUMBER   | (5)<br>REVISION/CHANGE DESCRIPTION  | (6)<br>PAGES<br>AFFECTED |  |
| 9/19/95<br>REV. 5   | BCP-01-<br>95-0219<br><br>BCP-03-<br>95-0002<br><br>BCP-00-<br>95-0020 | This revision incorporates three BCPs and replaces the interim cost and schedule baselines with the cost and schedules based on the detailed review and update of the Yucca Mountain Site Characterization Project (YMP) and the WAST Project cost and schedule baselines. It also includes the cost and schedule for the Program Integration elements of the Program and the historical costs for inactive Program elements. It updates the level of the schedule milestones based on new criteria. A Total Program Cost for the Civilian Radioactive Waste Management Strategic System of \$8,545 million, for control by the ESaab, was established. The YMP interim Total Project Cost (TPC) of \$4,950 million was replaced with a TPC of \$4,977 million. The WAST interim TPC of \$686 million was replaced with a TPC of \$752 million. A TPC for Quality Assurance of \$209 million was established. A TPC for Program Management and Integration of \$1,093 million was established. A TPC for Human Resources and Administration of \$269 million was established. Procedural sections were removed from this document and replaced with references to their new location. | ALL                      |  |

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## 1. INTRODUCTION

### 1.1 PURPOSE

The purpose of this document is to establish quantitative expressions of proposed costs and schedule to serve as a basis for measurement of Program performance. It identifies the components of the Program Cost and Schedule Baseline (PCSB) that will be subject to change control by the Executive (Level 0) and Program (Level 1) Baseline Change Control Boards (BCCBs) and establishes their baseline values. The Program technical baseline is contained in the Civilian Radioactive Waste Management System (CRWMS) Requirements Document (CRD) and the System Requirement Documents (SRDs) for the individual system elements.

Changes to the PCSB will be approved by the Program Baseline Change Control Board (PBCCB). In addition to the PBCCB, the Energy System Acquisition Advisory Board Baseline Change Control Board (ESAAB BCCB) will perform control functions relating to Total Project Cost (TPC) and major schedule milestones for the Yucca Mountain Site Characterization Project, the Waste Acceptance, Storage and Transportation (WAST) Project (formerly Monitored Retrievable Storage (MRS) Project), and Program Integration element. Additional information on how the PCSB is integrated into the OCRWM management system is contained in the Program Management System (PMS) Manual.

### 1.2 SCOPE

The PCSB establishes baseline values for the Yucca Mountain Site Characterization Project cost and schedule through submittal of the repository license application (LA) to the Nuclear Regulatory Commission (NRC). The WAST Project cost and schedule baseline applies to a WAST Project scope which includes the development of Multi-Purpose Canisters (MPCs); assumes no MRS Facility, but does not preclude a Federal Interim Central Storage (FICS) Facility if siting and funding become available; and provides for a fully operational Transportation System by 2010. The cost baseline for the WAST Project is established through FY 2000 and covers the initial deployment in 1998 of MPCs to Purchaser sites for at-reactor storage and the production of an initial set of MPCs (canister only) to be deployed. The PCSB establishes baseline values for the OCRWM Program Integration element, through the latest end point of the projects, to provide management oversight, guidance, direction and review in the areas of quality assurance, system engineering, regulatory compliance and program management as defined in the Program Work Breakdown Structure Dictionary.

The PCSB also contains a long-term reference schedule from the end of the Yucca Mountain Site Characterization Project baseline period through completion of the Program's life cycle (i.e., the decommissioning of the Mined Geologic Disposal System (MGDS)). For the WAST Project, it extends from FY 2001 to FY 2010, the date the Transportation System will be fully operational. The primary purpose of the long-term reference schedule is to establish a schedule which is consistent with the scope and time frame of the Program's technical baseline. This long-term reference schedule will be used largely to analyze the schedule impacts associated with change proposals to the technical baseline. By maintaining a Program long-term reference schedule, Program schedule changes resulting from changes in the technical baseline can be formally

documented. The long-term reference schedule will not be subject to ESAAB BCCB review, but will be controlled only by the PBCCB.

OCRWM regularly prepares cost estimates that extend beyond the end of the cost baseline. The source for all such cost estimates will be the most recent approved Total System Life Cycle Cost (TSLCC) analysis performed in conjunction with the annual fee adequacy assessment.

### **1.3 REFERENCES**

- a. U.S. Department of Energy, Office of the Associate Deputy Secretary for Field Management, Memorandum, subject "Designation of the Office of Civilian Radioactive Waste Management (OCRWM) System as a Strategic System," May 31, 1995.
- b. U.S. DOE Order 4700.1, *Project Management System*, March 6, 1987.
- c. U. S. DOE/RW-0043, *Program Management System Manual*, Rev. 5, January 1993.
- d. U.S. DOE/RW-0409, *Program Baseline Change Control Procedure*, Rev. 1, DCN01, December 1994.
- e. U.S. DOE/RW-0325P, *Program Work Breakdown Structure Dictionary*, September 1995.
- f. U.S. DOE Order 5100.3, *Field Budget Process*, August 23, 1984.

### **1.4 RELATIONSHIP TO OTHER OCRWM COST/SCHEDULE INFORMATION**

The PCSB is OCRWM's primary mechanism for cost/schedule control and performance measurement. More detailed cost and schedule baselines, subject to change control, shall be maintained at the project level. These other cost and schedule baselines shall support and be subordinate to the PCSB. Other OCRWM management plans that contain costs or schedule milestones shall acknowledge the PCSB as the controlling document.

The PCSB is also the primary source of cost and schedule information released outside OCRWM. The cost baseline may require updating as a result of the budget formulation process. Likewise, budget data, along with related schedule information contained in the PCSB, will be used as input into the TSLCC analysis. The TSLCC analysis is then used as the cost basis to calculate the adequacy of the ongoing fee paid by waste generators/owners into the Nuclear Waste Fund to fully recover the costs of the Program. This information is published in the annual Fee Adequacy Report.

The schedule baseline shall be the basis for externally-released schedule information in the Project Decision Schedule, any amendments to the Mission Plan, and the Mission Implementation Plan. The schedule baseline shall define the reference case schedule for Program budget formulation. Critical path networks that show the major activities and activity relationships for the PCSB shall be maintained and shall define the basis for the baseline milestone dates and costs.

## 2. COST AND SCHEDULE BASELINE DATA

### 2.1 COST BASELINE

The Program cost baseline is the sum of the Total Project Cost (TPC) of past and current projects and the Program Integration element of the Program. It is subject to independent review and will be changed as necessary to reflect improved cost data, changing assumptions, future budget appropriations, etc.. The work procured by the Program cost baseline is defined in the Program Work Breakdown Structure (WBS). The Program WBS Dictionary contains the detailed breakdown of work scope and products defined for each Program element.

The Program cost baseline is the sum of all TPCs. Annualized costs for current projects and the Program Integration element are shown in the appendices but are not baselined. All costs in the PCSB are expressed in year-of-expenditure dollars. A TPC, as defined in DOE Order 4700.1, includes all development and evaluation costs, operating costs associated with test and evaluation, and plant and capital equipment costs specifically associated with a project through the start of operations. In addition, TPC includes all historical costs as required by DOE Order 5100.3. It is the sum of Total Estimated Cost (TEC) plus all other costs identifiable with the project. TEC is defined in DOE Order 4700.1 as the cost of the project, including the cost of land and land rights, engineering design and inspection costs, direct and indirect construction costs, and initial equipment costs necessary to place the plant or installation in operation, whether funded from operating or plant and capital equipment appropriations. The annualized cost baselines for the Yucca Mountain Site Characterization Project (WBS 1.2), the WAST Project (WBS 3.0), and the Program Integration element (WBS 9.0) are contained in Appendices A, C, and E, respectively, for information only. The WBS cost breakouts in Appendices A and C are also for information only.

The responsible organization for the Yucca Mountain Site Characterization Project cost baseline data is the Yucca Mountain Site Characterization Office (YMSCO). The responsible organization for the WAST Project cost baseline data is the Office of Waste Acceptance, Storage and Transportation. The responsible organizations for the Program Integration element cost baseline data are the Offices of Program Management and Integration, Human Resources and Administration, and Quality Assurance. Responsible organizations shall maintain backup information that defines the basis for the cost baseline.

#### 2.1.1 ESAAB Cost Baseline

The Total Program Cost controlled by the ESAAB BCCB is \$8.545 billion consisting of the sum of the Total Project Costs listed in Table 1 which include the currently active Yucca Mountain Site Characterization Project (\$4.977 billion), WAST Project (\$752 million), and Program Integration Element (\$1.571 billion) and the cancelled (by the Nuclear Waste Policy Amendments Act of 1987) Basalt Site Characterization Project (\$485 million), Salt Site Characterization Project (\$519 million), Technical Support/Analytical Studies (\$160 million), and Second Repository Project (\$81 million).

## **2.1.2 Program Cost Baseline**

The costs that shall be controlled by the PBCCB are presented in Table 1. All costs are expressed in year-of-expenditure dollars.

## **2.2 SCHEDULE BASELINE**

The schedule baseline is a controlled list of Program milestones that satisfy the criteria described in Table 2. Appendices B, D, and F contain the schedule milestones for the Yucca Mountain Site Characterization Project, the WAST Project, and Program Integration, respectively. The following information is included for each milestone in the schedule baseline:

Milestone Description - A concise description of an event. The milestone description shall be appropriate for release outside DOE. The first word of the milestone description shall be a verb.

Milestone Identification - A unique identification number. The first character of the identification shall be R, M, T, W, MZ, or P for Repository (Yucca Mountain Site Characterization Project), MRS/MPC, Transportation, Waste Acceptance, Project Management, or Program Integration respectively.

Milestone Responsibility - The cognizant Director responsible for performing the activity associated with the milestone.

Highest-Level Change Control Board - The highest-level change control board shall be specified. All milestones controlled by the ESAAB BCCB will also be controlled by the PBCCB.

Milestone WBS - The work breakdown structure assignment for the activity associated with the milestone. Milestones shall be assigned to Level 2 of the Program WBS and consistent with the Program WBS Dictionary.

Milestone Completion Criteria - A description of the scope of work and required actions which signal the completion of the milestone by the responsible organization. Where applicable, the completion criteria shall identify major prerequisites for the milestone.

Baseline Date - The approved date that shall be used for internal planning and external reporting.

**Table 1. Summary of Program Cost Baseline**  
(millions of year-of-expenditure dollars)

|   |  |              |
|---|--|--------------|
| <b>Yucca Mountain Site Characterization Project</b> | <b>Total Project Cost <sup>(a)</sup></b> | <b>4,977</b> |
| <b>WAST Project</b>                                 | <b>Total Project Cost <sup>(a)</sup></b> | <b>752</b>   |
| <b>Quality Assurance</b>                            | <b>Total Project Cost <sup>(a)</sup></b> | <b>209</b>   |
| <b>Program Management and Integration</b>           | <b>Total Project Cost <sup>(a)</sup></b> | <b>1,093</b> |
| <b>Human Resource and Administration</b>            | <b>Total Project Cost <sup>(a)</sup></b> | <b>269</b>   |
| <b>BASALT Site Characterization</b>                 | <b>Total Project Cost <sup>(a)</sup></b> | <b>485</b>   |
| <b>Salt Site Characterization</b>                   | <b>Total Project Cost <sup>(a)</sup></b> | <b>519</b>   |
| <b>Technical Support/Analytical Studies</b>         | <b>Total Project Cost <sup>(a)</sup></b> | <b>160</b>   |
| <b>Second Repository</b>                            | <b>Total Project Cost <sup>(a)</sup></b> | <b>81</b>    |
| <b>CRWM Strategic System</b>                        | <b>Total Program Cost <sup>(b)</sup></b> | <b>8,545</b> |

a. Controlled by Program Baseline Change Control Board.

b. Controlled by ESaab.

**Table 2. Criteria for Inclusion of Milestones in the PCSB.**

Level 0 Milestones are included in the PCSB and are those controlled by the Secretary, acting as Acquisition Executive in the ESAAB process, which meet the following criteria:

1. Start and completion of major activities mandated by law.
2. Major program decision points which are dictated by DOE orders.
3. Energy systems progress reviews (annual review to ESAAB if no level 0 milestone is scheduled).
4. Other specific events designated by the Secretary.

Level 1 Milestones are included in the PCSB and are those controlled by the Director of OCRWM which meet the following criteria:

1. All level 0 milestones prior to submission to the Secretary.
2. Start and completion of major project phases (i.e. ACD, LAD, construction, operations, decommissioning, major fabrication initiation, etc.).
3. Major regulatory compliance actions, including initiation of environmental impact statement scoping, draft environmental impact statement issuance, final environmental impact statement issuance, and certification of compliance submissions.
4. Major crosscutting decisions which require integration between OCRWM projects or with OCRWM/DOE headquarters staff.
5. Major intermediate findings (HLFs) leading to Yucca Mountain site suitability determination and incremental steps to submission of a license application.
6. Completion of major documents and directives which affect the entire program or are transmitted to external agencies, stakeholders, oversight groups.
7. Notice of Proposed Rulemaking, Notice of Intent.
8. Other specific milestones designated by the OCRWM Director.

### **2.2.1 ESAAB Schedule Baseline**

Milestones controlled by the ESAAB BCCB are a subset of the Program schedule milestones contained in Appendices B, D, and F. The schedule milestones for the Yucca Mountain Site Characterization Project that shall be controlled by the ESAAB BCCB are:

|   |         |
|---|---------|
| Notify State of Site Selection                | 8/28/00 |
| Approve Repository Final Record of Decision   | 9/22/00 |
| Issue Site Recommendation Report to President | 9/29/00 |
| Submit License Application to NRC             | 6/29/01 |

The schedule milestones for the WAST Project that shall be controlled by the ESAAB BCCB are:

|  |          |
|--|----------|
| Decide to Proceed with MPC Concept                           | 3/1/94   |
| Present WAST Project Energy System Acquisition               |          |
| Review (ESAR) #1   | 4/15/94  |
| Present WAST Project ESAR #2                                 | 4/27/95  |
| Issue MPC EIS Record of Decision                             | 9/26/96  |
| Decision by ESAAB on MPC Fabrication and Deployment          | 11/17/97 |
| Approval by ESAAB to Continue MPC Fabrication and Deployment | 1/31/00  |

The interim schedule milestone for the Program Integration element that shall be controlled by the ESAAB BCCB is:

|   |         |
|---|---------|
| Approve ESAAB Program Approach Baseline | 1/15/96 |
|---|---------|

### **2.2.2 Program Schedule Baseline**

Figure 1 shows all the PCSB milestones that shall be subject to change control. The complete set of schedule baseline milestones for the Yucca Mountain Site Characterization Project, the WAST Project, and the Program Integration element are contained in Appendices B, D, and F, respectively. Appendix G contains the long-term reference schedule which is not baselined.

OCRWM PROGRAM LEVEL 0 & 1 MILESTONES

**Figure 1. CRWMS Schedule Baseline**

### **3. REPORTING**

Program reporting requirements are under revision in response to changing guidance from the Department of Energy and will be included in OCRWM program management documents under development.

### **4. MONITORING AND CONTROL**

#### **4.1 MONITORING REQUIREMENTS**

Program monitoring requirements are under revision in response to changing guidance from the Department of Energy and will be included in OCRWM program management documents under development.

#### **4.2 BCCB THRESHOLDS**

Thresholds for the BCCBs are contained in the OCRWM Baseline Management Plan.

### **5. CORRECTIVE ACTION**

Program corrective action requirements are under revision in response to changing guidance from the Department of Energy and will be included in OCRWM program management documents under development.

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## ACRONYMS

|        |  |
|--------|--|
| AE     | Acquisition Executive                        |
| BCCB   | Baseline Change Control Board                |
| BCP    | Baseline Change Proposal                     |
| CDR    | Conceptual Design Report                     |
| CFR    | Code of Federal Regulations                  |
| CoC    | Certificate of Compliance                    |
| CRWMS  | Civilian Radioactive Waste Management System |
| CY     | Calender Year                                |
| DEIS   | Draft Environmental Impact Statement         |
| DOE    | Department of Energy                         |
| EA     | Environmental Assessment                     |
| EFDATE | Effective Date                               |
| EIS    | Environmental Impact Statement               |
| EM     | Office of Environmental Management           |
| ESAAB  | Energy System Acquisition Advisory Board     |
| ESAR   | Energy System Acquisition Review             |
| E,S&H  | Environmental, Safety and Health             |
| ESF    | Exploratory Studies Facility                 |
| FEIS   | Final Environmental Impact Statement         |
| FICS   | Federal Interim Central Storage              |
| FY     | Fiscal Year                                  |
| GA     | General Atomics                              |
| HLF    | Higher Level Finding                         |
| HLW    | High-Level Radioactive Waste                 |
| H,M&S  | Handling, Maintenance and Supply             |
| ID     | Identification Number                        |
| INEL   | Idaho National Engineering Laboratory        |
| KD     | Key Decision                                 |
| LA     | License Application                          |
| LWT    | Legal Weight Truck                           |
| MGDS   | Mined Geologic Disposal System               |
| M&O    | Management and Operating Contractor          |
| MPC    | Multi-Purpose Canister                       |
| MRS    | Monitored Retrievable Storage                |

## ACRONYMS (Continued)

|        |   |
|--------|---|
| NEPA   | National Environmental Policy Act               |
| NOI    | Notice of Inquiry or Intent                     |
| NOPR   | Notice of Proposed Rulemaking                   |
| NRC    | Nuclear Regulatory Commission                   |
| NWPA   | Nuclear Waste Policy Act                        |
| OCRWM  | Office of Civilian Radioactive Waste Management |
| OMB    | Office of Management and Budget                 |
| OMTS   | Operations Management Tracking System           |
| OPMI   | Office of Program Management and Integration    |
| PA     | Program Approach                                |
| PBCCB  | Program Baseline Change Control Board           |
| PCS    | Project Control System                          |
| PCSB   | Program Cost and Schedule Baseline              |
| PMD    | Program Management Division                     |
| PMI    | Project Management and Integration              |
| PMS    | Program Management System                       |
| POBCCB | Project Office Baseline Change Control Board    |
| PWBS   | Project Work Breakdown Structure                |
| QA     | Quality Assurance                               |
| RFP    | Request for Proposal                            |
| ROD    | Record of Decision                              |
| RW     | Radioactive Waste                               |
| SAR    | Safety Analysis Report                          |
| SER    | Safety Evaluation Report                        |
| SNF    | Spent Nuclear Fuel                              |
| SRD    | System Requirements Documents                   |
| TBD    | To Be Determined                                |
| TEC    | Total Estimated Cost                            |
| TPC    | Total Project Cost                              |
| TS     | Transportation System                           |
| TSLCC  | Total System Life Cycle Cost                    |
| WAST   | Waste Acceptance, Storage and Transportation    |
| WBS    | Work Breakdown Structure                        |
| YMP    | Yucca Mountain Site Characterization Project    |
| YMSCO  | Yucca Mountain Site Characterization Office     |

**APPENDIX A**

**ANNUALIZED COST BASELINE FOR THE YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT**

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**ANNUALIZED COST BASELINE - YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT**  
**(Millions of year-of-expenditure dollars<sup>(a)</sup>)**

| WBS Element <sup>(b)</sup>     | Pre FY1995   | FY1995                   | FY1996     | FY1997     | FY1998     | FY1999     | FY2000     | FY2001     | TOTAL        |
|--------------------------------|--------------|--------------------------|------------|------------|------------|------------|------------|------------|--------------|
| Systems Engineering            | 9.3          | 15.0                     | 17.0       | 17.6       | 15.0       | 10.0       | 5.2        | 89.1       |              |
| Waste Package                  | 9.9          | 13.0                     | 14.0       | 17.0       | 17.0       | 14.0       | 10.5       | 95.4       |              |
| Site Investigations            | 95.4         | 110.0                    | 120.0      | 139.7      | 117.0      | 91.0       | 56.3       | 729.3      |              |
| Repository                     | 9.4          | 25.0                     | 39.1       | 39.0       | 40.0       | 35.0       | 26.3       | 213.7      |              |
| Regulatory                     | 28.1         | 30.6                     | 42.0       | 44.5       | 48.9       | 39.4       | 20.8       | 254.1      |              |
| Exploratory Studies Facilities | 121.7        | 103.0                    | 103.0      | 81.6       | 84.5       | 39.5       | 23.1       | 556.4      |              |
| Test Facilities                | 17.4         | 29.5                     | 35.1       | 34.0       | 34.0       | 35.5       | 25.1       | 210.6      |              |
| Project Management             | 21.3         | 16.5                     | 17.0       | 17.5       | 18.0       | 18.5       | 14.3       | 123.1      |              |
| Financial Assistance           | 37.3         | 32.5                     | 37.5       | 33.4       | 28.4       | 25.9       | 19.4       | 214.3      |              |
| Quality Assurance              | 10.2         | 10.5                     | 11.0       | 11.6       | 13.0       | 13.5       | 10.1       | 79.9       |              |
| Information Management         | 15.2         | 25.8                     | 26.2       | 24.7       | 25.2       | 24.7       | 18.2       | 160.1      |              |
| Environment, Safety, & Health  | 20.2         | 30.0                     | 33.5       | 30.5       | 28.0       | 23.5       | 13.5       | 179.2      |              |
| Institutional                  | 4.8          | 5.0                      | 5.5        | 6.0        | 6.5        | 6.5        | 4.9        | 39.2       |              |
| Support Services               | 22.0         | 27.4                     | 32.2       | 34.0       | 35.7       | 31.6       | 19.9       | 202.9      |              |
| Contingency <sup>(c)</sup>     | 0            | 0                        | 0          | 0          | 15.5       | 60.0       | 0          | 75.5       |              |
| <b>TOTAL<sup>(d)</sup></b>     | <b>1,754</b> | <b>422<sup>(e)</sup></b> | <b>474</b> | <b>533</b> | <b>531</b> | <b>527</b> | <b>469</b> | <b>267</b> | <b>4,977</b> |

a. Costs are updated from those approved in BCP-00-94-0005 by replacing FY 1994 funds available to cost (\$309 million) with FY 1994 actual costs (\$280 million) and replacing the FY 1995 appropriation (\$375 million) with the FY 1995 Project Total Cost including budgeted contractor fees as of June 1995 (\$422 million). PreFY1995 costs are prior year actual costs from January 1983 through FY 1994. FY 1996-FY 2001 costs are from YMP/PCM-0015, Project Cost and Schedule Baseline.

b. WBS elements shown are PostFY1992. Detailed records do not exist to translate PreFY1993 costs into PostFY1992 WBS elements.

c. Includes undistributed budget. These contingency values are incorporated within WBS 1.2.15 originally for facility scoring in the YMP baseline YMP/PCM-0015, Revision 5. Analysis has shown such use is infeasible, and therefore this budget is allocated to contingency in this Program baseline.

d. May not add due to independent rounding.

e. Includes FY 1994 carry-over, Management Reserve, Contract Close-out and estimated fees.

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**APPENDIX B**

**PROGRAM SCHEDULE BASELINE -  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT MILESTONES**

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Revision 5

## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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### WBS: Waste Package and Repository

| Milestone Number | Baseline Date | WBS          | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------------|-----------------------------|-------------|
| R4210            | 9/27/96       | 1.2.2, 1.2.4 | YMSCO                       | PBCCB       |

#### **Milestone Description**

Complete MGDS to TSS/EIS Conceptual Design/Start Preliminary Design

#### **Milestone Completion Criteria**

This milestone will be complete upon RW-1's acceptance of an integrated waste package and repository concept that meets the technical baseline requirements. Additionally, the Director of OCRWM approves the start of the MGDS preliminary design.

---

| Milestone Number | Baseline Date | WBS          | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------------|-----------------------------|-------------|
| R4220            | 9/29/00       | 1.2.2, 1.2.4 | YMSCO                       | PBCCB       |

#### **Milestone Description**

Complete MGDS Preliminary Design/Start MGDS Final Design

#### **Milestone Completion Criteria**

This milestone will be complete upon RW-1's acceptance of the MGDS preliminary design that meets the technical baseline requirements and provides input into the License Application and Safety Analysis Report. Additionally, the Director of OCRWM approves the start of the MGDS final design for construction.

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## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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### WBS: Regulatory

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5226            | 9/29/95       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue HLF Decision - Surface Processes

### **Milestone Completion Criteria**

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on erosion, surface characteristics, and hydrology. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5230            | 1/30/97       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue HLF Decision - Seismic/Tectonics/Volcanism

### **Milestone Completion Criteria**

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on seismic characteristics, tectonics, and volcanism. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5233            | 2/28/97       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue HLF Decision - Preclosure Radiological Safety

### **Milestone Completion Criteria**

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on preclosure radiological safety. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5231            | 7/31/97       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue HLF Decision - Geochemistry/Rock Characteristics

### **Milestone Completion Criteria**

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on geochemistry, rock characteristics, and human intrusion. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

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## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5232            | 7/31/97       | 1.2.5 | YMSCO                       | PBCCB       |

### Milestone Description

Issue HLF Decision - Reasonably Available Technology

### Milestone Completion Criteria

This milestone will be complete when RW-1 makes a final determination based primarily on the regulatory compliance assessment of the qualifying condition for the preclosure system guideline concerning ease and cost of siting, construction, operation, and closure. This assessment will combine the results of guideline compliance assessments for the supporting preclosure technical guidelines for surface characteristics, rock characteristics, tectonics, and hydrology. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5234            | 4/30/98       | 1.2.5 | YMSCO                       | PBCCB       |

### Milestone Description

Issue HLF Decision - Geohydrology/Transport

### Milestone Completion Criteria

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on geohydrology and transport characteristics. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

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## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5240            | 9/29/95       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue HLF Decision - Total System Performance

### **Milestone Completion Criteria**

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on the total system performance assessment system guideline and the postclosure technical guidelines. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5236            | 9/30/95       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue Decision on Technical Site Suitability

### **Milestone Completion Criteria**

This milestone will be complete when the Director of OCRWM has completed the assessment of the suitability of the Yucca Mountain site, for development as a repository, in accordance with the technical guidelines of 10 CFR 960. The Director's findings will be documented in a technical site suitability evaluation report and transmitted by letter to the Secretary of Energy.

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## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5250            | 5/26/99       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue HLF Decision - Environmental Quality, Socioeconomic, Transportation

### **Milestone Completion Criteria**

This milestone will be complete when RW-1 makes a final determination based primarily on the technical basis and regulatory compliance assessment on environmental quality, socioeconomics, and transportation. RW-1 issues the determination of the higher level finding in a Federal Register Notice.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5260            | 8/14/00       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Submit Draft State Notification of Site Selection

### **Milestone Completion Criteria**

This milestone will be complete when the Director of OCRWM submits to the Secretary of Energy a draft of the notification of site selection required by Section 114(a)(1) of the NWPA, as amended.

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## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5220            | 8/28/00       | 1.2.5 | YMSCO                       | ESAAB       |

### **Milestone Description**

Notify State of Site Selection

### **Milestone Completion Criteria**

This milestone will be complete when the Secretary of Energy makes notification of site selection required by Section 114(a)(1) of the NWPA, as amended.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5210            | 9/15/00       | 1.2.5 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue SRR to Secretary of Energy

### **Milestone Completion Criteria**

This milestone will be complete when the Director of OCRWM submits the Site Recommendation Report to the Secretary of Energy. The Director certifies the Site Recommendation Report contains all the information specified in the Nuclear Waste Policy Act, Section 114(a)(1), Subparagraphs a-g, which includes the Environmental Impact Statement.

## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5200            | 9/29/00       | 1.2.5 | YMSCO                       | ESAAB       |

### Milestone Description

Issue Site Recommendation Report to President

### Milestone Completion Criteria

This milestone will be complete when the Secretary of Energy submits the site recommendation report 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 Nuclear Waste Policy Act (NWPA).

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5280            | 6/15/01       | 1.2.5 | YMSCO                       | PBCCB       |

### Milestone Description

Concur on Final License Application

### Milestone Completion Criteria

This milestone will be complete when the Director of OCRWM certifies that a camera-ready version of the License Application is ready for submittal to the NRC. That certification additionally states compliance with the LA information requirements of 10 CFR 60, and that appropriate land has been withdrawn from the public domain for DOE use.

## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest CCB |
|------------------|---------------|-------|-----------------------------|-------------|
| R5181            | 6/29/01       | 1.2.5 | YMSCO                       | ESAAB       |

### Milestone Description

Submit License Application to the NRC

### Milestone Completion Criteria

This milestone will be complete when the LA is approved by the Secretary of Energy and submitted to the NRC in accordance with 10 CFR 60.22, requesting permission to start repository construction. Prerequisites include License Application Design Review (LADR).

---

### WBS: Information Management

| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R9894            | 10/27/99      | 1.2.12 | YMSCO                       | PBCCB       |

### Milestone Description

Turnover LSS to NRC

### Milestone Completion Criteria

This milestone will be complete upon the successful completion of an LSS acceptance test conducted by YMSCO and the LSS administrator.

---

## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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### WBS: Environmental, Safety and Health

| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R5141            | 5/31/95       | 1.2.13 | YMSCO                       | PBCCB       |

#### **Milestone Description**

Publish EIS Notice of Intent (NOI).

#### **Milestone Completion Criteria**

This milestone will be complete when the EIS Notice of Intent is published in the Federal Register. That notice announces the DOE intent to initiate development of an EIS for a potential repository at Yucca Mountain. The NOI initiates the scoping process for the DEIS.

---

| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R5151            | 9/28/98       | 1.2.13 | YMSCO                       | PBCCB       |

#### **Milestone Description**

Issue Draft Environmental Impact Statement

#### **Milestone Completion Criteria**

This milestone will be complete when the DEIS is published and disseminated for public review and comment.

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## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R5153            | 8/25/00       | 1.2.13 | YMSCO                       | PBCCB       |

### **Milestone Description**

File FEIS with EPA

### **Milestone Completion Criteria**

After preparation of the preliminary Final Environmental Impact Statement (FEIS), and on the basis of the Department of Energy's internal review and the Secretary's approval, the FEIS will be filed with the U.S. Environmental Protection Agency.

---

| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R5155            | 8/25/00       | 1.2.13 | YMSCO                       | PBCCB       |

### **Milestone Description**

Issue Final EIS - Including Comment Response Document

### **Milestone Completion Criteria**

After preparation of the preliminary Final Environmental Impact Statement (FEIS), and on the basis of the Department of Energy's internal review and the Secretary's approval, the FEIS will be filed with the U.S. Environmental Protection Agency. The FEIS and Comment Response Document will be issued, incorporating internal comments on the preliminary FEIS.

## PROGRAM SCHEDULE BASELINE - YMP MILESTONES

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| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R5161            | 8/25/00       | 1.2.13 | YMSCO                       | PBCCB       |

### Milestone Description

Issue Notice of FEIS Availability

### Milestone Completion Criteria

This milestone will be complete when notice of the FEIS availability is published in the Federal Register, upon which a 30-day waiting period must elapse before the Department of Energy can make a decision on the action examined in the EIS. Copies of the FEIS will be distributed to all interested parties.

---

| Milestone Number | Baseline Date | WBS    | Responsible RW Organization | Highest CCB |
|------------------|---------------|--------|-----------------------------|-------------|
| R5171            | 9/22/00       | 1.2.13 | YMSCO                       | ESAAB       |

### Milestone Description

Approve Repository Final Record of Decision

### Milestone Completion Criteria

After the 30-day waiting period following publication in the Federal Register of the Notice of Availability of the final Environmental Impact Statement, the Department of Energy will publish a Record of Decision in the Federal Register describing the final decision on the repository and any determination regarding a waste transportation corridor in Nevada.

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**APPENDIX C**

**ANNUALIZED COST BASELINE FOR THE  
WASTE ACCEPTANCE, STORAGE AND TRANSPORTATION PROJECT (WAST)**

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Revision 5

**ANNUALIZED COST BASELINE - WASTE ACCEPTANCE, STORAGE AND TRANSPORTATION PROJECT (WAST)**  
 (Millions of year-of-expenditure dollars)

| WBS Element        | Pre          |             |             |             |             |             | FY2000      | TOTAL        |
|--------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
|                    | FY1995       | FY1995      | FY1996      | FY1997      | FY1998      | FY1999      |             |              |
| Spent Fuel Storage | 4.2          | 4.1         | 3.1         | 3.1         | 3.1         | 3.1         | 3.1         | 20.7         |
| Transportation     | 14.8         | 15.2        | 10.3        | 14.3        | 16.3        | 18.3        | 18.3        | 89.0         |
| Waste Acceptance   | 5.8          | 8.3         | 13.4        | 14.1        | 10.5        | 8.8         | 8.8         | 60.8         |
| MPC Subsystem      | 14.4         | 30.4        | 33.5        | 37.5        | 48.1        | 62.8        | 62.8        | 226.7        |
| WAST PM&I          | 3.6          | 6.9         | 6           | 6.2         | 5.3         | 5.0         | 5.0         | 33.2         |
| Other              | 3.6          |             |             |             |             |             | 3.6         |              |
| <b>TOTAL</b>       | <b>317.5</b> | <b>46.3</b> | <b>64.9</b> | <b>66.4</b> | <b>75.2</b> | <b>83.2</b> | <b>98.0</b> | <b>751.5</b> |

Notes:

1. Cost History (FY83-94) -- source is OCRWM Monthly Report on Program Status as of June 1995.
2. Funding for FY96-00 is current estimate for the Program Approach, including the Technical Support Contractor. The FY96 through FY00 projected costs are consistent with the RW-35 memo dated March 30, 1995 that provided guidance for the FY97 IRB budget development, expressed as estimated annual expenditures rather than New Budget Authority.
3. FY95 budget is the PACS Performance Measurement Baseline (PMB) latest revised estimate as of June 30, 1995, plus contract close-out and estimated fees (identified as other).

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**APPENDIX D**

**PROGRAM SCHEDULE BASELINE -**

**WAST PROJECT MILESTONES**

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1299A           | 7/31/98       | 3.2.2 | 46                          | PBCCB        |

### **Milestone Description**

Receive CoC for GA-9 LWT cask from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the Department receives CoC(s) for the GA-9 Casks from the NRC.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1299            | 6/30/97       | 3.2.2 | 46                          | PBCCB        |

### **Milestone Description**

Receive CoC for GA-4 LWT cask from the NRC (without BU credit)

### **Milestone Completion Criteria**

This milestone will be complete when the Department receives CoC(s) for the GA-4 Casks from the NRC.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1250E           | 10/30/97      | 3.2.2 | 46                          | PBCCB        |

### **Milestone Description**

Receive Draft Part 71 (Transportation Cask) SER from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the Department receives a draft SER from the NRC for the MPC transportation cask(s).

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1250            | 10/30/98      | 3.2.2 | 46                          | PBCCB        |

### **Milestone Description**

Receive MPC Part 71 (Transportation Cask) CoC and Final SER from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the NRC issues CoC(s) for the MPC Transportation Cask(s).

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T255             | 1/3/95        | 3.2.5 | 45                          | PBCCB        |

### Milestone Description

Issue Notice of Inquiry on NWPA 180(c) Administrative Process

### Milestone Completion Criteria

This milestone was completed when the Notice of Inquiry responding to NWPA Section 180(c) requirements for development of proposed policy and procedure was published in the Federal Register.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T265             | 3/29/96       | 3.2.5 | 45                          | PBCCB        |

### Milestone Description

Publish Notice of Proposed Policy and Procedure for NWPA Section 180(c)

### Milestone Completion Criteria

This milestone will be complete when the Notice of Policy and Procedures for NWPA Section 180(c) has been published in the Federal Register.

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T270             | 6/30/97       | 3.2.5 | 45                          | PBCCB        |

### Milestone Description

Publish Final Notice of Policy and Procedures (180(c))

### Milestone Completion Criteria

This milestone will be complete when the final notice of implementing the provisions of NEPA Section 180(c) is published in the Federal Register.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| W001             | 5/25/94       | 3.3.3 | 44                          | PBCCB        |

### Milestone Description

Issue Notice of Inquiry (NOI) on Waste Acceptance Issues

### Milestone Completion Criteria

This milestone was completed when the NOI was issued on May 25, 1994.

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| W003             | 9/5/96        | 3.3.3 | 44                          | PBCCB        |

### Milestone Description

Publish NOPR on Standard Contract (10CFR961) revisions

### Milestone Completion Criteria

This milestone will be complete when the Notice of Proposed Rulemaking on Standard Contract (10CFR961) revisions is published in the Federal Register.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| W035             | 10/2/97       | 3.3.3 | 44                          | PBCCB        |

### Milestone Description

Publish Final Rule on Standard Contract revisions

### Milestone Completion Criteria

This milestone will be complete when the Final Rule on Standard Contract (10CFR961) revisions is published in the Federal Register.

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| W030             | 10/30/97      | 3.3.3 | 44                          | PBCCB        |

### **Milestone Description**

Begin SNF Records (Data) verification process at utility sites

---

### **Milestone Completion Criteria**

This milestone will be complete when the Department begins on-site verification of the spent nuclear fuel records of the first utility.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M4050            | 3/1/94        | 3.4.1 | 46                          | ESAAB        |

### **Milestone Description**

Decide to Proceed with MPC Concept

---

### **Milestone Completion Criteria**

This milestone was completed when DOE issued a Technical Direction letter on the MPC decision on February 18, 1994.

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M4150            | 6/3/94        | 3.4.1 | 46                          | PBCCB        |

### Milestone Description

Issue MPC RFP for Design

### Milestone Completion Criteria

This milestone was completed when the Request for Proposal (RFP) for the MPC was issued on June 3, 1994.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T060             | 4/24/96       | 3.4.2 | 46                          | PBCCB        |

### Milestone Description

Submit MPC Transportation Cask SAR to the NRC

### Milestone Completion Criteria

This milestone will be complete when the MPC Transportation Cask Safety Analysis Report(s) is submitted to the NRC for 10CFR Part 71 Review.

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M602A            | 4/24/96       | 3.4.2 | 46                          | PBCCB        |

### **Milestone Description**

Submit MPC Storage Overpack SAR to the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the MPC On-Site Transfer and Storage subsystem Topical Safety Analysis Report(s) is submitted to the NRC for 10CFR Part 72 review.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1250D           | 11/28/97      | 3.4.2 | 46                          | PBCCB        |

### **Milestone Description**

Receive fabrication exemption for the MPCs from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the Department receives a letter authorizing the start of MPC fabrication. Based on the NRC Schedule, it is assumed that milestones M604 and T1250E (Draft Part 71 and 72 SERs) would precede this.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ040            | 10/30/97      | 3.4.3 | 46                          | PBCCB        |

### Milestone Description

Submit request for MPC fabrication and deployment to ESAAB

### Milestone Completion Criteria

This milestone will be complete when the WAST Project Manager submits to ESAAB the request for MPC fabrication and deployment.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M504             | 11/28/97      | 3.4.3 | 46                          | PBCCB        |

### Milestone Description

Exercise 1998 option (Initial fabrication contract)

### Milestone Completion Criteria

This milestone will be complete when the M&O, with the concurrence of DOE, exercises the option for the 1998 increment of MPCs. The KD-3&4 decision of Milestone MZ005 (Present WAST Project ESAAB) must be completed prior to exercising the options. This combined ESAAB seeks approval to fabricate and deploy MPCs. Additionally, Milestones M2010 (Issue MPC EIS Record of Decision), M604 (Receive Draft MPC Part 72 (Storage) SER from the NRC), T1250E (Receive Draft Part 71 (Transportation Cask) SER from the NRC) and, finally, T1250D (Receive Fabrication Exemption for MPCs from the NRC) must be completed prior to exercising the options.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M4990            | 10/30/98      | 3.4.3 | 46                          | PBCCB        |

### Milestone Description

Start MPC Deployment

### Milestone Completion Criteria

This milestone will be complete when deployment of MPCs begins. Prior to deployment, the KD-4 portion of Milestone MZ005 (Present WAST Project ESAAB (KD-3&4)) must be completed and approval received to deploy MPCs. Additionally, Milestones M605 (Receive Final MPC CoC & SER-Storage Part 72) and T1250 (Receive Final MPC CoC & SER-Transportation Part 71) must be completed.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M430A            | 8/30/99       | 3.4.3 | 46                          | PBCCB        |

### Milestone Description

Issue RFP for follow-on fabrication

### Milestone Completion Criteria

This milestone will be complete when the request for proposals soliciting vendors' technical and cost proposals for the follow on (beyond 2 years) increment of MPC production is released.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ041            | 12/20/99      | 3.4.3 | 46                          | PBCCB        |

### **Milestone Description**

Submit request for continued MPC fabrication and deployment to ESAAB

### **Milestone Completion Criteria**

This milestone will be complete when the WAST Project Manager submits to ESAAB the request for MPC fabrication and deployment.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ042            | 1/31/00       | 3.4.3 | 46                          | ESAAB        |

### **Milestone Description**

Approval by ESAAB to continue MPC fabrication and deployment

### **Milestone Completion Criteria**

This milestone will be complete when the WAST Project Manager completes a presentation to the ESAAB and obtains approval to continue MPC fabrication and deployment.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M4392            | 9/29/00       | 3.4.3 | 46                          | PBCCB        |

### **Milestone Description**

Complete initial fabrication of MPCs

### **Milestone Completion Criteria**

This milestone will be complete when the initial fabrication (two year supply) of the canisters is complete.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M300             | 10/24/94      | 3.4.5 | 46                          | PBCCB        |

### **Milestone Description**

Issue Notice of Intent (NOI) on MPC Environmental Impact Statement (EIS)

### **Milestone Completion Criteria**

This milestone was completed when the Notice of Intent was published in the Federal Register on October 25, 1994.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M2003            | 12/10/95      | 3.4.5 | 46                          | PBCCB        |

### Milestone Description

Issue MPC DEIS

### Milestone Completion Criteria

This milestone will be complete when a Notice of Document Availability is published in the Federal Register.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M2009            | 8/26/96       | 3.4.5 | 46                          | PBCCB        |

### Milestone Description

Issue MPC FEIS

### Milestone Completion Criteria

This milestone will be complete when a Notice of Document Availability is published in the Federal Register.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M2010            | 9/26/96       | 3.4.5 | 46                          | ESAAB        |

### Milestone Description

Issue MPC EIS Record of Decision

### Milestone Completion Criteria

The milestone will be complete when the Record of Decision is published in the Federal Register.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T275             | 4/24/96       | 3.4.6 | 46                          | PBCCB        |

### Milestone Description

Submit the MPC Part 60 Design Considerations Report to the NRC

### Milestone Completion Criteria

This milestone will be complete when the Department submits the Part 60 Design Considerations Technical Report soliciting a letter of "no objection" to proceed with development of the MPC disposal overpack for use at the repository to the NRC.

---

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M608             | 8/31/96       | 3.4.6 | 46                          | PBCCB        |

### **Milestone Description**

Receive PWR Actinide Burnup credit SER from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the NRC approves the Topical Report on PWR Actinide burnup credit (storage and transportation) and its impact on criticality control and the Department receives the SER.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M608B            | 5/31/97       | 3.4.6 | 46                          | PBCCB        |

### **Milestone Description**

Submit Topical Report on PWR Principal Isotopes to the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the Department submits the Topical Report on Principal Isotopes burnup credit (storage and transportation) and its impact on criticality control to the NRC.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T280             | 10/30/97      | 3.4.6 | 46                          | PBCCB        |

### **Milestone Description**

Receive "letter of no objection" for use of MPCs in disposal from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the NRC finishes its review of the Part 60 Design Considerations Technical Report (submitted as T275) and issues a "letter of no objection" to proceed with development of the MPC disposal overpack for use at the repository.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M604             | 10/30/97      | 3.4.6 | 46                          | PBCCB        |

### **Milestone Description**

Receive draft MPC Part 72 (storage) SER from the NRC

### **Milestone Completion Criteria**

This milestone will be complete when the Department receives a Safety Evaluation Report (SER) for the MPC On-Site Transfer and Storage Segment and a Draft Certificate of Compliance (CoC) from the NRC.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M609D            | 8/30/98       | 3.4.6 | 46                          | PBCCB        |

### Milestone Description

Receive PWR Principal Isotope BU credit SER from the NRC

### Milestone Completion Criteria

This milestone will be complete when the NRC approves the Topical Report on PWR Principal Isotope burnup credit (storage and transportation) and its impact on criticality control and the Department receives the SER.

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| M605             | 10/30/98      | 3.4.6 | 46                          | PBCCB        |

### Milestone Description

Receive MPC Part 72 (Storage) CoC and final SER from the NRC

### Milestone Completion Criteria

This milestone will be complete when the Department receives a Final Certificate of Compliance for the MPC On-Site Transfer and Storage Segment from the NRC.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ001            | 4/15/94       | 3.5.1 | 40                          | ESAAB        |

### **Milestone Description**

Present WAST Project ESAR #1

### **Milestone Completion Criteria**

This milestone was completed when the WAST Project Manager received approval/concurrence of the April 15, 1994 Energy System Acquisition Review presentation to the ESAAB.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ002            | 4/27/95       | 3.5.1 | 40                          | ESAAB        |

### **Milestone Description**

Present WAST Project ESAR #2

### **Milestone Completion Criteria**

This milestone was completed when the WAST Project Manager presented the annual Energy System Acquisition Review presentation to the ESAAB.

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## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ030            | 5/1/95        | 3.5.1 | 40                          | PBCCB        |

### **Milestone Description**

Submit Rev. 0 WAST Project Plan to PBCCB

### **Milestone Completion Criteria**

This milestone was completed when RW-40 submitted the WAST Project Plan to the PBCCB.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| MZ005            | 11/17/97      | 3.5.1 | 40                          | ESAAB        |

### **Milestone Description**

Decision by ESAAB on MPC Fabrication & Deployment

### **Milestone Completion Criteria**

This milestone will be complete when the WAST Project Manager completes a combined KD-3&4 presentation to the ESAAB and obtains approval to award the MPC fabrication contract (Milestone M504) and to start MPC deployment (Milestone M4990). Milestone T280 (Receive "letter of no objection") must be completed prior to this. Milestones M604, & T1250E (Draft Part 71 and 72 SERs) and milestone T1250D (NRC fabrication exemption) are also required for approval to fabricate.

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**APPENDIX E**

**ANNUALIZED COST BASELINE FOR PROGRAM INTEGRATION**

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**Revision 5**

**INTERIM COST BASELINE - PROGRAM INTEGRATION ELEMENT**  
**(Millions of year-of-expenditure dollars)**

| WBS Element                      | FY 1994<br>& Prior | FY1995     | FY1996     | FY1997     | FY1998     | FY1999     | FY2000     | FY2001     | TOTAL        |
|----------------------------------|--------------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Quality Assurance                | 32                 | 15         | 25         | 25         | 26         | 28         | 29         | 29         | 209          |
| Program Management & Integration | 637                | 70         | 54         | 58         | 60         | 65         | 73         | 76         | 1093         |
| Human Resources & Administration | 83                 | 32         | 25         | 25         | 25         | 26         | 26         | 27         | 269          |
| <b>TOTAL<sup>(a)</sup></b>       | <b>752</b>         | <b>117</b> | <b>103</b> | <b>108</b> | <b>112</b> | <b>119</b> | <b>129</b> | <b>132</b> | <b>1,571</b> |

a. May not add to sum of lower level WBS elements due to rounding.

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**APPENDIX F**

**PROGRAM SCHEDULE BASELINE -  
PROGRAM INTEGRATION MILESTONES**

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## PROGRAM SCHEDULE BASELINE - PROGRAM INTEGRATION MILESTONES

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### WBS: Program Management & Integration

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| P6000            | 1/15/96       | 9.2 | 30                          | ESAAB        |

### **Milestone Description**

Approve ESAAB Program Approach Baseline

### **Milestone Completion Criteria**

This milestone will be complete when the Program Approach baseline is approved by the ESAAB. Prerequisites include approval of the Program Approach baseline by the Program Director, supported by the Strategic System Program Execution Plan, the technical baseline suite to implement the Program Approach, the Program Cost and Schedule Baseline, and the Program

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| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA660            | Annual: Sep   | 9.2 | 30                          | PBCCB        |

### **Milestone Description**

Approve OMB Budget Request

### **Milestone Completion Criteria**

This annual milestone will be complete when the Office of Management and Budget budget request for OCRWM is approved by the Program Director for the transmittal to the DOE Chief Financial Officer. This submission will satisfy DOE and OMB requirements. Prerequisites include issuance of OMB budget request development guidance and Project and Office completion of their respective sections.

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## PROGRAM SCHEDULE BASELINE - PROGRAM INTEGRATION MILESTONES

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| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA670            | Annual: Sep   | 9.2 | 30                          | PBCCB        |

### Milestone Description

Approve Fee Adequacy Report

### Milestone Completion Criteria

This annual milestone will be complete when the fee adequacy report is approved by the Program Director for release. Prerequisite to this report is the adequacy analysis based on the TSLCC analysis and report.

---

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA610            | Annual: Oct   | 9.2 | 30                          | PBCCB        |

### Milestone Description

Approve Program Plan

### Milestone Completion Criteria

This milestone will be complete when the Program Plan is approved by the Program Director for release. Prerequisite to this submission is development of portions by the Yucca Mountain Site Characterization Office and by the Office of Waste Acceptance, Storage and Transportation consistent with the Program policy and baseline.

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## PROGRAM SCHEDULE BASELINE - PROGRAM INTEGRATION MILESTONES

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| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| P5000            | 9/19/95       | 9.2 | 30                          | PBCCB        |

### Milestone Description

Approve Program Approach Baseline

### Milestone Completion Criteria

This milestone was completed when the Program Approach baseline was approved by the Program Director. Prerequisites included Program approval of the technical baseline change to implement the Program Approach, the Program Cost and Schedule Baseline, and the Program WBS Dictionary.

---

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA630            | Annual: Feb   | 9.2 | 30                          | PBCCB        |

### Milestone Description

Approve Interim TSLCC Analysis Update

### Milestone Completion Criteria

This milestone will be complete when the interim TSLCC analysis update is approved by the Program Director to support Congressional testimony. Prerequisites include approval of Program TSLCC assumptions and interim life cycle cost estimates.

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## PROGRAM SCHEDULE BASELINE - PROGRAM INTEGRATION MILESTONES

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| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA650            | Annual: Jun   | 9.2 | 30                          | PBCCB        |

### **Milestone Description**

Approve Final TSLCC Report

### **Milestone Completion Criteria**

This annual milestone will be complete when the Program Director approves the TSLCC report for release.

---

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| P6010            | 12/15/95      | 9.2 | 30                          | PBCCB        |

### **Milestone Description**

Complete technical baseline suite to implement the PA.

### **Milestone Completion Criteria**

This milestone will be complete when all the program requirements documents that identify CRWMS system requirements are approved by the Program Baseline Change Control Board (PBCCB). Documents include: the CRWMS Requirements Document (CRD), the Transportation System Requirements Document (TRANS-SRD), the Storage Requirements Document (STORAGE-SRD), the Mined Geologic Disposal System Requirements Document (MGDS-SRD), and the Waste Acceptance Requirements Document (WA-SRD).

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## PROGRAM SCHEDULE BASELINE - PROGRAM INTEGRATION MILESTONES

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| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| P6020            | 4/30/96       | 9.2 | 30                          | PBCCB        |

### **Milestone Description**

Complete total system description update.

### **Milestone Completion Criteria**

This milestone will be complete when the following documents are complete and approved by the Program Director. Documents include: the revision to the Conceptual System Description and the associated CRWMS Concept of Operations.

---

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| P7000            | 1/30/97       | 9.2 | 30                          | PBCCB        |

### **Milestone Description**

Complete interface control document suite to implement the PA.

### **Milestone Completion Criteria**

This milestone will be complete when the requisite interface documentation has been approved by the OCRWM Interface Control Working Group for implementation by the design organizations. Documents include: the Storage - Transportation Interface Control Document (ICD), the Waste Acceptance - Transportation ICD, the MGDS - Transportation ICD, the Storage - MGDS ICD, the Storage - Waste Acceptance ICD, and the MGDS - Waste Acceptance ICD.

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## PROGRAM SCHEDULE BASELINE - PROGRAM INTEGRATION MILESTONES

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### WBS: Human Resources & Administration

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA640            | Annual: May   | 9.3 | 10                          | PBCCB        |

#### **Milestone Description**

Transmit OCRWM Annual Report to Congress.

#### **Milestone Completion Criteria**

After the Secretary approves the document and transmittal letters, RW-1 signs the document and letters.

---

| Milestone Number | Baseline Date | WBS | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-----|-----------------------------|--------------|
| PA620            | Annual: Jan   | 9.3 | 10                          | PBCCB        |

#### **Milestone Description**

Submit NWF Financial Statements to CR.

#### **Milestone Completion Criteria**

RW-1 signs the letter transmitting the NWF Financial Statement to CR-1.

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**APPENDIX G**  
**LONG-TERM REFERENCE SCHEDULE**

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Revision 5

## PROGRAM SCHEDULE BASELINE - YUCCA MOUNTAIN PROJECT MILESTONES

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### WBS: Repository

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| R4390            | 2004          | 1.2.4 | YMSCO                       | PBCCB        |

### **Milestone Description**

Receive Repository Construction Authorization

### **Milestone Completion Criteria**

This milestone will be complete when the Director, OCRWM, authorizes construction activities to begin. Prerequisites include a readiness review, NRC construction authorization, and ESAAB approval.

---

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| R4490            | 2010          | 1.2.4 | YMSCO                       | PBCCB        |

### **Milestone Description**

Start Repository Waste Emplacement

### **Milestone Completion Criteria**

This milestone will be complete when the Secretary of Energy authorizes waste emplacement operations to begin. Prerequisites include a design review, NRC license to receive and possess waste, and ESAAB approval.

## PROGRAM SCHEDULE BASELINE - YUCCA MOUNTAIN PROJECT MILESTONES

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### WBS: Regulatory

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| R5291            | 2008          | 1.2.5 | YMSCO                       | PBCCB        |

### **Milestone Description**

Submit Updated Repository 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.

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| TBD              | 2110          | 1.2.5 | YMSCO                       | PBCCB        |

### **Milestone Description**

Submit License Application for Amendment to Permit Repository Closure

### **Milestone Completion Criteria**

To be determined.

## PROGRAM SCHEDULE BASELINE - WAST PROJECT MILESTONES

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### WBS: Casks

| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1600            | 2010          | 3.2.2 | 46                          | PBCCB        |

### **Milestone Description**

Transportation System Fully Operational

### **Milestone Completion Criteria**

This milestone will be complete when the full operational testing of the objective Transportation System has been completed.

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| Milestone Number | Baseline Date | WBS   | Responsible RW Organization | Highest BCCB |
|------------------|---------------|-------|-----------------------------|--------------|
| T1297            | 2007          | 3.2.3 | 46                          | ESAAB        |

### **Milestone Description**

Start Fabrication of GA-4/GA-9 LWT Casks for Fleet

### **Milestone Completion Criteria**

This milestone will be complete when the fabrication contract has been awarded.

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