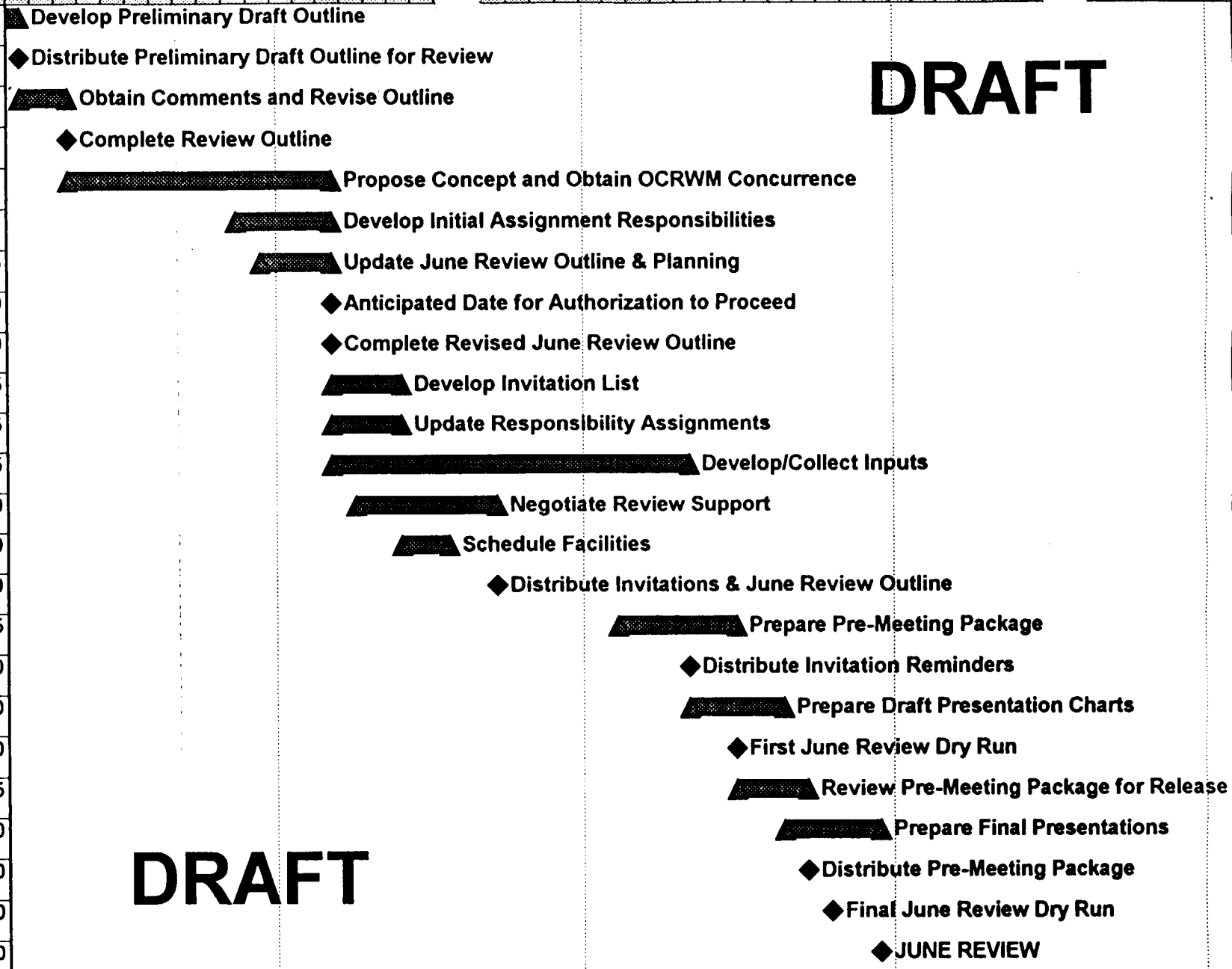


APPENDIX F
JUNE DESIGN REVIEW

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 12/16/96. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact M. Sellers. For suggested changes to the contents, contact R. Snell.

| Start | Finish | duration |
|---------|---------|----------|
| 14OCT9 | 17OCT9 | 4 |
| | 17OCT9 | 0 |
| 18OCT9 | 31OCT9 | 10 |
| | 31OCT9 | 0 |
| 01NOV9 | 16JAN97 | 55 |
| 20DEC9 | 16JAN97 | 20 |
| 27DEC9 | 16JAN97 | 15 |
| | 16JAN97 | 0 |
| | 16JAN97 | 0 |
| 17JAN97 | 06FEB97 | 15 |
| 17JAN97 | 06FEB97 | 15 |
| 17JAN97 | 01MAY9 | 75 |
| 24JAN97 | 06MAR9 | 30 |
| 07FEB97 | 20FEB97 | 10 |
| | 06MAR9 | 0 |
| 11APR97 | 15MAY9 | 25 |
| | 01MAY9 | 0 |
| 02MAY9 | 29MAY9 | 20 |
| | 15MAY9 | 0 |
| 16MAY9 | 05JUN97 | 15 |
| 30MAY9 | 26JUN97 | 20 |
| | 05JUN97 | 0 |
| | 12JUN97 | 0 |
| | 26JUN97 | 0 |



| | | | |
|----------------|---------|--|-------------------|
| Project Start | 14OCT96 | | Early Bar |
| Project Finish | 26JUN97 | | Progress Bar |
| Date Date | 14OCT96 | | Critical Activity |
| Print Date | 22NOV96 | | |

SCHEDULE FOR JUNE REVIEW - REV H
November 18, 1996

JUNE DESIGN REVIEW

1.0 PURPOSE

The purpose of this June 1997, review is to assess the overall engineering approach to the VA milestone and obtain high-level management concurrence. Key interfaces such as the relationship between Design Engineering and Performance Assessment will be described. The preparation of an MGDS Cost Estimate and an LA Plan will also be described. Finally, the design status as it currently exists will be reviewed to facilitate an overall understanding of the system and to encourage high-level course correction where needed. This will be a non-Q review.

A draft schedule to prepare for and execute the review is attached.

2.0 REVIEW AUDIENCE

The target audience for the June Design Review is OCRWM (YMSCO and WM&I), Project Management Organization, and M&O Management, as well as M&O Teammate Corporate Executives. TRB and NRC representation is also suggested. The June Design Review will also be shared with the Repository and other consultant boards.

3.0 REVIEW FORMAT

A pre-review package will be prepared to facilitate background development and to help achieve the meeting goals in a single day. Topics for the package will consist of key summary-level material to help set the stage for the review. Candidates for this material include an update to the Director's Summary, Highlights of the DOE's Waste Containment and Isolation Strategy for the Yucca Mountain Site, and the MGDS Concept of Operations. Other material such as the VA Design and Review Plan and the VA Monitoring Plan which describe the VA activities and the role of the June Design Review en-route to that assessment may be provided.

Presentations similar to those provided during the February 1-2, 1996 Management Reviews for the MGDS ACD will be provided. The goal is to develop a set of presentations which can be used for multiple audiences. The presentations would be delivered by the M&O Engineering and Integration Operations' managers. A draft agenda is attached. An explicit definition for the content of the presentation charts is provided below. Comments will be requested.

4.0 PRESENTATION CONTENT

4.1 VA Description

A brief introductory discussion describing the purpose and scope of the VA activities will be provided along with an overview of how the YMP's engineering efforts support the assessment. In addition, the meeting logistics will be explained, along with the comment process. Comments will be requested on the day of the review, and comment sheets will be provided to facilitate proper documentation.

4.2 MGDS Design Drivers And Requirements

The key requirements and design drivers will be identified and explained in terms of their significant implications to MGDS cost, schedule, or performance. Examples may include the required repository capacity, the form and rate of the waste received at the repository, the repository performance requirements in terms of pre- and post-closure, and the governing regulatory requirements for the MGDS. Major assumptions necessary to move the design forward will be identified. Engineering studies, design basis events evaluations, safety analyses, and functional/requirements analyses and their role in establishing requirements will be summarized as appropriate.

4.3. MGDS Concept of Operations

The operational concept for the MGDS will be summarized to explain the disposal process from waste receipt through emplacement, closure, and decommissioning. Key VA issues related to operations will be highlighted. The purpose of this presentation is to set the stage for the remaining presentations for each design area and for the major VA issues.

4.4 MGDS Design Overview

An overview of each design area will be provided, including the Yucca Mountain Site arrangement and layout, the general arrangement of the surface facilities, the general arrangement of the subsurface facilities and layout, the subsurface development plans, and the repository's relationship/interface with the Exploratory Studies Facility. An overview of waste package designs and the general emplacement arrangement of waste packages in the emplacement drifts will be provided. Waste Package materials testing will be summarized. Other significant features in the Engineered Barrier System and how these elements work together to support the waste containment and isolation strategy will be explained. The features of design and the key analytical methodologies will be summarized. Major contingency design alternatives will be identified.

5.0 MAJOR TECHNICAL ISSUES, DATA AND METHODS FOR RESOLUTION, RESOLUTION STATUS

The major technical issues important to the success of the VA milestone will be identified along with the resolution plan for each issue. Current status will be provided. The expected contribution of scientific and test data toward issue resolution will be identified. Performance assessment model development and their use in issue resolution will be explained. Design option and operational concept evaluations under consideration and the timing of expected decision/resolution points will be identified.

6.0 ENGINEERING AND PERFORMANCE ASSESSMENT INTERACTIONS

The iterative interactions between the design development activities with the performance assessment models will be explained. Tight coupling and integration between the design and TSPA which will support the VA milestone will be stressed. Sensitivities of the models to design parameters will be identified to show areas in the design with significant pre- and post-closure performance contributions. Interactions between the design and process models & abstractions will

be identified to illustrate the way in which performance assessment predictions influence the design process to converge on performance-sensitive design parameters. Dependencies between the design and the near-field models will be explained.

7.0 PLANS FOR PREPARING A COST ESTIMATE

The plan, strategy, and assumptions for the preparation of an MGDS cost estimate will be identified. Included will be a discussion of the E&I activities to provide information on the cost to complete the MGDS design, to construct the MGDS, to operate the MGDS, and to close, decommission, or, if necessary, to retrieve from the MGDS. Current assumptions and their relationship to cost estimating assumptions (such as those provided in the ACD) or to revised versions of the TSLCC will be explained. The basis and format which will underpin the capital cost estimates will be identified.

8.0 MGDS PLANS TO SUPPORT LA

The strategy and schedule for developing the design sufficient for licensing will be explained. The general level of design detail necessary to docket an LA will be provided, along with representative examples. Design activities required to support the LA for which progress is needed at the time of the VA milestone will be identified along with an indication of the post-VA activities necessary to support a docketable LA. E&I will support YMP cost estimating activities for the design to be included in an LA in March 2002.

JUNE DESIGN REVIEW

DRAFT AGENDA

- | | |
|-----------------|---|
| 8:00 am | Introduction and VA Description |
| 8:10 am | Meeting Logistics and Comment Process |
| 8:15 am | Requirements |
| 8:55 am | Concept of Operations |
| 9:35 am | Waste Package (Development & Materials) |
| 10:20 am | Break |
| 10:30 am | Surface Facilities |
| 11:10 am | Subsurface Design |
| 12:35 pm | Lunch (Catered) |
| 1:10 pm | Major Technical Issues, Resolution Plans, and Status |
| 2:10 pm | Performance Assessment Interactions |
| 2:50 pm | Break |
| 3:00 pm | Cost Estimate Plans |
| 3:30 pm | LA Plans |
| 4:00 pm | Open Discussion |
| 5:00 pm | Adjourn |

APPENDIX G
PHASE I DESIGN REVIEW

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 12/16/96. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact J. Clouet. For suggested changes to the contents, contact R. Snell.

PHASE I DESIGN REVIEW

1.0 PROPOSED CONCEPT

The proposed concept for the Phase I Design Review includes an engineering emphasis and provides an update to the progress of engineering since the June Review. An engineering review is performed to assess the state of the design relative to the planned progress at the time of the VA milestone. Interfaces with engineering are also emphasized since the Phase I Design completion is marked by the final data deliveries between design and its interfacing organizations. This will help ensure that each organization has what it needs from engineering, and that engineering has what it needs from other organizations to adequately support the VA milestone. The review identifies any items still to be provided and the plan for providing those items in time to support the VA milestone. The target audience includes the YMSCO, Project Management Organization, and M&O Management.

2.0 PRESENTATION SUMMARIES

2.1 Engineering

Engineering presentations will be provided to summarize the engineering completed to date along with a comparison against what is needed to support the VA milestone.

2.2 MGDS Cost Estimate

All information needed from engineering to prepare the MGDS cost estimate will be identified and any information not yet received will be emphasized for increased focus prior to the final cost estimate preparation. Coordination with the TSLCC will be summarized.

2.3 Scientific Programs

Presentations focused on model updates and documentation to support engineering needs will be provided. Open issues will be identified for increased focus to ensure necessary information is available to support VA milestone.

2.4 Performance Assessment

Presentations by PA to show readiness to proceed with the TSPA-VA will be provided. A summary of all data received and any data still missing and needed from engineering will be provided. Preclosure Safety work will be summarized to show progress to date relative to that needed for the VA milestone.

2.5 Licensing

A briefing of the LA Plan will be given to provide the picture of post-VA emphasis required from engineering. The Compliance Plan and the License Application Design and Review Plan and their incorporation into and/or relationship to the LA Plan will be summarized. A status of the Project Integrated Safety Assessment preparation will be provided.

2.6 NEPA/EIS

Although not slated to support the VA milestone, necessary progress toward the EIS requires engineering data deliveries during the Phase I Design time frame. The Phase I Review provides a convenient opportunity to review the timeliness and adequacy of these data deliveries. Progress on engineering support to the EIS will be stasured. Data deliveries provided to date will be summarized including Engineering Files. Progress on the Description of Planned Actions and Alternatives will be summarized. Any additional data needs will be identified for increased focus in the FY 98 to FY 99 time frame.

3.0 TIMING

The Phase I Design Review is tentatively scheduled for early September, 1997. The planning activities for this review are provided in the schedule at the end of this appendix. The review verifies the completion of the Phase I work scope and the necessary data deliveries required through the end of Phase I Design. Any residual Phase I issues and the remaining work scope necessary to support the VA milestone will be identified and finalized for emphasis during the initial portion of the Phase II Design.

4.0 DESIGN REVIEW CHECKLIST

The intent of the Phase I Design Review Checklist is to provide a methodical listing of items to be evaluated against expectations at the conclusion of the Phase I Design. The checklist includes listing of engineering products and their expected level of completion (Appendices C, D & E), a listing of critical interfaces (Appendix L), expected progress on issue resolution (Appendix B), expected progress on selected topics and/or items needing decisions (to be identified as part of activities 028 and 035 of the attached schedule), and an assessment of cost and schedule variances as identified in the most recent PACS report.

4.1 Product Listings _____

Each design area has developed a product listing with an expectation of the level of completion for each item at the time of Phase I Design completion.

- ____ Repository Sub-surface Product Listing
- ____ Repository Surface Product Listing
- ____ Waste Package Development Product Listing
- ____ Waste Package Materials Product Listing
- ____ Systems Engineering Product Listing

4.2 Critical Interface Listing _____

4.3 Issue Resolution Progress Listing _____

This listing contains the expected level of completion toward resolution of the 13 critical engineering issues important to the VA.

4.4 Selected Topics & Decisions Listing _____

This listing contains selected topics or decisions important to the VA not already covered in the Product, Interface, or Issue Resolution Listings.

4.5 Assessment of Cost and Schedule Variances _____

This listing contains the activities which should be completed by the end of Phase I and an assessment and explanation of variances.

| ID | Start | Finish | duration |
|-----|---------|---------|----------|
| 005 | 04NOV9 | 08NOV9 | 5 |
| 006 | 11NOV9 | 22NOV9 | 10 |
| 007 | 25NOV9 | 29NOV9 | 5 |
| 010 | | 29NOV9 | 0 |
| 015 | 02DEC9 | 13DEC9 | 10 |
| 020 | | 13DEC9 | 0 |
| 022 | 16DEC9 | 31JAN97 | 35 |
| 023 | | 31JAN97 | 0 |
| 021 | 03FEB97 | 21FEB97 | 15 |
| 031 | 03FEB97 | 14MAR9 | 30 |
| 026 | 17FEB97 | 07MAR9 | 15 |
| 028 | 03MAR9 | 14MAR9 | 10 |
| 035 | | 14MAR9 | 0 |
| 036 | 17MAR9 | 28MAR9 | 10 |
| 040 | | 28MAR9 | 0 |
| 045 | 31MAR9 | 11JUL97 | 75 |
| 047 | | 11JUL97 | 0 |
| 046 | 14JUL97 | 08AUG9 | 20 |
| 052 | | 08AUG9 | 0 |
| 065 | 11AUG9 | 05SEP97 | 20 |
| 080 | | 05SEP97 | 0 |
| 085 | 08SEP97 | 09DEC9 | 67 |
| 090 | 19NOV9 | 09DEC9 | 15 |
| 095 | | 30SEP97 | 0 |

▲ Develop Preliminary Draft Outline

▲ Obtain Initial Decision on Phase I Approach

▲ Revise Preliminary Draft Outline

◆ Distribute Preliminary Draft Outline for Review

▲ Obtain Comments and Revise Outline

◆ Complete Review Outline

▲ Propose Concept and Obtain Concurrence

◆ Anticipated Concurrence Date

▲ Develop Initial Assignment Responsibilities

▲ Adjust Project Workscopes to Support Review

▲ Develop Invitation List

▲ Update Phase I Review Outline (If Necessary)

◆ Complete Revised Phase I Review Outline

▲ Schedule Facilities

◆ Distribute Invitations & Phase I Review Outline

▲ Develop/Collect Inputs

◆ Distribute Invitation Reminders

▲ Prepare Draft Presentation Charts

◆ Phase I Review Dry Run

▲ Prepare Final Presentations

◆ PHASE I REVIEW

▲ Track and Close Phase I Open Items

▲ Validate Closure of Phase I Items

◆ Phase I Design Complete

DRAFT

DRAFT

| | | |
|----------------|---------|---------------------|
| Project Start | 14OCT96 | ▲ Early Bar |
| Project Finish | 09DEC97 | ▲ Progress Bar |
| Data Date | 14OCT96 | ▲ Critical Activity |
| Plot Date | 10DEC96 | |

PH-1

Sheet 1 of 1

SCHEDULE FOR EARLY PHASE I REVIEW

December 16, 1996

APPENDIX H
MGDS VA REVIEW
Preliminary

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 12/16/96. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact J. Clouet. For suggested changes to the contents, contact R. Snell.

MGDS VA REVIEW
Preliminary
E&I Section

1.0 PROPOSED CONCEPT

The proposed concept for the MGDS VA Review will be focused on the YMP. The lead for this review will be the Regulatory group. The review will cover the four VA products; VA MGDS Cost Estimate, TSPA-VA, VA Design, and the LA Plan, and will concentrate on the progress that has been made in the four product areas.

The review will be presented to the Director of the OCRWM with presentations provided by both YMSCO and M&O Management leads. The target audience will be the OCRWM and M&O Management.

This MGDS VA Review covers the documentation, support and presentations that will be provided by E&I on the MGDS VA Design and Cost Estimate.

2.0 QUALITY ASSURANCE

Based on an evaluation in accordance with QAP-2-0, *Conduct of Activities*, the MGDS VA Review was determined to be a non-QA review.

3.0 PRESENTATION OF E&I VA PRODUCTS

3.1 VA MGDS Cost Estimate

Details describing cost estimate are to be provided at a later date.

3.2 VA Design

The MGDS Design to support the VA milestone will focus on Systems, Structures and Components which are important to radiological safety, and have no licensing precedence with the NRC.

The Design Products listed in Appendices C, D and E of the VA Design and Review Plan will define the MGDS VA design and will be described in the Engineering chapters of the Project Integrated Safety Assessment. The Design Products include:

- Chapter 3 - Design of Systems, Structures and Components
- Chapter 4 - Repository Design
- Chapter 5 - Waste Package Design
- Chapter 6 - Engineered Barrier System Design
- Chapter 11 - Conduct of Operations

The Project Integrated Safety Assessment chapters will be summarized into a VA Design Summary, which will be similar to the Director's Summary.

The presentation of the MGDS Design for VA will be based on the VA Design Summary and will describe how the system design balances the overall facility. The presentation will also describe what potential solutions have been developed to resolve unprecedented regulatory designs with specific emphasis on the key design issues that have been identified as important to the VA milestone.

The format and flow of the Design Summary will include the concept of operations for the repository from receipt of waste through emplacement and repository closure or, if necessary, waste retrieval. The focus of the descriptions will be based on repository operations, surface, subsurface, waste package design, and waste form testing. Critical design features will be described as well as the binning methodology related to their selection. The rationale for selection of the reference design will be summarized. Reference to the Project Integrated Safety Assessment design chapters will be made to identify supporting design documentation. The additional work to be performed in each area to support the LA will be summarized. The document will make liberal use of graphics and illustrations to describe, explain, and emphasize focus areas.

4.0 REVIEW LOGISTICS

A pre-review package consisting of the Design Summary and the Engineering chapters of the Project Integrated Safety Assessment will be provided to a selected audience after June 30, 1998.

Comments generated from the MGDS VA Review will be applied toward the next phase of LA design.

The MGDS Cost Estimate will have been published in March of 1998, and updated before its submittal as a VA product. Any comments generated against the MGDS Cost Estimate will be included in the next cost estimate cycle.

5.0 SCHEDULE

The MGDS VA Review will be held July 31, 1998. The key Engineering milestones that lead to this date are:

- MGDS VA Cost Estimate - June 1998
- Phase I Design Review - September 1997
- Engineering Chapters of the Project Integrated Safety Assessment complete - June 30, 1998
- VA Design Summary - June 30, 1998

6.0 VA DESIGN REVIEW CHECKLIST

The intent of the VA Design Review Checklist is to provide a methodical listing of items to be evaluated against expectations at the conclusion of the design effort intended to support the VA milestone. Currently, this point is expected to occur during the initial stages of the Phase II Design, but prior to the VA milestone itself. The checklist includes a list of engineering products and their expected level of completion, a list of critical interfaces, expected progress on issue resolution, expected progress on selected topics and/or items requiring decisions, and an assessment of cost and schedule variances.

APPENDIX I
SYSTEMS ENGINEERING SCHEDULE

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 12/16/96. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact F. VanDerLaan. For suggested changes to the contents, contact R. Wagner.

SYSTEMS ENGINEERING SCHEDULE

The Systems Engineering (WBS 1.2.1) schedule for FY 97/98 is provided. This schedule reflects the current status of the FY 98 planning activity. All of the Systems Engineering activities are tied to the VA milestone.

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | | | |
|---|--|-----|-------------|--------------|------|------|--|--|--|------|--|--|--|------|--|--|--|----|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | |
| YP1XPP006: PPkg - IN0&X - ESF Construction Suppo | | | | | | | | | | | | | | | | | | | | | |
| SE806 | Update ESF Con-Ops | 251 | 02FEB98* | 01FEB99 | | | | | | | | | | | | | | | | | |
| SE824 | DIE FY99 | 251 | 01OCT98* | 30SEP99 | | | | | | | | | | | | | | | | | |
| YP1XPP007: PPkg - LA200 - Prepare Project Integr | | | | | | | | | | | | | | | | | | | | | |
| SE708A | Provide PISA Development Support | 161 | 01OCT97 | 22MAY98 | | | | | | | | | | | | | | | | | |
| YP1XPP008: PPkg - LA355 - Write PISA Ch. 1, Intr | | | | | | | | | | | | | | | | | | | | | |
| SE708 | Provide PISA Development Support - Chapter 1 | 110 | 31OCT97 | 10APR98 | | | | | | | | | | | | | | | | | |
| YP1XPP011: PPkg - MG010M2 - PISA Chapters 2,3,4, | | | | | | | | | | | | | | | | | | | | | |
| MG010M2 | PISA Chapters 2,3,4,5,6,9,11 Design/Ops/Site | 0 | | 30JUN98* | X2 | | | | | | | | | | | | | | | | |
| YP1XPP032: PPkg - SE124M2 - Submit MGDS Cost Est | | | | | | | | | | | | | | | | | | | | | |
| SE124M2 | Submit MGDS Cost Estimate to OCRWM | 0 | | 25AUG98* | M2 | | | | | | | | | | | | | | | | |
| YP1XPP033: PPkg - SE125A - MGDS Design SRA - Ph | | | | | | | | | | | | | | | | | | | | | |
| SE310B | DBA/DBE Definition & Analysis - Ph 2 | 204 | 02DEC96* | 19SEP97 | | | | | | | | | | | | | | | | | |
| YP1XPP034: PPkg - SE126 - MGDS Design SRA - 3 | | | | | | | | | | | | | | | | | | | | | |
| SE800A | Support ESF Operations | 855 | 01OCT97 | 01MAR01 | | | | | | | | | | | | | | | | | |
| YP1XPP037: PPkg - SE306M2 - Complete Chapter 11 | | | | | | | | | | | | | | | | | | | | | |
| SE306M2 | Complete Chapter 11 PISA | 0 | | 03APR98 | M2 | | | | | | | | | | | | | | | | |
| YP1XPP040: PPkg - SE322 - Classification Analsi | | | | | | | | | | | | | | | | | | | | | |
| SE322A | Classification Analysis/Q-List Update - 2 | 204 | 01OCT98 | 26JUL99 | | | | | | | | | | | | | | | | | |
| YP1XPP043: PPkg - SEGHIM2 - Complete Waste Qty, | | | | | | | | | | | | | | | | | | | | | |
| SEGHIM2 | Complete Waste Qty, Mix, and Throughput Study | 0 | | 11APR97* | M2 | | | | | | | | | | | | | | | | |
| YP1XPP047: PPkg - SERSTM2 - Complete Retrieval | | | | | | | | | | | | | | | | | | | | | |
| SERSTM2 | Complete Retrieval Study - VA | 0 | | 12MAY97* | M2 | | | | | | | | | | | | | | | | |
| YP1XPP049: PPkg - SEUWWM2 - Complete Safeguards | | | | | | | | | | | | | | | | | | | | | |
| SEUWWM2 | Complete Safeguards & Security Reqms Study | 0 | | 29OCT97* | X2 | | | | | | | | | | | | | | | | |
| YP1XPP051: PPkg - SEXYZM2 - Complete Regional Tr | | | | | | | | | | | | | | | | | | | | | |
| SEXYZM2 | Complete Regional Transportation Data Collection | 0 | | 30SEP97* | X2 | | | | | | | | | | | | | | | | |
| TR11FA1: Systems Engineering Management | | | | | | | | | | | | | | | | | | | | | |

Project Start 01OCT95
 Project Finish 01OCT98
 Date Date 02DEC96
 Plot Date 18DEC96

LRPO

YUCCA MOUNTAIN PROJECT PLAN
 WBS 1.2.1 - SYSTEMS ENGINEERING
 LONG RANGE PLAN (FY96-FY98)

Sheet 1 of 21

KNUSHNA 12/18/96 (1800-PR5) (5-5315)

Date _____ Revision _____ Checked _____ Approved _____

| Activity ID | Activity Description | OD | Early Start | Early Finish | MLE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|---------------------------------|-----|-------------|--------------|-----|---------------------------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE452 | Provide Management Support | 251 | 01OCT96A | 30SEP97 | | [Gantt bars for SE452] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR11GA1: Systems Engineering Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE568 | Provide Management Support | 455 | 01OCT97 | 26JUL99 | | [Gantt bars for SE568] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12FA1: ESF Operations Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE800700 | Support ESF Operations | 251 | 01OCT96A | 30SEP97 | | [Gantt bars for SE800700] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12FB1: Develop System Description Documents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE405700 | FA/DCA | 251 | 01OCT96A | 30SEP97 | | [Gantt bars for SE405700] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE405705 | Develop Bin 3 SDD's | 251 | 01OCT96A | 30SEP97 | | [Gantt bars for SE405705] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE405AM4 | SDD Status Report | 0 | | 31DEC96* | M4 | [Milestone for SE405AM4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE405BM4 | SDD Status Report | 0 | | 31MAR97* | M4 | [Milestone for SE405BM4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE410700 | Develop Bin 2 SDD | 128 | 01APR97 | 30SEP97 | | [Gantt bars for SE410700] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE415700 | Develop Bin 1 SDD's | 128 | 01APR97* | 30SEP97 | | [Gantt bars for SE415700] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE405CM4 | SDD Status Report | 0 | | 30JUN97* | M4 | [Milestone for SE405CM4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE405M4 | SDD Status Report | 0 | | 30SEP97 | M4 | [Milestone for SE405M4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12FB2: Requirements Documentation/Verification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE422700 | Maintain Top Level Requirements | 251 | 01OCT96A | 30SEP97 | | [Gantt bars for SE422700] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE422705 | Update CDA | 123 | 01OCT96A | 30APR97 | | [Gantt bars for SE422705] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE422BM4 | Briefing on CDA Status | 0 | | 27NOV96* | M4 | [Milestone for SE422BM4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE422M3 | MGDS Requirements Document | 0 | | 03MAR97* | M3 | [Milestone for SE422M3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE422CM4 | Briefing on CDA Status | 0 | | 30APR97* | M4 | [Milestone for SE422CM4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE422710 | Update CDA | 106 | 01MAY97 | 30SEP97 | | [Gantt bars for SE422710] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12FB3: MGDS Concept of Operations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400700 | Evaluate Technical Baseline | 61 | 01OCT96A | 31DEC96 | | [Gantt bars for SE400700] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400705 | Update ConOps | 62 | 02JAN97 | 31MAR97 | | [Gantt bars for SE400705] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400710 | Evaluate ConOps | 107 | 01APR97 | 29AUG97 | | [Gantt bars for SE400710] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Preplot Start 01OCT96
Preplot Finish 01OCT97
Data Date 02DEC98
Plot Date 18DEC98

Early
 Progress Bar
 Critical Activity

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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Date: _____
Revision: _____
Checked: _____
Approved: _____

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|--|--|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400715 | Update Con-Ops | 43 | 01JUL97 | 29AUG97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400720 | Review & Comment Resolution | 21 | 02SEP97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400BM3 | MGDS Con Ops - Rev 1 | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12GA1:MGDS Concept of Operations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400800 | Maintain MGDS Con Ops | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400AM4 | MGDS ConOps Status Report | 0 | | 02FEB98* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE400BM4 | MGDS ConOps Status Report | 0 | | 31JUL98* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12GB1: Develop System Description Documents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE520800 | Maintain/Update Sum. & Crit. Sections (Bin3 SDD's) | 251 | 01OCT97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE520810 | Support for Design Sections (Bin 3 SDDs) | 123 | 01OCT97 | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE521800 | Maintain/Update Sum. & Crit. Sections (Bin2 SDD's) | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522820 | Complete FY97 4th Quarter SDDs (Bin 1 SDDs) | 39 | 01OCT97* | 26NOV97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE523800 | General SDD Support Tasks | 251 | 01OCT97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522AM4 | SDD Status Report | 0 | | 31DEC97* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE520805 | Requirements Analysis (Bin 3 SDDs) | 62 | 02JAN98* | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE521810 | Support for Design Sections (Bin 2 SDDs) | 126 | 02JAN98* | 30JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522BM4 | SDD Status Report | 0 | | 31MAR98* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE521805 | Requirements Analysis (Bin 2 SDDs) | 64 | 01APR98* | 30JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522CM4 | SDD Status Report | 0 | | 30JUN98* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522810 | Requirements Analysis (Bin 1 SDDs) | 64 | 01JUL98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522805 | Maintain/Update Sum. & Crit. Sections (Bin1 SDD's) | 251 | 01SEP98 | 31AUG99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522815 | Support for Design Sections (Bin 1 SDDs) | 128 | 01SEP98 | 09MAR99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE522DM4 | SDD Status Report | 0 | | 30SEP98 | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR12GB2: Requirements Documents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE530800 | Maintain Top Level Requirements Documents | 313 | 01OCT97 | 04JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early |
| Project Finish | 01OCT99 | Program Bar |
| Date Data | 02DEC96 | Critical Activity |
| Plot Date | 18DEC96 | |

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Date | KRISHNA 12/18/96 (1600-PR5) (5-8315) | Checked/Approved |
| Revision | | |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MLE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | | |
|---|--|-----|-------------|--------------|-----|------|--|--|--|------|--|--|--|------|--|--|--|----|--|--|
| | | | | | | | | | | | | | | | | | | | | |
| SE580800 | Maint. Controlled Dsgn Assump. Document | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | | |
| SE530M3 | Requirement Documentation Revision | 0 | | 26NOV97* | P3 | | | | | | | | | | | | | | | |
| SE580AM4 | Controlled Dsgn Assump. Doc. Status Rpt. | 0 | | 02FEB98* | M4 | | | | | | | | | | | | | | | |
| SE530AM4 | Requirements Document Status Report | 0 | | 31MAR98* | M4 | | | | | | | | | | | | | | | |
| SE580BM4 | Controlled Dsgn Assump. Doc. Status Rpt. | 0 | | 31AUG98* | M4 | | | | | | | | | | | | | | | |
| SE530BM4 | Requirements Document Status Report | 0 | | 30SEP98* | M4 | | | | | | | | | | | | | | | |
| TR12GB3: Additional Underground Excavation Desig | | | | | | | | | | | | | | | | | | | | |
| SE800A80 | Support ESF Operations | 82 | 01OCT97* | 30JAN98 | | | | | | | | | | | | | | | | |
| SE806800 | Update Concept of Ops. for Operations of ESF | 63 | 02FEB98 | 30APR98 | | | | | | | | | | | | | | | | |
| SE806805 | Update Con. Ops./Turnover of ESF/Constru. to Oper. | 64 | 01APR98* | 30JUN98 | | | | | | | | | | | | | | | | |
| SE806AM4 | ESF ConOps Status Report | 0 | | 30JUN98* | | | | | | | | | | | | | | | | |
| SE806810 | Update ConOps/Turnover Perm. ESF to Repos. | 64 | 01JUL98 | 30SEP98 | | | | | | | | | | | | | | | | |
| SE806BM4 | ESF ConOps Status Report | 0 | | 30SEP98 | | | | | | | | | | | | | | | | |
| TR12GB4: ESF Operations Support | | | | | | | | | | | | | | | | | | | | |
| SE804900 | Update ESFDR for Add'l Under'grd Excav. | 63 | 04FEB98* | 04MAY98 | | | | | | | | | | | | | | | | |
| SE804AM3 | Add U'ground Exc. Revision of ESFDR | 0 | | 04MAY98 | P3 | | | | | | | | | | | | | | | |
| SE804910 | Update ESFDR for Mgmt Turnover/NLP-3-26 Impacts | 104 | 05MAY98 | 30SEP98 | | | | | | | | | | | | | | | | |
| SE804BM3 | ESF Transition Update of ESFDR | 0 | | 30SEP98 | P3 | | | | | | | | | | | | | | | |
| YP1XPP033: PPKg - SE125A - MGDS Design SRA - Ph | | | | | | | | | | | | | | | | | | | | |
| SE580 | Maintain MGDS Dsgn Assump. Document | 455 | 01OCT97* | 28JUL99 | | | | | | | | | | | | | | | | |
| TR13FB1: Program & Project Management Controls | | | | | | | | | | | | | | | | | | | | |
| SE418700 | Perform TRA | 123 | 01OCT96A | 31MAR97 | | | | | | | | | | | | | | | | |
| SE448700 | Evaluate Existing Project Documentation | 39 | 01OCT96A | 24DEC96 | | | | | | | | | | | | | | | | |
| SE449700 | Support TMIP Development | 251 | 02DEC96* | 30SEP97 | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT96 | Early | LRP0 |
| Project Finish | 01OCT98 | Progress Bar | |
| Date Date | 02DEC96 | Critical Activity | |
| Plot Date | 18DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Date | KRISHNA 12/16/96 (1800-REB) (5-5315) | Checked | Approved |
| Revision | | | |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MLE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | |
|---|--|-----|-------------|--------------|-----|------|--|--|--|------|--|--|--|------|--|--|--|----|--|
| | | | | | | | | | | | | | | | | | | | |
| SE448705 | Evaluate Precedent Documentation | 62 | 26DEC96 | 25MAR97 | | | | | | | | | | | | | | | |
| SE448706 | Status Briefing | 0 | | 25MAR97 | M4 | | | | | | | | | | | | | | |
| SE448710 | Prepare Draft Plan | 119 | 26MAR97 | 16JUL97 | | | | | | | | | | | | | | | |
| SE418701 | Status Briefing | 0 | | 31MAR97 | M4 | | | | | | | | | | | | | | |
| SE418710 | Develop Draft Plan | 97 | 01APR97 | 15AUG97 | | | | | | | | | | | | | | | |
| SE448715 | Conduct QAP-3-5 Review | 31 | 17JUL97 | 28AUG97 | | | | | | | | | | | | | | | |
| SE418720 | QAP-3-5 Review | 10 | 18AUG97 | 29AUG97 | | | | | | | | | | | | | | | |
| SE448720 | Prepare Final Plan | 22 | 29AUG97 | 30SEP97 | | | | | | | | | | | | | | | |
| SE418740 | Prepare Final Report | 21 | 02SEP97 | 30SEP97 | | | | | | | | | | | | | | | |
| SE418M3 | VA T&EP | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | |
| SE448M3 | Draft Compliance Plan Complete | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | |
| TR13GB1: Program & Project Management Controls | | | | | | | | | | | | | | | | | | | |
| SE419700 | Perform TRA | 123 | 01OCT97 | 31MAR98 | | | | | | | | | | | | | | | |
| SE450800 | Prepare Draft | 165 | 01OCT97* | 29MAY98 | | | | | | | | | | | | | | | |
| SE527 | Develop Technical Performance Measures | 367 | 01OCT97* | 22MAR99 | | | | | | | | | | | | | | | |
| SE527800 | Establish Parameter Selection Criteria | 61 | 01OCT97* | 31DEC97 | | | | | | | | | | | | | | | |
| SE540800 | Evaluate Previous Compliance Plan | 39 | 01OCT97 | 26NOV97 | | | | | | | | | | | | | | | |
| SE540805 | Prepare Draft Plan | 148 | 01DEC97 | 30JUN98 | | | | | | | | | | | | | | | |
| SE527810 | Select Parameters | 62 | 02JAN98 | 31MAR98 | | | | | | | | | | | | | | | |
| SE419AM4 | Status Briefing | 0 | | 31MAR98 | M4 | | | | | | | | | | | | | | |
| SE419710 | Develop Draft Plan | 96 | 01APR98 | 14AUG98 | | | | | | | | | | | | | | | |
| SE527820 | Develop Planned Profiles | 96 | 01APR98 | 14AUG98 | | | | | | | | | | | | | | | |
| SE450810 | QAP-3-5 Review | 32 | 01JUN98 | 15JUL98 | | | | | | | | | | | | | | | |
| SE540810 | Conduct QAP-3-5 Review | 32 | 01JUL98 | 14AUG98 | | | | | | | | | | | | | | | |

Project Start 01OCT95
 Project Finish 01OCT98
 Date Date 02DEC98
 Plot Date 18DEC98

Early
 Progress Bar
 Critical Activity

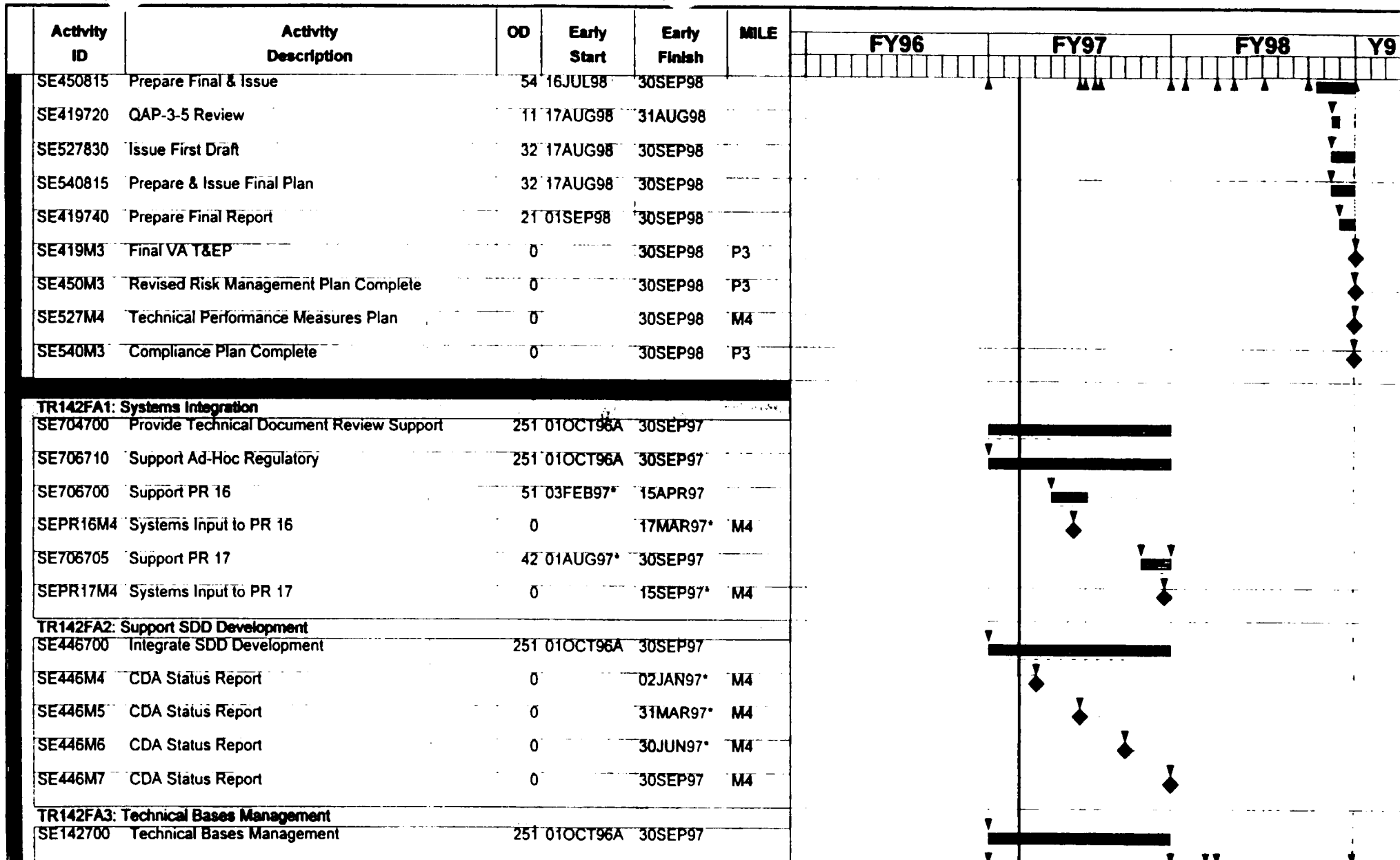
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YUCCA MOUNTAIN PROJECT PLAN
 WBS 1.2.1 - SYSTEMS ENGINEERING
 LONG RANGE PLAN (FY96-FY98)

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KRISHNA 12/18/98 (18000-RS) (S-3315)

Date _____ Revision _____ Checked _____ Approved _____



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| Project Start | 01OCT96 | | Early |
| Project Finish | 01OCT02 | | Progress Bar |
| Date Date | 02DEC96 | | Critical Activity |
| Plot Date | 18DEC96 | | |

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YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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KRISHNA 12/16/96 (1800418)(S-5315)

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| Date | Revision | Checked | Approved |
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| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | Timeline | | | |
|---|---|-----|-------------|--------------|------|----------|------|------|----|
| | | | | | | FY96 | FY97 | FY98 | Y9 |
| TR142GA1: Technical Bases Management | | | | | | | | | |
| SE142800 | Technical Bases Management | 455 | 01OCT97 | 26JUL99 | | | | | |
| TR142GA2: Systems Integration | | | | | | | | | |
| SE446800 | Integrate SDD Development | 455 | 01OCT97 | 26JUL99 | | | | | |
| SE704800 | Provide Technical Document Review Support | 455 | 01OCT97 | 26JUL99 | | | | | |
| SE706800 | Support Ad-Hoc Regulatory Interactions | 455 | 01OCT97* | 26JUL99 | | | | | |
| SE706835 | Support VA Design Summary Statement | 74 | 01OCT97* | 20JAN98 | | | | | |
| SE706840 | Support MGDS VA Review | 44 | 01OCT97 | 05DEC97 | | | | | |
| SE446AM4 | CDA Issues Status Report | 0 | | 02JAN98* | M4 | | | | |
| SE706810 | Support PR 18 | 143 | 02FEB98* | 24AUG98 | | | | | |
| SEPR18M4 | Systems Input to PR18 | 0 | | 13MAR98* | M4 | | | | |
| SE446BM4 | CDA Issues Status Report | 0 | | 31MAR98* | M4 | | | | |
| SE446CM4 | CDA Issues Status Report | 0 | | 30JUN98* | M4 | | | | |
| SE706820 | Support PR 19 | 137 | 25AUG98* | 15MAR99 | | | | | |
| SEPR19M4 | Systems Input to PR 19 | 0 | | 15SEP98* | M4 | | | | |
| SE446DM4 | CDA Issues Status Report | 0 | | 30SEP98* | M4 | | | | |
| TR142GA3: Support PISA Chapter 1 Development | | | | | | | | | |
| SE708800 | Review PISA Plan | 30 | 31OCT97* | 16DEC97 | | | | | |
| SE708810 | Support TOC Development | 15 | 31OCT97* | 21NOV97 | | | | | |
| SE708815 | Support AO Development | 15 | 31OCT97* | 21NOV97 | | | | | |
| SE708820 | Support Text Development | 55 | 24NOV97 | 12FEB98 | | | | | |
| SE708825 | Support Chapter 1 Review | 40 | 13FEB98 | 10APR98 | | | | | |
| TR142GA4: Support PISA Development | | | | | | | | | |
| SE708840 | Support PISA Chapter Integration | 187 | 01OCT97* | 30JUN98 | | | | | |
| SE708845 | Participate in Integrated M&O Review | 34 | 15JUN98* | 31JUL98 | | | | | |

Project Start 01OCT95
 Project Finish 01OCT02
 Date Date 02DEC98
 Post Date 18DEC98

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YUCCA MOUNTAIN PROJECT PLAN
 WBS 1.2.1 - SYSTEMS ENGINEERING
 LONG RANGE PLAN (FY96-FY98)

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KRISHNA 12/18/98 (1600HRS) (S-5315)

Date Revision Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | | | |
|--|---|-----|-------------|--------------|------|------------------|--|--|--|------|--|--|--|------|--|--|--|----|--|--|--|
| | | | | | | Gantt Chart Area | | | | | | | | | | | | | | | |
| SE708855 | Support DOE Review/Comment Resolution | 22 | 01JUL98 | 31JUL98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE708860 | Support PISA Completion | 15 | 03AUG98 | 21AUG98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| TR142GB1: Support PISA Chapter 11 Development | | | | | | | | | | | | | | | | | | | | | |
| SE306830 | Prepare First Draft | 61 | 01OCT97* | 31DEC97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE306835 | Coordinate First Draft Review | 41 | 03DEC97* | 30JAN98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE306AM4 | Deliver First Draft | 0 | | 31DEC97 | M4 | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE306840 | Prepare Final Draft | 44 | 02FEB98 | 03APR98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE306AM3 | Complete PISA Ch. 11 - Conduct of Operations | 0 | | 03APR98 | P3 | [Gantt Bar] | | | | | | | | | | | | | | | |
| TR15FB1: System Studies Support to SRA/Design | | | | | | | | | | | | | | | | | | | | | |
| SE050700 | Conduct Research & Development Plan | 23 | 01OCT96A | 06DEC96 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE440700 | Conduct Research | 32 | 01OCT96A | 06DEC96 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE506700 | Conduct Research | 31 | 01OCT96A | 06DEC96 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE050720 | Complete Initial Performance Confirmation Plan | 107 | 11NOV96A | 29AUG97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE506705 | Identify Sealing Options for Nevada Req'mts | 29 | 15NOV96A | 24DEC96 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE440705 | Dev. Apprch/Quantifying Thresh.Add'g Eng'rg Perf | 13 | 18NOV96A | 06DEC96 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE050705 | Estab. Draft Ref Perform. Confirm. Baseline | 60 | 09DEC96 | 05MAR97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE050710 | Supplement Perform. Confirm Requirements | 100 | 09DEC96 | 30APR97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE440710 | ID Eng'rd Components Contrib./Perform & Ass. Cost | 39 | 09DEC96 | 03FEB97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE440715 | Compare Contributions Against Threshold. | 49 | 09DEC96 | 18FEB97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE506710 | Identify Sealing Options for 10CFR60 Req'mts | 41 | 26DEC96 | 24FEB97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE506715 | Formulate Selection Criteria | 32 | 26DEC96 | 10FEB97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE440720 | Prepare Report Documenting Results | 35 | 17JAN97* | 07MAR97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE506720 | Evaluate Sealing Requirements Options | 53 | 11FEB97 | 25APR97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE440725 | Initiate QAP-3-5 Review & Deliver Report | 16 | 10MAR97 | 31MAR97 | | [Gantt Bar] | | | | | | | | | | | | | | | |

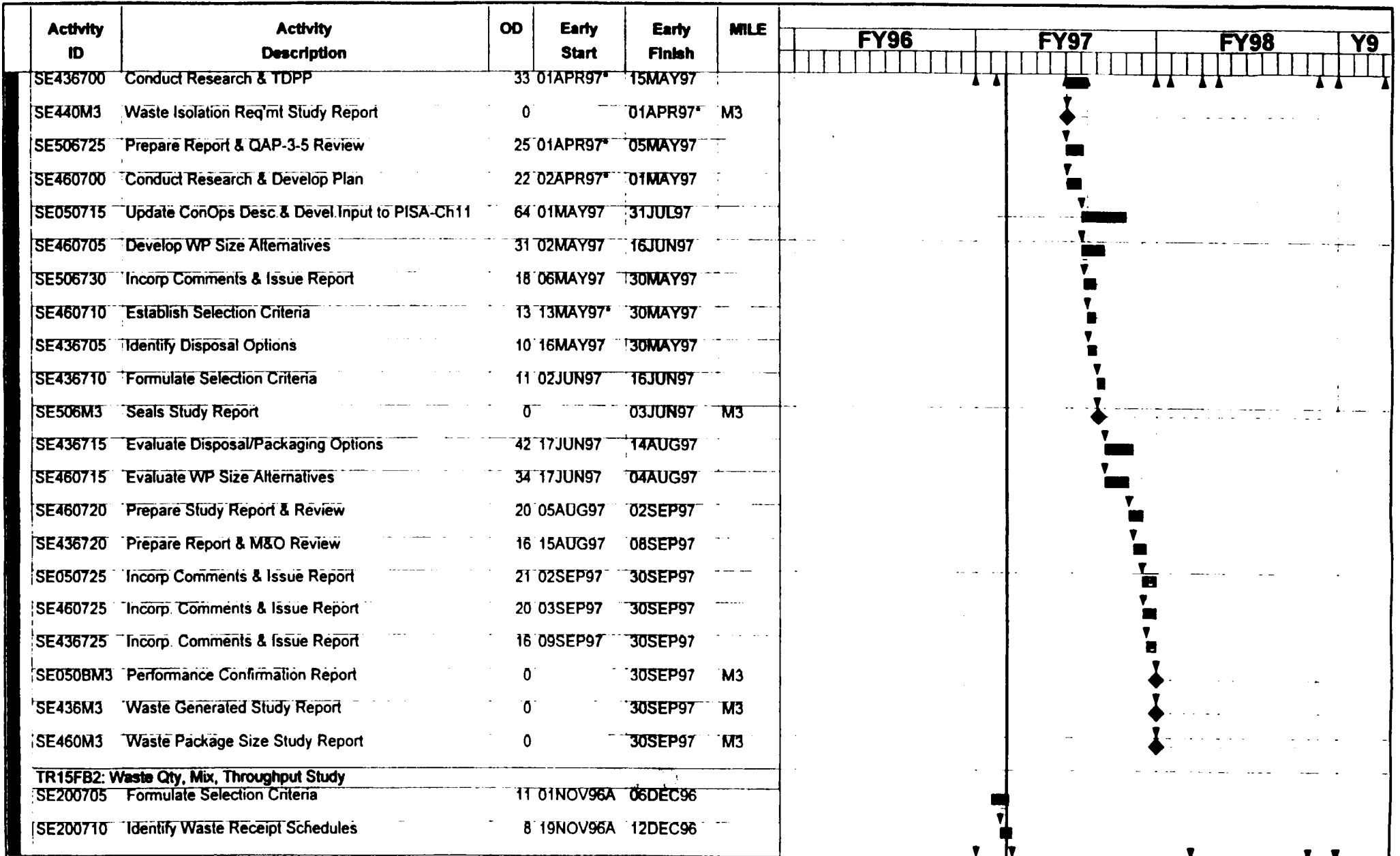
Project Start: 01OCT95
 Project Finish: 01OCT02
 Data Date: 02DEC96
 Plot Date: 18DEC96

Legend:
 [] Early
 [] Progress Bar
 [] Critical Activity

LRPO

YUCCA MOUNTAIN PROJECT PLAN
 WBS 1.2.1 - SYSTEMS ENGINEERING
 LONG RANGE PLAN (FY96-FY98)

Sheet 8 of 21
 KRISHNA 12/16/96 (1600HRS) (5-5315)
 Date: _____ Revision: _____
 Checked: _____ Approved: _____



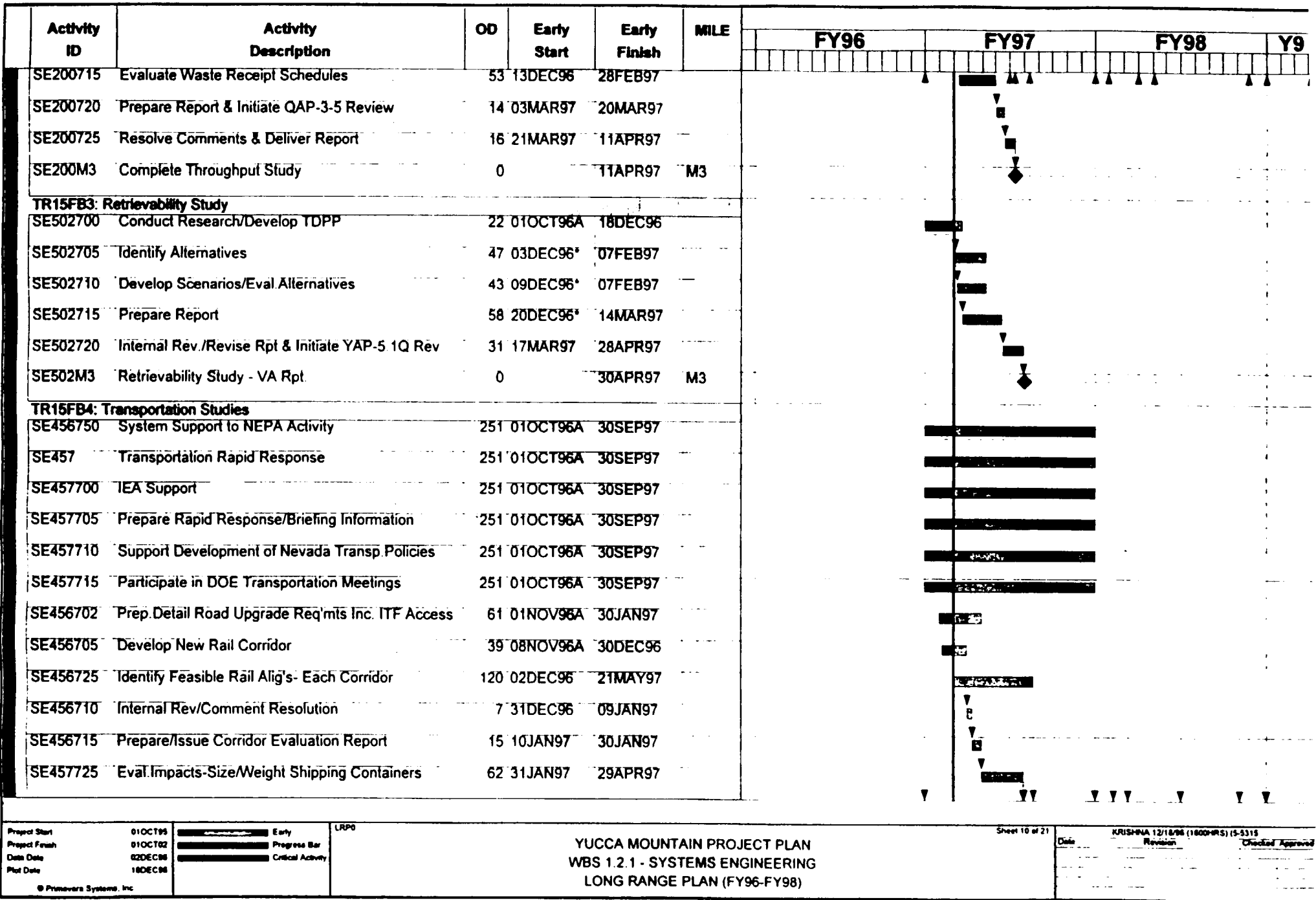
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| Project Start | 01OCT96 | | Early |
| Project Finish | 01OCT98 | | Progress Bar |
| Date Date | 02DEC96 | | Critical Activity |
| Plot Date | 18DEC96 | | |

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YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Date | KRUSHWA 12/18/96 (1800-ERS) (5-5315) |
| | Revision Checked Approved |



Project Start: 01OCT95
 Project Finish: 01OCT97
 Date Date: 02DEC96
 Plot Date: 18DEC96

Legend:
 [Bar Type] Early
 [Bar Type] Progress Bar
 [Bar Type] Critical Activity

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YUCCA MOUNTAIN PROJECT PLAN
 WBS 1.2.1 - SYSTEMS ENGINEERING
 LONG RANGE PLAN (FY96-FY98)

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Date: KRISHNA 12/18/96 (1800HRS) (5-5315)

Revision: Checked: Approved:

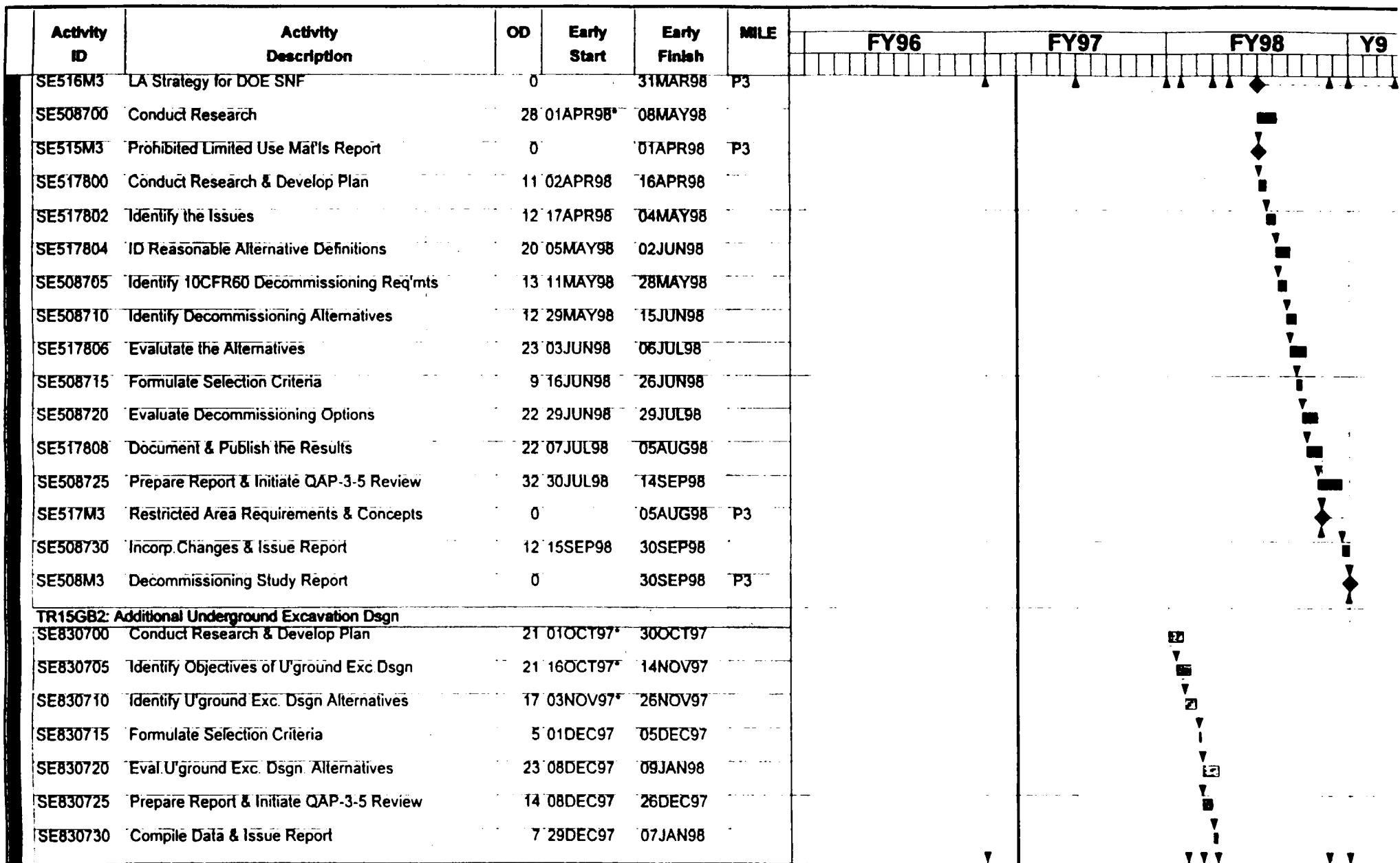
| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | Timeline | | | |
|--|---|-----|-------------|--------------|------|----------|------|------|----|
| | | | | | | FY96 | FY97 | FY98 | Y9 |
| SE456M3 | Rail Corridor Evaluation Report | 0 | | 30APR97* | M3 | | | | |
| SE457730 | Prep. Intermodal Transfer Station Altern. & Costs | 64 | 30APR97 | 30JUL97 | | | | | |
| SE456730 | Identify Single Preferred Alignments | 6 | 22MAY97 | 30MAY97 | | | | | |
| SE456735 | Prepare Report | 24 | 02JUN97 | 03JUL97 | | | | | |
| SE456740 | Internal Review & Comment Resolution | 5 | 07JUL97 | 11JUL97 | | | | | |
| SE456745 | Prepare & Issue Document | 44 | 14JUL97 | 12SEP97 | | | | | |
| SE457735 | Prep. Detail HH Cycle Times & Equip'mt Estimate | 43 | 31JUL97 | 30SEP97 | | | | | |
| TR15GB1: System Studies Support to SRA/Design | | | | | | | | | |
| SE457750 | IEA Support | 251 | 01OCT97 | 30SEP98 | | | | | |
| SE457755 | Prepare Rapid Response/Briefing Information | 251 | 01OCT97 | 30SEP98 | | | | | |
| SE457760 | Support Devel./Nevada Transp. Policies | 251 | 01OCT97* | 30SEP98 | | | | | |
| SE457765 | Participate in DOE Transportation Meetings | 251 | 01OCT97 | 30SEP98 | | | | | |
| SE508780 | System Studies Support to FA/RA | 251 | 01OCT97* | 30SEP98 | | | | | |
| SE515800 | Conduct Research & Develop Plan | 22 | 01OCT97* | 31OCT97 | | | | | |
| SE516800 | Conduct Research & Develop Plan | 22 | 01OCT97* | 31OCT97 | | | | | |
| SE515804 | Identify List-Prohibited or Limited use Mat'ls | 9 | 03NOV97 | 14NOV97 | | | | | |
| SE516802 | ID Issues Assoc. With DOE SNF Fuel Types | 9 | 03NOV97 | 14NOV97 | | | | | |
| SE515806 | ID Mat'ls That Have Significant Impact if Excl. | 19 | 17NOV97 | 15DEC97 | | | | | |
| SE516804 | ID Altern. for Dealing with the Issues | 51 | 17NOV97 | 30JAN98 | | | | | |
| SE515808 | ID Altern. Dsgn Concepts/do not Comp. exclud. mat'l | 32 | 16DEC97 | 30JAN98 | | | | | |
| SE515810 | Evaluate the Options | 19 | 02FEB98 | 27FEB98 | | | | | |
| SE516806 | Evaluate the Alternatives | 19 | 02FEB98 | 27FEB98 | | | | | |
| SE515812 | Document Results & Publish Report | 23 | 02MAR98 | 01APR98 | | | | | |
| SE516808 | Document & Publish the Results | 22 | 02MAR98 | 31MAR98 | | | | | |

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|----------------|---------|-------------------|------|
| Project Start | 01OCT95 | Early | LRP0 |
| Project Finish | 01OCT92 | Progress Bar | |
| Date Date | 02DEC98 | Critical Activity | |
| Plot Date | 18DEC98 | | |

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| Revision: | |
| Checked: | |
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|----------------|---------|-------------------|------|
| Project Start | 01OCT95 | Early | LRP0 |
| Project Finish | 01OCT92 | Progress Bar | |
| Date Date | 02DEC96 | Critical Activity | |
| Plot Date | 18DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Sheet 12 of 21 | Date | KRISHNA 12/18/98 (1600-PRS) (5-5315) |
| | Revision | Checked Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|--|---|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE830M3 | U'ground Exc. Design Req'mts Study Report | 0 | | 07JAN98 | P3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR15GB3: Systems Study Support to FA/RA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE900100 | Conduct Research & Develop Plan | 22 | 01APR98* | 30APR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE900102 | Identify the Issues | 22 | 16APR98* | 15MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE900104 | Identify Reasonable Alternative Decisions | 20 | 18MAY98 | 15JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE900106 | Evaluate the Alternatives | 43 | 16JUN98 | 14AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE900108 | Document & Publish the Results | 32 | 17AUG98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE900M3 | Thermal Management Technical Analysis | 0 | | 01OCT98 | P3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR15GB4: Waste Isolation / EBS Requirements | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125A10 | Conduct Research & Develop Plan | 22 | 01OCT97* | 31OCT97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125A20 | Identify Barriers | 18 | 03NOV97 | 01DEC97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125A30 | Conduct Performance Assessments | 52 | 02DEC97 | 13FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125A40 | Evaluate Results | 19 | 02FEB98* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125A50 | Prepare Report & Review | 19 | 17FEB98 | 13MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125A60 | Incorporate Comments & Issue Report | 13 | 16MAR98 | 01APR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE125AM3 | Waste Isolation / EBS Requirements Report | 0 | | 01APR98 | P3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YP1XPP033: PPKg - SE125A - MGDS Design SRA - Ph | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE514 | System Studies Support to FA/RA | 205 | 01OCT98 | 27JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR16FA1: Interface Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE426700 | Develop Bin3 Interfaces | 187 | 01OCT96A | 25JUL97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE426705 | Develop Bin2 Interfaces | 187 | 01OCT96A | 25JUL97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE426710 | Evaluate Interfaces | 187 | 01OCT96A | 25JUL97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE426715 | Document Interface Requirements | 46 | 28JUL97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE426M3 | Interface Management Process Report | 0 | | 30SEP97* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR16GA1: Interface Management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Project Start 01OCT95
Project Finish 01OCT92
Data Date 02DEC96
Plot Date 18DEC96

Legend:
 Early
 Progress Bar
 Critical Activity

LRP0

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
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Date KRISHNA 12/18/96 (1600HRS) (5-5315)
Revision
Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | FY97 | | | | FY98 | | | | Y9 | | |
|------------------------------------|--|-----|-------------|--------------|------|-----------------|--|--|--|--|------|--|--|--|------|--|--|--|----|--|--|
| | | | | | | [Calendar Grid] | | | | | | | | | | | | | | | |
| SE532810 | Update Bin 3 SSC Interface Requirements | 187 | 01OCT97* | 30JUN98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE532815 | Update Bin 2 SSC Interface Requirements | 187 | 01OCT97* | 30JUN98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE532820 | Evaluate Interfaces | 187 | 01OCT97* | 30JUN98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE532AM4 | Interface Management Status Report | 0 | | 31MAR98* | M4 | [Milestone] | | | | | | | | | | | | | | | |
| SE532825 | Update Interface Requirements | 64 | 01JUL98 | 30SEP98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE532BM4 | Interface Management Status Report | 0 | | 30SEP98 | M4 | [Milestone] | | | | | | | | | | | | | | | |
| TR17FB1: MGDS Cost Analysis | | | | | | | | | | | | | | | | | | | | | |
| SE124710 | Cost Models Update | 95 | 21OCT96A | 19FEB97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124715 | Interim MGDS-VA Cost Est. Analysis Update | 70 | 18NOV96A | 26FEB97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124M4 | PCE Assumptions Approved by RW-1 | 0 | | 17DEC96* | M4 | [Milestone] | | | | | | | | | | | | | | | |
| SE124725 | Prelim. Draft MGDS-VA Cost Est. Notebook | 78 | 20JAN97* | 08MAY97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124M4A | Update to RW-1 | 0 | | 19MAR97* | M4 | [Milestone] | | | | | | | | | | | | | | | |
| SE124720 | Preliminary Draft MGDS-VA Cost Est. Report | 36 | 20MAR97 | 08MAY97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124735 | Final Draft MGDS-VA Cost Est. Report | 66 | 29MAY97* | 29AUG97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124740 | Final Draft MGDS-VA Cost Est. Notebook | 33 | 16JUL97* | 29AUG97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124745 | Final MGDS-VA Cost Estimate Report | 21 | 02SEP97* | 30SEP97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124M4B | Final MGDS-VA Cost Est. Comments Received | 0 | | 09SEP97* | M4 | [Milestone] | | | | | | | | | | | | | | | |
| SE124AM3 | Submit Cost Estimate | 0 | | 30SEP97 | M3 | [Milestone] | | | | | | | | | | | | | | | |
| TR17GB1: MGDS Cost Analysis | | | | | | | | | | | | | | | | | | | | | |
| SE124800 | Develop VA Case Assumptions | 23 | 01OCT97* | 03NOV97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124805 | Develop 98 TSLCC Assumptions | 28 | 06OCT97* | 14NOV97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124810 | Cost Models (VA & TSLCC) Update | 33 | 20OCT97* | 08DEC97 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124815 | Prepare Draft TSLCC & VA Estimates | 37 | 14NOV97* | 09JAN98 | | [Gantt Bar] | | | | | | | | | | | | | | | |
| SE124825 | Draft TSLCC Documentation for ICE | 55 | 17NOV97* | 05FEB98 | | [Gantt Bar] | | | | | | | | | | | | | | | |

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|----------------|---------|----------------|----------|
| Project Start | 01OCT95 | ----- Critical | Early |
| Project Finish | 01OCT02 | ----- Progress | Bar |
| Date Code | 02DEC95 | ----- Critical | Activity |
| Print Date | 18DEC95 | | |

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YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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KRISHNA 12/18/96 (1800HRB) (5-5315)

Date Revision Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | Timeline | | | |
|---|--|-----|-------------|--------------|------|----------|------|------|----|
| | | | | | | FY96 | FY97 | FY98 | Y9 |
| SE124830 | Update VA Estimates | 55 | 09DEC97* | 26FEB98 | | | | | |
| SE124820 | Draft TSLCC Report for ICE | 12 | 19JAN98* | 03FEB98 | | | | | |
| SE124855 | Prepare Final Cost Documentation | 135 | 09FEB98* | 19AUG98 | | | | | |
| SE124835 | Support Ice Review | 55 | 02MAR98* | 15MAY98 | | | | | |
| SE124840 | Prepare Final VA Estimate | 77 | 16MAR98* | 01JUL98 | | | | | |
| SE124845 | Update TSLCC per ICE Inputs | 34 | 06JUL98* | 20AUG98 | | | | | |
| SE124860 | Support YMSCO Review | 27 | 15JUL98* | 20AUG98 | | | | | |
| SE124850 | Prepare Final VA Cost Report | 20 | 24JUL98* | 20AUG98 | | | | | |
| SE124M3 | Issue MGDS Cost Analysis to YMSCO for Review | 0 | | 20AUG98 | P3 | | | | |
| TR18FA1: Specialty Engineering Support to MGDS D | | | | | | | | | |
| SE720700 | Provide SA Supt-Nuclear Facility Design | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720705 | Provide SA Supt-Site Util Sys.Dsgn | 208 | 01OCT96A | 30JUL97 | | | | | |
| SE720710 | Provide SA-Underground HVAC Sys.Req'ts | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720715 | Provide SA-SubSurf.WP Handling Dsgn | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720730 | Provide SA Supt.-Devel of Retrieval Dsgn | 208 | 01OCT96A | 30JUL97 | | | | | |
| SE720735 | SA Supt-Devel/Dsgn Guide-Radiation Shield-Drifts | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720740 | Prov.Dsgn Safety Input/Review Empl.Strategies-RP | 102 | 01OCT96A | 28FEB97 | | | | | |
| SE720750 | Provide SA-MGDS Concept of Operations | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720752 | Provide SA-Bin3 Sys.Description Documents | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720754 | Provide SA To Bin 3 SRA Design-Phase 1 | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720758 | Provide SA-Bin2 System Description Doc's | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720760 | Rvw VA Test and Evaluation Plan | 251 | 01OCT96A | 30SEP97 | | | | | |
| SE720762 | Provide Analysis Rqmts. to MGDS DRD & CRWMS RD | 251 | 01OCT96A | 30SEP97 | | | | | |

Project Start 01OCT95
 Project Finish 01OCT98
 Data Date 02DEC98
 Plot Date 18DEC98

Legend:
 [] Early
 [] Progress Bar
 [] Critical Activity

LRP0

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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 Date KRISHNA 12/18/98 (1800HRS) (5-5315)
 Revision _____
 Checked _____
 Approved _____

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 |
|-------------|--|-----|-------------|--------------|------|------|---|---|---|------|---|---|---|------|---|---|---|----|
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| SE722734 | Provide HFE Inputs to MGDS CoO | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722736 | Provide HFE Inputs to Bin 3 System Desc. Doc. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722738 | Provide HFE Inputs SRA Dsgn-Bin 3 Ph-1 | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722742 | Provide HFE Inputs to the Bin 2 Sys. Descr. Doc. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722744 | Provide HFE Inputs SRA Dsgn-Bin 2 Ph-1 | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722748 | Rvw VA Test & Eval. Plan | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722750 | Provide New/Updated/Mod. HFE Rqmts | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722752 | Provide HFE Inputs for SSC Interfaces | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722754 | Provide Inputs on Applic. of HFE Reg. Guidelines | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722758 | Prov. HFE Inputs/Rvw MGDS Dsgn Assump. Doc | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722760 | Provide HFE Inputs to Retrievability CoO | 133 | 01OCT96A | 14APR97 | | | | | | | | | | | | | | |
| SE722762 | Provide HFE Sppt. to Document Reviews | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722764 | Provide HFE Inputs to Progress and Adhoc Rpts | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722766 | Provide HFE Inputs to Safety Anal. Act. & Rpts. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722778 | Rvw Interface Drwg Pkgs for HFE Rqmts | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722780 | Participate in Mockup Test to Eval. Welding Proc | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722782 | Dev/Eval. Proced. for Testing & Exam Closure Wel | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE722784 | Provide HFE Inputs to Prelim. EBS Sys. Desc. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE724700 | RAM Sppt. to SRA/Dsgn | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE724702 | Provide RAM Sppt. to Updating/Integration | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE724704 | Provide RAM Sppt. to Site-Utilities Sys. Dsn | 208 | 01OCT96A | 30JUL97 | | | | | | | | | | | | | | |
| SE724708 | Provide RAM Sppt. to Subsurface WP Handling Dsgn | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |
| SE724714 | Provide RAM Analysis Inputs to MGDS CoO | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | |

Project Start 01OCT96
Project Finish 01OCT97
Date Date 02DEC96
Plot Date 18DEC96

LRPO

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YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

Date KRISHNA 12/18/96 (1600-RRS) (5-3315)
Revision _____
Checked _____
Approved _____

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|-------------|---|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| SE724716 | Provide RAM Anal. Inputs Bin 3 Sys. Des. Doc's | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724718 | Prov. RAM Anal. Inputs SRA Dsgn P-1/Bin 3 | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724722 | Prov. RAM Anal. Inputs Bin 2 Sys. Desc. Doc (SDD) | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724724 | Prov. RAM Anal. Inputs SRA/Dsgn P-1 for Bin 2 | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724728 | Rvw the VA Test & Eval. Plan to Ensure RAM | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724730 | Provide New/Update/Mod. RAM | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724732 | Provide Inputs on Applic. of RAM Analysis | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724734 | Provide RAM Analysis Inputs to Retrie. CoO | 133 | 01OCT96A | 14APR97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724736 | Provide RAM Analysis Sppt. to Doc. Rvws | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724738 | Provide RAM Analysis Inputs to Progress & Adhoc | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724742 | Rvw Interface Drwg Pkgs for Inclusion RAM Anal. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724744 | Provide RAM Anal. Inputs to Prelim. EBS Sys. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724746 | Prov. RAM Supt. U'ground HVAC Sys. Req'mts | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724750 | Prov. RAM Supt. Devel. Retrieval Dsgn. | 230 | 01OCT96A | 29AUG97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE722720 | Provide HFE Dsgn Inputs/Subsurf. Facility Arrang | 187 | 01NOV96A | 27JUN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE722722 | Prov. Prelim. HFE Inputs/Specs. Emerg. Warn. System | 187 | 01NOV96A | 27JUN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE722704 | Prelim. HFE Dsgn to Include Site & Facil. Access | 147 | 03JAN97* | 31JUL97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE720720 | Provide SA Supt. -Prelim. Sealing/Closure Dsgn | 141 | 11FEB97* | 29AUG97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724748 | Prov. RAM Supt. Prelim. Sealing/Closure Dsgn | 141 | 11FEB97* | 29AUG97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE722756 | Provide Inputs Concerning HFE Dsgn Features | 128 | 01APR97* | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE720756 | Provide SA Desc. of Ops. & Maint. Desc. -Bin 3 | 107 | 30APR97* | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE720765 | Prov. SA to Desc. Of Ops & Maint. Cond/Bin 2 | 107 | 30APR97* | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE722740 | Provide HFE Inputs Desc. Oper. & Maint. /Bin3 | 107 | 30APR97* | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT96 | Early | LRPO |
| Project Finish | 01OCT97 | Progress Bar | |
| Date Date | 02DEC96 | Critical Activity | |
| Plot Date | 18DEC96 | | |

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YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Sheet 18 of 21 | Date | KRISHNA 12/18/96 (1600HRS) (5-5315) |
| | Revision | Checked / Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|---|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------------|--|--|--|--|--|--|--|--|--|--|--|------------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| SE722746 | Provide HFE Inputs Desc. Oper. & Maint /Bin 2 | 107 | 30APR97* | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724720 | Prov. RAM Anal. Inputs Bin 3 Desc. Oper. & Maint. | 107 | 30APR97* | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724726 | Prov. RAM Anal. Inputs Bin 2 Desc. Oper. & Maint. | 107 | 30APR97* | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR18FB1: Support ESF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814702 | Provide SA Inputs/Rvw ESF ConOps Update | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814704 | Provide Safety Anal. Inputs/Rvw to ESFDR | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814706 | Provide Safety Anal. ESF Facilities/Part. CCB | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814766 | Provide Dsgn Safety Inputs/ESF Subsurf. Facil. | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814776 | Prov. Dsgn Safety Inputs/ESF Surface Facilities | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814781 | Eval. Data/DS Heating Phase Single Heater Test | 163 | 01OCT96A | 27MAY97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814787 | Rvw Asbuilt Inputs ESF, O&M Baseline & ESFDR Rqm | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814793 | Provide Dsgn Safety Rqmts Inputs Emerg. Ops Ctr | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814798 | Provide Dsgn Safety Info the Dev. of EOC | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814700 | Update SSA's to As-Built as Required | 229 | 01NOV96A | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814792 | Prov. Dsgn Safety Inputs to Title IIDsgn ESF SGDF | 28 | 13JAN97* | 20FEB97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814784 | Prov. Dsgn Safety/Single Heater Test Status Rpt | 115 | 18APR97* | 30SEP97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE814M3 | Deliver Saftey Analysis Activity Report (SAAR) | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR18FB2: Perform MGDS Safeguards & Security Land | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE500700 | Perform Safeguards & Sec. Land Withdrawal Study | 81 | 02JAN97* | 25APR97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE500705 | Write Draft Report | 10 | 28APR97 | 09MAY97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE500710 | Internal & External Review | 29 | 12MAY97 | 20JUN97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE500715 | Prepare Final Report | 5 | 23JUN97 | 27JUN97 | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE500M3 | Safeguards & Security Land Withdrawal Study Rpt. | 0 | | 27JUN97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR18GA1: Specialty Engineering Support to MGDS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE720791 | Provide Specialty Engineering Support to PISA | 146 | 01OCT97* | 01MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | ██████████ | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT96 | ██████████ | Early |
| Project Finish | 01OCT97 | ██████████ | Progress Bar |
| Data Date | 02DEC96 | ██████████ | Critical Activity |
| Plot Date | 18DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Sheet 18 of 21 | KRISHNA 12/18/96 (1800-HRS) (5-5318) |
| Date | Revision |
| Checked | Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|---|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| SE720A | Provide System Safety Support to SRA/Design | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE722A | Provide HFE Support to SRA/Design | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE724A | Provide RAM Support to SRA/Design | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE726A | Provide ILS Support to SRA/Design | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR18GA2: Specialty Engineering Support to ESF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE812 | Update Maindrift SSA to Add 1 U-Grnd Excavation | 106 | 01MAY98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE812M4 | Briefing Maindrift SSA | 0 | | 30SEP98 | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR18GA3: Safeguards & Security | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE730A | Provide Safeguards, Security to SRA/Design | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR1AFA1: Degraded Mode Criticality | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A700 | Degraded Mode Criticality | 32 | 01OCT96A | 06DEC96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1ADM3 | Degraded Mode Crit. Analysis of Immob. Plut. | 0 | | 06DEC96 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR1AFA2: External Criticality | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A705 | External Criticality | 198 | 02DEC96* | 11SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A2M3 | Rpt. External Criticality of Plutonium | 0 | | 11SEP97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR1AFA3: Plan/Strategy for Inclu of Plut Wst int | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A710 | Plan/Strategy -Inclusion of Plut Waste in FWMS | 145 | 01OCT96A | 27MAY97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A3M3 | Approach to Incorp. Plut. Waste into FWMS | 0 | | 27MAY97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR1AFA4: Plan Implementation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A715 | Plan Implementation | 118 | 03MAR97* | 15AUG97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A4M3 | Data Needs Document | 0 | | 30JUN97* | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE1A5M3 | Draft MOA | 0 | | 29AUG97* | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR1BFB1: DBE Definition & Analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE310700 | DBE FY'97 (1ST HALF) | 123 | 01OCT96A | 31MAR97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SE310705 | DBE FY'97 (2ND HALF) | 128 | 01APR97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early | LRPO |
| Project Finish | 01OCT02 | Progress Bar | |
| Date Date | 02DEC96 | Critical Activity | |
| Plot Date | 18DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

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| Sheet 20 of 21 | KRISHNA 12/18/96 (1600-RRS) (S-5315) |
| Date | Revision |
| Checked | Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | Timeline | | | |
|---|------------------------------------|-----|-------------|--------------|------|---|------|------|----|
| | | | | | | FY96 | FY97 | FY98 | Y9 |
| TR1BFB2: Classification Analysis/Q-List Update | | | | | | | | | |
| SE320700 | CA/Q-List FY'97 (1st Half) | 123 | 01OCT96A | 31MAR97 | | [Gantt bar spanning FY96 Q4 to FY97 Q1] | | | |
| SE320705 | CA/Q-List FY'97 (2nd Half) | 128 | 01APR97 | 30SEP97 | | [Gantt bar spanning FY97 Q2 to FY97 Q3] | | | |
| TR1BFB3: DIE Analyses | | | | | | | | | |
| SE820700 | DIE FY'97 (1ST QTR) | 61 | 01OCT96A | 31DEC96 | | [Gantt bar spanning FY96 Q4] | | | |
| SE820705 | DIE FY'97 (2ND QTR) | 62 | 02JAN97 | 31MAR97 | | [Gantt bar spanning FY97 Q1] | | | |
| SE820710 | DIE FY'97 (3RD QTR) | 64 | 01APR97 | 30JUN97 | | [Gantt bar spanning FY97 Q2] | | | |
| SE820715 | DIE FY'97 (4TH QTR) | 64 | 01JUL97 | 30SEP97 | | [Gantt bar spanning FY97 Q3] | | | |
| SE820M3 | DIE FY'97 REPORT | 0 | | 30SEP97 | M3 | [Milestone diamond at end of FY97 Q3] | | | |
| TR1BGA1: DIE Analyses | | | | | | | | | |
| SE822800 | DIE FY'98 | 251 | 01OCT97* | 30SEP98 | | [Gantt bar spanning FY97 Q4 to FY98 Q3] | | | |
| SE822M4 | DIE FY'98 Briefing | 0 | | 30SEP98 | M4 | [Milestone diamond at end of FY98 Q3] | | | |
| TR1BGA2: PISA Chapter 7 | | | | | | | | | |
| SE5603 | Support Chapter 7 PISA Development | 224 | 10NOV97* | 30SEP98 | | [Gantt bar spanning FY97 Q4 to FY98 Q3] | | | |
| TR1BGB1: Classification Analysis/Q-List Update | | | | | | | | | |
| SE322800 | CA/Q-List FY'98 (1st Half) | 123 | 01OCT97 | 31MAR98 | | [Gantt bar spanning FY98 Q1 to FY98 Q2] | | | |
| SE322805 | CA/Q-List FY'98 (2nd Half) | 128 | 01APR98 | 30SEP98 | | [Gantt bar spanning FY98 Q3 to FY98 Q4] | | | |
| TR1BGB2: DBE Definition & Analysis | | | | | | | | | |
| SE310800 | DBE FY'98 (1ST HALF) | 123 | 01OCT97 | 31MAR98 | | [Gantt bar spanning FY98 Q1 to FY98 Q2] | | | |
| SE310805 | DBE FY'98 (2ND HALF) | 128 | 01APR98 | 30SEP98 | | [Gantt bar spanning FY98 Q3 to FY98 Q4] | | | |

| | | | |
|----------------|---------|----------|------|
| Project Start | 01OCT95 | [Legend] | LRPO |
| Project Finish | 01OCT92 | [Legend] | |
| Data Date | 02DEC96 | [Legend] | |
| Plot Date | 18DEC96 | [Legend] | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.1 - SYSTEMS ENGINEERING
LONG RANGE PLAN (FY96-FY98)

Sheet 21 of 21

KRISHNA 12/18/96 (1800HRS) (S-5315)
 Date: _____ Revision: _____ Checked: _____ Approved: _____

APPENDIX J

WASTE PACKAGE DEVELOPMENT AND MATERIALS SCHEDULE

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 12/16/96. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact C. Chagnon. For suggested changes to the contents, contact A. Segrest.

WASTE PACKAGE DEVELOPMENT AND MATERIALS SCHEDULE

The Waste Package Development and Materials (WBS 1.2.2) schedule for FY 97/98 is provided. This schedule reflects the current status of the FY 98 planning activity. All of the Waste Package Development and Materials activities are tied to the VA milestone, except those that exclusively support the EIS/NEPA development.

| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 | | | FY98 | | | FY99 | | | | | | | | | | | | |
|--|--|-------------|--------------|--------|------|---|---|------|---|---|------|---|---|---|---|---|---|---|---|--|--|--|--|
| | | | | | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 1.2.2 Waste Package | | | | | | | | | | | | | | | | | | | | | | | |
| YP2XPP017: PPKg - WP0020M2B - Complete EMCR Rev | WP0020M2B Complete Engr. Matls. Char. Rpt. Rev 2 | | 01APR99' | 0 | | | | | | | | | | | | | | | | | | | |
| YP2XPP021: PPKg - WP0035M2B - Complete WFCR Rev | WP0035M2B Complete Waste Form Char. Rpt. Rev 1 | | 26FEB97' | 0 | | | | | | | | | | | | | | | | | | | |
| YP2XPP023: PPKg - WP015M2B - Complete EMCR Rev 1 | WP015M2B Complete EMCR Rev 1 | | 26FEB97' | 0 | | | | | | | | | | | | | | | | | | | |
| YP2XPP028: PPKg - WP080M2 - Complete Disposal Cr | WP080M2 Complete Disposal Criticality Technical Report | | 14AUG96' | 100 | | | | | | | | | | | | | | | | | | | |
| YP2XPP032: PPKg - WP110M2B - Complete WFCR Rev 2 | WP110M2B Complete Waste Form Char. Rpt. Rev 2 | | 30NOV98' | 0 | | | | | | | | | | | | | | | | | | | |
| YP2XPP036: PPKg - WP150M2 - Update Disposal Crit | WP150M2 Update Disposal Criticality Topical Report | | 08OCT97' | 0 | | | | | | | | | | | | | | | | | | | |
| 1.2.2.1 Waste Package Coordination and Planning | | | | | | | | | | | | | | | | | | | | | | | |
| TR21FA2: Management & Integration Outside EBS | WP21FA2 Management & Integration Outside EBS - Ph I | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| TR21FA3: OPI/EDC/PCG - Ph I | WP21FA3 OPI/EDC/PCG - Ph I | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| TR21FA4: MGDS Waste Package Dsgn Review Phase I | WP21FA4 MGDS Phase I Dsgn Review - Waste Package | 02APR97' | 30SEP97' | 0 | | | | | | | | | | | | | | | | | | | |
| TR21FA5: WPD Management & Integration Phase I | WP21702 Dev WP Design Completion Letter Report | 01OCT96' | 11SEP97' | 9 | | | | | | | | | | | | | | | | | | | |
| | WP21FA5 WPD Management & Integration | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| | WP21704 Submit EBS/WP Ph-1 Dsgn. Comp. Letter Rpt | | 12SEP97' | 0 | | | | | | | | | | | | | | | | | | | |
| TR21FA6: LLNL M&I Phase I | WP21FA6 LLNL M&I Phase I | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| TR21FA7: Support LLNL Lab Leads | WP21FA7 Support LLNL Lab Leads | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| TR21FA8: PR Preparation - LLNL | WP21FA8 PR Preparation - LLNL | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| TR21FA9: Annual/Long Range Planning - LLNL | WP21FA9 Annual/Long Range Planning -LLNL | 01OCT96' | 30SEP97' | 8 | | | | | | | | | | | | | | | | | | | |
| TR21FAA: Waste Package Consulting Board | WP21FAA Waste Package Consulting Board | 02DEC96' | 29MAY97' | 0 | | | | | | | | | | | | | | | | | | | |

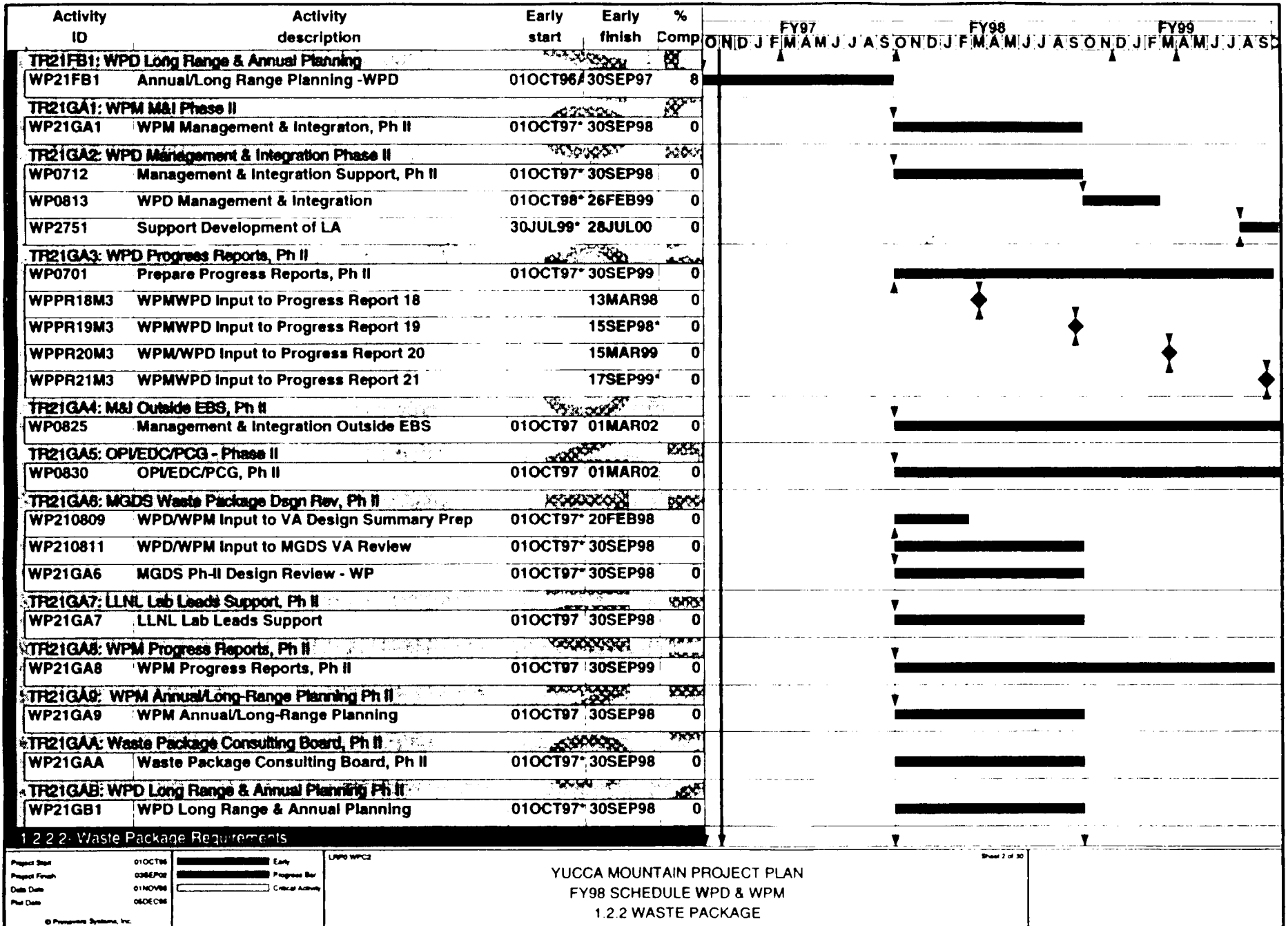
Project Start 01OCT96
Project Finish 03SEP97
Date Date 01NOV98
Plot Date 08DEC98

Legend:
 Early
 Progress Bar
 Critical Activity

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UCCA MOUNTAIN PROJECT PLAN
FY98 SCHEDULE WPD & WPM
1.2.2 WASTE PACKAGE

Sheet 1 of 30



1.2.2.2 Waste Package Requirements

| | | | |
|----------------|---------|-------------------|----------|
| Project Start | 01OCT96 | Early | UNP WPCZ |
| Project Finish | 03SEP98 | Progress Bar | |
| Start Date | 01NOV96 | Critical Activity | |
| Plan Date | 06DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | FY99 | | | | | | | | | | | | |
|---|--|-------------|--------------|--------|-------------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O |
| WP220732 | Update WP Off-Normal & Acc. Scenario Rep. | 01OCT96 | 31JAN97 | 34 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220731 | Est Freq of MGDS DBES | 06JAN97 | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220733 | Review WP Off-Normal & Acc. Scenario Rep. | 03FEB97 | 17MAR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220734 | Submit WP DBE document | | 17MAR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220736 | Assemble/Dev input for MGDS DBE and Q-List | 18MAR97 | 29AUG97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220740 | Dev IOC to WP design indicat WP DBEs reqrmg | 18MAR97 | 31MAR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220742 | Submit IOC to WP design | | 31MAR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220735 | Document WP DBEs Requiring Design Analysis | 02APR97 | 01JUL97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220737 | Define DBE Prameters | 02JUL97 | 30SEP97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220738 | Submit input to MGDS DBE and Q-List class. | | 29AUG97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR22FB4: Complete Phase I of EB Segment Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220748 | Collect information on materials performance. | 01OCT96 | 30SEP97 | 1 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220744 | Dev select crit for dist between levels of perf | 01NOV96 | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220746 | Select candidate matls for WP Support & Invert | 01NOV96 | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220750 | Select ref matls from the candidate materials. | 02DEC96 | 03MAR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220756 | Prep TSPA-VA Input IOC for PA documenting | 04MAR97 | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP0509L3 | Provide EBS input to TSPA-VA | | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220758 | Submit IOC to PA | | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220752 | Prepare QA documentation of matls select | 02APR97 | 15AUG97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220754 | Submit EBS/WP Materials Selection Analysis | | 15AUG97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR22FB5: Determine Near Field Environment Impact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220760 | Collect models for waste package material degrad | 01OCT96 | 05FEB97 | 8 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220762 | Collect design information. | 03FEB97 | 01APR97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220764 | Application on data to predicting performance. | 03MAR97 | 29AUG97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220765 | Submit IOC to PA Desc NFE degrad effects on | | 29AUG97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR22FB6: Prepare Progress Reports - WPD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220701 | Prepare Progress Reports | 01OCT96 | 30SEP97 | 7 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220705 | Provide Input & Forecast to Prog Reports | 01NOV96 | 30SEP97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220709 | Support Interactive Review | 01NOV96 | 30SEP97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP220711 | Support issue Resolution | 01NOV96 | 30SEP97 | 0 | [Gantt bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Project Start 01OCT96
Project Finish 00SEP98
Date Date 01NOV98
Plot Date 06OCT98

01OCT96 [] Early
00SEP98 [] Progress Bar
01NOV98 [] Critical Activity
06OCT98 []

LNPO WPC2

YUCCA MOUNTAIN PROJECT PLAN
FY98 SCHEDULE WPD & WPM
1.2.2 WASTE PACKAGE

| Activity ID | Activity description | Early start | Early finish | % Comp | Gantt Chart (FY97, FY98, FY99) | | | | | | | | | | | |
|--|--|-------------|--------------|--------|---------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| WP0807 | Document & Update EB Segment Matls Selection | 01OCT97 | 30SEP98 | 0 | [Gantt bar from Oct 1997 to Sep 1998] | | | | | | | | | | | |
| WP220805 | Revised WP/EB Seg Matls Selection Analysis Ph II | | 30SEP98 | 0 | [Gantt bar ending at Sep 1998] | | | | | | | | | | | |
| TR22GB5: Cladding Degradation Model for TSPA LA | | | | | | | | | | | | | | | | |
| WP0808 | Develop Cladding Degrad.Model for TSPA-VA | 01OCT97 | 30JUL98 | 0 | [Gantt bar from Oct 1997 to Jul 1998] | | | | | | | | | | | |
| TR22GB7: Near Field Environment Impacts, Ph II | | | | | | | | | | | | | | | | |
| WP227 | Near Field Environment Impacts, Phase II | 01OCT97 | 30SEP98 | 0 | [Gantt bar from Oct 1997 to Sep 1998] | | | | | | | | | | | |
| 1.2.2.3.1. Multi-Purpose Canister | | | | | | | | | | | | | | | | |
| TR231FA1: Complete Phase I of CF Disposal Contal | | | | | | | | | | | | | | | | |
| WP231720 | Dev Compare & Contrast Table for UCF Evals | 01OCT96 | 31MAR97 | 15 | [Gantt bar from Oct 1996 to Mar 1997] | | | | | | | | | | | |
| WP231722 | Dev Tbl Comparing M&O 93 MPC Design | 01APR97 | 30SEP97 | 0 | [Gantt bar from Apr 1997 to Sep 1997] | | | | | | | | | | | |
| TR231GB1: CF Disposal Container Ph II | | | | | | | | | | | | | | | | |
| WP231800 | Prepare List of Eng'g Eval's/Analyses | 01OCT97 | 02DEC97 | 0 | [Gantt bar from Oct 1997 to Dec 1997] | | | | | | | | | | | |
| WP231802 | Perform Thermal evaluations | 01OCT97 | 10JUL98 | 0 | [Gantt bar from Oct 1997 to Jul 1998] | | | | | | | | | | | |
| WP231804 | Perform Structural evaluations | 01OCT97 | 10JUL98 | 0 | [Gantt bar from Oct 1997 to Jul 1998] | | | | | | | | | | | |
| WP231806 | Perf.Criticality Determination, Evaluation | 01OCT97 | 01JUL98 | 0 | [Gantt bar from Oct 1997 to Jul 1998] | | | | | | | | | | | |
| WP231808 | Evaluate 2 Std. Canisters | 01OCT97 | 16MAR98 | 0 | [Gantt bar from Oct 1997 to Mar 1998] | | | | | | | | | | | |
| WP231809 | Group Canister Types & Select 1 | 01OCT97 | 22DEC97 | 0 | [Gantt bar from Oct 1997 to Dec 1997] | | | | | | | | | | | |
| WP231817 | Support Standard Canister Comm Dev Effort | 01OCT97 | 30SEP98 | 0 | [Gantt bar from Oct 1997 to Sep 1998] | | | | | | | | | | | |
| WP231818 | Perform Shielding Analyses | 01OCT97 | 08JUL98 | 0 | [Gantt bar from Oct 1997 to Jul 1998] | | | | | | | | | | | |
| WP231814 | Prepare Technical Input Sheets | 03DEC97 | 19FEB98 | 0 | [Gantt bar from Dec 1997 to Feb 1998] | | | | | | | | | | | |
| WP231812 | Assess vendor(s) CF des acceptability to MGDS | 05JAN98 | 30SEP98 | 0 | [Gantt bar from Jan 1998 to Sep 1998] | | | | | | | | | | | |
| WP231811 | Sub Des Basis Canister Sel Letter Report | | 16MAR98 | 0 | [Gantt bar ending at Mar 1998] | | | | | | | | | | | |
| WP231810 | Prepare engineering sketches | 17MAR98 | 27OCT98 | 0 | [Gantt bar from Mar 1998 to Oct 1998] | | | | | | | | | | | |
| WP0501 | Complete Dev of CF Disposal Container Design | 28OCT98 | 27OCT99 | 0 | [Gantt bar from Oct 1998 to Oct 1999] | | | | | | | | | | | |
| WP231801 | Consolidate CF Des Input Fm SDDs (LOE) | 02AUG99 | 31JUL00 | 0 | [Gantt bar from Aug 1999 to Jul 2000] | | | | | | | | | | | |
| WP2752 | Document Development of CF Disposal Container | 02AUG99 | 04FEB00 | 0 | [Gantt bar from Aug 1999 to Feb 2000] | | | | | | | | | | | |
| 1.2.2.3.2. High-Level Waste Glass Canister | | | | | | | | | | | | | | | | |
| TR232FA1: Complete Phase I of HLW Disposal Contal | | | | | | | | | | | | | | | | |
| WP232718 | Compare & Cont HLW DC to VA Evals of UCF DC | 01OCT96 | 31MAR97 | 15 | [Gantt bar from Oct 1996 to Mar 1997] | | | | | | | | | | | |
| WP232720 | Revw ACD Design Evals & Report | 01APR97 | 30SEP97 | 0 | [Gantt bar from Apr 1997 to Sep 1997] | | | | | | | | | | | |
| TR232GB1: HLW Disposal Container Ph II | | | | | | | | | | | | | | | | |

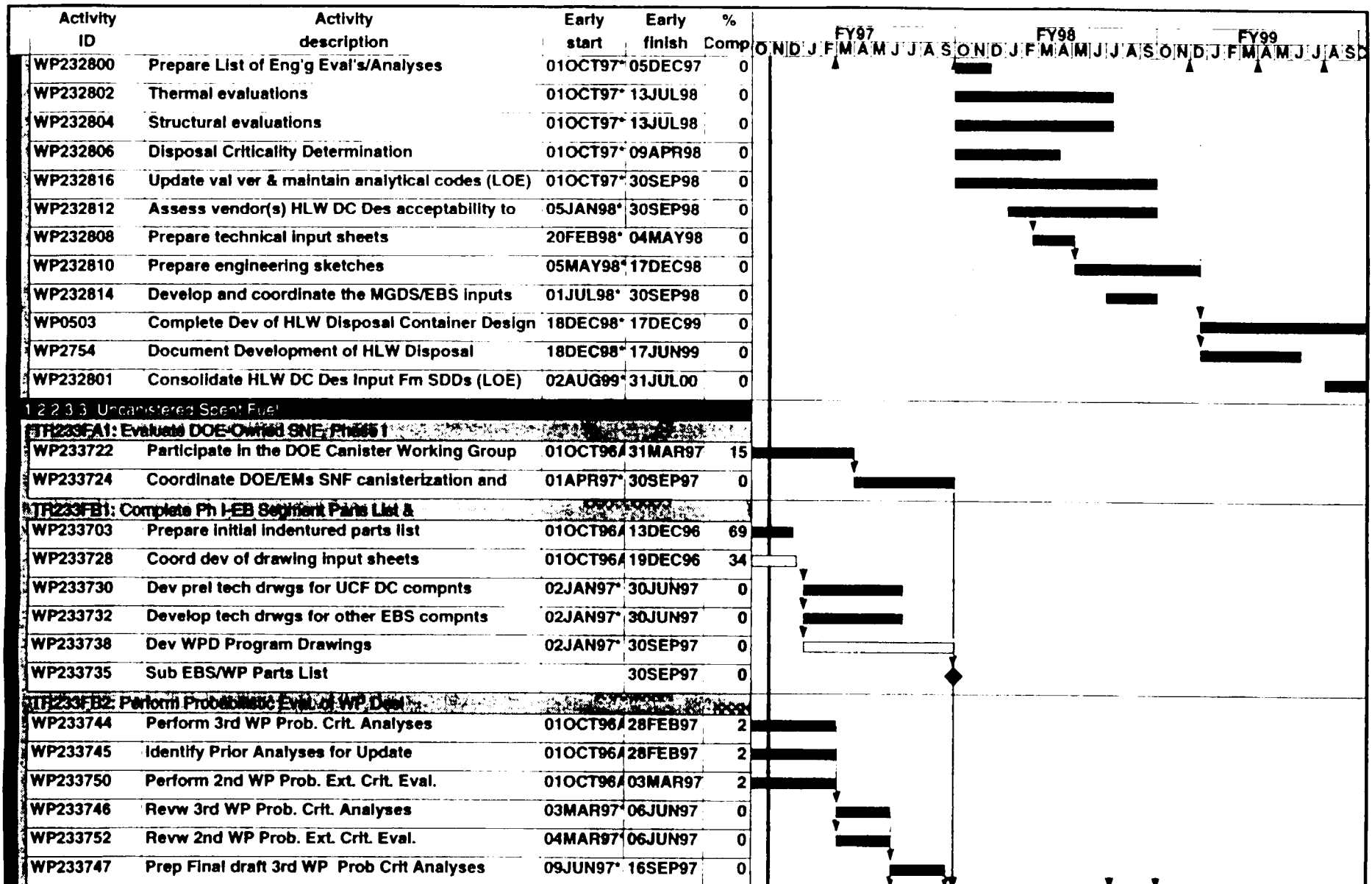
Project Start: 01OCT98
 Project Finish: 03MAY02
 Date Date: 01NOV98
 Print Date: 08DEC98

Legend:
 [Bar] Early
 [Bar] Progress Bar
 [Bar] Critical Activity

LRPO WPCZ

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

Sheet 6 of 30



Project Start: 01OCT96
 Project Finish: 05SEP00
 Data Date: 01NOV98
 Plot Date: 05OCT98

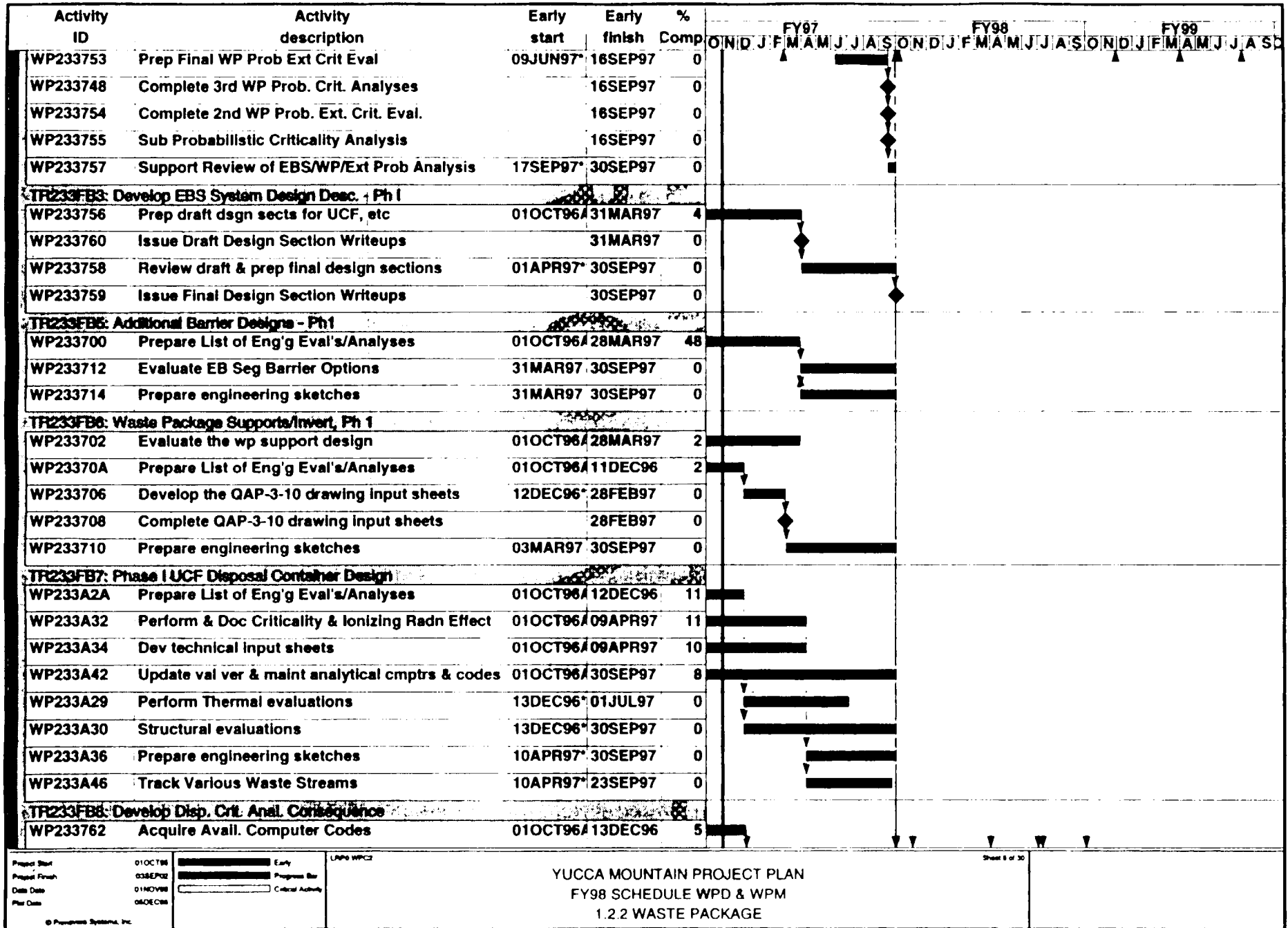
Legend:
 [Solid Bar] Early
 [Hatched Bar] Progress Bar
 [Dashed Bar] Critical Activity

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UAP0 WPC2

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

Sheet 7 of 30

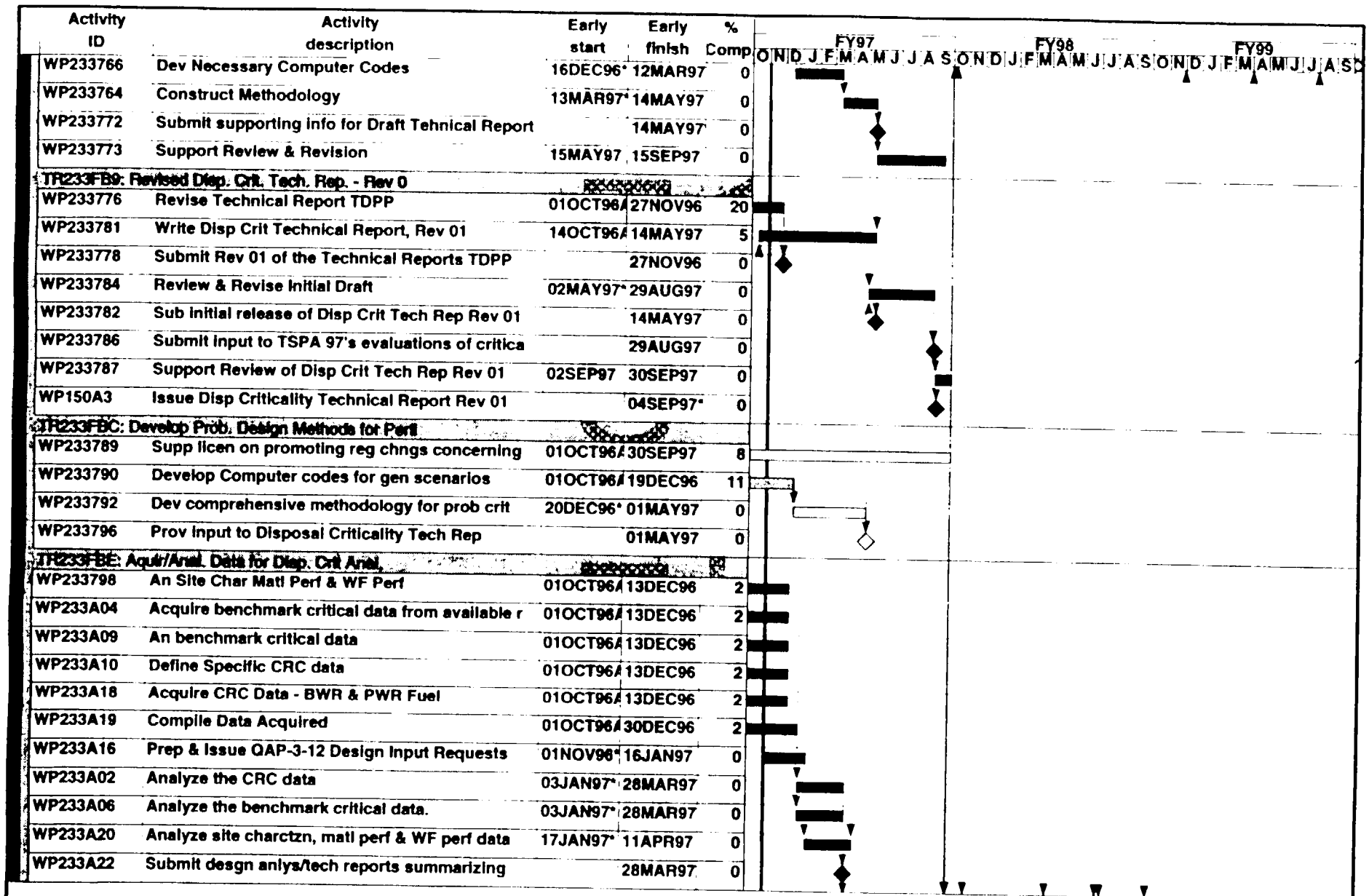


Project Start: 01OCT96
 Project Finish: 03SEP98
 Date Date: 01NOV98
 Plot Date: 06OCT98

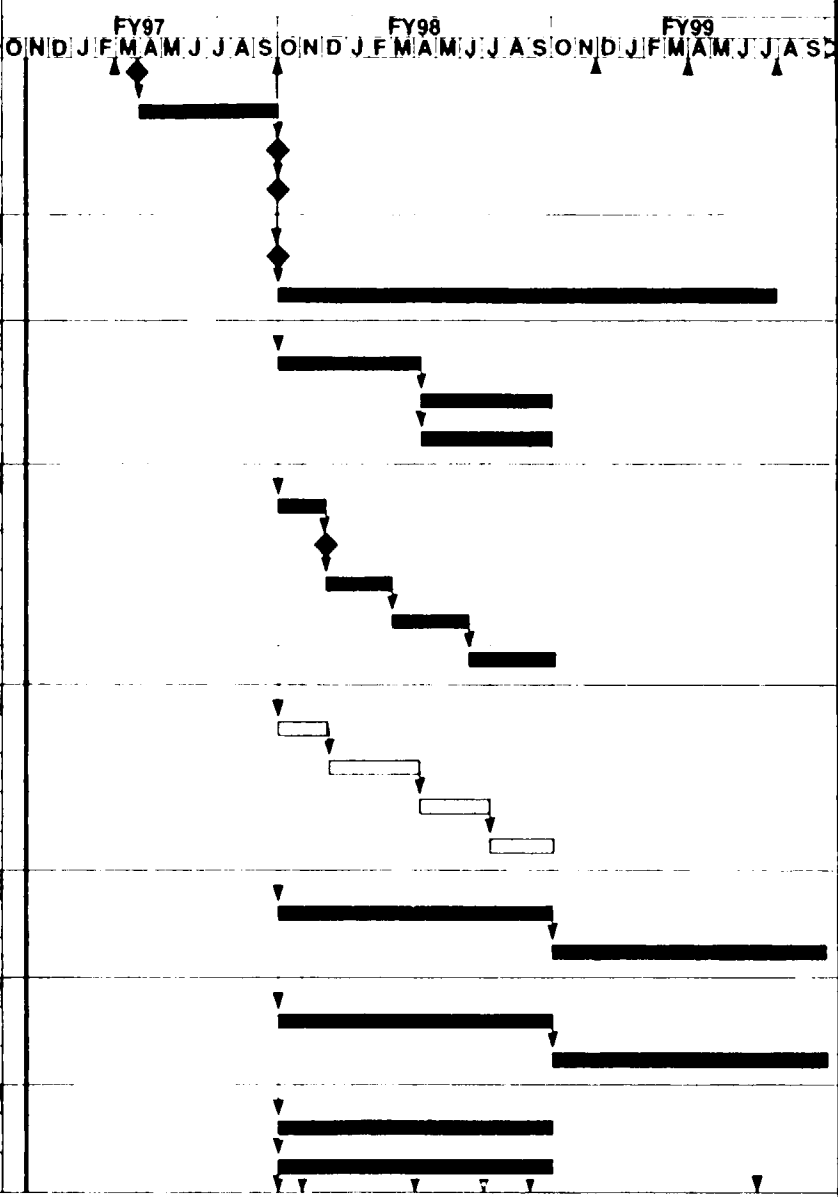
UWPP WPCZ

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

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| Activity ID | Activity description | Early start | Early finish | % Comp | |
|---|--|-------------|--------------|--------|--|
| WP233A24 | Support configuration model | | 28MAR97 | 0 | |
| WP233A12 | Analyze irradiated fuel assembly isotopic data | 31MAR97 | 30SEP97 | 0 | |
| WP233A26 | Provide supporting info for Disp Crit Tech Rep | | 30SEP97 | 0 | |
| WP233A28 | Provide Support to the consequence model | | 30SEP97 | 0 | |
| TR233GA1: DOE-Owned SNF Design Ph II | | | | | |
| WP233827 | Provide design data input to Waste Package | | 30SEP97 | 0 | |
| WP0504B | Comp.DOE High Level Waste Evaluation | 01OCT97 | 27JUL99 | 0 | |
| TR233GB1: WP Supports/Invert Ph II | | | | | |
| WP233801 | Conduct engineering evalns | 01OCT97 | 09APR98 | 0 | |
| WP0504 | Complete Dev of EBS Invert | 10APR98 | 30SEP98 | 0 | |
| WP2760 | Document Dev. of EBS Invert | 10APR98 | 30SEP98 | 0 | |
| TR233GB2: Additional Barriers Design Ph II | | | | | |
| WP233842 | Develop the QAP-3-10 drawing input sheets | 01OCT97 | 03DEC97 | 0 | |
| WP233844 | Complete QAP-3-10 drawing input sheets | | 03DEC97 | 0 | |
| WP233840 | Cond engineering evalns & revw long term perf | 04DEC97 | 02MAR98 | 0 | |
| WP0504A | Comp.Devel/EBS Backfill, Drip Shield & Add.Barr.. | 03MAR98 | 11JUN98 | 0 | |
| WP2762 | Doc.Dev. of EBS Backfill, Drip Shield, & Add Barr. | 12JUN98 | 05OCT98 | 0 | |
| TR233GB4: EBS Parts List, Dwgs & Specs Ph II | | | | | |
| WP0505 | Develop EB Segment Parts List, Dwgs & Specs | 01OCT97 | 05DEC97 | 0 | |
| WP233856 | Complete EB Segment Parts List, Dwgs & Specs | 08DEC97 | 06APR98 | 0 | |
| WP233734 | Develop procurement/fabrication drawings, parts | 07APR98 | 09JUL98 | 0 | |
| WP233848 | Develop interface drawings | 10JUL98 | 01OCT98 | 0 | |
| TR233GB5: EBS DBE Evalns Ph II | | | | | |
| WP0509G | Define DBEs & DBAs | 01OCT97 | 30SEP98 | 0 | |
| WP233868 | Define EBS-DBE's-DBA's, Phase III | 01OCT98 | 29SEP99 | 0 | |
| TR233GB6: EBS System Design Descriptions Ph II | | | | | |
| WP0509J | Develop EBS System Design Description | 01OCT97 | 30SEP98 | 0 | |
| WP233905 | Finalize EBS System Design Description | 01OCT98 | 30SEP99 | 0 | |
| TR233GB7: EBS Design Prob Evalns Ph II | | | | | |
| WP0509N | Analyse EBS Performance - Ph II | 01OCT97 | 30SEP98 | 0 | |
| WP0509P | Perform Probabilistic Eval.of EBS Designs | 01OCT97 | 30SEP98 | 0 | |



Project Start: 01OCT96
 Project Finish: 03SEP99
 Data Date: 01NOV98
 Plot Date: 06DEC98

Legend:
 [Solid Bar] Early
 [Hatched Bar] Program Bar
 [Dashed Bar] Critical Activity

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LMO WPC2

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

Sheet 10 of 30

9. Provide a rough schedule of when this issue will be resolved for VA:

| | | | -----FY97----- | | | | | | | | | | | -----FY98----- | | | | | | | | | | | | |
|----|-------------------------------|---------------------|----------------|---|---|---|---|---|---|---|---|---|---|----------------|---|---|---|---|---|---|---|---|---|---|---|---|
| No | POC (Name/Phone) | Date | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S |
| 1 | Kal Bhattacharrya | 04/15/97 - 05/15/97 | | | | | | | | ■ | ■ | | | | | | | | | | | | | | | |
| 2 | R. Memory | 04/15/97 - 05/30/97 | | | | | | | | ■ | | | | | | | | | | | | | | | | |
| 3 | Ken Ashe | 06/01/97 - 06/30/97 | | | | | | | | | ■ | | | | | | | | | | | | | | | |
| 4 | Bob Andrews | 05/01/97 - 06/30/97 | | | | | | | | ■ | ■ | | | | | | | | | | | | | | | |
| 5 | Ed Mc Cann (Environmental) | 07/01/97 - 07/30/97 | | | | | | | | | ■ | | | | | | | | | | | | | | | |
| 6 | Kal Bhattacharrya | 06/01/97 - 07/30/97 | | | | | | | | | ■ | ■ | | | | | | | | | | | | | | |
| 7 | R. Memory | 08/01/97 - 09/30/97 | | | | | | | | | | | ■ | ■ | | | | | | | | | | | | |
| 8 | R. Memory | 10/01/97 - 11/30/97 | | | | | | | | | | | | | | | ■ | ■ | | | | | | | | |

10. **Describe a process that will be used to measure performance towards closure:**
Performance will be measured by tracking to the schedule identified in item #9 above. As each of the activities is completed the issue will be progressing toward closure sufficient for VA.

11. **Describe how status will be reported during the process of closing this issue.**
Status will be reported monthly and as each activity is scheduled for completion. A deliverable document will be produced documenting the outcome of this issue resolution activity at the end of FY97.

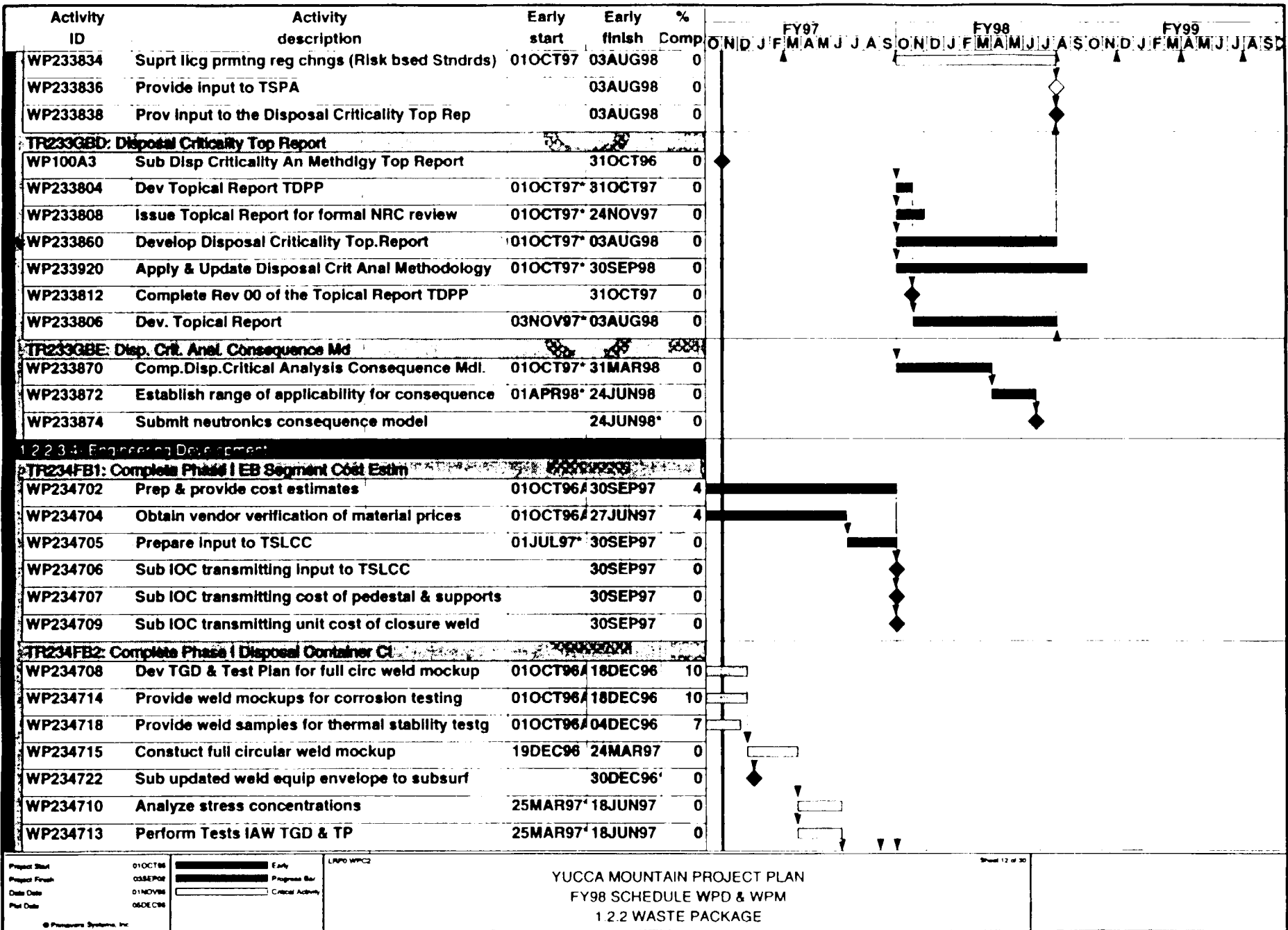
| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 | | | | | FY98 | | | | | FY99 | | | | | | | | | | | | | | |
|---|--|-------------|--------------|--------|------|---|---|---|---|------|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| | | | | | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | |
| WP233873 | Perform Probabilistic Eval. for Licensing Proc. | 01OCT97* | 30SEP99 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP0509P1 | Probabilistic Eval. Anal. of EBS Designs | | 31AUG98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP0509P2 | Final Prob. Eval. Anal. for Licensing Process | | 30JUN99* | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR233GB8: Disposal Criticality Topical Rp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP100C | Disposal Criticality Integration | 01OCT97* | 30SEP98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233910 | Respond to formal NRC comments | 25NOV97* | 21MAY98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233850 | Update Disposal Criticality Topical Report | 04AUG98* | 04JUN99 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233952 | Submit Update Disp Criticality Topical Report | | 04JUN99 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR233GB9: Disp. Crit Analytical Methods | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233854 | Aquir/Anal. Data-Disp. Crit. Anal. Method '98 | 01OCT97* | 19DEC97 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233A08 | Acquire chemical assay data | 01OCT97* | 15DEC97 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233A14 | Acquire site charactn data, Matl & WF Perf. | 01OCT97* | 15DEC97 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR233GBA: EBS Tech. Specs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233GBA | Develop EBS Technical Specs | 01OCT97* | 30SEP98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR233GBB: UCF Disposal Container Design Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233818 | Det acceptable isotopics generation system | 01OCT97* | 03APR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233819 | Complete Dev of UCF Disp Cont | 01OCT97* | 03APR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233820 | Determine method for combining criticality condi | 01OCT97* | 20MAR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233821 | WP/EB Segment Design Integration Ph II | 01OCT97* | 30SEP99 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233822 | Establish range of applicability for consequenc | 01OCT97* | 27MAR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233A44 | Establish Design Basis SNF | 01OCT97* | 20MAR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233A38 | Assess vendor(s) UCF des acceptability to MGDS | 05JAN98* | 02JUL98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233826 | Provide supporting inform for the Top Rep | | 20MAR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233828 | Prov supporting inform for License App | | 27MAR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233824 | Submit neutronics consequence model | | 03APR98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233A40 | Update Thermal Conductivity Methodology | 01JUL98* | 23DEC98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP2753 | Doc. Devel'mt of UCF Disposal Container Design | 01OCT98* | 02APR99 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233802 | Consolidate UCF Des Input fm SDDs (LOE) | 02AUG99* | 31JUL00 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR233GBD: Prob. Design Methods for Topical Rep | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233830 | Develop a statistical analysis of potential redu | 01OCT97 | 03AUG98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP233832 | Refine the criticality methodology to incorporat | 01OCT97 | 03AUG98 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|----------------|---------|-------------------|
| Project Start | 01OCT96 | Early |
| Project Finish | 03SEP98 | Progress Bar |
| Date Data | 01NOV96 | Critical Activity |
| Plan Date | 08OCT96 | |

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YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE



Project Start 01OCT96
 Project Finish 03SEP98
 Data Date 01NOV98
 Plot Date 06DEC98

01OCT96 Early
 03SEP98 Progress Bar
 01NOV98
 06DEC98 Critical Activity

LWPC WPC2

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

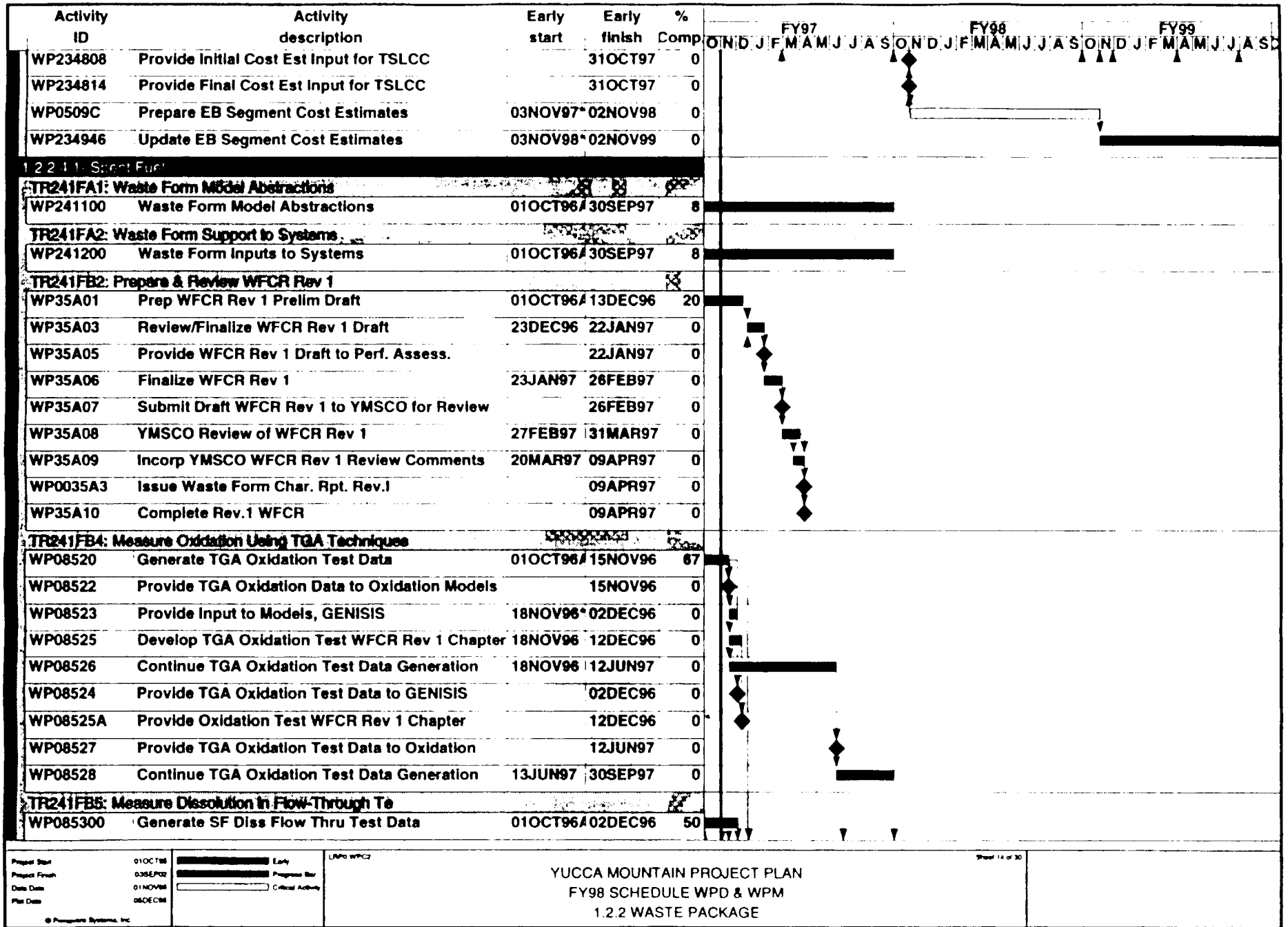
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| Activity ID | Activity description | Early start | Early finish | % Comp | |
|---|--|-------------|--------------|--------|--|
| WP234719 | Dev WP Clos Methds Report | 01MAY97* | 01JUL97 | 0 | |
| WP234711 | Provide stress concentrations for design work | 19JUN97* | 22JUL97 | 0 | |
| WP234720 | Review WP Closure Methods Report | 04AUG97 | 29AUG97* | 0 | |
| WP234721 | Sub WP Closure Methods Report | | 29AUG97* | 0 | |
| WP234724 | Submt updated weld equip envelope to surf | | 30SEP97* | 0 | |
| TR234FB3: Compl. Ph I Development of Non-Destructive | | | | | |
| WP234727 | Develop TGD/TP | 01OCT96* | 13DEC96 | 24 | |
| WP234726 | Develop NDE method for WP closure weld | 16DEC96* | 03JUN97 | 0 | |
| WP234730 | Perform 100% Mapping | 16DEC96* | 03JUN97 | 0 | |
| WP234732 | Det need for in-process inspection | 16DEC96* | 03SEP97 | 0 | |
| WP234728 | Use circular mockup to demonstrate closure weld | 10MAR97* | 22AUG97 | 0 | |
| WP234734 | Develop NDE Report | 04SEP97 | 15SEP97 | 0 | |
| WP234736 | Sub WP NDE Methods Report | | 15SEP97 | 0 | |
| WP234737 | Supp Review of NDE Report | 16SEP97 | 30SEP97 | 0 | |
| TR234FB4: Phase I Disposal Container Fabrication | | | | | |
| WP234740 | Document recommended fabrication methods | 01OCT96* | 29AUG97 | 34 | |
| WP234746 | Prep Raw Manuf & Matl Cost Est | 01NOV96* | 31OCT97 | 0 | |
| WP234738 | Docmnt 30% completion w/ fabrication sketches | 15JAN97* | 30SEP97 | 0 | |
| WP234742 | Submit report detailing recommended fabrication | | 29AUG97 | 0 | |
| WP234744 | Develop fabrication drawings | | 30SEP97 | 0 | |
| TR234GB1: Disp Container Fabric Methods Ph II | | | | | |
| WP234804 | Disposal Container Fabrication Summary Report | | 30SEP97 | 0 | |
| WP0509 | Develop Disp Container Fabrication, Ph II | 01OCT97* | 30SEP98 | 0 | |
| WP234802 | Dev Disp Container Fabrication Summary Report | 01OCT98* | 05FEB99 | 0 | |
| WP234942 | Comp. Devel'mt of Disposal Container Fabrication | 03NOV98* | 02NOV99 | 0 | |
| TR234GB2: Disp Container Closure Methods Ph II | | | | | |
| WP0509A | Dev Disposal Container Closure Method, Ph II | 01OCT97* | 02OCT98 | 0 | |
| TR234GB3: Non-Destructive Exam Methods Ph II | | | | | |
| WP0509B | Develop Non-destructive Examination Mthds, Ph | 01OCT97* | 30SEP98 | 0 | |
| WP234944 | Document Non-destructive Examination Mthds | 01OCT98* | 30SEP99 | 0 | |
| TR234GB4: EB Segment Cost Estimate Ph II | | | | | |

| | | |
|----------------|---------|-------------------|
| Project Start | 01OCT96 | Early |
| Project Finish | 03SEP99 | Progress Bar |
| Start Date | 01NOV96 | Critical Activity |
| End Date | 03OCT98 | |

YUCCA MOUNTAIN PROJECT PLAN
FY98 SCHEDULE WPD & WPM
1.2.2 WASTE PACKAGE

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Project Start: 01OCT96
 Project Finish: 03SEP97
 Date Data: 01NOV96
 Plot Date: 06DEC96

UNPO WFCR

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YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

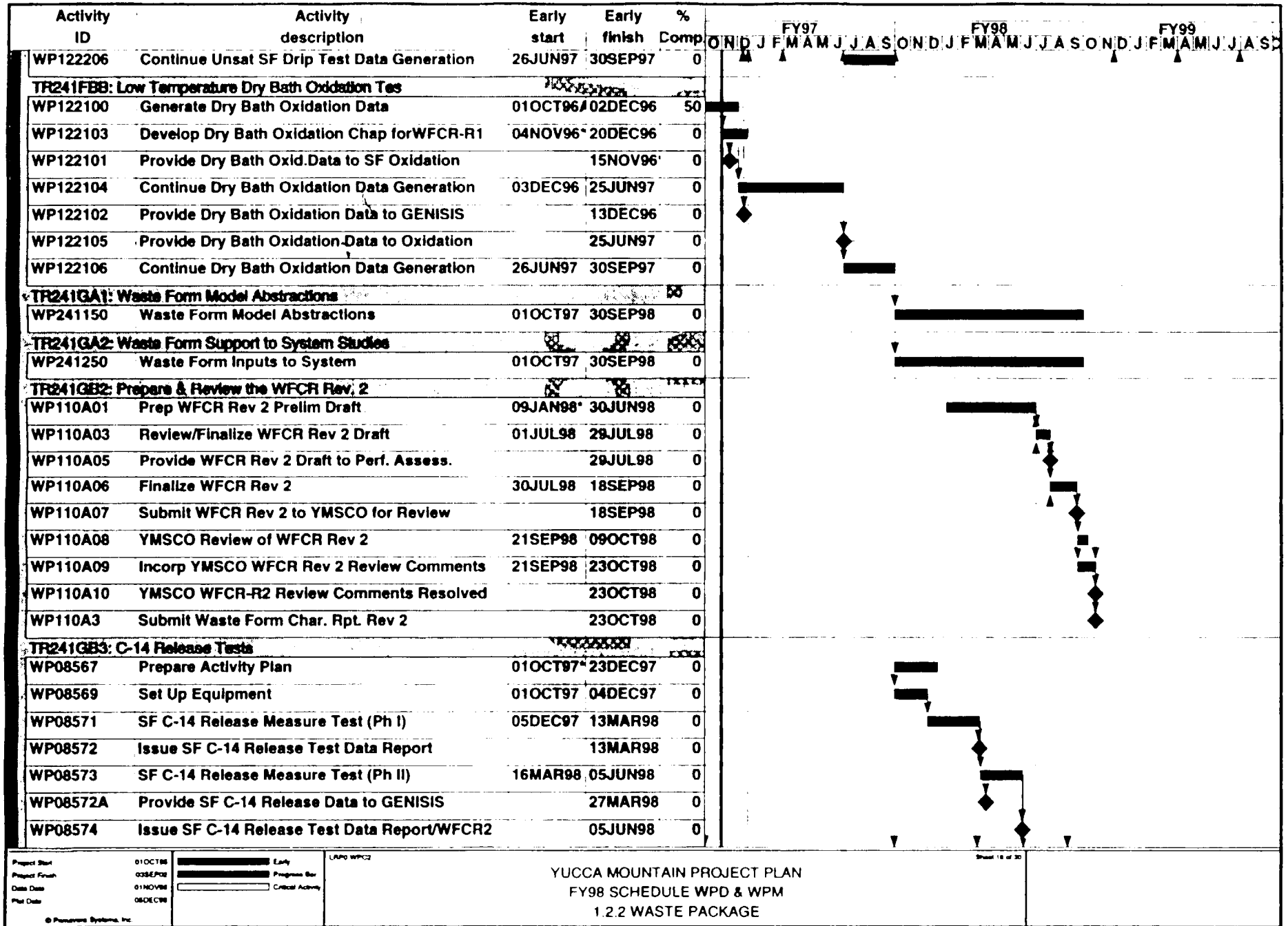
| Activity ID | Activity description | Early start | Early finish | % Comp | |
|--|---|-------------|--------------|--------|--|
| WP085303 | Develop SF Diss Flow Thru Test WFCR Rev 1 | 04NOV96 | 20DEC96 | 0 | |
| WP085301 | Provide SF Diss Flow Thru Data to Models | | 15NOV96 | 0 | |
| WP085302 | Provide SF Diss Flow Thru Test Data to GENISIS | | 02DEC96 | 0 | |
| WP085304 | Continue SF Diss Flow Thru Test Data Generation | 03DEC96 | 25JUN97 | 0 | |
| WP85303A | Provide SF Diss Flow Thru Test Chap to | | 20DEC96 | 0 | |
| WP085305 | Provide SF Diss Flow Thru Test Data to Models | | 25JUN97 | 0 | |
| WP085306 | Continue SF Diss Flow Thru Test Data Generation | 26JUN97 | 30SEP97 | 0 | |
| TR241FB7: Procure Approved Test Materials | | | | | |
| WP08601 | ID Approved Test Materials (ATM) for | 01OCT96 | 15NOV96 | 40 | |
| WP08603 | ATMs Vendor Selection | 18NOV96 | 31MAR97 | 0 | |
| WP08605 | ATM Procurement Ph-1 | 01APR97 | 30MAY97 | 0 | |
| WP08607 | Characterize Received ATM Samples Ph-1 | 02JUN97 | 30SEP97 | 0 | |
| TR241FB8: Support ATM Procurement | | | | | |
| WP0861 | Support ATM Selection | 01OCT96 | 30SEP97 | 8 | |
| WP0861A | DOE Concurrence on ATM Procurements | | 31MAR97 | 0 | |
| WP0862 | Follow Procurement & Characterization | 01APR97 | 13JUN97 | 0 | |
| WP0862A | Spent Fuel ATM Procurement Letter Rpt. | | 13JUN97 | 0 | |
| TR241FB9: Develop Process Models for Predicting | | | | | |
| WP122400 | Develop Waste Form Preliminary Process Model | 01OCT96 | 12DEC96 | 20 | |
| WP122401 | Provide Waste Form Model Chap to WFCR-R1 | | 12DEC96 | 0 | |
| WP122402 | Enhance Response Models | 26DEC96 | 25JUN97 | 0 | |
| WP122403 | Provide Response Models Results to PA | | 25JUN97 | 0 | |
| WP122413 | Support PA Inquiries | 26JUN97 | 30SEP97 | 0 | |
| TR241FBA: Unsaturated Drip Condition Testing (SN) | | | | | |
| WP122200 | Generate Unsat SF Drip Test Data | 01OCT96 | 02DEC96 | 20 | |
| WP122201 | Provide Unsat SF Drip Data to Models | | 15NOV96 | 0 | |
| WP122203 | Develop Unsat SF Drip Test Chapter for WFCR-R1 | 03DEC96 | 26DEC96 | 0 | |
| WP122204 | Continue Unst SF Drip Test Data Generation | 03DEC96 | 25JUN97 | 0 | |
| WP122202 | Provide Unsat SF Drip Test Data to GENISIS | | 13DEC96 | 0 | |
| WP122205 | Provide Unsat SF Drip Test Data to Models | | 25JUN97 | 0 | |

Project Start: 01OCT96
 Project Finish: 03SEP98
 Data Date: 01NOV98
 Print Date: 04DEC98

Legend:
 [Solid Bar] Early
 [Hatched Bar] Progress Bar
 [Dashed Bar] Critical Activity

UYCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

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| Activity ID | Activity description | Early start | Early finish | % Comp | |
|--|---|-------------|--------------|--------|--|
| WP08575 | SF C-14 Release Measure Test (Ph III) | 08JUN98 | 05MAY99 | 0 | |
| WP08576 | Submit SF C-14 Release Final Report & Data | | 05MAY99 | 0 | |
| TR241GB4: Measure SF Oxidation Using TGA Tech. | | | | | |
| WP08528A | Continue TGA Oxidation Test Data Generation | 01OCT97 | 29MAY98 | 0 | |
| WP08530 | Analyze Samples | 02MAR98 | 30APR98 | 0 | |
| WP08529 | Provide TGA Oxidation Data to Oxidation Models | | 29MAY98 | 0 | |
| WP08532 | Develop TGA Oxidation Chapter for WFCR Rev 2 | 01JUN98 | 30JUN98 | 0 | |
| WP08536 | Continue TGA Oxidation Test Data Generation | 01JUN98 | 29JAN99 | 0 | |
| WP08534 | Provide TGA Oxidation Chapter to WFCR Rev 2 | | 30JUN98 | 0 | |
| WP08538 | Provide TGA Oxidation Test Data to Oxida. | | 29JAN99 | 0 | |
| TR241GB5: Measure SF Flow Thru Dissolution | | | | | |
| WP085320 | Continue SF Diss.Flow Thru Test Data Generation | 01OCT97 | 11JUN98 | 0 | |
| WP085322 | Analyze Samples | 02MAR98 | 30APR98 | 0 | |
| WP085307 | Provide SF Diss Flow Thru Data to Models | | 11JUN98 | 0 | |
| WP085311 | Provide SF Diss Flow Thru Test Data to Models | | 11JUN98 | 0 | |
| WP085308 | Develop SF Diss Flow Thru Chapter for WFCR | 12JUN98 | 14JUL98 | 0 | |
| WP085310 | Continue SF Diss Flow Thru Test Data Generation | 12JUN98 | 30SEP98 | 0 | |
| WP085309 | Provide SF Diss Flow Thru Chapter to WFCR Rev | | 14JUL98 | 0 | |
| TR241GB6: Measure Releases from SNE Hardware | | | | | |
| WP08554 | Issue SF Hardware Rel.Test Rpt/WFCR2/GENISIS | | 31OCT96 | 0 | |
| WP08551A | Prepare Activity Plan | 01OCT97 | 27FEB98 | 0 | |
| WP08551 | SF Hardware Release Measure Test (Ph I) | 02MAR98 | 30SEP98 | 0 | |
| WP08552 | Issue SF Hardware Release Test Report | | 30SEP98 | 0 | |
| WP08553 | SF Hardware Release Measure Test (Ph II) | 01OCT98 | 30JUN99 | 0 | |
| WP08553A | Prepare Hardware Release Rate Report | 01JUL99 | 31AUG99 | 0 | |
| TR241GB7: Procure Approved Test Materials (MCC) | | | | | |
| WP08608 | Select & Procure ATM | 01OCT97 | 31DEC97 | 0 | |
| WP08610 | Characterize Received ATM Samples Ph-II | 05JAN98 | 30JUN98 | 0 | |
| TR241GB8: Support ATM Procurement | | | | | |
| WP08612 | Support ATM Procurement Ph-II | 01OCT97 | 02JAN98 | 0 | |
| WP08614 | Follow Characterization Effort | 05JAN98 | 30JUN98 | 0 | |

Project Start: 01OCT98
 Project Finish: 03SEP98
 Data Date: 01NOV98
 Plot Date: 06DEC98

Legend:
 Early
 Progress Bar
 Critical Activity

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YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S | | | | | | | | | | | | | | | | | | |
|---|---|-------------|--------------|--------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| WP08616 | Provide Letter Report to YMSCO | | 30JUN98 | 0 | | | | | | | | | | | | | | | | | | | |
| TR241GB9: Develop Waste Form Process Model | | | | | | | | | | | | | | | | | | | | | | | |
| WP122407 | Enhance Response Model (Excluding | 01NOV96 | 09APR97 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122404 | Improve Response Model(Including Dissolution) | 10MAR98 | 11JUN98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122405 | Prepare Response Model Chap to WFCR-R2 | 12JUN98 | 31AUG98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122420 | Improve Response Model Continued | 12JUN98 | 08MAR99 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122406 | Provide Response Model to PA & WFCR-Rev 2 | | 31AUG98 | 0 | | | | | | | | | | | | | | | | | | | |
| TR241GBA: Unsat. SF Drip Condition Testing | | | | | | | | | | | | | | | | | | | | | | | |
| WP122220 | Continue Unsat.SF Drip Test Data Generation | 01OCT97* | 11JUN98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122222 | Analyze Samples | 02MAR98* | 29MAY98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122207 | Provide Unsat SF Drip Data to Models | | 11JUN98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122208 | Develop Drip Test Chapter for WFCR Rev 2 | 12JUN98 | 14JUL98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122210 | Continue Unsat SF Drip Test Data Generation | 12JUN98 | 14OCT98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122209 | Provide Drip Test Chapter to WFCR Rev 2 | | 14JUL98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122211 | Provide Unsat SF Drip Test Data to Models | | 14OCT98 | 0 | | | | | | | | | | | | | | | | | | | |
| TR241GBB: Dry Bath SF Oxidation Testing | | | | | | | | | | | | | | | | | | | | | | | |
| WP122120 | Continue Dry Bath Oxidation Data Generation | 01OCT97 | 11JUN98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122122 | Analyze Samples | 02MAR98* | 29MAY98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122107 | Provide Dry Bath Data to Oxidation Models | | 11JUN98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122108 | Develop Dry Bath Oxidation Chap for WFCR-R2 | 12JUN98 | 14JUL98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122110 | Continue Dry Bath Oxidation Data Generation | 12JUN98 | 11FEB99 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122109 | Provide Dry Bath Oxidation Chap to WFCR-R2 | | 14JUL98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP122111 | Provide Dry Bath Data to Oxidation Models | | 30SEP98* | 0 | | | | | | | | | | | | | | | | | | | |
| TR241GBC: Cladding Degradation Testing | | | | | | | | | | | | | | | | | | | | | | | |
| WP241800 | Prepare Activity Plan | 01OCT97* | 30JAN98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP241802 | Set Up Equipment | 01DEC97* | 31MAR98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP241804 | Conduct Phase I tests | 01APR98 | 30SEP98 | 0 | | | | | | | | | | | | | | | | | | | |
| WP241806 | Analyze Samples | 01JUL98 | 30SEP98 | 0 | | | | | | | | | | | | | | | | | | | |
| 1.2.2.1.2 - Borosilicate Glass | | | | | | | | | | | | | | | | | | | | | | | |
| TR242FB1: HLWG Degradation Parameter Tests | | | | | | | | | | | | | | | | | | | | | | | |
| WP085600 | Prepare Activity Plan | 01OCT96* | 31JAN97 | 25 | | | | | | | | | | | | | | | | | | | |

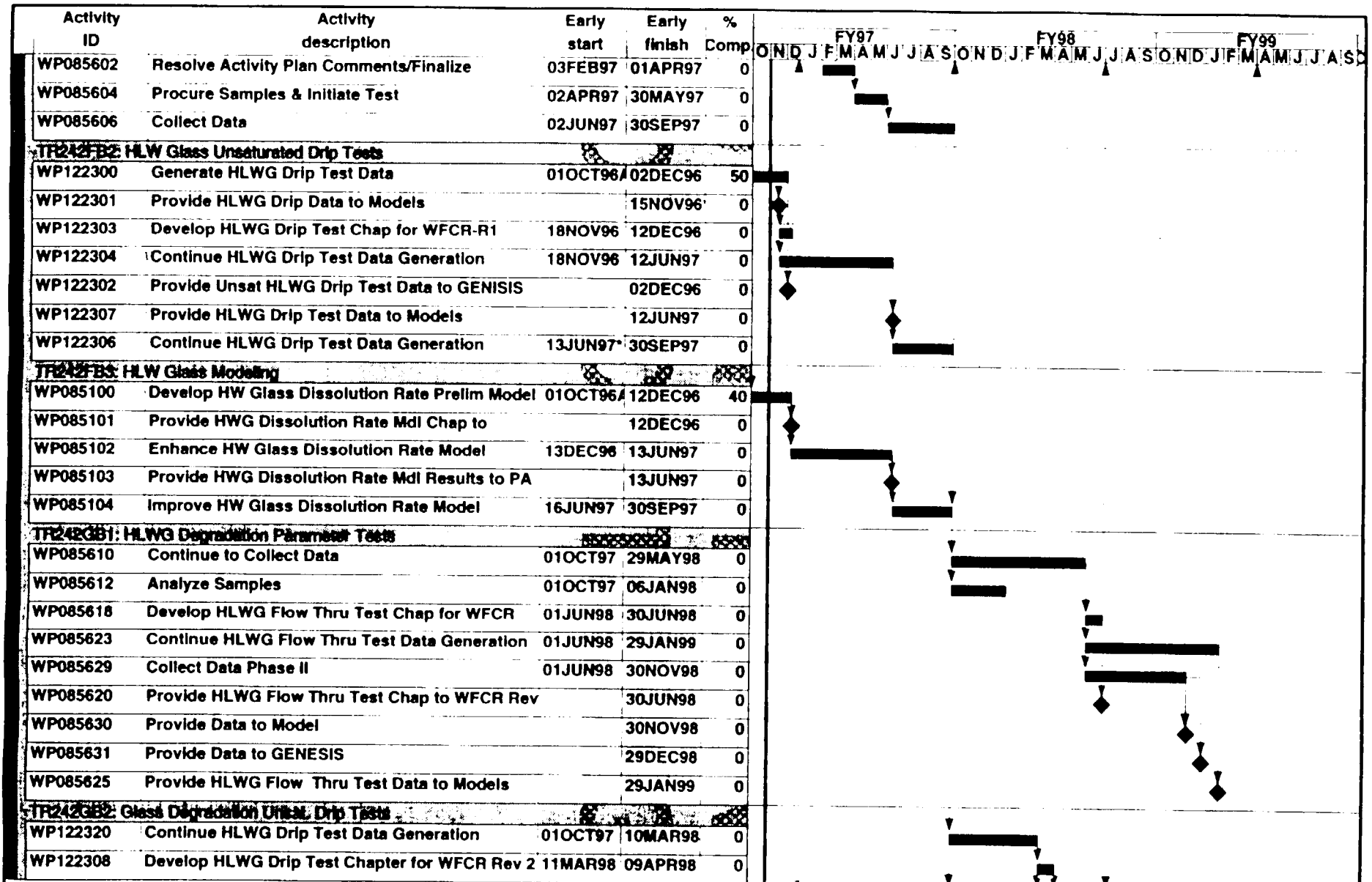
Project Start: 01OCT96
 Project Finish: 03SEPT02
 Data Date: 01NOV98
 Plot Date: 08OCT98

Legend:
 [Solid Bar] Early
 [Hatched Bar] Progress Bar
 [Dashed Bar] Critical Activity

LWPC WPCZ

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

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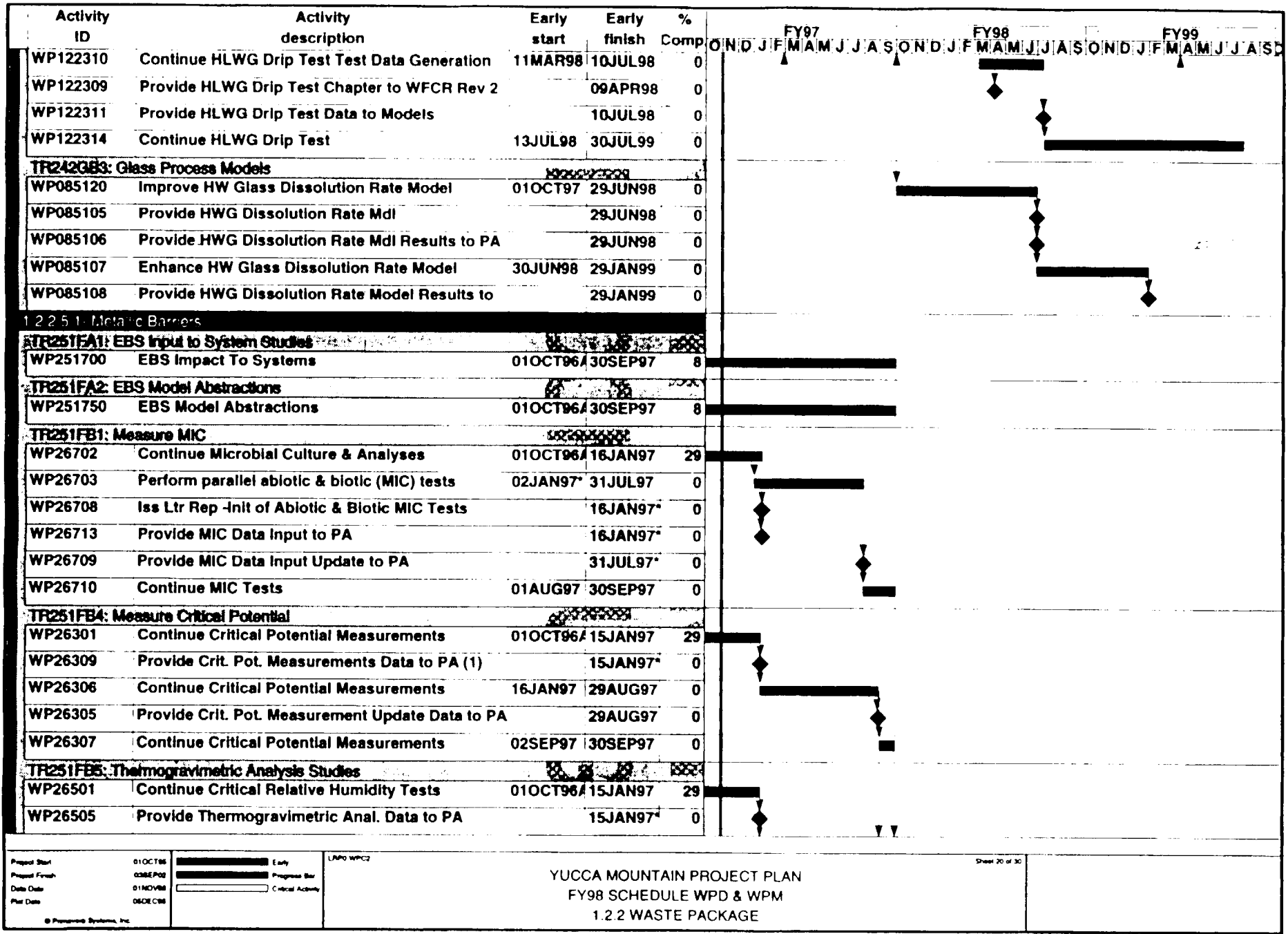


Project Start 01OCT96
 Project Finish 03SEP98
 Data Date 01NOV96
 Plot Date 05OCT96

Legend:
 [Solid Bar] Early
 [Hatched Bar] Progress Bar
 [Dashed Bar] Critical Activity

LRPO WPC2

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

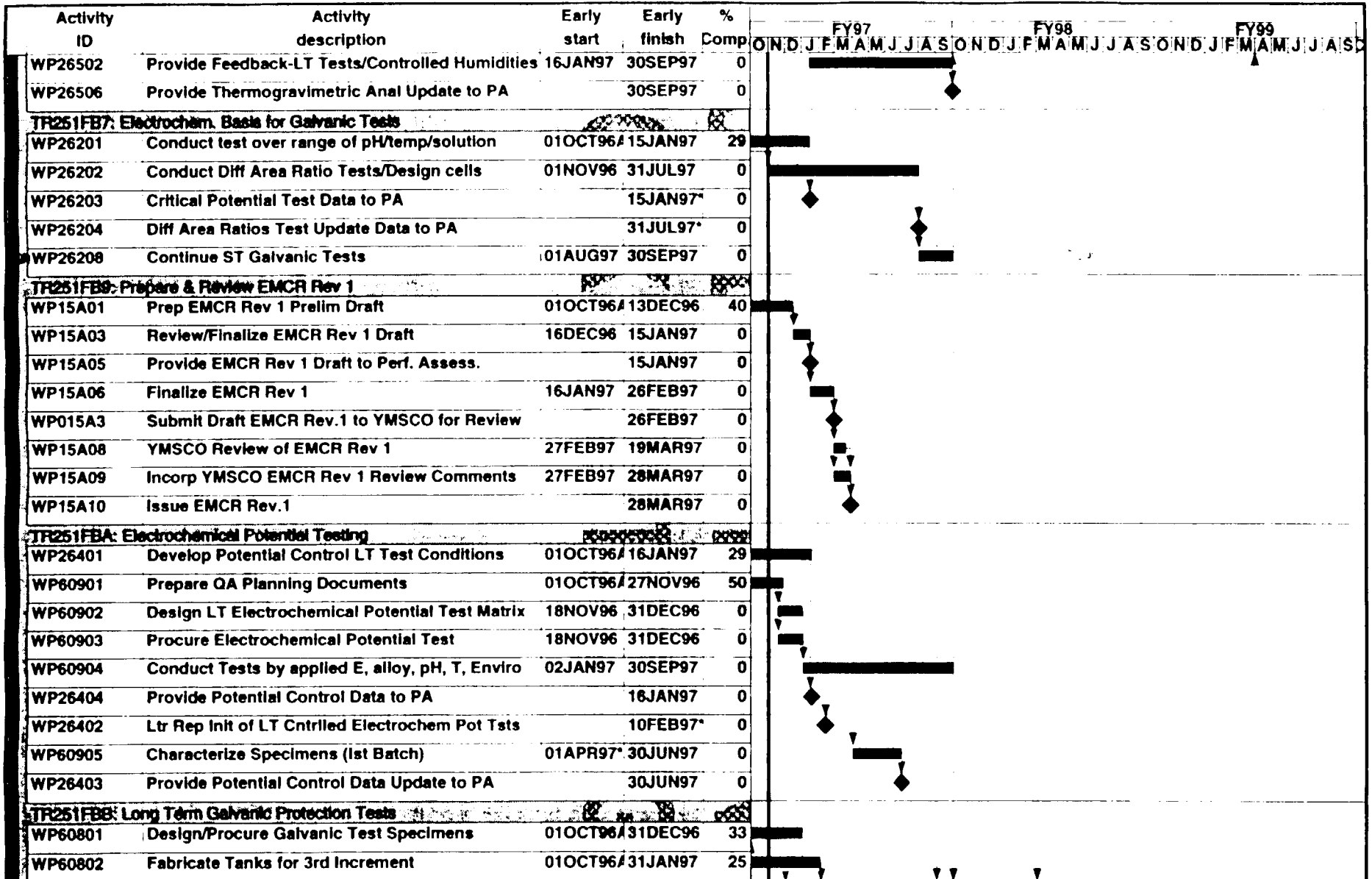


Project Start: 01OCT96
 Project Finish: 03SEP98
 Data Date: 01NOV98
 Plot Date: 08DEC98

LAPD WPCZ

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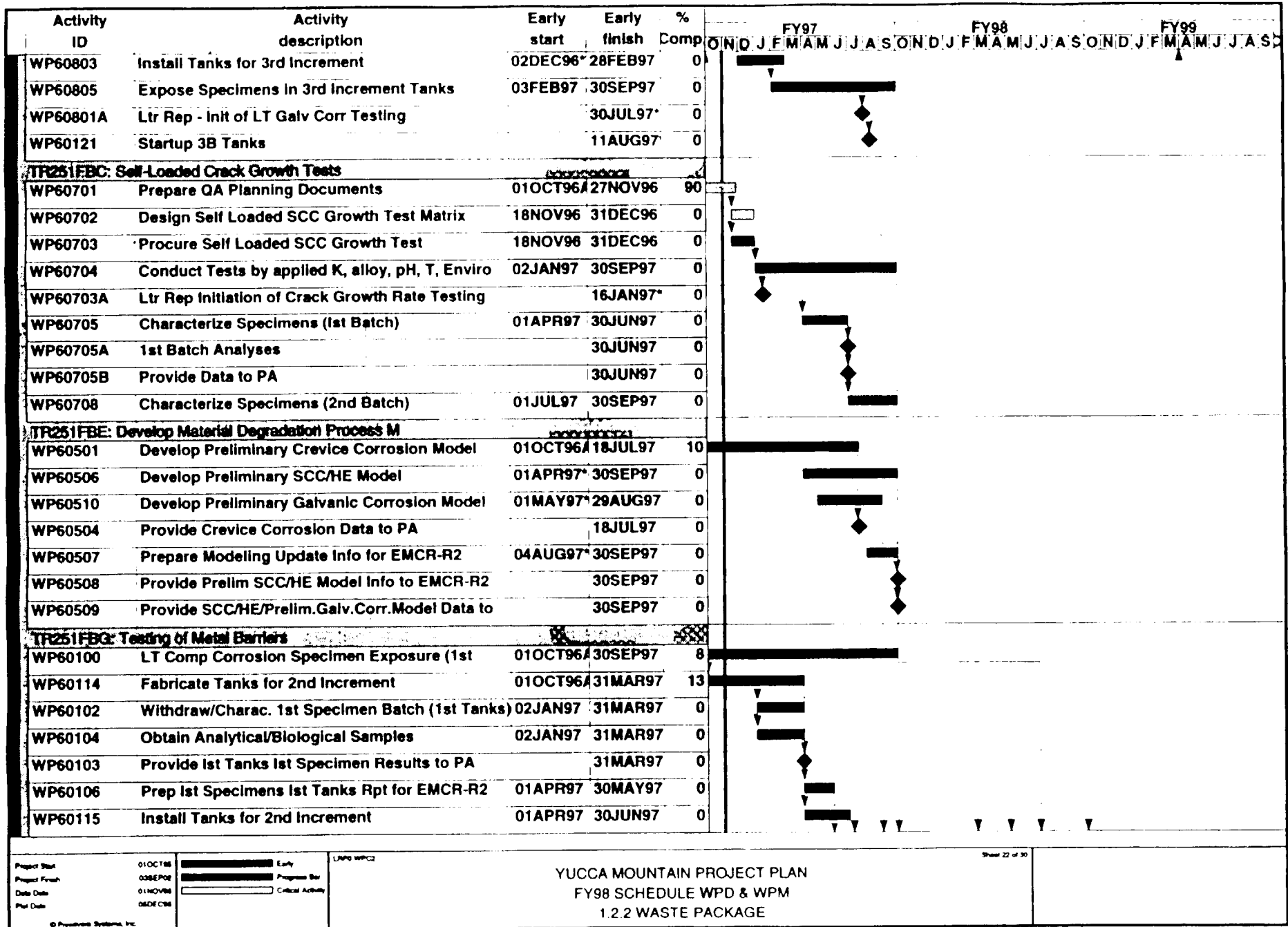
YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE



Legend:
 01OCT96 [Bar] Early
 03SEP97 [Bar] Progress Bar
 01NOV96 [Bar] Critical Activity
 05DEC96 [Bar] Milestone

LRPO WPC2

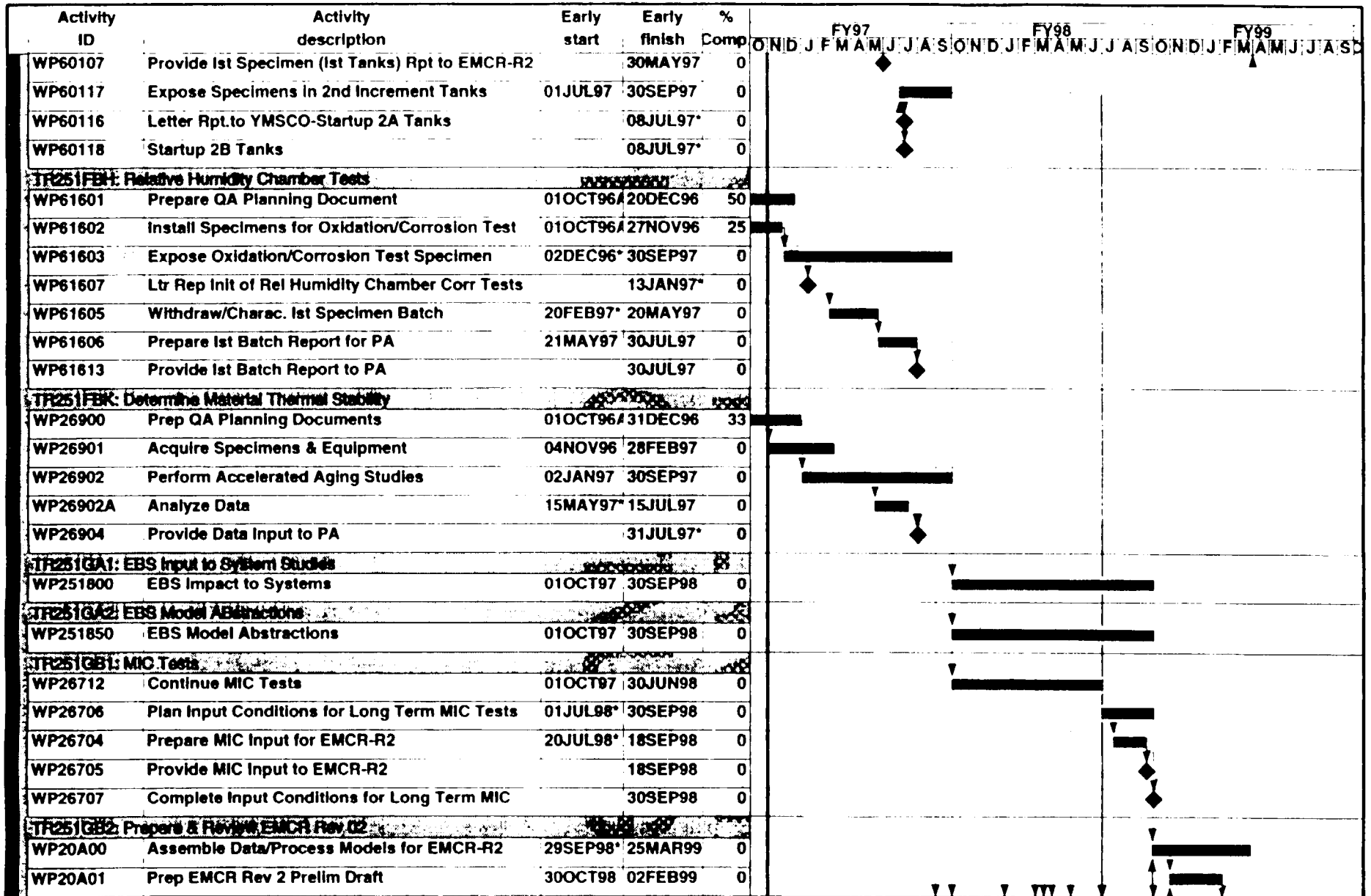
YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE



Project Start: 01OCT96
 Project Finish: 03SEP98
 Data Date: 01NOV98
 Print Date: 08DEC98

UNP WPCC

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE



| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 | | | | FY98 | | | | FY99 | | | | | | | | |
|---|---|-------------|--------------|--------|------|---|---|---|------|---|---|---|------|---|---|---|---|---|---|---|--|
| | | | | | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | |
| WP25804 | Evaluate Sensors | 03FEB97 | 31JUL97 | 0 | | | | | | | | | | | | | | | | | |
| WP25806 | Eval.Other Microanalytical Techniques | 03MAR97 | 29AUG97 | 0 | | | | | | | | | | | | | | | | | |
| WP25808 | Prepare Input to EMCR - Rev 2 | 01AUG97 | 30SEP97 | 0 | | | | | | | | | | | | | | | | | |
| WP25810 | Provide Input to EMCR - Rev 2 | | 30SEP97 | 0 | | | | | | | | | | | | | | | | | |
| JF251GB7: Electrochem Basls for Galvanic Effects | | | | | | | | | | | | | | | | | | | | | |
| WP26210 | Continue ST Galvanic Tests | 01OCT97 | 29SEP98 | 0 | | | | | | | | | | | | | | | | | |
| WP26211 | Analyze Specimens | 01APR98* | 30JUN98 | 0 | | | | | | | | | | | | | | | | | |
| WP26205 | Prepare Input for EMCR-R2 | 01JUL98* | 30SEP98 | 0 | | | | | | | | | | | | | | | | | |
| WP26209 | Provide Data To Model Activity | | 29SEP98 | 0 | | | | | | | | | | | | | | | | | |
| WP26206 | Provide Input to EMCR-R2 | | 30SEP98 | 0 | | | | | | | | | | | | | | | | | |
| JF251GB8: Thermogravimetric Analysis Studies | | | | | | | | | | | | | | | | | | | | | |
| WP25850 | Perform TGA Studies | 01OCT97* | 27FEB98 | 0 | | | | | | | | | | | | | | | | | |
| WP25852 | Characterize Samples | 02JAN98* | 31MAR98 | 0 | | | | | | | | | | | | | | | | | |
| WP25854 | Complete TGA Studies | 01APR98 | 31JUL98 | 0 | | | | | | | | | | | | | | | | | |
| WP25856 | Analyze Samples | 01APR98 | 01JUL98 | 0 | | | | | | | | | | | | | | | | | |
| WP25858 | Prepare Results to EMCR Rev 2 | 01APR98 | 30JUN98 | 0 | | | | | | | | | | | | | | | | | |
| WP25860 | Provide Results to EMCR Rev 2 | | 30JUN98 | 0 | | | | | | | | | | | | | | | | | |
| JF251GBA: LT Electrochemical Potential Tests | | | | | | | | | | | | | | | | | | | | | |
| WP60910 | Continue Conduct Test/Applied E,Alloy,PH,T,Evn. | 01OCT97 | 29JUL99 | 0 | | | | | | | | | | | | | | | | | |
| WP60906 | Characterize Specimens (2nd Batch) | 02MAR98* | 30JUN98 | 0 | | | | | | | | | | | | | | | | | |
| WP60907 | Prepare Report for EMCR-R2 | 01JUN98* | 31JUL98 | 0 | | | | | | | | | | | | | | | | | |
| WP60908 | Provide Electrochem Potential Report to | | 31JUL98 | 0 | | | | | | | | | | | | | | | | | |
| JF251GBB: Long Term Galvanic Protection Test | | | | | | | | | | | | | | | | | | | | | |
| WP60805A | Expose Specimens In 3rd Increment Tanks | 01OCT97 | 28AUG98 | 0 | | | | | | | | | | | | | | | | | |
| WP60807 | Obtain Analytical/Biological Samples (3rd Tank) | 01OCT97 | 26NOV97 | 0 | | | | | | | | | | | | | | | | | |
| WP60809 | Prepare 1st Batch/3rd Tank Report for EMCR-R2 | 01OCT97 | 05DEC97 | 0 | | | | | | | | | | | | | | | | | |
| WP60820 | Fabricate Tanks for 4th Increment | 01OCT97* | 27FEB98 | 0 | | | | | | | | | | | | | | | | | |
| WP60810 | Provide 3rd Tank/1st Batch Report to EMCR-R2 | | 05DEC97 | 0 | | | | | | | | | | | | | | | | | |
| WP60824 | Expose Specimens In 4th Increment Tanks | 02JAN98* | 26AUG99 | 0 | | | | | | | | | | | | | | | | | |
| WP60822 | Install Tanks for 4th Increment | 02MAR98 | 29MAY98 | 0 | | | | | | | | | | | | | | | | | |

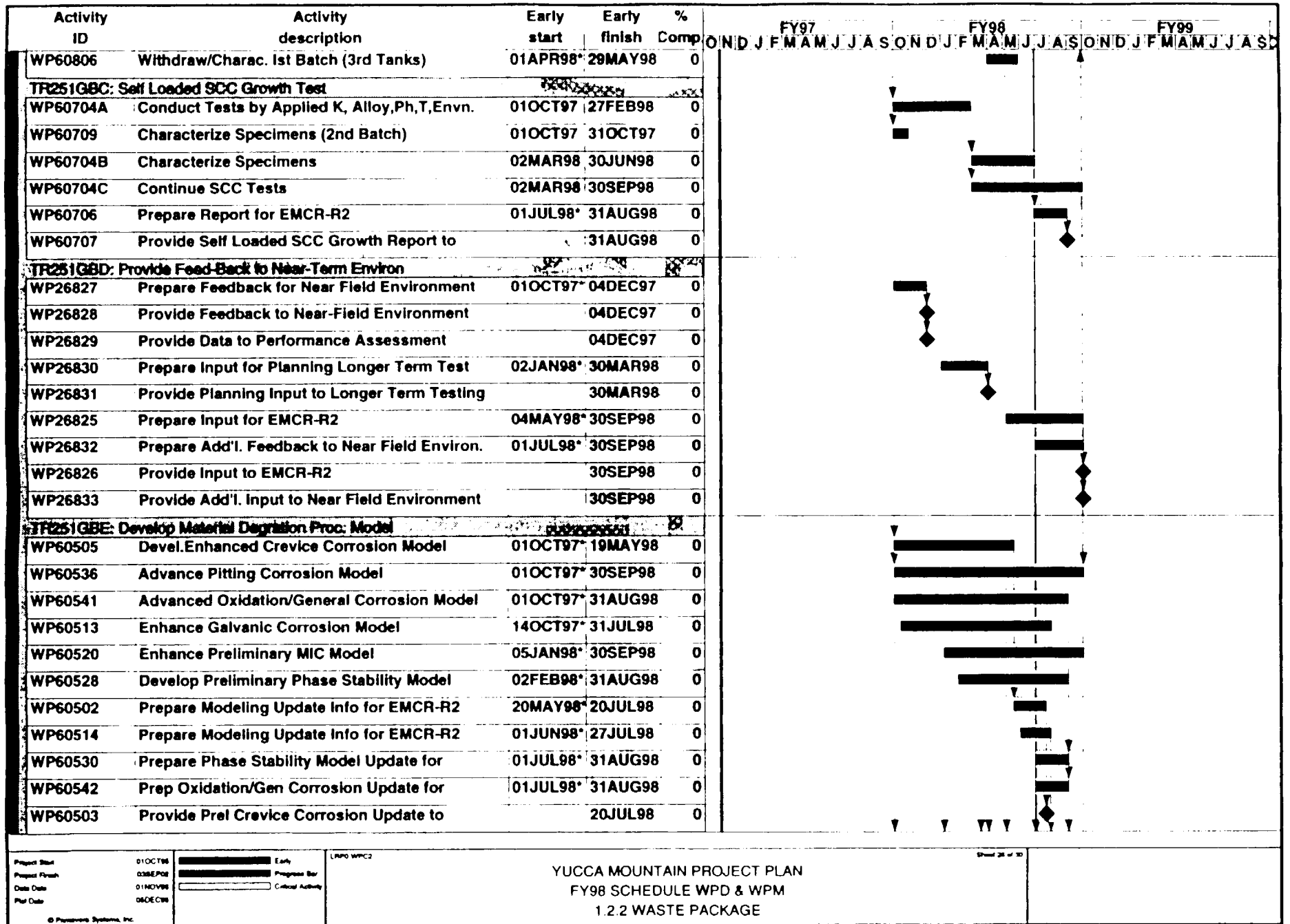
Project Start: 01OCT98
Project Finish: 03SEP98
Date Data: 01NOV98
Print Date: 06DEC98

Legend:
[Bar with diagonal lines] Early
[Bar with horizontal lines] Progress Bar
[Bar with vertical lines] Critical Activity

LRPO WPC

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YUCCA MOUNTAIN PROJECT PLAN
FY98 SCHEDULE WPD & WPM
1.2.2 WASTE PACKAGE



| | | |
|----------------|---------|---------------------|
| Project Start | 01OCT98 | ■ Early |
| Project Finish | 03SEP09 | ■ Progress Bar |
| Date Date | 01NOV98 | □ Critical Activity |
| Print Date | 08DEC98 | |

LRPO WPC2

YUCCA MOUNTAIN PROJECT PLAN
FY98 SCHEDULE WPD & WPM
1.2.2 WASTE PACKAGE

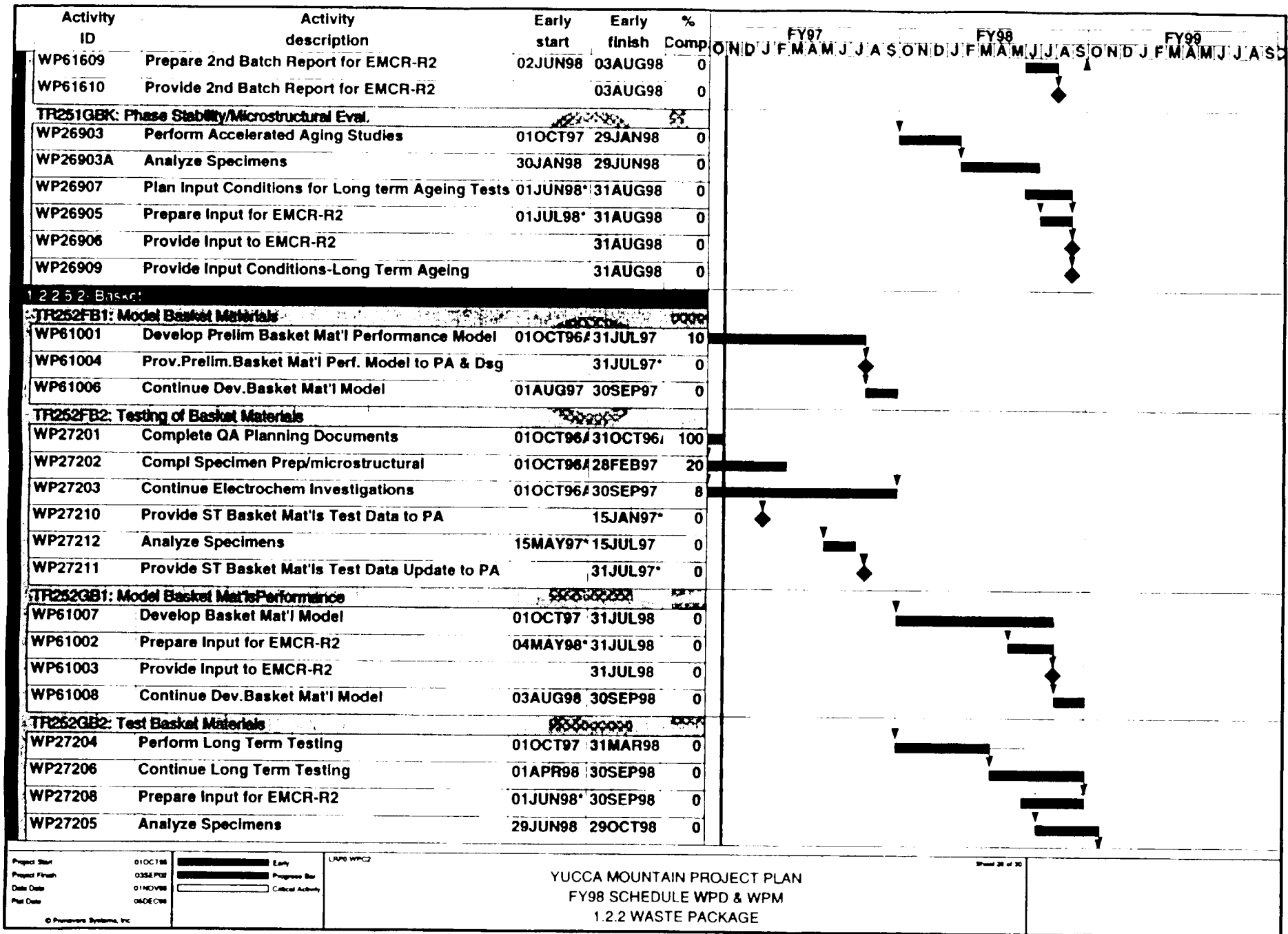
| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 | | | FY98 | | | FY99 | | | |
|--|---|-------------|--------------|--------|------|---|---|------|---|---|------|---|---|---|
| | | | | | O | N | D | J | F | M | A | M | J | J |
| WP60516 | Provide Prel Galvanic Corrosion Info to EMCR-R2 | | 27JUL98 | 0 | | | | | | | | | | |
| WP60518 | Provide Prel Galvanic Corrosion Info to PA | | 27JUL98 | 0 | | | | | | | | | | |
| WP60522 | Prepare Modeling Update Info for EMCR-R2 | 03AUG98* | 30SEP98 | 0 | | | | | | | | | | |
| WP60537 | Prep Pitting Corrosion Model Update for | 03AUG98* | 30SEP98 | 0 | | | | | | | | | | |
| WP60532 | Provide Phase Stability Model Update to | | 31AUG98 | 0 | | | | | | | | | | |
| WP60534 | Provide Phase Stability Model Update to PA | | 31AUG98 | 0 | | | | | | | | | | |
| WP60543 | Prov Oxidation/Gen Corrosion Update to | | 31AUG98 | 0 | | | | | | | | | | |
| WP60544 | Provide Oxidation/Gen Corrosion Mdl Update to | | 31AUG98 | 0 | | | | | | | | | | |
| WP60524 | Provide MIC Model Info to EMCR-R2 | | 30SEP98 | 0 | | | | | | | | | | |
| WP60526 | Provide MIC Model Info to PA | | 30SEP98 | 0 | | | | | | | | | | |
| WP60538 | Provide Pitting Corrosion Mdl Update to | | 30SEP98 | 0 | | | | | | | | | | |
| WP60539 | Provide Pitting Corrosion Model Update to PA | | 30SEP98 | 0 | | | | | | | | | | |
| TR251GBG: Long Term Corrosion Test | | | | | | | | | | | | | | |
| WP60101 | LT Comp Corrosion Specimen Exposure(1st | 01OCT97 | 29JAN99 | 0 | | | | | | | | | | |
| WP60122 | Withdraw/Charac. 1st Batch (2nd Tanks) | 06JAN98* | 01APR98 | 0 | | | | | | | | | | |
| WP60124 | Obtain Analytical/Biological Samples (2nd Tank) | 31MAR98* | 22MAY98 | 0 | | | | | | | | | | |
| WP60110 | Obtain Analytical/Biological Samples | 05MAY98 | 30JUN98 | 0 | | | | | | | | | | |
| WP60126 | Provide Analytical/Biological Samples to NFE | | 22MAY98 | 0 | | | | | | | | | | |
| WP60128 | Prepare 1st Batch (2nd Tanks) Rpt for EMCR-R2 | 26MAY98 | 22JUL98 | 0 | | | | | | | | | | |
| WP60111 | Provide Analytical/Biological Feedback to NFE | | 30JUN98 | 0 | | | | | | | | | | |
| WP60120 | Expose Specimens in 2nd Increment Tanks | 30JUN98 | 25OCT99 | 0 | | | | | | | | | | |
| WP60108 | Withdraw/Charac. 2nd Specimen Batch (1st | 01JUL98 | 28SEP98 | 0 | | | | | | | | | | |
| WP60130 | Provide 1st Batch (2nd Tanks) Report to EMCR-R2 | | 22JUL98 | 0 | | | | | | | | | | |
| WP60109 | Provide 1st Tanks 2nd Specimen Results to PA | | 28SEP98 | 0 | | | | | | | | | | |
| WP60112 | Prep 2nd Specimens 1st Tanks Rpt for EMCR-R2 | 29SEP98 | 02DEC98 | 0 | | | | | | | | | | |
| WP60113 | Provide 2nd Specimen (1st Tanks) Rpt to | | 02DEC98 | 0 | | | | | | | | | | |
| TR251GBH: Oxid/Corr Test-Controlled Rel Humid | | | | | | | | | | | | | | |
| WP61604 | Expose Oxidation/Corrosion Test Specimen | 01OCT97* | 16MAR98 | 0 | | | | | | | | | | |
| WP61608 | Withdraw/Charac. 2nd Specimen Batch | 17MAR98 | 01JUN98 | 0 | | | | | | | | | | |
| WP61608A | Continue Oxidation/Corrosion Tets | 17MAR98 | 20JAN99 | 0 | | | | | | | | | | |

Project Start: 01OCT98
 Project Finish: 03SEP98
 Data Date: 01NOV98
 Print Date: 05DEC98

LAPD WPC2

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

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Project Start: 01OCT96
 Project Finish: 03SEPT98
 Data Date: 01NOV98
 Plot Date: 04DEC98

Legend:
 [Bar] Early
 [Bar] Progress Bar
 [Bar] Critical Activity

LAMP WPC2

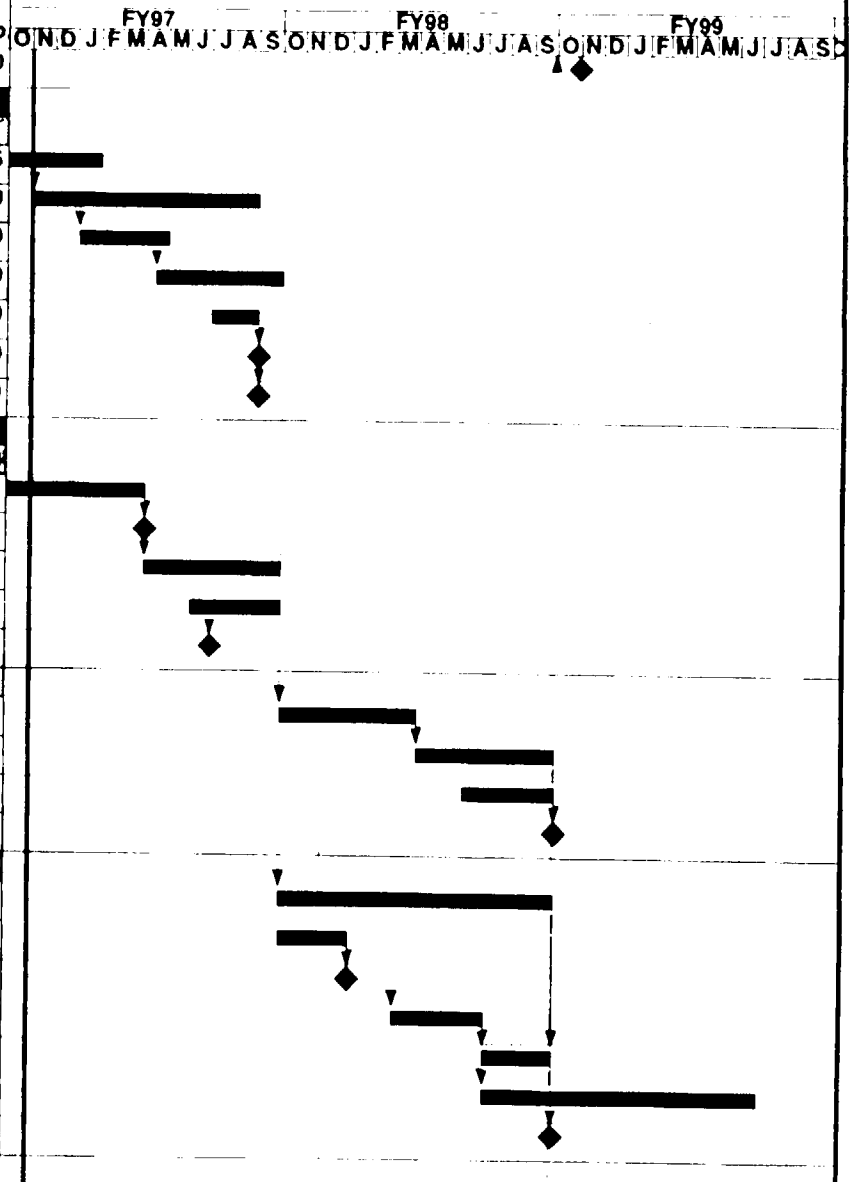
YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

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| Activity ID | Activity description | Early start | Early finish | % Comp | |
|---|--|-------------|--------------|--------|--|
| WP27209 | Provide Input to EMCR-R2 | | 29OCT98 | 0 | |
| 1 2 2 5 4. Packaging | | | | | |
| TR255FB2: Test Other EB Segment Materials | | | | | |
| WP26801 | Prepare SIP/Other Planning Documents | 01OCT96 | 31JAN97 | 25 | |
| WP26803 | Isolate & Culture Microbes | 04NOV96 | 29AUG97 | 0 | |
| WP26802 | Procure Specimens & Test Equipment | 03JAN97 | 01MAY97 | 0 | |
| WP26804 | Perf Therm/Chem Degrad Test on Conc./Other | 14APR97* | 30SEP97 | 0 | |
| WP26808 | Prepare Feedback for Near Field Environment | 01JUL97* | 29AUG97 | 0 | |
| WP26809 | Provide Feedback to Near-Field Environment | | 29AUG97 | 0 | |
| WP26815 | Provide Data to Performance Assessment | | 29AUG97 | 0 | |
| 1 2 2 5 5 Back: Invert | | | | | |
| TR255FB1: Develop EB Segment Material Models | | | | | |
| WP60404A | Dev. Prelim. Model for Corrosion Products | 01OCT96 | 31MAR97 | 16 | |
| WP60404B | Provide Corrosion Prod. Models to site | | 31MAR97 | 0 | |
| WP60401 | Dev Prelim Model-Perf. of Concrete in Repository | 01APR97 | 30SEP97 | 0 | |
| WP60403 | Extend Model Development to Other EBS Mat'ls | 02JUN97* | 30SEP97 | 0 | |
| WP60404 | Provide Data Input to PA | | 30JUN97* | 0 | |
| TR255GB1: Model EBS Mats Performance | | | | | |
| WP60402 | Continue to Advance Model Development | 01OCT97 | 31MAR98 | 0 | |
| WP60405 | Extend Model Development to Other EBS Mat'ls | 01APR98 | 30SEP98 | 0 | |
| WP60406 | Prepare Input for EMCR-R2 | 01JUN98* | 30SEP98 | 0 | |
| WP60408 | Provide Input to EMCR-R2 | | 30SEP98 | 0 | |
| TR255GB2: Test EBS Materials | | | | | |
| WP26805 | Perf. Ther/Chem Degrad. Test on Conc/Other Mat'l | 01OCT97 | 30SEP98 | 0 | |
| WP26810 | Prepare Input for Planning Longer Term Test | 01OCT97* | 31DEC97 | 0 | |
| WP26811 | Provide Planning Input to Longer Term Testing | | 31DEC97 | 0 | |
| WP26812 | Assess Microbial Impacts | 02MAR98* | 30JUN98 | 0 | |
| WP26806 | Prepare Input for EMCR-R2 | 01JUL98* | 30SEP98 | 0 | |
| WP26813 | Initiate Long Term Tests | 01JUL98 | 30JUN99 | 0 | |
| WP26807 | Provide Input to EMCR-R2 | | 30SEP98 | 0 | |
| 1 2 2 5 6 Non Metallic Barriers | | | | | |

Legend:
 01OCT96: Start Date
 03SEP97: Finish Date
 01NOV98: Milestone Date
 06OCT98: Milestone Date
 ■ Early
 ▬ Progress Bar
 ▬ Critical Activity

LRPD WPC2
 YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE
 Sheet 24 of 30



| Activity ID | Activity description | Early start | Early finish | % Comp | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | FY99 | | | | | | | | | | | |
|--|--|-------------|--------------|--------|---------------------------------------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S |
| TR258FB1: Develop Ceramic Material Models | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60410 | Devel. Mechanical Perf. Model | 01OCT96 | 30MAY97 | 13 | [Gantt bar from Oct 1996 to May 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60411 | Dev Prelim Model-Perf. of Ceramic in Repository | 01OCT96 | 30SEP97 | 8 | [Gantt bar from Oct 1996 to Sep 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60412 | Devel. Chemical Perf. Model | 03MAR97 | 30SEP97 | 0 | [Gantt bar from Mar 1997 to Sep 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60413 | Provide Data Input to PA | | 30JUN97* | 0 | [Gantt bar from Jun 1997 to Jun 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR258FB2: Perform Ceramic Material Tests | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60315 | Perform Mechanical Tests | 01OCT96 | 29MAY97 | 13 | [Gantt bar from Oct 1996 to May 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60300 | Evaluate Coating Permeability | 02JAN97* | 30JUN97 | 0 | [Gantt bar from Jan 1997 to Jun 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60316 | Perform Corrosion Tests | 30MAY97 | 30SEP97 | 0 | [Gantt bar from May 1997 to Sep 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60314 | Prepare Specimens for Corr. Testing | 02JUN97* | 30SEP97 | 0 | [Gantt bar from Jun 1997 to Sep 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60315A | Letter Rpt. Ceramic Feasibility/Mech. Tests & Eval | | 13JUN97* | 0 | [Gantt bar from Jun 1997 to Jun 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60301 | Provide into LA, Design | | 30JUN97 | 0 | [Gantt bar from Jun 1997 to Jun 1997] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR258GB1: Model Ceramic Mat's Performance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60416 | Continue to Advance Model Development | 01OCT97 | 30SEP98 | 0 | [Gantt bar from Oct 1997 to Sep 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60416A | Prepare Interim Report | 02JAN98* | 30APR98 | 0 | [Gantt bar from Jan 1998 to Apr 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60417 | Provide Inputs to PA, Design | | 30APR98* | 0 | [Gantt bar from Apr 1998 to Apr 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60418 | Prepare Input for EMCR-R2 | 01JUN98* | 30SEP98 | 0 | [Gantt bar from Jun 1998 to Sep 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60420 | Provide Input to EMCR-R2 | | 30SEP98 | 0 | [Gantt bar from Sep 1998 to Sep 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR258GB2: Test Ceramics Materials | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60312 | Conduct Mechanical Degradation Tests | 01OCT97* | 30SEP98 | 0 | [Gantt bar from Oct 1997 to Sep 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60316A | Perform Corrosion Tests | 01OCT97 | 23JUL99 | 0 | [Gantt bar from Oct 1997 to Jul 1999] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60318 | Mech. Test of Corroded Specimens | 15OCT97 | 19JAN98 | 0 | [Gantt bar from Oct 1997 to Jan 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60320 | Prepare Input to EMCR - Rev 2 | 30JUL98 | 30SEP98 | 0 | [Gantt bar from Jul 1998 to Sep 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WP60320A | Provide Input to EMCR Rev.2 | | 30SEP98 | 0 | [Gantt bar from Sep 1998 to Sep 1998] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Project Start: 01OCT96
 Project Finish: 03SEP98
 Date Date: 01NOV98
 Print Date: 06DEC98

Legend:
 [Solid Bar] Early
 [Hatched Bar] Progress Bar
 [Dashed Bar] Critical Activity

LRP0 WPC2

YUCCA MOUNTAIN PROJECT PLAN
 FY98 SCHEDULE WPD & WPM
 1.2.2 WASTE PACKAGE

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APPENDIX K

REPOSITORY SURFACE AND SUBSURFACE SCHEDULE

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 12/16/96. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact B. Stanley. For suggested changes to the contents, contact A. Segrest.

REPOSITORY SURFACE AND SUBSURFACE SCHEDULE

The Repository Surface and Subsurface (WBS 1.2.4) schedule for FY 97/98 is provided. This schedule reflects the current status of the FY 98 planning activity. All of the Repository Surface and Subsurface activities are tied to the VA milestone, except those that exclusively support the EIS/NEPA development and Nevada Transportation.

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | |
|--|--|-----|-------------|--------------|------|------|--|--|--|------|--|--|--|------|--|--|--|----|--|
| | | | | | | | | | | | | | | | | | | | |
| YP4XPP008: PPkg - MG120M2 - Complete MGDS Design | | | | | | | | | | | | | | | | | | | |
| MG120M2 | Complete MGDS Design - Phase I | 0 | | 30SEP97* | M2 | | | | | | | | | | | | | | |
| YP4XPP021: PPkg - RP070A - Surface Design - Phas | | | | | | | | | | | | | | | | | | | |
| RP7401 | Management and Integration - Ph.II | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | |
| RP7402E | NOB-Utility Systems Design - Ph.II | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | |
| RP7403E | Nevada Transportation - Ph.II | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | |
| YP4XPP032: PPkg - XRP2055 - Update Sub Surface F | | | | | | | | | | | | | | | | | | | |
| RP17030 | Prep. Subsurface Supt. Facility Gen. Arrangement | 168 | 30APR98* | 31DEC98 | | | | | | | | | | | | | | | |
| YP4XPP033: PPkg - XRP2215 - Prepare Thermal Mgmt | | | | | | | | | | | | | | | | | | | |
| RP17200 | Prepare Thermal Mgmt Technical Report | 123 | 02OCT98* | 01APR99 | | | | | | | | | | | | | | | |
| TR41FA1: Repository Management and Integration | | | | | | | | | | | | | | | | | | | |
| RP129750 | Repository Management & Integration | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| TR41FA2: Repository Design Consulting Board | | | | | | | | | | | | | | | | | | | |
| RPO4X710 | Repository Tunneling Consultant Board | 85 | 03MAR97* | 30JUN97 | | | | | | | | | | | | | | | |
| TR41FA4: Repository Management Support Activities | | | | | | | | | | | | | | | | | | | |
| RP100710 | Senior Management Support | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| RPO4X700 | Product Integrity - OPI / PCG / EDC | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| TR41GA1: Repository Management and Integration | | | | | | | | | | | | | | | | | | | |
| RP192752 | Repository Management & Integration | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | |
| TR41GA2: Repository Support Activities | | | | | | | | | | | | | | | | | | | |
| RP04X702 | Product Integrity - OPI / PCG / EDC | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | |
| RP100712 | Senior Management Support | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | |
| RP193754 | Repository Support Activities | 251 | 01OCT97* | 30SEP98 | | | | | | | | | | | | | | | |
| YP4XPP001: PPkg - IN04X - Repository Base Support | | | | | | | | | | | | | | | | | | | |
| RP10010A | Provide Management Support | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | |
| RPNO4X0A | OPI/PCG/EDC | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | |

| | | |
|----------------|---------|-------------------|
| Project Start | 01OCT95 | Early |
| Project Finish | 01OCT02 | Progress Bar |
| Date Date | 02DEC98 | Critical Activity |
| Plot Date | 18DEC98 | |

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

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| KRISHNA 12/18/98 (1600-HRS) (S-5315) | | |
| Date | Revision | Checked/Approved |
| | | |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | |
|---|---|-----|-------------|--------------|------|------|--|--|--|------|--|--|--|------|--|--|--|----|--|
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| RP10010B | Provide Management Support | 251 | 01OCT98 | 30SEP99 | | | | | | | | | | | | | | | |
| RPNO4X0B | OPI/PCG/EDC | 251 | 01OCT98 | 30SEP99 | | | | | | | | | | | | | | | |
| TR42FA1: Subsurface Interface Activities | | | | | | | | | | | | | | | | | | | |
| RP121753 | Assess CONOP Resulting from FY1966 Work | 124 | 01OCT96A | 01APR97 | | | | | | | | | | | | | | | |
| RP124750 | Support of SRA | 211 | 02DEC96* | 30SEP97 | | | | | | | | | | | | | | | |
| RP124765 | Progress Report Input PR #16 | 73 | 02DEC96* | 17MAR97 | | | | | | | | | | | | | | | |
| RP124770 | Support of QA Procedures | 211 | 02DEC96* | 30SEP97 | | | | | | | | | | | | | | | |
| RP124775 | Systems Engineering Studies Support | 211 | 02DEC96* | 30SEP97 | | | | | | | | | | | | | | | |
| RPPR16M3 | Submit Repository Input to PR16 | 0 | | 17MAR97* | M4 | | | | | | | | | | | | | | |
| RP121757 | Develop / Revise CONOP Descriptions | 127 | 02APR97 | 30SEP97 | | | | | | | | | | | | | | | |
| RP124767 | Progress Report Input PR #17 | 74 | 02JUN97* | 15SEP97 | | | | | | | | | | | | | | | |
| RPPR17M3 | Submit Repository Input to PR17 | 0 | | 15SEP97* | M4 | | | | | | | | | | | | | | |
| TR42FA3: Support SRA - RSD Ph I | | | | | | | | | | | | | | | | | | | |
| RP2405A1 | Support SRA (LOE) | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| TR42FA4: Interface Activities - RSD Ph I | | | | | | | | | | | | | | | | | | | |
| RP24061 | Interface Activities (LOE) | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| TR42FA6: MGDS Project Engineering - Repository P | | | | | | | | | | | | | | | | | | | |
| RP100702 | Project Engineering-Ph 1 | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| RP120MG1 | VA Design & Review Plan | 0 | | 31DEC96* | M3 | | | | | | | | | | | | | | |
| RP120MG2 | Draft LA Design & Review Plan | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | |
| TR42FA7: Product Production Support | | | | | | | | | | | | | | | | | | | |
| RP420600 | Product Production Support/Product Checking | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| TR42FB3: Prepare Design Guides - RSD Ph I | | | | | | | | | | | | | | | | | | | |
| RP2402D1 | Develop Design Guide Plan | 32 | 01OCT96A | 13DEC96 | | | | | | | | | | | | | | | |
| RP2402D2 | Prepare Source Terms Design Guides | 133 | 21OCT96A | 02MAY97 | | | | | | | | | | | | | | | |

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| Project Start | 01OCT96 | | Early |
| Project Finish | 01OCT98 | | Progress Bar |
| Date Date | 02DEC98 | | Critical Activity |
| Plot Date | 18DEC96 | | |

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YUCCA MOUNTAIN PROJECT PLAN
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| Date | KRISHNA 12/18/96 (1600-PR3) (5-5315) | Checked | Approved |
| Revision | | | |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | |
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| RP2402D4 | Prepare Remote Operations Design Guides | 86 | 05MAY97 | 04SEP97 | | | | | | | | | | | | | | | |
| TR42FB4: Support Systems Studies - RSD Ph I | | | | | | | | | | | | | | | | | | | |
| RP2405B1 | Waste, Quantity, Mix & Throughput, SE200A | 123 | 01OCT96A | 31MAR97 | | | | | | | | | | | | | | | |
| RP2405B2 | Retrievability Study, SE502 | 123 | 01OCT96A | 31MAR97 | | | | | | | | | | | | | | | |
| RP2405B3 | Seals Study, SE506 | 128 | 02DEC96 | 03JUN97 | | | | | | | | | | | | | | | |
| RP2405B8 | Performance Confirmation, SE050B | 251 | 02DEC96 | 30SEP97 | | | | | | | | | | | | | | | |
| RP2405B7 | Test Evaluation Plan, SE504 | 127 | 27JAN97* | 25JUL97 | | | | | | | | | | | | | | | |
| RP2405B4 | Safeguards, Security to SRA/Design, SE500 | 128 | 01APR97 | 30SEP97 | | | | | | | | | | | | | | | |
| RP2405B5 | Waste Package Size Study, SE460 | 128 | 01APR97 | 30SEP97 | | | | | | | | | | | | | | | |
| RP2405B6 | Waste Generated (Disposal) Study, SE436 | 128 | 01APR97 | 30SEP97 | | | | | | | | | | | | | | | |
| TR42FB5: Subsurface Design Documentation | | | | | | | | | | | | | | | | | | | |
| RP120715 | SDD Development | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| RP120700 | Develop Radiation Shielding Design Guide | 108 | 11FEB97* | 15JUL97 | | | | | | | | | | | | | | | |
| RP120710 | Drift Design (Ref:SNL-Dec1991) Review & Update | 118 | 15APR97* | 30SEP97 | | | | | | | | | | | | | | | |
| RP120M3H | Design Guides | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | |
| TR42GA1: Support SRA - RSD Ph II | | | | | | | | | | | | | | | | | | | |
| RP7405A1 | Support SRA (LOE) | 459 | 01OCT97* | 30JUL99 | | | | | | | | | | | | | | | |
| TR42GA2: Interface Activities - RSD Ph II | | | | | | | | | | | | | | | | | | | |
| RP74061 | Interface Activities (LOE) | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | |
| TR42GA3: MGDS Project Engineering - Repository P | | | | | | | | | | | | | | | | | | | |
| RP1000A | MGDS Project Engineering - Repository Ph-II | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | |
| RP1000A1 | Prepare VA Design Summary Statement | 74 | 01MAY98* | 14AUG98 | | | | | | | | | | | | | | | |
| RPT000A3 | Coordinate E&I Support to MGDS VA Review | 44 | 01JUN98* | 31JUL98 | | | | | | | | | | | | | | | |
| RP1000A2 | VA Design Summary Statement | 0 | | 14AUG98 | P3 | | | | | | | | | | | | | | |
| RP1000B | MGDS Project Engineering - Repository | 251 | 01OCT98 | 30SEP99 | | | | | | | | | | | | | | | |
| TR42GA4: Subsurface Interface Activities | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early | LAP0 |
| Project Finish | 01OCT92 | Progress Bar | |
| Date Date | 02DEC98 | Critical Activity | |
| Plot Date | 18DEC98 | | |

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| Date | KRISHNA 12/18/98 (1600HRS) (S-5315) | Checked | Approved |
| | Revision | | |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
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| RP74051 | Subsurface Interface Activities | 251 | 01OCT97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPPR18M3 | Submit Repository Input to PR 18 | 0 | | 13MAR98* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPPR19M3 | Submit Repository Input to PR19 | 0 | | 15SEP98* | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR42GA7: Product Production Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7303F1 | Product Production Support | 896 | 01OCT97* | 27APR01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR42GB2: Subsurface Design Documentation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP74064 | Prep Repos. Text & Info to PISA Chpts 2-11 | 102 | 01OCT97* | 02MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP74062 | SDD Development | 190 | 02JAN98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP74066 | Coord. & Cond. Rev's of Relative PISA Chpts | 64 | 03MAR98 | 01JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP74068 | Support Prep. of Plan for Development | 85 | 02JUN98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR42GB3: Support Systems Studies - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7405B1 | Decommissioning, SE508 | 230 | 01OCT97* | 31AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR42GB4: Prepare Design Guides - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403F1 | Prepare Design Guides | 230 | 01OCT97* | 31AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YP4XPP003: PPkg - MG010 - Write Design/Operation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPG1402B | Write PISA | 186 | 01OCT97* | 29JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPG10M3A | Submit Initial Draft Repository PISA Chapters | 0 | | 30DEC97* | P3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPG10M3 | Submit Final Repository PISA Chapters | 0 | | 29JUN98 | P3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| YP4XPP024: PPkg - RP170A - Subsurface Design - P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17000 | Support SRA - Phase II | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17005 | Update Subsurface Layout | 374 | 01OCT97* | 31MAR99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17017 | Design Guide Development - Phase II | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17022 | Support DBA/Q-List Development | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17065 | Cost Update | 455 | 01OCT97 | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17075 | Develop Tech. Spec's - Phase II | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17098 | M & I - SubSurface | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | ■ | Early | URP6 |
| Project Finish | 01OCT02 | ■ | Progress Bar | |
| Date Date | 02DEC98 | ■ | Critical Activity | |
| Plot Date | 18DEC98 | | | |

YUCCA MOUNTAIN PROJECT PLAN
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| Date | 12/18/98 | Revision | 1 (600-HRS) (5-5315) | Checked | Approved |
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| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | |
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| RP17099 | Refine Underground Facility Portion of EB Seg | 455 | 01OCT97* | 26JUL99 | | | | | | | | | | | | | | | |
| RP17205 | Seals/Decommissioning | 272 | 01OCT97* | 30OCT98 | | | | | | | | | | | | | | | |
| RP17003 | Interface Activities | 397 | 29OCT97 | 28MAY99 | | | | | | | | | | | | | | | |
| RP17010 | Refine Ground Support Systems | 374 | 17NOV97* | 13MAY99 | | | | | | | | | | | | | | | |
| RP1701M3 | Receive PA Input | 0 | | 30SEP98* | M4 | | | | | | | | | | | | | | |
| RP17001 | Refine Concept of operations | 455 | 01OCT98 | 25JUL00 | | | | | | | | | | | | | | | |
| RP17020 | Radiological Safety | 896 | 01OCT98 | 29APR02 | | | | | | | | | | | | | | | |
| RP17035 | Refine Emergency Systems Designs | 146 | 01OCT98* | 03MAY99 | | | | | | | | | | | | | | | |
| RP17040 | Refine Subsurface Waste Handling System Design | 156 | 01OCT98 | 17MAY99 | | | | | | | | | | | | | | | |
| RP17045 | Update Materials Identification and Characterist | 111 | 01OCT98* | 15MAR99 | | | | | | | | | | | | | | | |
| RP17055 | Update Utilities Systems Design | 251 | 01OCT98* | 30SEP99 | | | | | | | | | | | | | | | |
| RP17070 | SDD Development - Phase II | 455 | 01OCT98 | 25JUL00 | | | | | | | | | | | | | | | |
| RP17015 | Refine Retrieval System and Strategy | 190 | 31DEC98* | 29SEP99 | | | | | | | | | | | | | | | |
| RP17025 | Finalize HVAC System Configurations | 190 | 31DEC98* | 29SEP99 | | | | | | | | | | | | | | | |
| TR448EB085: Cost Estimating | | | | | | | | | | | | | | | | | | | |
| TR448604 | Prepare TSLCC Data for Report | 22 | 30JUL96A | 11DEC96 | | | | | | | | | | | | | | | |
| TR46FA1: Cost Estimating - RSD Ph I | | | | | | | | | | | | | | | | | | | |
| RP020720 | Cost Estimating - RSD Ph I | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| TR46FB1: Nevada Transportation | | | | | | | | | | | | | | | | | | | |
| RP020700 | Addition of a Fifth Rail Corridor | 124 | 01OCT96A | 01APR97 | | | | | | | | | | | | | | | |
| RP020702 | Refine Rail Corridor Alignments | 170 | 01OCT96A | 05JUN97 | | | | | | | | | | | | | | | |
| RP020706 | Rapid Response Support | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| RP020M3 | Nevada Transportation Status Letter | 0 | | 05JUN97 | M3 | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early | LRP0 |
| Project Finish | 01OCT02 | Progress Bar | |
| Date Date | 02DEC96 | Critical Activity | |
| Plot Date | 18DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

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| KROSHINA 12/18/96 (1800MRS) (3-5315) | |
| Date | Revision |
| Checked | Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
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| RP020704 | Support Alternative Selection | 81 | 06JUN97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46FB2: Update/Integrate Nuclear Fac Design - R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A2 | Finalize Waste Handling Concept | 82 | 01OCT96A | 30JAN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A3 | Size Waste Handling Equipment/Areas | 100 | 02DEC96* | 23APR97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP243AMA | Waste Handling Systems Config. | 0 | | 30JAN97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A4 | Size Cask Maintenance Areas | 20 | 27MAR97 | 23APR97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A1 | Size Common Support Areas | 44 | 24APR97 | 25JUN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A5 | Size Waste Treatment Equipment/Areas | 44 | 24APR97 | 25JUN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403AA | Complete Design Descriptions | 111 | 24APR97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP243AMB | Waste Handling & Cask Maint. | 0 | | 30MAY97* | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A6 | Develop Initial Integrated Facility Layout | 19 | 26JUN97 | 23JUL97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP243AMC | Secondary Waste Treatment Flow | 0 | | 30JUN97* | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A7 | Prepare Structural Design | 48 | 24JUL97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A8 | Prepare HVAC design | 48 | 24JUL97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2403A9 | Prepare Space Summary and GAS | 42 | 01AUG97* | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP243AMD | HVAC Flow Diagrams | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP243AME | Nuclear Facilities General Arrangement | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP244M3 | Provide Design Data to PA - Ph I | 0 | | 30SEP97 | M4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46FB3: Radiological Safety - RSD Ph I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2402A1 | Radiological Safety Design Analysis | 187 | 01OCT96A | 30JUN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2402A2 | Waste Handling Operations Dose Assessment | 64 | 01JUL97 | 30SEP97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP242AM | Waste Handling Operations Dose | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46FB4: Operations/Staffing Analysis - RSD Ph I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP2402C4 | Develop Staffing Estimate | 84 | 01OCT96A | 03FEB97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP242CM | Operations Staffing Letter Report | 0 | | 03FEB97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|----------------|---------|--|------|
| Project Start | 01OCT95 | | LRP0 |
| Project Finish | 01OCT92 | | |
| Date Date | 02DEC96 | | |
| Plot Date | 18DEC96 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 6 of 18

Date KRISHNA 12/18/96 (1600HRS) (S-5315)

Revision _____ Checked Approved _____

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 |
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| TR46FB5: Site Preparation - RSD Ph I | | | | | | | | | | | | | | | | | | |
| RP2403C1 | Prepare Site Grading & Drainage Plans | 64 | 01JUL97* | 30SEP97 | | | | | | | | | | | | | | |
| RP2403C2 | Prepare Site Operations Description | 42 | 01AUG97* | 30SEP97 | | | | | | | | | | | | | | |
| RP2403C3 | Update Site Layouts | 42 | 01AUG97* | 30SEP97 | | | | | | | | | | | | | | |
| RP243CM | Repository Surface Site Layout Dwgs | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | |
| TR46FB7: Support DBE/Q-List Development - RSD Ph | | | | | | | | | | | | | | | | | | |
| RP2405C1 | Internal Events Analysis | 146 | 01OCT96A | 01MAY97 | | | | | | | | | | | | | | |
| RP2405C3 | Aircraft /Missile Crash/Bombing Events Analysis | 102 | 01OCT96A | 28FEB97 | | | | | | | | | | | | | | |
| RP2405C4 | Classification Analysis Support | 190 | 01NOV96A | 03SEP97 | | | | | | | | | | | | | | |
| RP2405C2 | External Events Analysis | 127 | 02JAN97* | 01JUL97 | | | | | | | | | | | | | | |
| TR46FB8: Develop Alternatives Data for NEPA - RS | | | | | | | | | | | | | | | | | | |
| RP24071 | Assemble Engineering Files | 84 | 14OCT96A | 12FEB97 | | | | | | | | | | | | | | |
| RP247M3 | Engineering File for NEPA | 0 | | 12FEB97 | M3 | | | | | | | | | | | | | |
| RP24072 | Prepare NEPA Data for Alternatives | 106 | 13FEB97 | 15JUL97 | | | | | | | | | | | | | | |
| RP247M3B | Update Engineering File for NEPA | 0 | | 15JUL97 | M3 | | | | | | | | | | | | | |
| TR46GA2: Cost Estimating - RSD Ph II | | | | | | | | | | | | | | | | | | |
| RP74041 | Prepare Input to '97 TSLCC | 67 | 01OCT97 | 09JAN98 | | | | | | | | | | | | | | |
| RP74042 | Support TSLCC Preparation & Reviews | 156 | 12JAN98 | 20AUG98 | | | | | | | | | | | | | | |
| RP74043 | Refine Cost Estimates | 78 | 12JAN98 | 30APR98 | | | | | | | | | | | | | | |
| RP74044 | Prepare Licensing, Design & Construction Schedul | 272 | 01JUL98* | 30JUL99 | | | | | | | | | | | | | | |
| TR46GA3: Support NEPA Process - RSD Ph II | | | | | | | | | | | | | | | | | | |
| RP74071 | Support NEPA Process (LOE) | 459 | 01OCT97* | 30JUL99 | | | | | | | | | | | | | | |
| TR46GB2: Support DBE/Q-List Development-RSD Ph I | | | | | | | | | | | | | | | | | | |
| RP7405C1 | Prepare DBE Analysis | 165 | 01OCT97* | 29MAY98 | | | | | | | | | | | | | | |
| RP7405C3 | Support Classification Analyses Preparation | 459 | 01OCT97* | 30JUL99 | | | | | | | | | | | | | | |
| RP7405C2 | Maintain DBE Analysis | 376 | 02FEB98* | 29JUL99 | | | | | | | | | | | | | | |

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|----------------|---------|---|-------------------|
| Project Start | 01OCT95 | ■ | Early |
| Project Finish | 01OCT02 | ■ | Progress Bar |
| Date Date | 02DEC96 | ■ | Critical Activity |
| Plot Date | 18DEC96 | | |

LAP0

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 7 of 18

Date KRISHNA 12/18/96 (1600-HRS) (S-8319)
Revision Checked/Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|--|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| TR46GB3: NOB - Waste Handling Systems Design - R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A1 | Prepare/Update Configuration Analyses | 123 | 01OCT97* | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A2 | Prepare Flow Diagrams and Descriptions | 126 | 01DEC97* | 29MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A3 | Prepare/Update Component Sizing Analyses | 127 | 02FEB98* | 31JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A4 | Establish Space and Interface System Requirement | 128 | 01APR98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A5 | Prepare Control Logic Diagrams and Descriptions | 123 | 03AUG98 | 29JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A6 | Prepare Outline Specifications and Equipment Dra | 126 | 01DEC98* | 28MAY99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402A7 | Complete SDD Input | 169 | 01DEC98 | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GB5: NOB - Waste Treatment Systems Design - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402C1 | Prepare/Update Configuration Analyses | 107 | 01APR98* | 31AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402C2 | Prepare Flow Diagrams and Descriptions | 106 | 01MAY98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402C3 | Prepare/Update Component Sizing Analyses | 107 | 01JUN98* | 30OCT98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402C4 | Establish Space and Interface System Requirement | 103 | 01JUL98* | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402C5 | Prepare Control Logic Diagrams and Descriptions | 84 | 01DEC98 | 31MAR99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GB6: NOB - Support Systems Design - RSD Ph I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402D1 | Update the General Arrangements | 60 | 01SEP98* | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402D2 | Update the Support Area Designs | 102 | 01SEP98 | 29JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402D3 | Prepare/Update Configuration Analyses | 60 | 01SEP98 | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402D4 | Prepare Flow/1-Line Diagrams and Descriptions | 311 | 01OCT98* | 30DEC99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402D5 | Prepare/Update Component Sizing Analyses | 60 | 02NOV98* | 29JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402D6 | Establish Space and Interface System Requirement | 61 | 01DEC98* | 26FEB99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GB7: NOB - Structure/Piping Design - RSD Ph | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402E1 | Update the General Arrangements | 60 | 01SEP98* | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402E2 | Update the Support Area Designs | 102 | 01SEP98 | 29JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402E3 | Prepare/Update Configuration Analyses | 60 | 01SEP98 | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Project Start 01OCT95
Project Finish 01OCT02
Data Date 02DEC96
Plot Date 18DEC96

Legend:
Early (dotted bar)
Progress Bar (solid bar)
Critical Activity (thick solid bar)

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

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Date KRISHNA 12/18/96 (1600HRS) (5-5315)
Revision
Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|--|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| RP7402E4 | Prepare Flow/1-Line Diagrams and Descriptions | 311 | 01OCT98* | 30DEC99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402E5 | Prepare/Update Component Sizing Analyses | 60 | 02NOV98* | 29JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402E6 | Establish Space and Interface System Requirement | 61 | 01DEC98* | 26FEB99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402E9 | Finalize General Arrangements | 84 | 01DEC98* | 31MAR99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7402EA | Prepare Control Logic Descriptions | 65 | 01DEC98 | 04MAR99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GB8: Carrier Staging Shed Design - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A1 | Prepare/Update Configuration Analysis | 41 | 02FEB98* | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A2 | Prepare Flow Diagrams and Descriptions | 44 | 02MAR98* | 30APR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A3 | Prepare/Update Component Sizing Analyses | 42 | 01APR98* | 29MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A4 | Establish Space and Interface System Requirement | 42 | 01APR98* | 29MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A5 | Prepare Control Logic Diagrams and Descriptions | 65 | 01JUN98 | 31AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A6 | Prepare Outline Specifications and Equipment Dra | 60 | 01SEP98 | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A7 | Prepare Piping Transpositions | 60 | 01SEP98 | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A8 | Prepare Structural Design Analyses | 60 | 01SEP98 | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403A9 | Prepare General Arrangements | 63 | 01SEP98* | 03DEC98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403AA | Complete SDD Input | 39 | 01OCT98* | 30NOV98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GB9: Site Preparation - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CA1 | Prepare/Update Site Grading & Drainage Plans | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GBA: Site-Wide Systems Designs - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CBA | Maintenance & Supply Systems | 169 | 01OCT98 | 04JUN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB1 | Site Electrical Power System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB2 | Site Water System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB3 | Site Communication Systems | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB4 | Site Compressed Air System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB5 | Security and Safeguards System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Project Start 01OCT95
Project Finish 01OCT02
Data Date 02DEC98
Plot Date 18DEC98

Legend:
 Early
 Progress Bar
 Critical Activity

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 9 of 18

© Primavera Systems, Inc.
KRISHNA 12/18/98 (1600-HRS) (5-5315)
Date Revision Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 |
|---|--|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|
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| RP743CB6 | Emergency Response System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB7 | Health Safety System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB8 | Surface Environmental Monitoring System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CB9 | Central Command and Control Operations System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CBB | Administration System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CBC | General Site Transportation System | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743CBD | Site Gen Hazardous & Non Hazard Waste Disposal | 169 | 01DEC98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GBC: Radiological Safety - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403D1 | Prepare/Update Radiological Safety Design Analys | 373 | 01OCT97* | 30MAR99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403D2 | Prepare/Update Operations Dose Assessment | 229 | 01SEP98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP7403D3 | Prepare ALARA Analyses | 229 | 01SEP98 | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GBD: VA Nuclear Facil Sys Des - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP742VD1 | Prepare Analyses | 111 | 01OCT97* | 13MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP742VD3 | Establish Space and Interface System Requirement | 60 | 03NOV97* | 30JAN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP742VD2 | Prepare Flow/1-Line Diagrams & Descriptions | 70 | 17NOV97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP742VD4 | Complete SDD Inputs | 47 | 17NOV97* | 26JAN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GBE: VA Site Wide Sys & Stur Des - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743VC1 | Utility System Design | 101 | 01OCT97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743VC2 | Safety & Security Systems Design | 101 | 01OCT97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743VC3 | Management & Admin Systems Design | 101 | 01OCT97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743VC4 | Transportation Systems Design | 101 | 01OCT97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP743VC5 | Site Generated Harazdous/non Harazd waste Syst | 101 | 01OCT97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GBF: Prepare Technical Reports - RSD Ph II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP84091 | Prepare Uncanistered Fuel Handling Technical Rep | 229 | 01SEP98* | 30JUL99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR46GBG: Technical Specifications Site Systems - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early |
| Project Finish | 01OCT92 | Progress Bar |
| Date Date | 02DEC98 | Critical Activity |
| Plot Date | 18DEC96 | |

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 10 of 18

Date KRISHNA 12/18/96 (1600HRS) (5-5315)
Revision Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | Schedule | | | |
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| | | | | | | FY96 | FY97 | FY98 | Y9 |
| RP10251 | Prepare Technical Specifications for Site System | 229 | 01SEP98* | 30JUL99 | | | | | |
| TR46GBH: Technical Specifications Nuclear Sys - | | | | | | | | | |
| RP10252 | Prepare Technical Specifications for Nuclear Sys | 229 | 01SEP98* | 30JUL99 | | | | | |
| TR46GBK: Off-Site Utilities | | | | | | | | | |
| RP46802 | Preliminary Load List (Technical Paper) | 71 | 01OCT97* | 15JAN98 | | | | | |
| RP46800 | Electrical Services Analysis | 191 | 01DEC97* | 31AUG98 | | | | | |
| RP46804 | Develop Drawings | 128 | 01APR98* | 30SEP98 | | | | | |
| RP73031 | Off-Site Utilities | 645 | 01OCT98* | 27APR01 | | | | | |
| TR46GBL: Nevada Transportation Phase II | | | | | | | | | |
| RP7403F | Nevada Transportation - Ph II | 896 | 01OCT97* | 27APR01 | | | | | |
| TR47FAF: Cost Estimating | | | | | | | | | |
| RP127705 | Prepare Cost Est - Subs Dsn, Constr & Ops (TSLCC) | 187 | 01OCT96A | 30JUN97 | | | | | |
| RP127700 | Prepare Cost Estim for Comparative Dsn Analysis | 168 | 03FEB97* | 30SEP97 | | | | | |
| TR47FB1: Identify Materials of Construction | | | | | | | | | |
| RP500705 | Develop Materials of Construction Data Base | 251 | 01OCT96A | 30SEP97 | | | | | |
| RP1206M3 | Deliver Engineering data to PA | 0 | | 30SEP97 | M4 | | | | |
| TR47FB2: Near Field Environment | | | | | | | | | |
| RP510710 | Near Field Design Analysis | 209 | 01OCT96A | 31JUL97 | | | | | |
| TR47FB3: Drift Stability Design | | | | | | | | | |
| RP506705 | Identify Ground Support Materials | 61 | 01OCT96A | 31DEC96 | | | | | |
| RP506710 | Perform Analysis | 124 | 14OCT96A | 10APR97 | | | | | |
| RP506715 | Develop Ground Support Designs | 96 | 14OCT96A | 01APR97 | | | | | |
| RP506720 | Preparation of Drawings | 168 | 03FEB97* | 30SEP97 | | | | | |
| RP120M3C | Emplacement Drift Stability | 0 | | 30SEP97 | M3 | | | | |
| TR47FB5: Subsurface Development Design | | | | | | | | | |
| RP120760 | Site Geology & Available Empl. Area | 151 | 01OCT96A | 08MAY97 | | | | | |

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| Project Start | 01OCT95 | Early | LRPO |
| Project Finish | 01OCT02 | Progress Bar | |
| Data Date | 02DEC98 | Critical Activity | |
| Plot Date | 18DEC98 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

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| Sheet 11 of 18 | KRISHNA 12/18/98 (1600HRS) (5-3315) |
| Date | Revision |
| Checked | Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|--|-----|-------------|--------------|------|---------------|--|--|--|--|--|--|--|--|--|--|--|---------------|--|--|--|--|--|--|--|--|--|--|--|---------------|--|--|--|--|--|--|--|--|--|--|--|---------------|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | [Gantt Chart] | | | | | | | | | | | | [Gantt Chart] | | | | | | | | | | | | [Gantt Chart] | | | | | | | | | | | | [Gantt Chart] | | | | | | | | | | | |
| RP120795 | Subsurface Layout Analysis | 80 | 15OCT96A | 07FEB97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120755 | Subsurf Constr. & Develop Methods | 123 | 01NOV96A | 29APR97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120765 | SS Layout Coordinate Geometry Analysis | 85 | 01NOV96A | 01AUG97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120780 | Develop Operations & Constr Schedules | 43 | 01NOV96A | 03JUN97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120785 | Prepare Drawings | 229 | 01NOV96A | 30SEP97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120789 | Thermal Load Management Analysis | 102 | 01NOV96A | 31MAR97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120775 | Define Prelim Constr Equipment List | 43 | 30APR97 | 30JUN97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120M3 | SubSurface Development Design | 0 | | 31JUL97* | M3 | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120M3A | Excavation/Emplacement Method & Schedule | 0 | | 31JUL97* | M3 | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP120M3B | Thermal Load Management | 0 | | 01AUG97 | M3 | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| TR47FB6: Emplacement System Design | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502700 | Equipment Design Analysis | 196 | 01OCT96A | 14JUL97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502705 | Electrification of SS Railed Vehicles | 187 | 15OCT96A | 14JUL97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502735 | Prepare Emplacement System Drawings | 168 | 21OCT96A | 24JUN97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502730 | RH & C Design Analysis | 197 | 01NOV96A | 13AUG97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502715 | Equipment Description Document | 106 | 01MAY97* | 30SEP97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502740 | RH & C Description Document | 106 | 01MAY97* | 30SEP97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP502M3 | Waste Package Handling Equipment | 0 | | 30SEP97 | M3 | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| TR47FB7: Radiological Design | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP123752 | Computer Code Qualification | 251 | 01OCT96A | 30SEP97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP123750 | Radiation Shielding Analysis | 251 | 01NOV96A | 30SEP97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP123758 | Retrieval Radiation Analysis | 147 | 02DEC96* | 30JUN97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| TR47FB9: Subsurface HVAC | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP122725 | Develop/Empl.Vent. Analysis | 145 | 01OCT96A | 30APR97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |
| RP122705 | Dust Control Analysis | 61 | 02DEC96* | 27FEB97 | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | | [Gantt Bar] | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early |
| Project Finish | 01OCT02 | Progress Bar |
| Date Date | 02DEC96 | Critical Activity |
| Plot Date | 18DEC96 | |

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
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KRISHNA 12/18/96 (1600HRS) (5-5315)



| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | FY97 | | | | FY98 | | | | Y9 | |
|--|--|-----|-------------|--------------|------|------|---|---|---|------|---|---|---|------|---|---|---|----|--|
| | | | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | |
| RP122710 | Assess Need - Emplacement Side HEPA Filters | 80 | 02DEC96* | 26MAR97 | | | | | | | | | | | | | | | |
| RP122720 | Airflow Control Analysis | 80 | 02DEC96* | 26MAR97 | | | | | | | | | | | | | | | |
| RP122745 | Prepare Drawings | 190 | 02JAN97* | 30SEP97 | | | | | | | | | | | | | | | |
| RP122730 | Develop Prelim List - Prim & Aux Vent. Equipt. | 43 | 27MAR97* | 27MAY97 | | | | | | | | | | | | | | | |
| RP120M3D | Sub Surface HVAC | 0 | | 30SEP97 | M3 | | | | | | | | | | | | | | |
| TR47FBA: Retrieval Design | | | | | | | | | | | | | | | | | | | |
| RP504705 | Design Analysis | 176 | 01OCT96A | 13JUN97 | | | | | | | | | | | | | | | |
| RP504710 | Equipment / Component Drawings | 169 | 14OCT96A | 04JUN97 | | | | | | | | | | | | | | | |
| RP504715 | Equipment Description Document | 97 | 15APR97* | 29AUG97 | | | | | | | | | | | | | | | |
| RP504M3 | Retrieval Design & Operation | 0 | | 29AUG97 | M3 | | | | | | | | | | | | | | |
| TR47FBD: DBE/Q-List Support | | | | | | | | | | | | | | | | | | | |
| RP123762 | DBE / Scenano Analysis | 251 | 01OCT96A | 30SEP97 | | | | | | | | | | | | | | | |
| RP123768 | Evaluate Common Mode Failure / Logic Diagrams | 229 | 01NOV96A | 30SEP97 | | | | | | | | | | | | | | | |
| RP123766 | Code Qualification for DBE / PRA | 122 | 02DEC96 | 23MAY97 | | | | | | | | | | | | | | | |
| RP123764 | Support the Classification Analysis of SSCs | 157 | 03FEB97* | 15SEP97 | | | | | | | | | | | | | | | |
| TR47FBH: NEPA/Environmental Support | | | | | | | | | | | | | | | | | | | |
| RP128715 | Prepare Engineering Files | 201 | 14OCT96A | 30JUL97 | | | | | | | | | | | | | | | |
| RP128705 | Prepare Drawings | 126 | 02JAN97* | 30JUN97 | | | | | | | | | | | | | | | |
| TR47FBI: Subsurface EB Segment Design | | | | | | | | | | | | | | | | | | | |
| RP126710 | Define Backfill Strategy - Develop Prelim Design | 80 | 01OCT96A | 28JAN97 | | | | | | | | | | | | | | | |
| RP126700 | Emplacement Drift Invert | 61 | 01NOV96A | 30JAN97 | | | | | | | | | | | | | | | |
| RP12065A | Receive PA Input | 0 | 02DEC96* | | M4 | | | | | | | | | | | | | | |
| RP126720 | Prepare Prelim Design - WP Support System | 80 | 02DEC96* | 26MAR97 | | | | | | | | | | | | | | | |
| RP126730 | Prepare Drawings | 83 | 02DEC96* | 31MAR97 | | | | | | | | | | | | | | | |
| RP120M3E | Subsurface EBS Design | 0 | | 31MAR97 | M3 | | | | | | | | | | | | | | |

Project Start 01OCT95
Project Finish 01OCT97
Date Data 02DEC96
Print Date 18DEC96

Early
Progress Bar
Critical Activity

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

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Date KRISHNIA 12/18/96 (1600-PR3) (S-5315)
Revision
Checked Approved

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|---|---|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| TR47FBJ: Performance Confirmation Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP124705 | PC Facilities | 103 | 01NOV96A | 01APR97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP124700 | Remote MCC for PC | 112 | 02DEC96* | 09MAY97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP124715 | Prepare PC Drawings | 74 | 16DEC96* | 01APR97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP120M3F | Performance Confirmation Design | 0 | | 09MAY97 | M3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GAF: Cost Estimating | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP8405 | Cost Estimating | 251 | 01OCT97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GB4: Radiological Safety | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17080 | Radiation Safety/Shielding Dsgn Anal Norm Ops | 166 | 01OCT97 | 01JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17082 | Off-Normal Radiation Safety Evaluation | 210 | 01OCT97 | 03AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17088 | Technical Specifications Development | 124 | 03NOV97* | 01MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP17084 | Radiation Anal /Monitors,Cntrls, Sys, & Comp. | 128 | 01APR98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GB6: Emplacement System Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47600 | General Equipment Analysis | 145 | 01OCT97* | 30APR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47620 | Perform Analysis 1 | 61 | 01OCT97* | 31DEC97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47602 | WP Transporter Analysis | 143 | 03NOV97* | 29MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47628 | Develop RH&C Drawings | 220 | 17NOV97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47604 | Gantry Structural Analysis | 126 | 01DEC97* | 29MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47614 | Develop WP Transporter Drawings | 212 | 01DEC97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47606 | Gantry Carrier Analysis | 126 | 02JAN98* | 30JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47622 | Perform Analysis 2 | 62 | 02JAN98 | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47608 | Isolation Door Analysis | 127 | 02FEB98* | 31JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47610 | Shadow Shield Analysis | 127 | 02FEB98 | 31JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47612 | Loading Dock Analysis | 119 | 16MAR98* | 31AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47624 | Perform Analysis 3 | 64 | 01APR98 | 30JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Project Start 01OCT95
 Project Finish 01OCT02
 Data Date 02DEC96
 Plot Date 18DEC96

Legend:
 [Bar] Early
 [Bar] Progress Bar
 [Bar] Critical Activity

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 14 of 18
 Date KRISHNA 12/18/96 (1600-RS) (5-5315)
 Revision: _____
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| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
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| RP47616 | Develop Outline Specifications | 106 | 01MAY98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47626 | Perform Analysis 4 | 64 | 01JUL98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GB7: Subsurface Utilities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47900 | System Evaluation | 82 | 01OCT97* | 30JAN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47902 | System Schematics | 49 | 03NOV97* | 15JAN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47904 | General Arrangements | 63 | 01DEC97* | 02MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47906 | Assess Changes to Utility Sys. Requirements | 74 | 03MAR98 | 15JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47912 | Develop Overall Sys. Design Descriptions | 149 | 03MAR98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47908 | Devel. System & Major Subsystem P&ID's | 64 | 01APR98* | 30JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47910 | Develop One-Line Diagrams | 75 | 01JUN98* | 15SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GB8: Subsurface HVAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47924 | HEPA Filter Analysis | 63 | 27MAR97 | 24JUN97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47928 | Backfill & Closure | 102 | 01OCT97* | 02MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47934 | Design Guide for HVAC Design | 61 | 01OCT97* | 31DEC97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47920 | Isolation Airlocks | 60 | 03NOV97* | 30JAN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47938 | Develop Drawings | 212 | 01DEC97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47922 | Emplac. Drift Vent/Radiation Doors & Regulators | 64 | 02FEB98 | 01MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47930 | Dust Control Monitoring Analysis | 64 | 03MAR98 | 01JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47926 | Ventilation Equipment | 94 | 04MAY98 | 15SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47932 | Emergency Ventilation & Evacuation Plans | 85 | 02JUN98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47936 | Develop Outline Specifications | 85 | 02JUN98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GB9: Retrieval System Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47500 | Retrieval Scenario Analysis | 101 | 01OCT97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47502 | Retrieval Equipment Analysis | 126 | 01DEC97* | 29MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47504 | Develop Retrieval Drawings | 160 | 15DEC97* | 31JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | Early | LRPO |
| Project Finish | 01OCT02 | Progress Bar | |
| Date Date | 02OCT98 | Critical Activity | |
| Plot Date | 18DEC98 | | |

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

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| Sheet 15 of 18 | KRISHNA 12/18/96 (1800-RRS) (5-5315) |
| Date | Revision |
| Checked | Approved |

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
|--|--|-----|-------------|--------------|------|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|
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| RP47506 | Develop Outline Specifications | 106 | 01MAY98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBA: Seals/Decommissioning | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47950 | Identify Requirements for Seals | 22 | 01OCT97* | 31OCT97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47952 | Develop Preliminary Designs | 79 | 03NOV97 | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47954 | Produce Preliminary Drawings for VA | 62 | 01DEC97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47956 | Refine Performance Criteria | 44 | 02MAR98 | 30APR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47964 | Supt Sys. Engrg /Devel. Reqmts-B'fill, Sealing | 128 | 01APR98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47958 | Reevaluate Seal Designs | 106 | 01MAY98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47960 | Refine Procd. Subsurface Closure/Decomm. | 104 | 01JUL98* | 01DEC98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47962 | Develop Drawings | 102 | 01SEP98* | 29JAN99 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBB: DBE/Q-List Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP123770 | Computational Modeling-DBE Consequences | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP123772 | DBE Anal.-Equipment Dsgn Anal. Top Rpt. | 166 | 03NOV97* | 01JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP123776 | Analysis & Writeup in Supt. of PISA | 124 | 03NOV97 | 01MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP123774 | Eval Control & Monit. Sys.-Accident Scenarios | 190 | 02JAN98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP123778 | Technical Specifications Development | 127 | 02JAN98* | 01JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP123780 | Develop DBE Design Guide | 118 | 15APR98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBD: Subsurface EB Segment Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47970 | Perform Analysis | 176 | 01OCT97* | 15JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47972 | Develop Outline Specs | 158 | 02JAN98* | 14AUG98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47974 | Develop Drawings | 169 | 02FEB98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBE: Ground Control Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47822 | Update Design Inputs | 61 | 01OCT97* | 31DEC97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47836 | ReEvaluate Approach-Database/Catalog | 61 | 01OCT97* | 31DEC97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47824 | Update Eval. of Ground Support Materials | 101 | 03NOV97* | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT99 | Early |
| Project Finish | 01OCT02 | Progress Bar |
| Date Code | 02DEC98 | Critical Activity |
| Plot Date | 18DEC98 | |

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YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
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| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | FY96 | | | | | | | | | | | | FY97 | | | | | | | | | | | | FY98 | | | | | | | | | | | | Y9 | | | | | | | | | | | |
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| RP47820 | Design Guide Development-Seismic | 107 | 01DEC97* | 01MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47826 | Upgrade Thermal & Thermomechanical Anal. | 170 | 01DEC97 | 31JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47832 | Update List of Materials | 62 | 02JAN98 | 31MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47830 | Prepare Drawings | 169 | 02FEB98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47834 | Update Quantities, Charac. & Est. Service Life Matl | 86 | 01APR98* | 31JUL98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBF: Excavation/Muck Handling Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47880 | TBM Excavation Analysis | 101 | 08MAY98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47882 | Secondary Excavation Analysis | 101 | 08MAY98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47884 | Raise Borer Excavation Analysis | 101 | 08MAY98 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47892 | Develop Drawings | 229 | 10JUN98* | 07MAY99 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47886 | Secondary Excavation Analysis | 129 | 01OCT98 | 08APR99 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47888 | Muck Removal Analysis | 129 | 01OCT98 | 08APR99 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47890 | Develop Outline Specifications | 150 | 01OCT98 | 07MAY99 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBG: Personnel & Materials Transport | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47980 | Perform Analyses | 124 | 03NOV97* | 01MAY98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47984 | Develop Drawings | 144 | 03NOV97 | 01JUN98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47982 | Develop Equipment Description Document | 128 | 01APR98* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBH: NEPA/Environmental Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47870 | Prepare New Engineering Files for Review | 102 | 01OCT97* | 02MAR98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47872 | Rev. & Revise Existing Engineering Files | 251 | 01OCT97 | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| TR47GBJ: Performance Confirmation Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RP47806 | Remote Handling & Control | 251 | 01OCT97* | 30SEP98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47800 | Update PC Parameters | 32 | 01DEC97* | 15JAN98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47802 | Enhance PC Data Acquisition Strategy | 62 | 01DEC97* | 27FEB98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |
| RP47804 | Update PC Provisions into SubSurface Design | 63 | 02JAN98* | 01APR98 | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | |

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| Project Start | 01OCT95 | █ | Early |
| Project Finish | 01OCT92 | █ | Progress Bar |
| Date Date | 02DEC98 | █ | Critical Activity |
| Plot Date | 18DEC98 | | |

LRPO

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 17 of 18

KRISHNA 12/18/98 (1800HRS) (S-5313)
 Date: _____ Revision: _____ Checked: _____ Approved: _____

| Activity ID | Activity Description | OD | Early Start | Early Finish | MILE | Fiscal Year | | | | |
|--|---|-----|-------------|--------------|------|-------------|------|------|----|--|
| | | | | | | FY96 | FY97 | FY98 | Y9 | |
| TR47GBL: Personnel Safety & Warning System Design | | | | | | | | | | |
| RP47850 | Eval. DBE's Devel. -VA Dsgn Activity | 39 | 01OCT97* | 26NOV97 | | | | | | |
| RP47854 | Devel. Asses. Plan for Each Event | 53 | 15JAN98* | 31MAR98 | | | | | | |
| RP47855 | Develop Recovery Plans | 45 | 02MAR98 | 01MAY98 | | | | | | |
| RP47860 | Prepare Drawings | 120 | 16MAR98* | 01SEP98 | | | | | | |
| RP47858 | Prepare Documentation | 64 | 15APR98* | 15JUL98 | | | | | | |
| TR47GBM: Subsurface Facilities | | | | | | | | | | |
| RP47404 | Drainage System Analysis | 82 | 01OCT97* | 30JAN98 | | | | | | |
| RP47405 | Ventilation Openings Design | 82 | 01OCT97 | 30JAN98 | | | | | | |
| RP47410 | Supplimental Thermal Analyses | 165 | 01OCT97 | 29MAY98 | | | | | | |
| RP47418 | Shaft Headframes & Hoisting Systems | 145 | 01OCT97* | 30APR98 | | | | | | |
| RP47425 | Shaft Design Guide | 83 | 01OCT97* | 02FEB98 | | | | | | |
| RP47420 | Subsurface Construction Materials Handling Sys. | 79 | 03NOV97* | 27FEB98 | | | | | | |
| RP47430 | Develop Design Drawings | 229 | 04NOV97* | 01OCT98 | | | | | | |
| RP47422 | Personnel Support Facilities | 84 | 01DEC97* | 31MAR98 | | | | | | |
| RP47408 | Construction & Emplacement Schedules | 84 | 02JAN98* | 30APR98 | | | | | | |
| RP47416 | Ventilation Fans, Fan Hsngs. & HEPA Filter Sys. | 190 | 02JAN98* | 30SEP98 | | | | | | |
| RP47402 | Coordinate Geometry Calculations | 86 | 02MAR98* | 30JUN98 | | | | | | |
| RP47400 | Sursurface Conop Description | 86 | 01APR98* | 31JUL98 | | | | | | |
| RP47414 | Waste Emplacement Optimization Analysis | 86 | 01APR98* | 31JUL98 | | | | | | |
| RP47424 | Backfill Prep. & Handling Facilities | 128 | 01APR98 | 30SEP98 | | | | | | |
| RP47428 | Equipment Outline Specifications | 128 | 02APR98* | 01OCT98 | | | | | | |
| RP47412 | Draft Thermal Management Plan | 86 | 02JUN98 | 01OCT98 | | | | | | |

Project Start 01OCT95
Project Finish 01OCT02
Data Date 02DEC96
Plot Date 18DEC96

Legend:
Early
Progress Bar
Critical Activity

LRP0

YUCCA MOUNTAIN PROJECT PLAN
WBS 1.2.4 - REPOSITORY
LONG RANGE PLAN (FY96-FY98)

Sheet 18 of 18

KRUSHNA 12/18/96 (1600HRS) (S-5315)

Date Revision Checked/Approved

APPENDIX L
E&I INTERFACES

The data contained in this appendix reflects the status of the Yucca Mountain Site Characterization Project as of 3/7/97. Because of the evolving conditions of the Yucca Mountain Site Characterization Project, data in this appendix is changed or updated as necessary. However, this VA Design and Review Plan will not be revised or reissued as a result of data updates. For a current status of the data in this appendix and/or a copy of the current version, contact M. Sellers. For suggested changes to the contents, contact R. Wagner.

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A preliminary checklist of the interfaces between E&I and the YMP and Program areas has been created by reviewing the data in the FY 97/98 planning database. The resulting list of summary accounts that involve interfaces with E&I are provided in the following pages. Headings are provided to identify the area that is interfacing with E&I, and the interface topic that is being addressed. The summary account title and number are provided along with the approximate time of the interface.

E&I DELIVERIES TO PA
KEY 1997 DESIGN DELIVERIES

PERFORMANCE ASSESSMENT

PRECLOSURE

1. Description of Underground Opening Stabilization Techniques

Delivery from Drift Stability Design TR47FB3
Materials: December
Analyses: April
Final Delivery: September

2. Description of Underground HVAC

Delivery from Subsurface HVAC TR47FB9
Analyses & equipment list: April/May
Final Delivery: September

3. Location of Release Sources

Delivery from Subsurface Layout from TR47FB5
Layout Analyses: April

Delivery from Surface DBE work from TR46FB7
Internal Events Analyses: May

Delivery from Subsurface DBE work from TR47FBD
Scenario Analyses: September

Delivery from Site Layout from TR46FB5
Updated Site Layout Drawings: September

Delivery from Nuclear Facilities Design TR46FB2
Initial Layout: July
HVAC Design: September
General Arrangements: September
Provide Data to PA: September

Delivery from Preparation of Design Guides TR42FB3
Source Term Design Guide: April

Delivery from EBS DBEs TR22FB3
EB Seg/WP DBEs: January
WP Off-normal & Accident Scenarios: March

4. Transporter Design and Underground Operations

Delivery from Subsurface Emplacement System Design TR47FB6
Emplacement System Drawings: June
Handling Equipment: September

5. Retrieval Information

Delivery from Subsurface Retrieval Design TR47FBA
Equipment/component drawings: June

Delivery from Retrievability Study TR15FB3
Retrievability Study: May

6. Waste Handling Concepts of Operation

Delivery from Nuclear Facility Design TR46FB2
Waste Handling Concept: January

Delivery from Radiological Safety TR46FB3
Waste Handling Ops Dose Assessments: September

Delivery from Subsurface Development Design TR47FB5
Waste Emplacement Method: July

Delivery from Subsurface Interface Activities TR42FA1
Revise subsurface con-op description: September

Delivery from Subsurface Emplacement System Design TR47FB6
Emplacement System Drawings: June
Handling Equipment: September

Delivery from Con-Ops Account TR12FB3
Updates: March, August, September

Delivery from System Studies TR15FB1
Waste Generated Study: September

7. Waste Receipt Schedule

Delivery from Waste Qty Mix Throughput Study TR15FB2
Report complete: April

Delivery from System Studies TR15FB1
Waste Package Size Study: September

8. Decontamination Waste Streams

Delivery from System Studies TR15FB1
Waste Generated Study: September

Delivery from Nuclear Facility Design TR46FB2
Secondary Waste Treatment Flow: June

9. Hot Cell HVAC

Delivery from Nuclear Facility Design TR46FB2
HVAC Design & Flow Diagrams: September

10. Concepts for Radiation Attenuation

Delivery from Subsurface Design Documentation TR42FB5
Radiation Shielding Design Guide: July

Delivery from Radiological Safety TR46FB3
Radiological Safety Design Analyses: June

Delivery from Radiological Design TR47FB7
Radiation Shielding Analyses: September

POST CLOSURE

Delivery from Requirements Documentation/Verification
CDA Updates: March, September

1. Areal Mass Loading

Delivery from Near Field Environment TR47FB2
Near Field Design Analysis: July

Delivery from Subsurface Development TR47FB5
Thermal Load Management Analysis: April

2. Waste Package Size and Spacing

Delivery from System Studies TR15FB1
Waste Package Size Study: September

Delivery from Subsurface Development TR47FB5
Subsurface Layout Analyses: February
Thermal Load Management Analyses: April

Delivery from EB Segment Parts List TR233FB1
Technical Drawings for CF, UCF, & HLW Disposal Container Components: June

Delivery from UCF Disposal Container Design
Engineering Sketches: September

3. Drift Size and Excavation Method

Delivery from Subsurface Development TR47FB5
Subsurf Construction & Development Methods: April
Excavation Methods: July

Delivery from Drift Stability Design TR47FB3
Ground Support Designs: April

4. Physical and Chemical Characteristics of Inverts/WP Supports

Delivery from Subsurface EB Segment Design TR47FB1
Emplacement Drift Invert: January
WP Support System: February

Delivery from EB Segment Material Design TR22FB4
Performance & Candidate Materials - EBS Input to TSPA: April
EBS/WP Candidate Materials Selection - IOC to PA: April
Materials Selection Analyses: August

Delivery from EB Segment Parts List TR233FB1
Technical Drawings for Drift Invert Components: June

Delivery from WP Support/Invert Design TR233FB6
Invert/support Evaluations: March
Analyses/sketches: September

Delivery from EMCR Preparation TR251FB9
Provide EMCR Rev 1 Draft to PA: January
Issue EMCR Rev. 1: April

5. Chemical Characteristics of Other Emplaced Materials

Delivery from Drift Stability Design TR47FB3

Ground Support Materials: December

Delivery from Materials of Construction TR47FB1

Materials of construction database & Delivery to PA: September

Delivery from Subsurface EB Segment Design TR47FBI

Emplacement Drift Invert: January

WP Support System: February

Delivery from EB Segment Material Design TR22FB4

Performance & Candidate Materials - EBS Input to TSPA: April

EBS/WP Candidate Materials Selection - IOC to PA: April

Materials Selection Analyses: August

Delivery from EB Segment Parts List TR233FB1

Technical Drawings for Drift Invert Components: June

Delivery from WP Support/Invert Design TR233FB6

Invert/support Evaluations: March

Analyses/sketches: September

Delivery from EMCR Preparation TR251FB9

Provide EMCR Rev 1 Draft to PA: January

Issue EMCR Rev. 1: April

Delivery from Basket Material Models TR252FB1

Provide Preliminary Basket Matl Performance Model to PA & Dsgn: July

Delivery from Basket Material Testing TR252FB2

Provide ST Basket Materials Test Data to PA: January

Provide ST Basket Materials Test Data Update to PA: July

Delivery from EB Segment Material Models TR255FB1

Provide Data Input to PA: June

Delivery from EMCR Rev 1 TR251FB9

Provide EMCR Rev 1 Draft to PA: January

Issue EMCR Rev. 1: April

6. EBS Enhancement Information, including backfill (if any)

Delivery from Subsurface EB Segment Design TR47FBI
Backfill Strategy - Preliminary Design: January

Delivery from Additional Barrier Design TR233FB5
Engrg Evaluations/Analyses: March
Options and sketches: September

Delivery from EBS Model Abstractions TR251FA2
EBS Model Abstractions: September

Delivery from EMCR Rev 1 TR 251FB9
Provide EMCR Rev 1 Draft to PA: January
Issue EMCR Rev 1: April

7. Ventilation Plans

Delivery from Subsurface HVAC TR47FB9
Analyses & equipment list: April/May
Final Delivery: September

8. Long-term Drift Stability

Delivery from Drift Stability Design TR47FB3
Materials: December
Analyses: April
Final Delivery: September

WP & MATERIALS

WP MILESTONE COLLECTION POINTS

Integrate Performance Assessment TSPA-VA TR22FA3
Provide EBS Input to TSPA-VA: November 96
Integrate with PA: All year - September

1. Thermal Hydrologic and Chemical Characteristics of EBS Materials

Delivery from EBS Model Abstractions TR251FA2
EBS Model Abstractions: September

Delivery from EMCR Rev 1 TR251FB9
Provide EMCR Rev 1 Draft to PA: January
Issue EMCR Rev. 1: April

Delivery from Testing of Metal Barriers TR251FBG
Provide 1st Tanks 1st Specimen Results to PA: March

Delivery from Material Thermal Stability TR251FBK
Provide data input to PA: July

Delivery from Basket Material Models TR252FB1
Provide Preliminary Basket Material Performance Model to PA & Design: July

Delivery from Basket Materials Tests TR252FB2
Provide ST Basket Materials Test Data to PA: January
Provide ST Basket Materials Test Data Update to PA: July

Delivery from EB Segment Materials Models TR255FB1
Provide Data Input to PA: June

Delivery from Other EB Segment Materials Tests TR255FB2
Provide Data to PA: August

Delivery from Ceramic Materials Models TR256FB1
Provide Data Input to PA: June

2. Initiation Criteria for Humid Air Corrosion

Delivery from Critical Potential Measurements TR251FB4
Provide Critical Potential Measurements Data to PA: January
Provide Critical Potential Measurements Update Data to PA: August

Delivery from Thermogravimetric Analyses TR251FB5
Provide Thermogravimetric Analysis Data to PA: January
Provide Thermogravimetric Analysis Update to PA: September

Delivery from Relative Humidity Chamber Tests
Provide 1st Batch Report to PA: July

3. Modes of Degradation other than Aqueous or Humid Air

Delivery from Measure MIC TR251FB1
Provide MIC Data Input to PA: January
Provide MIC Data Input Update to PA: July

Delivery from other EB Segment Materials Test TR 255FB2
Provide Data to PA: August

4. Performance Related Basis for Design - Predictive Models and Basis

Delivery from Determination of Near Field Environmental Impact TR22FB5
Submit IOC to PA Describing Degradation Effects on EBS: August

Delivery from Ceramic Material Models TR256FB1
Provide Data Input to PA: June

5. Cathodic Protection Confirmation

6. Technical Basis for Corrosion Degradation Models

Delivery from EMCR Revision 1 TR251FB9 (Collection point for Corrosion Models)
Provide EMCR Rev 1 Draft to PA: January
Issue EMCR Rev 1: April

Delivery from Measure MIC TR251FB1
Provide MIC Data Input to PA: January
Provide MIC Data Input Update to PA: July

Delivery from Critical Potential Measurements TR251FB4
Provide Critical Potential Measurements Data to PA: January
Provide Critical Potential Measurements Update Data to PA: August

Delivery from Thermogravimetric Analyses TR251FB5
Provide Thermogravimetric Analysis Data to PA: January
Provide Thermogravimetric Analysis Update to PA: September

Delivery from Relative Humidity Chamber Tests
Provide 1st Batch Report to PA: July

Delivery from Electrochemical Basis for Galvanic Tests TR251FB7
Critical Potential Test Data to PA: January
Diff Area Ratios Test Update Data to PA: July

Delivery from Electrochemical Potential Testing TR251FBA
Provide Potential Control Data to PA: January
Provide Potential Control Update Data to PA: June

Delivery from Self-Loaded Crack Growth Tests TR251FBC
Provide Data to PA: June

Delivery from Material Degradation Process Models TR251FBE
Provide Crevice Corrosion Data to PA: July
Provide SCC/HE/Prelim. Galv. Corr. Model Data to PA: September

Delivery from Tests of Metal Barriers TR251FBG
Provide 1st Tanks 1st Specimen Results to PA: March

7. Technical Basis for Cladding Degradation Models

Delivery from Cladding Degradation Modeling TR22FB2
Submit IOC to PA: March
Submit DBF Clad & Models: July

Delivery from Cladding Degradation Testing TR241GBC
Perform Degradation Testing: October 97

8. Waste Alteration/Dissolution Rates

Delivery from Waste Form Model Abstractions TR241FA1: September

Delivery from WFCR Preparation TR241FB2 - This is a collection point for Waste Form Models

WFCR Rev 1 Draft to PA: January
WFCR Rev 1 Publication: April

Delivery from Process Model Development TR241FB9
Provide Waste Form Response Model Results to PA: June

Delivery from HLW Glass Modeling TR242FB3
Provide HWG Dissolution Rate Model Results to PA: June

Radionuclide Transport Through Waste Package/EBS

Delivery from Champion Radionuclide Transport Evaluation TR22FAA
Assessment of Work: February
IOC to PA: September

Criticality Evaluations

Delivery from Probabilistic Evaluations of WP Design
Criticality Analyses: September

PA DELIVERIES TO E&I

CANDIDATE DELIVERIES FROM PA TO E&I

1. PA Data Needs

Abstraction/Testing of Waste Pkg Degradation TR542FB2
Provide WP w/PA Data Needs: Dec 96

Near Field Environment Models TR543FB2
Provide Facility Design w/Data Needs: Oct 96

2. Support to Systems Engineering

Support to Follow-on Performance Confirmation Study TR541FA2: September 97

Support to Waste Isolation Study TR541FA3: March 97

Support to Requirements Analysis TR541FA4: August 97

Support to Follow-on Performance Confirmation YP5XPP076: September 98

PA Support to Seals Study TR543FA1: April 97

PA Support to DBE's TR543FA2: December 96

PA Support to Classification Analyses TR543FA3: September 97

PA Support to Classification Analyses/Q-List TR543GA1
Initial: December 97
Follow-on: September 98

PA Support to DIE's TR547FA1: September 97

PA Support to DIE's TR547GA1: September 98

3. Key Assumptions

VA Methodology TR541FB2
Identify Key Assumptions: August 97

4. Results Feedback

TSPA-VA Chapter 8 TR541FB3
Present Reference Case Results: January 98
Sensitivity Analysis Results: February 98

Abstraction/Testing of Waste Form Degradation TR542FB1
Cladding Sensitivity: June 97
Waste Form Degradation Sensitivity: September 97

Abstraction/Testing of Waste Package Degradation TR542FB2
Waste Package Degradation Sensitivities: October 97
Cathodic Protection Sensitivities: October 97
Documented Sensitivity Analyses: March 98

Waste Form Mobilization TR542FB3
Colloid Mobilization Sensitivity Analysis: June 97
Waste Form Mobilization Sensitivity Analysis: Oct 97
Radionuclide Solubility Sensitivity Analyses: July 97
Waste Package Scale Thermal-Hydrologic Sensitivity: September 97
Gaseous Radionuclide Mobility Sensitivity Analysis: August 97
EBS Diffusion Sensitivity Analysis: October 97

Preclosure Performance Assessment TR543FB1
Reference Case Results: December 97
Sensitivity/Uncertainty Analyses: February 98

VA Near Field Environmental Models TR543FB2
Provide Sensitivity Analyses to Design: June 98

VA Thermal-Hydrologic Models TR543FB3
Provide Thermal-Hydrologic Sensitivity Analyses to Design: November 97

5. Materials Evaluations

Consequences of Cementitious Materials TR543EB030: December 96

E&I DELIVERIES TO SITE

CANDIDATE DELIVERIES FROM E&I TO SITE

1. E&I Data Needs

Not explicitly identified in current schedule: June 97 and June 98

2. Test Requirements

Performance Confirmation Design TR47GBJ

Update Performance Confirmation Parameters: January 98

Project Management Control Documents TR13FB1

Draft VA Test & Evaluation Plan: August 97

VA Test & Evaluation Plan: September 97

Project Management Control Documents TR13GB1

Final VA Test & Evaluation Plan: September 98

System Studies TR15FB1

Performance Confirmation Report: September 97

Waste Isolation Study: April 97

3. Radiation Transport

Champion Radiation Transport Evaluations TR22FAA

Assessment: September 97

Radionuclide Transport Evaluation TR22GB6: July 99

4. Near Field Feedback

Near Field Environment TR47FB2

Design Analyses: July 97

Test Other EBS Segment Materials TR255FB2

Feedback to Near Field Environment: August 97

Testing Other EBS Materials TR255GB2

Feedback to Near Field Environment: September 98

Near Field Environment Impacts TR22GB7: September 98

Provide Feedback to Near Field Activities TR251GBD

Initial: December 97

Additional: September 98

5. Waste Form Data

WFCR Revision 1 TR241FB2: April 97

WFCR Revision 2 TR241GB2: September 98

6. EB Segment Materials

EB Segment Materials Models TR255FB1

Provide to Site: March 97

System Studies TR15GB1

Materials Study: January 98

Drift Stability Design TR47FB3

Ground Support Materials: December 96

Ground Control Design TR47GBE

Update List of Materials: March 98

SITE DELIVERIES TO E&I

CANDIDATE DELIVERIES FROM SITE TO ENGINEERING

1. Support to System Studies/Reports

Support Systems Engrg OG39FA1D

Performance Confirmation Follow-on Work: September 97

Support Perf Confirmation Study: September 97

Suppt Sys Engrg Reports & Studies TR39BFA1D

Prepare MGDS Cost Est: September 97

Functional/Reqmnts Analysis - Bin 3: September 97

Functional/Reqmnts Analysis - Bin 2: September 97

VA Test & Evaluation Plan: September 97

Waste Isolation Study: March 97

Seals Study: May 97

Performance Confirmation Follow-on: September 97

Support DIE's TR39BFA2D: September 97

Support Systems Engrg TR39BGA1D

MGDS Cost Estimate: September 98

PISA Chapter 11 (Conduct of Ops): April 98

Suppt Funct Analysis/Reqmnts Analysis: September 98

Finalize Bin 3 Functional Analysis/Reqmnts Analysis: September 98

Update Bin 2 Functional Analysis/Reqmnts Analysis: September 98

Develop Technical Performance Measures: September 98

Support ESF Operations: September 98

ESF/MGDS Transition Plan: September 98

E-W Drift Design Reqmnts Study: January 98

ESF Con-Ops: September 98

Decommissioning Study: September 98

FY98 DIE Suppt TR39BGA2D: September 98

INO3X Account YP3XPP001

Systems Engineering Support: September 01

Systems Functional Analysis/Reqmnts Analysis: September 00

VA & LA Test & Evaluation Plan: March 02

2. Seismic Design Inputs

Conduct Prob Seismic Hazard OG32836FB1
Seismic Workshops: December 96
Final Report: August 97
Seismic Design Inputs: January 98

Seismic Design Inputs TR32835FB1: September 97

3. Thermal Test Data/Results

Drift Scale Test Forecast TR3E2FB23: July 97

Drift Scale Test TR3E2GB53 - Heating Phase
Initial Results: July 98

Single Heater Test TR3E2FB2 & TR3E2FB4
Heat-Up Results: July 97
Cool Down Data: February 98

Final Analysis of Single Heater Test Data TR3E2GB1: June 98

Laboratory Thermal Properties TR32711FB1
Thermal Test Report: June 97

Large Block Test Results TR3E1FB2: August 97

Near Field Environment YP3XPP058
Large Block Test Report: April 98

4. Geologic/Stratigraphic Information & Models

3-D Model TR395FB1: February 97

PISA Chapter 2.3 OG39BFB1
Geology/Stratigraphy/Seismology/Structure Description: May 97

Geologic System Description (PISA)TR39BFB1
Draft Description: July 97
Final Description: September 97
Geologic Map OG32212FB2: August 97

3-D Site Model TR395FA1: September 97

Confirmatory Update to 3-D Site Model TR395GA1: August 98

5. Rock Properties/Rock Mechanics

Rock Properties TR32222FB1

Draft Description: April 97

Final Description: September 97

T-M Changes in Rock Mass TR3C3FB8: September 97

6. DBE Inputs

Volcanism Data Base TR32711FB1: September 97

Maximum Flood Information

Adverse Weather Projections

7. Near Field Environment Conditions

Infiltration Model OG33121FB1: March 97

Moisture Monitoring Data in ESF OG33124FBA & TR33124FBA: March 97

Moisture Monitoring Data in ESF OG33124FBD & TR33124FBB: September 97

Chlorine-36 Data TR33122FBA: March 97

Chlorine-36 Data in ESF TR33122FBB

Data: February 97

Interpretation of Results: August 97

Percolation Flux Across Repository OG33124FB8 & TR33124FB8: August 97

Percolation Flux Across Repository TR33124GB8: September 98

NFER, Rev 1, Vol 1 TR3C5FB9: August 97

Chemical Composition of Water Before Contact w/Repository TR3C1FB1: December 96

Post-Emplacement Seepage Into Repository TR3C2FB5: July 97

Near Field/AZ Models TR3C5FB54

Report: November 97

Chemical Composition of Water Contacting Waste Packages & Waste Form TR3C5FBB

1st Batch Results: January 97

2nd Batch Results: May 97

3rd Batch Results: September 97

Near Field Environment Description (PISA) TR39BFB5: June 98

Mechanics of Waste Package Environment TR3C3GB8: September 98

Chemistry/Minerology of Waste Package Environment TR3C5GB5: September 98

Large Block Test Results TR3E1FB2: August 97

Near Field Environment YP3XPP058

Confirmatory Testing for Near Field Environment: November 98

Large Block Test Report: April 98

8. Waste Form-Related Testing/Data: EBS Transport

Neptunium Solubility TR34131FB4: June 97

Sorption & Transport TR34122FB2

Man Made Mat'ls & Rn Transport: September 97

Rn Solubility Studies TR34131FBB

Model & Experiment Data: September 97

Updates: September 98

Concentrations of Rns Leaving EBS TR3A31FB3

Limit Rn Solubility in EBS: December 96

Corrosion Transport Experiments: March 97

Transport Through Cement Materials Experiments: June 97

Models for Waste Package Hydrological TR3C2FB6: July 97

9. Materials-Related Testing/Data

Sorption & Transport TR34122FB2

Man Made Mat'ls & Rn Transport: September 97

Effects of Man-Made Mat'ls TR3C5GBB

Initial: February 98

Update: September 98

SITE DELIVERIES TO LA

E&I TO LICENSING CANDIDATE DELIVERIES (Non-PISA Deliveries)

1. License Application Plan

Project Management Documents TR13FB1
Draft Compliance Plan: September 97

Project Management Documents TR13GB1
Draft Compliance Plan Update: June 98
Final Compliance Plan: September 98

MGDS Project Engineering TR42FA6
Draft LA Design & Review Plan: September 97

2. Progress Report Support

Systems Integration TR142FA1
PR 16 Input: March 97
PR 17 Input: September 97

Systems Integration TR142GA2
PR 18 Input: March 98
PR 19 Input: September 98
PR 20 Input: March 99

PR Preparation - LLNL TR21FA8: September 97

WPD PR Support TR21GA3: July 01

WPM PR Support TR21GA8: September 98

Subsurface Interface Activities TR42FA1
Input to PR 16: March 97
Input to PR 17: September 97

Subsurface Interface Activities TR42GA4
Input to PR 18: March 98
Input to PR 19: September 98
Input to PR 20: March 99

3. Miscellaneous

System Studies TR15GB1

LA Strategy for DOE SNF: April 98

Integrate Development of Licensing & Regulatory Documents TR22FA2: September 97

Regulatory & Licensing TR22GA7- Phase II

Integrate Regulatory Documents: July 99

E&I DELIVERIES TO PISA

CANDIDATE DELIVERIES FROM E&I TO THE PISA

General Logic Flow for PISA Deliveries:

In general, the logic flow for capturing engineering information in the PISA should begin with the work scope in each applicable engineering area with deliveries to preparation of System Description Document (SDD) sections. The SDD sections should then deliver the appropriate PISA chapter generation. The PISA chapter generation should then deliver the PISA itself in the 1.2.5 area.

1. General PISA Deliveries

SDD's (Deliver to each Design-related PISA Chapter) TR12GB1

Bin 3 SDD's: March 98

Bin 2 SDD's: June 98

Develop SDD's TR12FB1

Bin 1 SDD's: September 97

Systems Integration TR142GA2

Integrate SDD's: September 97

Systems Integration TR142GA2

Integrate SDD's: Oct 97 - July 99

Support PISA Development TR142GA4

Chapter Integration: Apr 98

Reviews & Completion: August 98

Subsurface Design Documents TR42GB2

Text & Info to PISA Chapters (2 - 11): March 98

Reviews: June 98

2. PISA Chapter 1

Support PISA Chapter 1 TR142GA3

Support Development Tasks: April 98

3. PISA Chapter 3

Classification Analyses/Q-List TR1BFB2

CA/Q-List: September 97

Classification Analyses/Q-List TR1BGB1
CA/Q-List: March 98

Support DBE/Q-List TR46GB2
Q-List Analyses: Oct 97 - July 99

DBE/Q-List TR47GBB: Oct 97 - Sept 98

4. PISA Chapter 4

Waste Qty, Mix, & Throughput Study TR15FB2: April 97

System Study Support to SRA/Design TR15GB1
Decommissioning Study: April 98 - October 98

Support System Studies TR42GB3
Decommissioning: Oct 97 - August 98

Nuclear Facility System Description TR46GBD
Analyses: March 98
Diagrams: Feb 98

Emplacement System TR47GB6
Selected Drwgs: May 98

Subsurface Utilities TR47GB7
Evaluations, General Arrangements, Schematics: March 98

Subsurface HVAC TR47GB8
Airlocks, Closure, HVAC: March 98

Ground Control TR47GBE
Materials: March 98
Design Inputs: December 97

Subsurface Facilities TR47GBM
Drainage: Jan 98
Ventilation Openings: January 98

5. PISA Chapter 5

CF Disposal Design TR231GB1
Design Basis Canister Selection: March 98

System Studies TR15FB1
Waste Package Size Study: September 97

HLS Disposal Container Design TR232GB1
Thermal, Structural, Criticality Evaluations: April 98

EBS Design Probabalistic Evaluations TR233GB7
EBS Performance: Oct 97 - July 99
Probabalistic Evaluations: Oct 97 - July 99

Criticality Analysis Methods TR233GB9: Dec 97

UCF Disposal Container Design TR233GBB
Complete Development: July 98
Design Basis SNF: July 98

Probabalistic Design Methods TR233GBC
Criticality Methodology: August 98

Disposal Criticality Analysis Consequence Model TR233GBE: March 98
Material Test Data (TR251GB1, TR251GB4, TR251GB5, TR251GB7, TR251GBA,
TR251GBC): June 98

Material Degradation Models TR251GBE
Crevice Corrosion Model: May 98

Phase Stability TR251GBK
Accelerated Aging Studies: Jan 98

WPD Input to PISA Ch 5 & 6 TR22GB1
Draft: Feb 98
Final: June 98

WPM Input to PISA Ch 5 & 6 TR22GB2
Draft: Feb 98
Final: June 98

6. PISA Chapter 6

System Studies TR15FB1
Seals Study: May 97

WP Supports/Inverts TR233GB1
Evaluations: April 98

Additional Barriers TR233GB2
Drawing Input Sheets: March 98

Testing of Other EBS Materials TR255GB2
Thermal/Chemical Tests: Oct 97 - Sep 98

Subsurface EBS Design TR47GBD
Analyses: June 98

EBS Parts Lists, Drwgs, & Specs TR233GB4: Oct 97 - July 99

Seals/Decommissioning Drwgs & Designs TR47GBA: Feb 98

Subsurface Facilities TR47GBM
Shaft Design Guide: Feb 98

WPD Input to PISA Ch 5 & 6 TR22GB1
Draft: Feb 98
Final: June 98

WPM Input to PISA Ch 5 & 6 TR22GB2
Draft: Feb 98
Final: June 98

7. PISA Chapter 7

DBE Definition & Analysis TR1BFB1
DBE's: September 97

PISA Chapter 7 TR1BGA2
Chapter Development: September 98

DBE Definition & Analyses TR1BGB2: March 98

EBS DBE Evals TR233GB5
Integrate DBE's: Oct 97 - July 99

DBE/Q-List TR47GBB: Oct 97 - Sep 98

System Studies TR15GB1
LA Strategy for DOE SNF: April 98

DOE-Owned SNF Design TR233GB3
Evaluations: Oct 97 - July 99

Waste Form Data (TR241GB3, TR241GB4, TR241GB5, TR241GB6, TR241GBA,
TR241GBB, TR242GB1, TR242GB2): May, June 98

Glass Process Models TR242GB3
Dissolution Rates: June 98

DBE/Q-List TR46GB2
DBE Analyses: May 98

8. PISA Chapter 9

System Studies TR15FB1
Waste Generated Study: September 97

Site-Wide Systems & Structures TR46GBE
Site Generated Waste: Feb 98

9. PISA Chapter 10

DEB Def'n & Analysis TR1BFB1
DBE's: September 97

DBE Def'n & Analysis TR1BGB2: March 98

DBE/Q-List TR46GB2
DBE Analyses: May 98

Rad Safety Design TR46GBC: Oct 97 - July 99

Radiation Safety TR47GB4: Oct 97 - April 01

DBE/Q-List TR47GBB: Oct 97 - September 98

10. PISA Chapter 11

MGDS Con-Ops TR12FB3
MGDS Con-Ops Revision 1: September 97

MGDS Con-Ops TR12GA2
Maintain MGDS Con-Ops: September 98

Support PISA Chapter 11 Development TR142GB1
Complete PISA Chapter 11: April 98

Safeguards & Security TR18FB2: June 97

Subsurface Interface Activities TR42FA1
Revise Con-Ops: September 97

**Waste Handling Systems TR46GB3
Update Config Analyses: Mar 98**

**Personnel Safety & Warning System TR47GBL
Immediate Response Plans: Feb 98**

**VA Site-Wide Systems & Structures TR46GBE
Safety & Security Systems: February 98**

LA DELIVERIES TO E&I

LICENSING TO E&I CANDIDATE DELIVERIES

1. Criticality Topical Report

TR524FA1 Support Draft Criticality Control Topical Report: August 97

TR524FA2 Final Topical Report: September 97

TR524GA4 Final Topical Report: August 98

2. LA Plan Delivery to Guide Future Design

Prepare LA Plan TR524FB5

Submit Final LA Plan: September 97

License Application Plan YP5XPP089

Finalized: August 98

3. RIB & Genesis Data

RIB Maintenance TR533FB1

Waste Package Materials Properties Data in RIB: July 97

Waste Form Characteristics Data in RIB: August 97

Genesis Data Base Maintenance TR536FB1

EBS Phase I Data: September 97

Repository Phase I Data: September 97

MGDS COST ESTIMATES

MGDS COST ESTIMATE CANDIDATE DELIVERIES (Non-TSLCC)

1. Systems Engineering Cost Estimate Preparation

MGDS Cost Estimate TR17FB1
All Activities (MGDS Cost Estimate)

MGDS Cost Analysis TR17GB1
Cost Models Update: Dec 97
Draft Estimate: Jan 98
Update VA Estimates: Feb 98
Final VA Estimates: Jul 98
Final VA Cost Report & Documentation: August 98

2. Waste Package/Engineered Barrier System Cost Estimate Support

EBS Cost Estimate TR234GB4: September 98

Complete Phase I EBS Cost Estimate TR234FB1
Prepare & Provide Cost Estimates: September 97
Obtain Vendor Verification of Material Prices: June 97
Cost of Pedestals & Supports: September 97
Closure Weld Costs: September 97

3. Repository Cost Estimate Support

Cost Estimating TR46FA1: September 97

Cost Estimating TR46GA2
Refine Cost Estimates: Mar 98 - July 99

Cost Estimating TR47FAF: September 97

Cost Estimating TR47GAF: September 98

4. Non-E&I Cost Estimating Support

Support Systems Engineering Reports & Studies TR39BFA1D
Prepare MGDS Cost Estimate: September 97

Support Systems Engineering TR39BGA1D
MGDS Cost Estimate: September 98

E&I DELIVERIES TO NEPA

CANDIDATE DELIVERIES FROM E&I TO NEPA

1. Transportation Work

Transportation Studies (All Activities) TR15FB4: September 97

System Studies TR15FB1

Rapid Response: September 98

NV Transportation Policies: November 98

DOE Transportation Meetings: November 98

Nevada Transportation (All Activities) TR46FB1: September 97

Nevada Transportation TR46GBL: April 01

2. Safeguards & Security, Land Withdrawal

MGDS Safeguards & Security (Land Withdrawal) TR18FB2: June 97

3. Waste Package Support

Integrate Environmental Assessment Performance TR22FA1: September 97

Environmental Assessment Performance TR22GA5: July 99

4. Repository Support

Develop Alternatives Data for NEPA TR46FB8

Engineering Files: March 97

Engineering Files Updates: August 97

Support NEPA Process TR46GA3: July 99

NEPA/Environmental Support TR47FBH

Drawings: June 97

Engineering Files: August 97

NEPA/Environmental Support TR47GBH

New Engineering Files: March 98

Revised Engineering Files: September 98

E&I PROGRAM INTERFACES

PROGRAM INTERFACES WITH WASTE PACKAGE

1. Data provided by Waste Package Development to Nuclear Regulatory Commission
Summary Account TR233FB9
WP150A3 Disposal Criticality Technical Report, Rev. 01 04Sep97

Summary Account TR233GBD
WP100A3 Disposal Criticality Topical Report 30Aug98
2. Data received by Waste Package Development from various utilities and labs
Summary Account TR233FBE
WP233A04 Acquire benchmark critical data 29Nov96
WP233A18 Acquire CRC data - BWR & PWR Fuel 14Mar97

Summary Account TR233FBF
WP233A51 Acquire chemical assay data 30Jun97
3. Data received by Waste Package Development from various materials suppliers
Summary Account TR234FB1
WP234704 Obtain verification of materials prices used in cost estimates 27Jun97
4. Data provided by Waste Package Materials on waste form materials testing and modeling to the Nuclear Waste Technical Review Board, the Nuclear Regulatory Commission, the State of Nevada, and other users
Summary Account TR241FB2
WP0035A3 Issue Waste Form Characteristics Report Revision 1 03Apr97
5. Data provided by Waste Package Materials on engineered materials testing and modeling to the Nuclear Waste Technical Review Board, the Nuclear Regulatory Commission, the State of Nevada, and other users
Summary Account TR251FB9
WP15A10 Issue Engineered Materials Characteristics Report Revision 1 01Apr97

E&I PROGRAM INTERFACES

PROGRAM INTERFACES WITH SYSTEMS ENGINEERING

1. Data received by Systems Engineering from DOE/EM, RSA, or WAST/PM&A
 - Summary Account TR12FB2: Requirements Documentation/Verification
 - SE422700 Maintain Top Level Requirements 01Oct96, 30Sep97
 - SE422705 Update CDA 01Oct96, 31Mar97
 - SE422710 Update CDA 01Apr97, 30Sep97
 - Inputs from Program Level Requirements if changes occur.
 - Flow down of requirements from higher level documents controlled by WAST or PM&A.
 - Newly imposed requirements on MGDS system such as Other Waste Forms, Waste Acceptance modifications, etc.
 - Modification of Assumptions to accommodate newly imposed constraints (if any) on system.
 - Potential Originating Organizations: DOE/EM, RSA, or WAST/PM&A
 - Data Flow: EM or RSA to WAST/PM&A to DOE/YMP to M&O or WAST/PM&A to M&O/WM&I to M&O/MGDS
 - Feedback to EM or RSA or WAST/PM&A regarding our assumptions might occur through DOE/YMP to WAST/PM&A.

 - Summary Account TR12FB3: MGDS Concept of Operations
 - SE400705 Update Con-Ops 02Dec96, 31Mar97
 - SE400715 Update Con-Ops 01Jul97, 29Aug97
 - Inputs from WAST/PM&A or RSA could impact receipt of waste operations or waste processing operations. EM inputs (if any) could affect waste receipt/waste handling operations, requiring adjustments to Con-Ops Document.
 - Data Flow: EM or RSA to WAST/PM&A to DOE/YMP to M&O, or WAST/PM&A to M&O/WM&I to M&O/MGDS

 - Summary Account TR12GA1 MGDS Concept of Operations (Post VA)
 - SE400800 Maintain MGDS Con-Ops 30Nov98, 29Nov99
 - See TR12FB3. Sufficient time to better plan interface points and need dates (if any) to support LA Design.

 - Summary Account TR12FB1 Develop System Description Documents
 - SE405705 Develop Bin 3 SDD's 01Oct96, 30Sep97
 - SE410700 Develop Bin 2 SDD's 07Apr97, 30Sep97
 - SE415700 Develop Bin 1 SDD's 01Apr97, 30Sep97
 - Inputs (if any) from DOE/EM, WAST/PM&A, or RSA could impact receipt of waste operations, waste processing operations, or waste receipt/waste handling operations, requiring adjustments to requirements sections in SDD documents.
 - Data Flow: EM or RSA to WAST/PM&A to DOE/YMP to M&O, or WAST/PM&A to M&O/WM&I to M&O/MGDS; Data may flow through MGDS RD to SDDs.

 - Summary Account TR12GB1 System Description Documents (may not support VA)

SE520805 Requirements Analysis (Bin 3 SDDs) 02Jan98, 31Mar98
SE521805 Requirements Analysis (Bin 2 SDDs) 01Apr98, 30Jun98
SE522810 Requirements Analysis (Bin 1 SDDs) 01Jul98, 30Sep98
See TR12FB1. Sufficient time to better plan interface points and need dates (if any) to support LA Design.

Summary Account TR12GB2 Requirements Documents (probably does not support VA)
SE580800 Maintain CDA Document 01Oct97, 30Sep98
SE530800 Maintain Top Level Requirements Docs 26Nov97, 25Nov98
See TR12FB2.

Summary Account TR13GB1: Program and Project Management & Controls (non-VA)
SE450800 Prepare Draft Risk Management Plan 28Jan98, 21Sep98

Input from EM, RSA, and WAST/PM&A in risk areas associated with inputs which will affect MGDS Design or License Application. Plan will lay out approach for managing risks critical to MGDS success.
Data Flow: EM or RSA to WAST/PM&A to DOE/YMP to M&O, or WAST/PM&A to M&O/WM&I to M&O/MGDS

Summary Account TR15FB1: System Studies Support to SRA/Design
SE460700 Research for Waste Package Size Study 27May97, 25Jun97
Input desired from WAST, DOE/EM, Navy on sizes/shapes of commercial (odd-ball) and other waste forms and any potential impacts to WP Size.

Summary Account TR15FB4: Transportation Studies
SE456750 System Support to NEPA Activity (non-VA) 01Oct96, 30Sep97
Support to Engineering Files and EIS Transportation work. Input from EM, Navy, Other Waste Orgs via DOE/WAST/PM&A or DOE/YMP to M&O. Output goes to Jason via DOE/YMP.

SE457705 Transportation Support (Rapid Response) 01Oct96, 30Sep97
Inputs from RSA via DOE/WAST/PM&A and DOE/YMP necessary to support interface definitions (in 1.2.1.6). Inputs from Transportation portion of WAST with potential impacts to MGDS or Nevada Transportation.

Summary Account TR15GB1: System Studies Support to SRA/Design
SE457755 Transportation Support (Rapid Response) 01Oct97, 30Sep98
See TR15FB4, SE457705.

SE516802 ID Issues for LA Strategy for DOE SNF (non-VA) 03Nov97, 14Nov97
Input/Output with EM, Navy, and other Waste Form orgs.
Data Flow is from EM/Navy/Others to DOE/WAST/PM&A or DOE/YMP to M&O.

Summary Account TR16FA1 Interface Management

SE426700 Develop Bin 3 Interfaces 01Oct96, 30Jun97
SE426705 Develop Bin 2 Interfaces 01Oct96, 30Jun97
SE426710 Evaluate Interfaces 01Oct96, 30Jun97

Inputs desired from DOE/EM, DOE/WAST/PM&A, RSA, and Navy to support the evaluation of parameters at the MGDS to Waste Form or MGDS to Transportation interface.

Outputs to these organizations in the form of interfaces reflective of current MGDS capabilities/envelopes. Waste Acceptance Criteria Document developed based on current MGDS capabilities to be added in FY97 Supplemental Funding (TR16FB1) with a draft on June 30, 97 (Level 4) and a Revision 0 on 9-30-97 (Level 3).

Data flow is via DOE/YMP or M&O/WM&I.

Summary Account TR16GA1 Interface Management

SE532810 Update Bin 3 SSC Interface Requirements 01Oct97, 30Jun97
SE532815 Update Bin 2 SSC Interface Requirements 01Oct97, 30Jun97
SE532820 Evaluate Interfaces 01Oct97, 30Jun97

See TR16FA1. Adjustments to Interfaces probable as a result of negotiations with external organizations (through DOE/YMP) in order to accommodate larger percentage of fuels. Potential impacts to design to be reflected in LA design (not VA). Take credit for capability to handle fuel by showing we have approach at VA, but not yet incorporated into design. A continuation of account TR16FB1 added via FY97 Supplemental funding will also likely be required.

2. Data received by Systems Engineering from M&O/WM&I

Summary Account TR13FB1 Program & Project Management & Controls

SE449700 Support TMIP Development 02Dec96, 30Sep97

Requires participation (input) from M&O/WM&I to develop/update this document.

Minimum participation consists of review, comment, and sign-off on final product.

External interfaces involving DOE to other agencies will need to be documented in another forum (IMP?).

Feedback could be provided to M&O/WM&I to provide documented management process for interfacing between East and West.

SE418710 Prepare Draft VA T&EP Plan 01Apr97, 01Aug97

Input from Test Evaluation Master Plan (TEMP) which was received from M&O/WM&I.

Summary Account TR13GB1: Program and Project Management & Controls (non-VA)

SE419710 Develop Preliminary Draft LA T&EP 01Apr98, 14Aug98

Input from M&O/WM&I for any changes/update to TEMP. Incorporation of Other Waste Forms, and RSA Interfaces into test requirements (weak relationship).

Summary Account TR15FB1: System Studies Support to SRA/Design

SE436700 Research for Waste Generated Study 01Apr97, 15May97

Input from M&O/WM&I on Waste Stream Characteristics (already received) - may have implications on type, rate, and qty of waste generated.

Summary Account TR15FB2: Waste Qty, Mix, Throughput Study
SE200710 Identify Waste Receipt Schedules 19Nov96, 28Feb97
Inputs received from M&O/WM&I regarding Waste Stream Characteristics (rates and potential surges). Results of study likely to be fed back to M&O/WM&I.

Summary Account TR15GB3 Thermal Management Technical Analysis (non-VA)
SE900102 Identify Issues 16Apr98, 15May98
Input from WAST/PM&I via M&O/WM&I on waste receipt schedules and modifications and storage information. Inputs will need to be considered in the context of thermal management.

Summary Account TR17FB1: MGDS Cost Analysis
SE124720 Preliminary Draft MGDS-VA Cost Est. Rpt. 18Mar97, 06May97
Input from M&O/WM&I regarding anticipated assumptions for TSLCC and MGDS Cost Estimate planned for FY98. Desired input from EM and others (via DOE/WAST/PM&A or DOE/YMP) regarding incorporation of costs associated with other fuels into the baseline & design.

Summary Account TR17GB1: MGDS Cost Analysis (Schedule being revised)
SE124800 Develop VA Case Assumptions 01Oct97, 03Nov97
SE124805 Develop 98 TSLCC Assumptions 06Oct97, 14Nov97
Inputs from M&O/WM&I regarding agreements on assumptions.
Incorporation of Comments June 98, July/Aug 98
Input from M&O/WM&I regarding TSLCC Comments (possibly from ICE). Also provides opportunity to incorporate Design generated adjustments.

Summary Account TR18FB2: Perform MGDS Safeguards & Security Eval
SE500700 Perform Safeguards & Security Eval 02Jan97, 25Apr97
Inputs desired from EM & Navy regarding characteristics of other waste forms which may have Safeguards & Security implications. Inputs regarding Pu desired.
Data Flow via DOE/YMP or DOE/WAST/PM&A through M&O/WM&I

Summary Account TR18GA3: Safeguards and Security
SE730A Provided Safeguards, Security to SRA/Design 01Oct97, 26Jul99
See TR18FB2.

Summary Account TR1BFB1: DBE Definition and Analysis
SE310700 DBE FY'97 (1ST HALF) 01Oct96, 31Mar97
SE310705 DBE FY'97 (2ND HALF) 01Apr97, 30Sep97
Input desired from EM, Navy, and other waste forms to consider in DBE analyses. Inputs concerning Pu desired for evaluation also.
Data Flow via DOE/YMP or DOE/WAST/PM&A through M&O/WM&I.

Summary Account TR1BGB2: DBE Definition and Analysis
SE310800 DBE FY'98 (1ST HALF)
SE310805 DBE FY'98 (2ND HALF)
See TR1BFB1.

03Nov97, 03Apr98
01May98, 02Nov98

3. Data provided by Systems Engineering to WAST/PM&A or WM&I

Summary Account TR15GB3 Thermal Management Technical Analysis (non-VA)

SE125AM3 Thermal Management Technical Analysis 30Sep98

Potential Output to WAST via DOE/YMP regarding thermal management techniques to be employed during waste acceptance or storage. Output could affect RSA or ISF constraints.

Summary Account TR17FB1: MGDS Cost Analysis

SE124AM3 Submit Cost Estimate 30Sep97

Output to M&O/WM&I stating assumptions to be used in MGDS contribution to TSLCC and for MGDS and LA Plan Cost Estimates.

Summary Account TR17GB1: MGDS Cost Analysis (Schedule being revised)

SE124805 Develop 98 TSLCC Assumptions 06Oct97, 14Nov97

Cost Input to TSLCC March 98

Output to M&O/WM&I to support TSLCC

Output to M&O/WM&I reflecting revisions resulting from comment incorporation.

TECHNICAL PUBLICATIONS MANAGEMENT
ACCEPTED DELIVERABLE TRANSMITTAL

Page 1 of 1

DATE: September 2, 1997 SLM: jlp:0833A
TO: Stephan J. Brocoum WBS: 1.2.12.1.5
FROM: Sandra L. Moore, Publications Production Supervisor *SLM* QA: N/A
Technical Publications Management

Enclosed is a copy of the accepted YAR and deliverable #RP120MG1R1, WBS #1.2.4.2, Viability Assessment Design and Review Plan, DI: B00000000-01717-4600-00070, Rev 1, ICN 2. The acceptance of this deliverable closes YAR #0833A.

TPM will file a records package associated with this YAR in the Records Processing Center.

If you have any questions regarding the information contained herein or concerns about the deliverable coordination process, please contact Mary Ann Nusbaum, TPM Production Coordinator at (702) 295-6992 or me at (702) 295-7162.

Enclosures:

1. Copy of YAR #0833A
2. Copy of completed deliverable package

cc w/enclosures:
D. M. Ridolfi, YMSCO

TECHNICAL PUBLICATIONS MANAGEMENT
ACCEPTED DELIVERABLE TRANSMITTAL

Page 1 of 1

DATE: September 2, 1997
TO: Carl R. Hastings
FROM: Sandra L. Moore, Publications Production Supervisor *SM*
Technical Publications Management

SLM: jlp:0833A
WBS: 1.2.12.1.5
QA: N/A

Enclosed is a copy of the accepted YAR for deliverable #RP120MG1R1, WBS#1.2.4.2, Viability Assessment Design and Review Plan, DI: B00000000-01717-4600-00070, Rev 1, ICN 2. The acceptance of this deliverable closes YAR #0833A.

TPM will file a records package associated with your YAR in the Records Processing Center. If you have any associated records regarding this deliverable, submit a records package according to records source responsibilities defined in AP-17.1Q and include the YAR number in the records package title.

If you have any questions regarding the information contained herein or concerns about the deliverable coordination process, please contact Mary Ann Nusbaum, TPM Production Coordinator at (702) 295-6992 or me at (702) 295-7162.

Enclosure:

1. Copy of YAR #0833A



TRW Environmental
Safety Systems Inc.

1180 Town Center Drive
Las Vegas, NV 89134
702.295.5400

WBS# 1.2.1
QA: N/A

Contract #: DE-AC01-91RW00134
LV.EIO.RDS.08/97-031

August 19, 1997

Stephan J. Brocoum
Assistant Manager for Licensing
Yucca Mountain Site Characterization Office
U.S. Department of Energy
P.O. Box 30307
North Las Vegas, NV 89036-0307

Dear Dr. Brocoum:

Subject: Viability Assessment Design and Review Plan

Attached is the "Viability Assessment Design and Review Plan," B00000000-1717-4600-00070, Rev. 1, ICN 2, dated August 11, 1997. The following pages have been changed since the ICN 1, May 22, 1997, issue that you currently possess and have been inserted into the attached document:

1. Title page
2. Page i
3. Page ii
4. In Appendix B, the five pages that comprise the Resolution Plan for Issue # 10.

This transmittal is intended to satisfy the "Pending" conditions that will allow the subject document to be accepted by the U.S. Department of Energy.

If you have any questions, please call Carl Hastings at 295-4358.

Sincerely,

Richard D. Snell, Manager
Engineering & Integration Operations
Management and Operating Contractor

LV.EIO.RDS.08/97-031

August 19, 1997

Page 2

Enclosure:

Viability Assessment Design
and Review Plan, Rev. 1, ICN 2

cc w/o encl:

V. A. Dulock, M&O, Las Vegas, NV

C. R. Hastings, M&O, Las Vegas, NV

S. L. Klapproth, M&O, Las Vegas, NV