

Exhibit 10

Exhibit 10

TECHNICAL GUIDANCE FOR LICENSE APPLICATION PLANNING (Plan B: Compliance-Focused Program)

1. INTRODUCTION

The purpose of this document is to provide a consistent set of technical guidance to the organizations involved in the planning for the license application (LA) under the compliance-focused program (Plan B). Plan B focuses on identifying the minimum but sufficient scope of work required to submit an LA that is considered to be docketable, should the Yucca Mountain site be recommended and approved. This work scope will be sharply focused using a risk-informed, performance-based approach to define the work necessary to defend the preclosure and postclosure licensing arguments. This top-down approach to ensure regulatory compliance differs from the bottom-up approach used to develop the initial Detailed Work Plan (DWP). The approach is expected to result in a reduction in the amount of work necessary to prepare a docketable LA. Therefore, Plan B results will need to be communicated to the NRC in planned follow-on KTI-related technical exchanges to ensure that NRC understands and accepts the basis for any proposed changes.

The area of greatest challenge in this planning effort is the area of performance assessment (PA), which includes the testing program as well as process model analyses and modeling. Recent organizational changes at Bechtel SAIC Company (BSC) will facilitate the planning in this area. The PA Strategy/Scope organization is currently developing a postclosure compliance strategy to be used in defining and conducting the total system performance assessment (TSPA) and identifying the information needs. This strategy will be reviewed by a new TSPA Oversight Group that reports directly to the BSC Manager of Projects, and will be subsequently validated by the Postclosure Strategy Board recently formed. This strategy will drive the planning for the scope of work to be conducted to fulfill the needs of the TSPA.

The approach to planning has been broken into eight components. The first component is the overarching general guidance that must be considered in developing more detailed plans by all areas of the Project. The next seven components consist of the individual guidance related to the different areas of the Project (License Application/Licensing; Design; Preclosure Safety Assessment; Performance Assessment; Special Projects; Site Operations; and Business, Technical Support, and Programmatic Areas) that must work together to support development and submittal of a docketable LA.

This guidance also contains two appendices. Appendix A contains a listing of the key assumptions upon which the planning of this work is based. Appendix B discusses the strategic approach to be used in identifying the information to be contained in the Licensing Support Network (LSN) and activities required to support LSN certification. A strategic planning schedule is being issued separately as a companion to this technical guidance. That schedule is a top-down schedule that summarizes the key activities and milestones that serve as the overall framework for this planning, consistent with the DOE goal of an LA submittal in December 2004. The dates in the strategic planning schedule should not be interpreted as the definitive

Existing quality issues must be resolved expeditiously and appropriate measures taken to prevent recurrence. Resolution of these issues will be conducted in accordance with the Performance Improvement Transition Plan, which will be incorporated into this planning effort.

The technical basis for the LA, which will support LA preparation and any eventual NRC review, must be essentially complete eight months prior to LA submittal to support BSC's initial LSN certification process. BSC will complete the initial certification of the LSN to the DOE seven months prior to LA submittal so that DOE has one month to prepare their initial certification to the NRC six months prior to LA submittal as required by 10 CFR Part 2, Subpart J. Adequate time is provided for the certification processes to allow for implementation of corrective actions, if needed. It is expected that some development of technical information will continue through submittal of the LA and afterwards, and consequently there will be incremental certification coincident with amendments of the LA.

This technical basis will build on the final technical basis for a possible SR decision, to the extent possible. Doing this should provide both schedule and cost benefits for completion of the LA and its supporting technical basis. This approach should also facilitate NRC review and completion of the staff Safety Evaluation Report (SER) within the 18-month period described in the schedule for the LA proceedings in Appendix D of 10 CFR Part 2. This is because the NRC reviewed the preliminary technical documents for a possible SR decision as one basis for developing its preliminary sufficiency comments. Any significant changes to the technical basis existing at the time of a possible SR decision must be justified in terms of their relevance to meeting the primary objective for submittal of a complete and defensible LA and any potential cost impacts. Since the NRC's preliminary sufficiency comments were largely based on the site characterization and design information supporting a possible SR decision, significant changes to this information may require additional NRC review.

Development of the technical documents that provide information needed to prepare the LA will take place in parallel only when that approach will not affect the quality of downstream products (e.g., development of Process Model Reports (PMRs) in parallel with the Total System Performance Assessment (TSPA), assuming that the TSPA is based on the Analysis and Model Reports (AMRs)). Adequate review time must be provided to ensure that the information incorporated in downstream products, including draft LA chapters, is consistent with the final source material. Version control of all documents must be maintained and a structured process adhered to for document development and review.

The technical work conducted following a possible site recommendation and prior to completion of the technical basis for the LA must clearly focus on:

- Providing additional design-specific information needed as part of the technical basis for the LA that was not needed for a possible SR decision;
- Improving confidence in or refining models and other elements of the existing SR technical basis to develop the technical basis for the compliance case presented in the LA for NRC review.

Commitments to the NRC and other external parties will be tracked using an appropriate database management system, with incremental modifications as necessary to improve its function.

In support of implementing a Safety Conscious Work Environment on the Project, the DOE (as the prospective applicant) must have in place a process that allows for all employees to raise issues and concerns without fear of adverse consequences. The Condition/Issue Identification and Reporting/Resolution System (CIRS) is the starting point for employees to raise concerns. It is the Project's intent that CIRS be fully effective at addressing concerns and thus reducing the number of concerns that enter the OCRWM Concerns Program.

In addition, an effective corrective action process must be in place prior to LA submittal. These include the quality assurance deficiency processes, lessons learned program, root cause processes, and performance measures. These processes are included in the action plans for the implementation of the Performance Improvement Transition Plan, and will be planned as part of this LA planning effort.

4. DESIGN

Design will move forward in support of key project milestones and will progress through pre-conceptual and conceptual design for the SR, preliminary design for the LA, and final design for the updated license application for a license to receive and possess waste. The technical baseline, managed by the configuration management program, will be updated as each key decision is made that evolves the design from the less complex and less detailed to the next design phase for that particular system, structure, or component. Prior to site designation, potential adjustments to the design will be evaluated and studied. Any formal adjustments to the design baseline, however, are not expected to occur until after site designation, if the site is approved.

The primary focus will be on development of the appropriate level of design documentation and analysis needed for the LA submittal (e.g., System Description Documents (SDDs), design analyses, materials lists and specifications, general arrangement drawings, process and flow diagrams). Each system will be considered against the requirements of 10 CFR Part 63 and the products developed such that they meet these requirements. The LA products that are necessary to provide the information in the LA will be identified and documented in the LA Design Product Matrix developed by the Repository Design Project and reflected in the LA Guidance and Products database.

The BSC Repository Design Project will be the prime author for LA Chapters 4 (Repository Surface Design), 5 (Waste Form and Waste Package Design), 6 (Engineered Barrier System Design), and 9 (Radioactive Waste Management), and selected sections of Chapters 1 (Introduction), 2 (Compliance with Technical Criteria), and 11 (Conduct of Operations and Related Topics). These sections will be based on the information provided by the LA products and consistent with the guidance in the LA Guidance and Products database.

The flexible design concept described in the Yucca Mountain Science and Engineering Report (YMS&ER), with appropriate modifications to encompass the range of operating conditions

Regulatory

27. The LA chapters will be drafted based on the information provided in the LA Guidance and products database. If the YMRP is issued by June 2002, an evaluation will be made as to the best method of presenting the information in the LA that takes into account the YMRP. This will be captured in the Management Plan for the Development of the Yucca Mountain License Application. Impacts to the technical workscope due to the issuance of the YMRP, if any, will be addressed through the scope, cost, and schedule baseline control process.
28. The information required to support the development of the LA is defined by the LA Products List, which is based on the LA Guidance (formerly TGD). The LA Guidance includes the grading approach used in the TGD to determine the amount of information required for each quality level. It also specifies the amount of differentiation (i.e., information available to be provided at LA CA vs. LA update to Receive and Possess). The LA Products list specifies the products at a fairly high level. Subsequent to the identification of the LA Products List, the Repository Design Project is producing a License Application Design Product Matrix that specifies the various types of drawings and other products (total of 38 product types) that are needed down to the subsystem level. Additionally, the product types have a description being developed that will define what that product will include. Because the LA Products have already been identified at a high level, these additional details are not expected to significantly alter the scope of the product but rather to define it in further detail. Following NRC issuance of the Yucca Mountain Review Plan, the LA Guidance and LA Products will be readjusted to meet these requirements, or to justify an acceptable alternative. The level of detail of the license application for construction authorization is assumed to be consistent with that in Preliminary Safety Analysis Reports for similar facilities and designs.
29. The schedule will accommodate early and phased review by NRC of programmatic, design, science, and analysis topics between SR and LA. Documentation shall be complete to the point that meaningful discussions can be held with the NRC. A detailed interactions schedule will be developed to show the relationships of the supporting work to the interactions. During the six month period prior to LSN certification, the schedule will accommodate early and phased review by NRC of completed programmatic, design, and science & analysis documentation. Documentation completed earlier than this time frame will be provided to NRC as soon as it is available. Documentation supporting the license application should be completed in time to support the initial certification process for the LSN. LSN certification will occur six months prior to the License Application submittal. This means technical products should be completed eight months prior to the scheduled LA date. Changes to documentation can still be made after LSN certification and will be verified during LSN recertification at the time of LA submittal. Changes to documentation should be minimized and not incorporated in schedules unless deemed essential (e.g., resolves DOE or NRC review comments/issues, etc.). Input of information to the LSN is anticipated to require a minimum duration of 18 months, which may be extended depending upon resource

Exhibit 11

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Licensing Support Network

A New Path Forward

4/20/02

Examples of Documents

- Prong 1
 - AMR/PMR, detailed data, models, computer codes, methodologies, QA pedigree
- Prong 2
 - All documents contrary to DOE's licensing position, including DRs, CARs, NCRs, minority reports
- Prong 3
 - All reports and studies, including circulated drafts, covering topics of Reg. Guide 3.69

Consequences

- NRC will not accept the LA for docketing until 6 months after LSN certification
- An incomplete LSN has the potential to draw the licensing proceedings beyond the 3-year window mandated in the NWPA

Exhibit 12

Exhibit 12

STRATEGIC BASIS FOR LICENSE APPLICATION PLANNING FOR A POTENTIAL YUCCA MOUNTAIN REPOSITORY

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Robert P. Gamble, Robert C. Murray, and K. Michael Cline, Booz Allen Hamilton, Inc.

ABSTRACT

If Yucca Mountain, Nevada is designated as the site for development of a geologic repository for disposal of spent nuclear fuel and high-level radioactive waste, the Department of Energy (DOE) must obtain Nuclear Regulatory Commission (NRC) approval first for repository construction, then for an operating license, and, eventually, for repository closure and decommissioning. The licensing criteria at 10 CFR Part 63 establish the basis for these NRC decisions. Submittal of a license application (LA) to the NRC for authorization to construct a repository at the Yucca Mountain site is, at this point, only a potential future action by the DOE. Given the policy process defined in the Nuclear Waste Policy Act, as amended (NWPA), there is no way to predict whether or when the necessary authorization to submit a LA might be obtained. In spite of this uncertainty, the DOE must take prudent and appropriate action now, and over the next several years, to prepare for development and timely submittal of a LA. This is particularly true given the need for the DOE to develop, load, and certify the operation of its electronic information system to provide access to its relevant records as part of the licensing support network (LSN) in compliance with NRC requirements six months prior to LA submittal. The DOE must also develop a LA, which is a substantially different document from those developed to support a Site Recommendation decision. The LA must satisfy NRC licensing criteria and content requirements, and address the acceptance criteria defined by the NRC in its forthcoming *Yucca Mountain Review Plan* (YMRP). The content of the LA must be adequate to facilitate NRC acceptance and docketing for review, and the LA and its supporting documents must provide the documented basis for the NRC findings required for a construction authorization. The LA must also support a licensing proceeding before an Atomic Safety and Licensing Board panel prior to Commission action on any decision to authorize construction. The DOE has established a strategic basis for planning that is intended to provide the framework for development of an integrated plan for activities leading to preparation and submittal of a LA.

INTRODUCTION

The DOE's overall objective is to ensure safe disposal of spent nuclear fuel and high-level radioactive waste consistent with applicable laws and safety standards. The primary and more immediate objective is submittal of a complete and defensible LA to the NRC as soon as possible following the potential designation of the Yucca Mountain site for development as a repository. This position paper defines the general path forward to achieve that objective, including a strategic planning basis and identification of selected decisions or actions that may be needed. Lower-level strategies and cost-effective implementation plans based on the strategic planning basis established here must be prepared to support the DOE's multi-year planning process.

GENERAL STRATEGIC BASIS FOR PLANNING

The LA submitted to the NRC must present sufficient information to demonstrate compliance with the requirements in the NRC's rule establishing the criteria for disposal of high-level radioactive wastes in a potential geological repository at Yucca Mountain, Nevada - 10 CFR Part 63 (1). The LA must be:

- Complete - Provide the information necessary to satisfy NRC content requirements in 10 CFR Part 63 and address the guidance in the forthcoming YMRP to facilitate docketing;
- Transparent and traceable – Provide sufficiently detailed information as to purpose, method, assumptions, inputs, conclusions, and references, so that an independent NRC reviewer technically qualified in the subject area can generally understand the essential information relied upon as the technical basis for the DOE licensing/compliance case without having to consult the supporting documents or the originator of the documents. It should be possible to assess the adequacy of the licensing/compliance case based on full traceability to the supporting documents and other information to permit further, more detailed examination of the technical basis relied upon for the licensing case at reviewer discretion;
- Defensible – The technical case presented for compliance with NRC requirements and performance objectives must be supported by the technical basis documents and the available information.

Preparation and review of the LA are not quality affecting activities and are not subject to the requirements of the DOE *Quality Assurance Requirements and Description (QARD)* (2). The Final Environmental Impact Statement (FEIS) will accompany any LA submitted to the NRC by the DOE. There is no current basis to conclude that a supplement to the FEIS will be needed at LA submittal. The design-basis eventually developed for licensing will be evaluated to ensure that appropriate documentation is prepared, consistent with the requirements of the National Environmental Policy Act, to support NRC adoption of the DOE's EIS.

The technical basis for the LA must build on the final technical basis for a possible site recommendation (SR) decision for several reasons:

- Site characterization must be complete prior to a decision by the Secretary to recommend the site; the expectation is that only a limited amount of confirmatory or design-specific testing will be needed after that decision to verify or otherwise enhance confidence in the technical basis for the LA;
- The technical basis for a SR decision must provide adequate confidence for that decision and, therefore, must be the foundation for development and refinement of the technical basis for the LA;
- The technical basis for the LA, which will support LA preparation and any eventual NRC review, must be essentially complete at the time of initial certification of the LSN, six months prior to LA submittal as required by 10 CFR Part 2, Subpart J (3).
- Use of the existing technical basis, including the SR design basis, as a starting point should provide both schedule and cost benefits for completion of the LA and its supporting technical basis; it should also facilitate NRC review of the LA and its supporting documents since the

in the schedule for the licensing proceeding in Appendix D of 10 CFR Part 2 (3). Consistent with this approach, there should be no specification of page counts for LA chapters.

Pre-licensing interactions with the NRC must be clearly linked to the completion of documentation to address the KTI agreement items. Additional meetings will be considered, as appropriate, to reach early agreement with the NRC on the LA format and content, resolution of preclosure safety and design-detail issues, and selected approaches and methodologies critical to the licensing case. Interactions will continue on the topical reports currently under NRC review or for which DOE has committed to provide additional information (e.g., reports covering methods for assessment of the seismic design basis and criticality).

Commitments and comments from the NRC and all other external parties will be managed using an appropriate database management system, with incremental modifications as necessary to improve its function. This system will also be used to manage and document decisions.

Technical and regulatory reviews of draft LA chapters by all affected offices within the DOE, as well as Naval Reactors, must occur in parallel to make the initial review process as efficient as possible. The review of draft chapters must be complete along with the essential supporting technical basis documents before initial LSN certification, six months prior to LA submittal. DOE management review of and concurrence on the integrated LA, and production of the final document, will take place during the six months following initial LSN certification. Opportunities to accelerate the LA development schedule should be considered, including early preparation and review of programmatic inputs (e.g., general descriptions of the QA program, emergency response plan, records maintenance program) at a level of detail appropriate for the LA for a construction authorization. Development of these inputs could begin following evaluation of NRC requirements in 10 CFR Part 63 and guidance in the YMRP.

TECHNICAL AND BUSINESS SUPPORT, INCLUDING INFRASTRUCTURE INVESTMENT

Support work must focus on achieving the primary objective of earliest possible submittal of a LA following a potential site designation, but must also adequately support a prioritized and phased infrastructure investment plan that anticipates infrastructure needs at the time of a possible construction authorization.

Information management and related administrative services must focus on defining the minimal work and staff requirements that are adequate and necessary to support elements critical to LA docketing and review, including records management activities and LSN development, loading, and monitoring to permit certification. Project computer hardware and software upgrades should be limited to what is adequate and necessary to support Project work and allow interoperability among users based on equipment that is supported by current technology. Adequate staff support for maintenance of current and new systems is essential. Specialized hardware and software needs must be evaluated and any acquisitions justified in terms of their support for work needed for the LA.

Exhibit 13

Exhibit 13



U.S. Department of Energy
Office of Civilian Radioactive Waste
Management



LICENSE APPLICATION PLAN REVIEW

April 2002

LA Plan Key Milestones

CY 01 | CY 02 | CY 03 | CY 04 | CY 05

SR/Licensing

- Feb 02 Site Recommendation to President
- Feb 02 Site Designation (Assumed)
- Mar 02 Reassess Workscope for KTI Agreements & Other Technical Issues
- Apr 02 Critical Decision-1 Milestone
- Aug 02 Critical Decision-1 Milestone
- Nov 01 LA Plan Approach
- Dec 01 TSPA Strategy & Project Implementation Guidance
- Mar 02 Workscope Reviews Complete & DWP Re-submittal (Baseline to LA)
- Jun 04 LA Chapters 2nd Draft Complete
- Jun 04 LSN Certification
- Nov 04 Integrated LA Reviews Complete
- Dec 04 LA Submittal

Strategic/Programmatic

- Jul 04 Critical Decision-2 Milestone

Design

- Dec 01 Subsurface Layout Evaluation Complete
- Apr 02 Initial Conceptual Design Studies Complete (Input to PA)
- Aug 02 Conceptual Baseline Update
- Oct 02 Confirmatory Design Inputs to TSPA-LA
- Oct 03 PSA for LA Complete
- Jan 04 Complete Preliminary Design

Performance Assessment & Modeling

- Apr 02 Conceptual Design and Initial Test Inputs to Process Models
- Mar 03 Process Model & Abstraction Updates Complete
- Oct 03 TSPA-LA Models & Analyses Complete
- May 04 TSPA-LA Complete

Testing

- Mar 02 Early Test Feeds & Bounds
- Oct 02 Confirmatory Test Feeds to TSPA-LA



Exhibit 14

Exhibit 14

Repository Program Overview

Presented to:
Nuclear Waste Technical Review Board

Presented by:
Russel J. Dyer, Project Manager
Yucca Mountain Site Characterization Office
Office of Civilian Radioactive Waste Management

May 7, 2002
Washington, DC

LA Plan Key Milestones

CY 01 CY 02 CY 03 CY 04 CY 05

SR/Licensing

- ▲ Site Recommendation to President
Feb 02
- ▲ Site Designation (Assumed)
Jul 02
- ▲ Reassess Workscope for KTH Agreements & Other Technical Issues
Apr 02
- ★ LA Submittal
Dec 04
- ▲ LA Chapters 2nd Draft Complete
Jun 04
- ▲ LSN Certification
Jun 04
- ▲ Integrated LA Reviews Complete
Nov 04

Strategic/Programmatic

- ▲ LA Plan Approach
Nov 01
- ▲ Critical Decision-1 Milestone
Aug 02
- ▲ Critical Decision-2 Milestone
Jul 04

TSPA Strategy & Project Implementation Guidance

- ▲ TSPA Strategy & Project Implementation Guidance
Dec 01
- ▲ Workscope Reviews Complete & DWP Re-submittal (Baseline to LA)
Mar 02

Design

- ▲ Subsurface Layout Evaluation Complete
Dec 01
- ▲ Initial Conceptual Design Studies Complete (Input to PA)
Apr 02
- ▲ Conceptual Baseline Update
Aug 02
- ▲ Confirmatory Design Inputs to TSPA-LA
Oct 02
- ▲ PSA for LA Complete
Oct 03
- ▲ Complete Preliminary Design
Jan 04

Performance Assessment & Modeling

- ▲ Conceptual Design and Initial Test Inputs to Process Models
Apr 02
- ▲ Process Model & Abstraction Updates Complete
Mar 03
- ▲ TSPA-LA Models & Analyses Complete
Oct 03
- ▲ TSPA-LA Complete
May 04

Testing

- ▲ Early Test Feeds & Bounds
Mar 02
- ▲ Confirmatory Test Feeds to TSPA-LA
Oct 02

Exhibit 15

Exhibit 15



U.S. Department of Energy
Office of Civilian Radioactive Waste Management

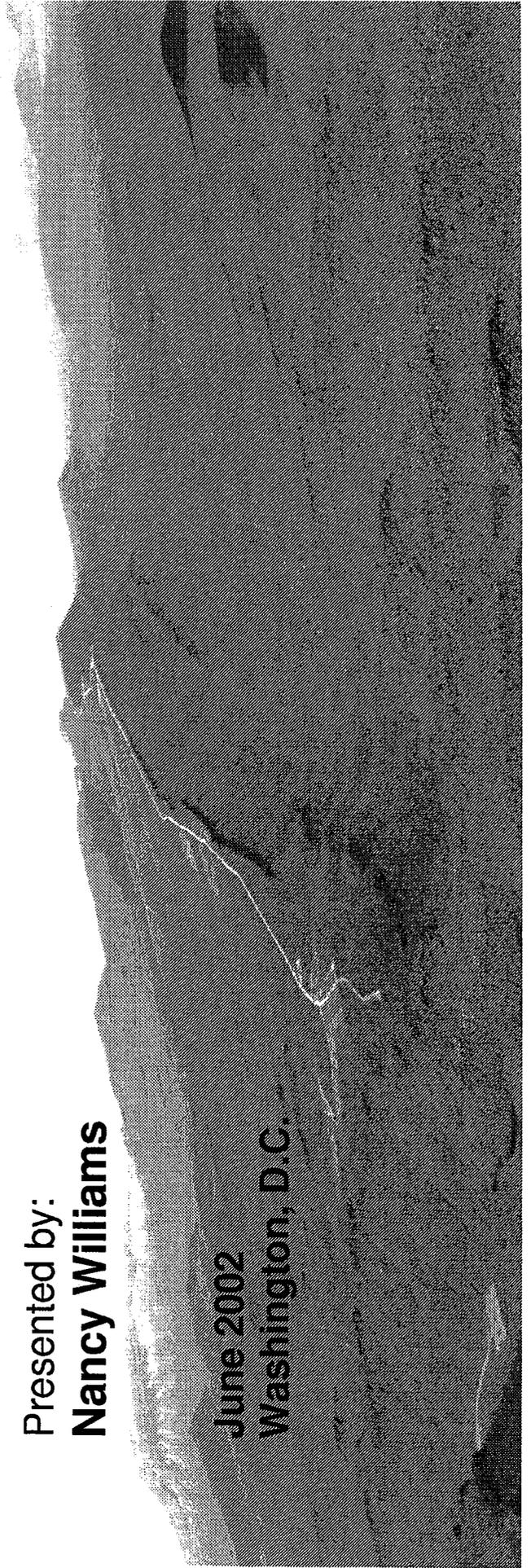


LA Development Approach

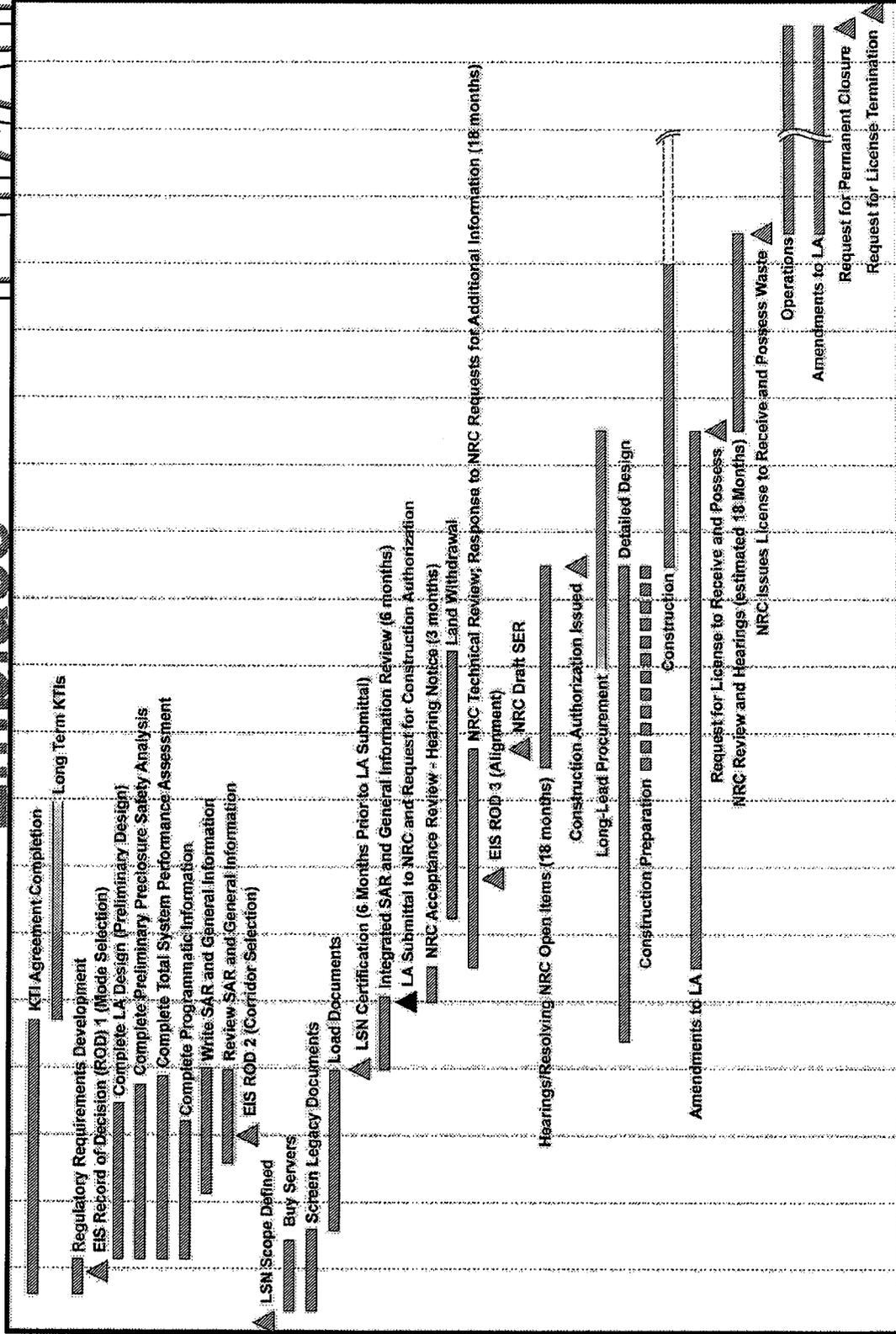
Presented to:
Robert Card

Presented by:
Nancy Williams

June 2002
Washington, D.C.



Licensing Approach to Receive and Emplace



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03/08

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06/02



Exhibit 16

Exhibit 16



U.S. Department of Energy
Office of Civilian Radioactive Waste Management



License Application Status

Presented to:
Nuclear Regulatory Commission

Presented by:
Joseph Ziegler
Acting Director, Office of License Application and Strategy
Office of Repository Development
U.S. Department of Energy

January 23, 2003
Rockville, Maryland

Summary Schedule to LA Submittal

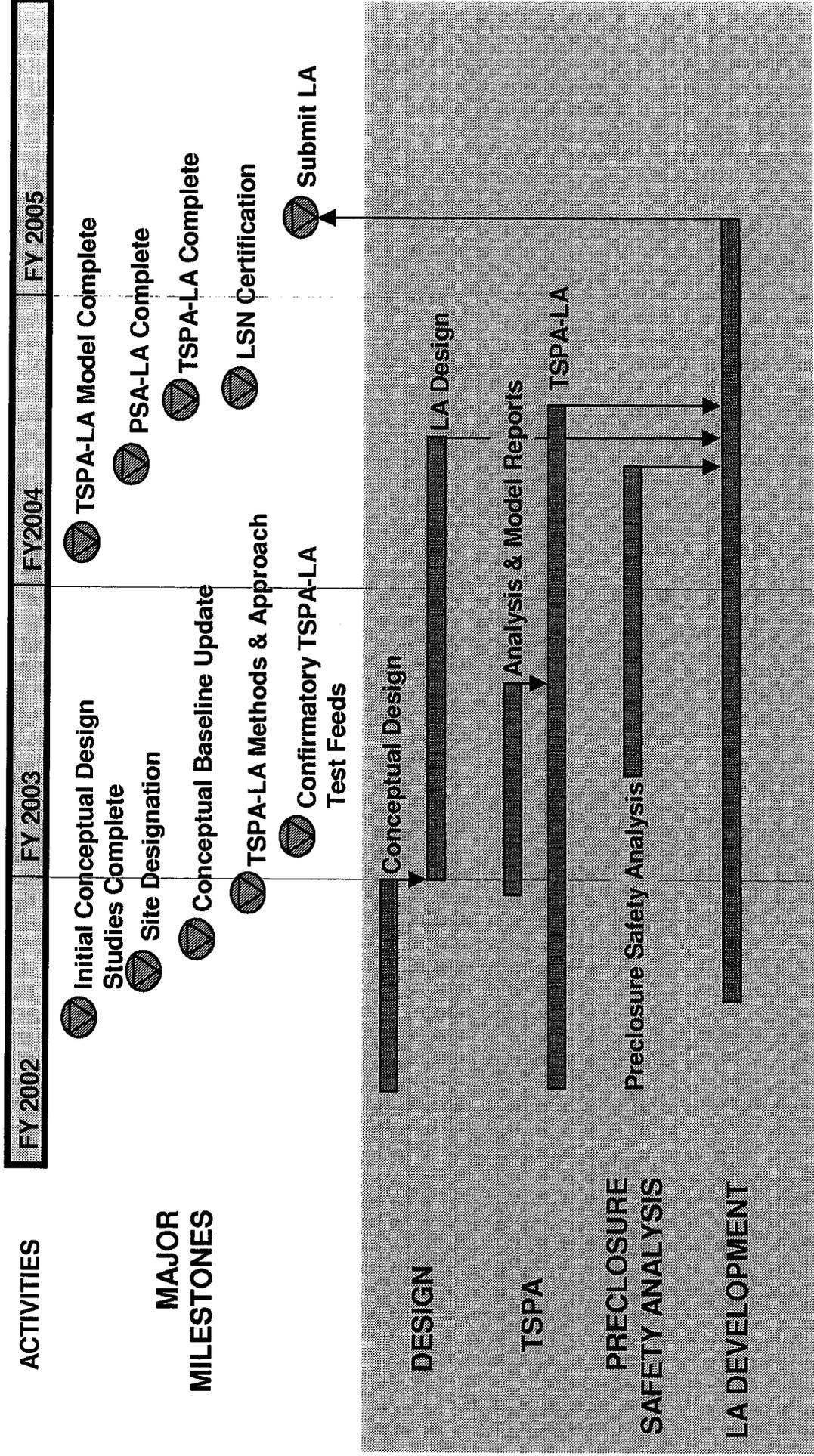
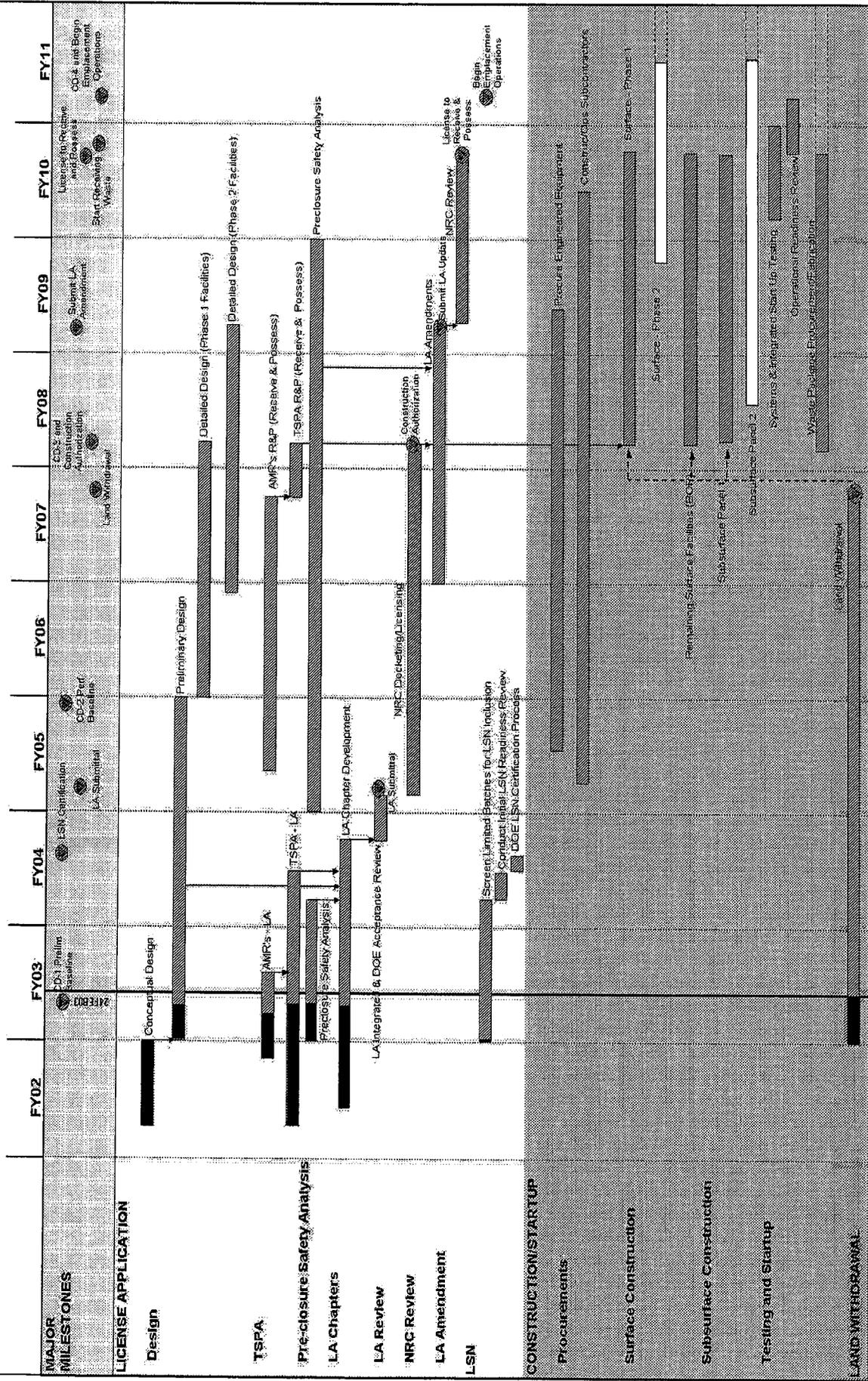


Exhibit 17

Exhibit 17

YUCCA MOUNTAIN PROJECT SUMMARY PLAN TO WASTE EMPACEMENT



Yucca Mountain Project Critical Path Float Values to LA

