

Exhibit 18

Exhibit 18



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

Exhibits For Illustration

Presented to:
Nuclear Waste Technical Review Board

Presented by:
W. John Arthur, III
Deputy Director, Office of Repository Development
U.S. Department of Energy

May 13, 2003
Washington, DC

Preliminary Draft Yucca Mountain Decision Schedule

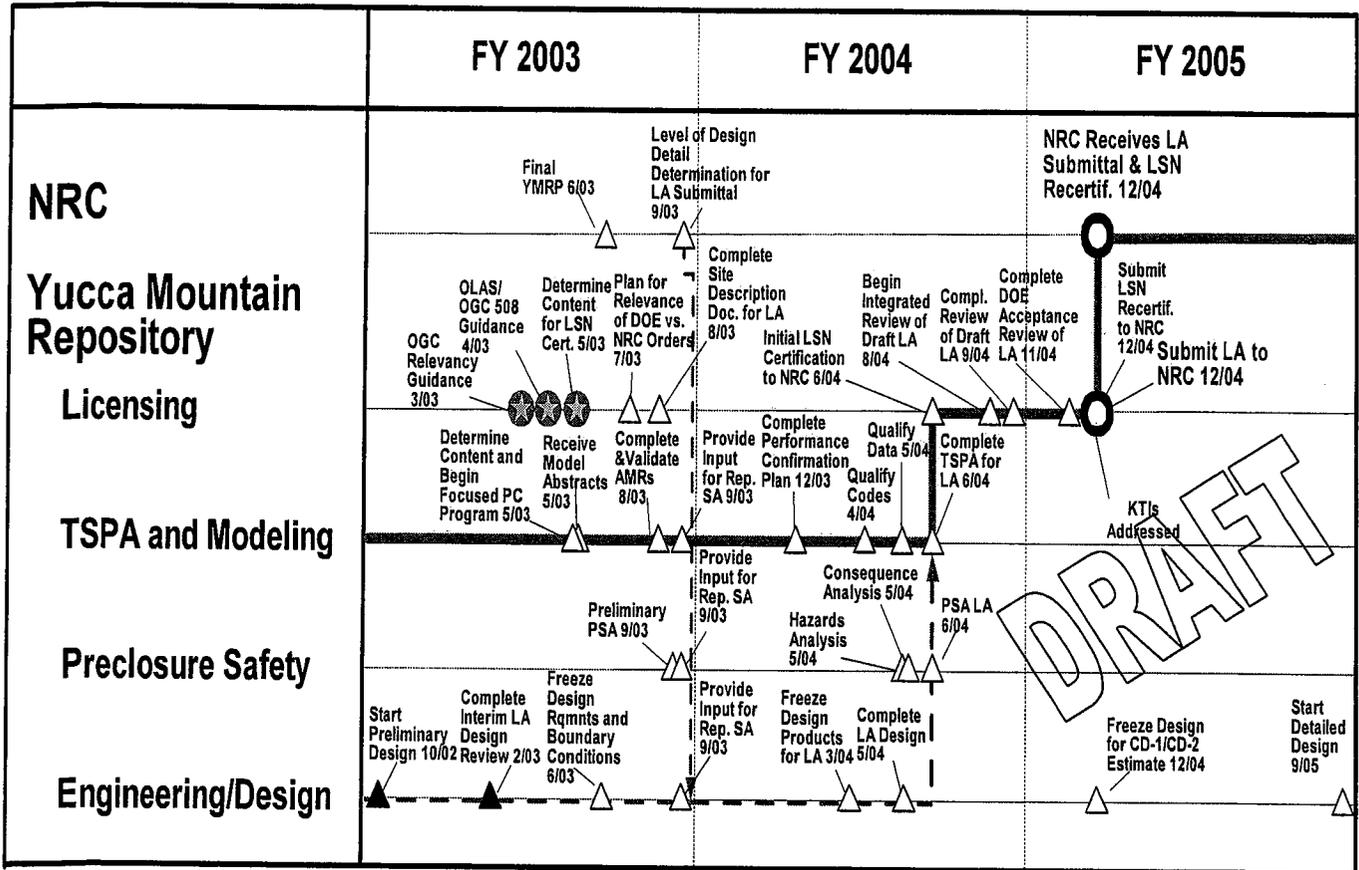


Exhibit 19

Exhibit 19

Performance Assessment & Modeling

Assumptions and Work Sequence

39. TSPA used for the compliance case will continue to utilize a logic sequence involving data collection, AMR development revisions (process models & abstractions), PMR revisions, TSPA revision, and sensitivity evaluations. There will be one complete revised TSPA update prior to the LA submittal.
40. Process model development and TSPA analyses will utilize bounding and conservative arguments, and will incorporate margin in the development of material used to support compliance arguments. TSPAs performed in support of the compliance argument will utilize the AMR/PMR/TSPA documentation structure, the contents of which will not extend beyond bounding arguments defined by the RSS Rev 4 and by additional commitments to close KTI agreements, where such agreements center upon the TSPA representation of the process. “Best Estimate” predictions, realistic evaluations, and quantification of uncertainties will be performed to supplement the bounding evaluations to provide management and NRC insight into the bounding and conservative nature of the models and evaluations. The documentation form of these activities will be developed and implemented with sufficient time to consider implications of the “best estimate” results on the compliance arguments.

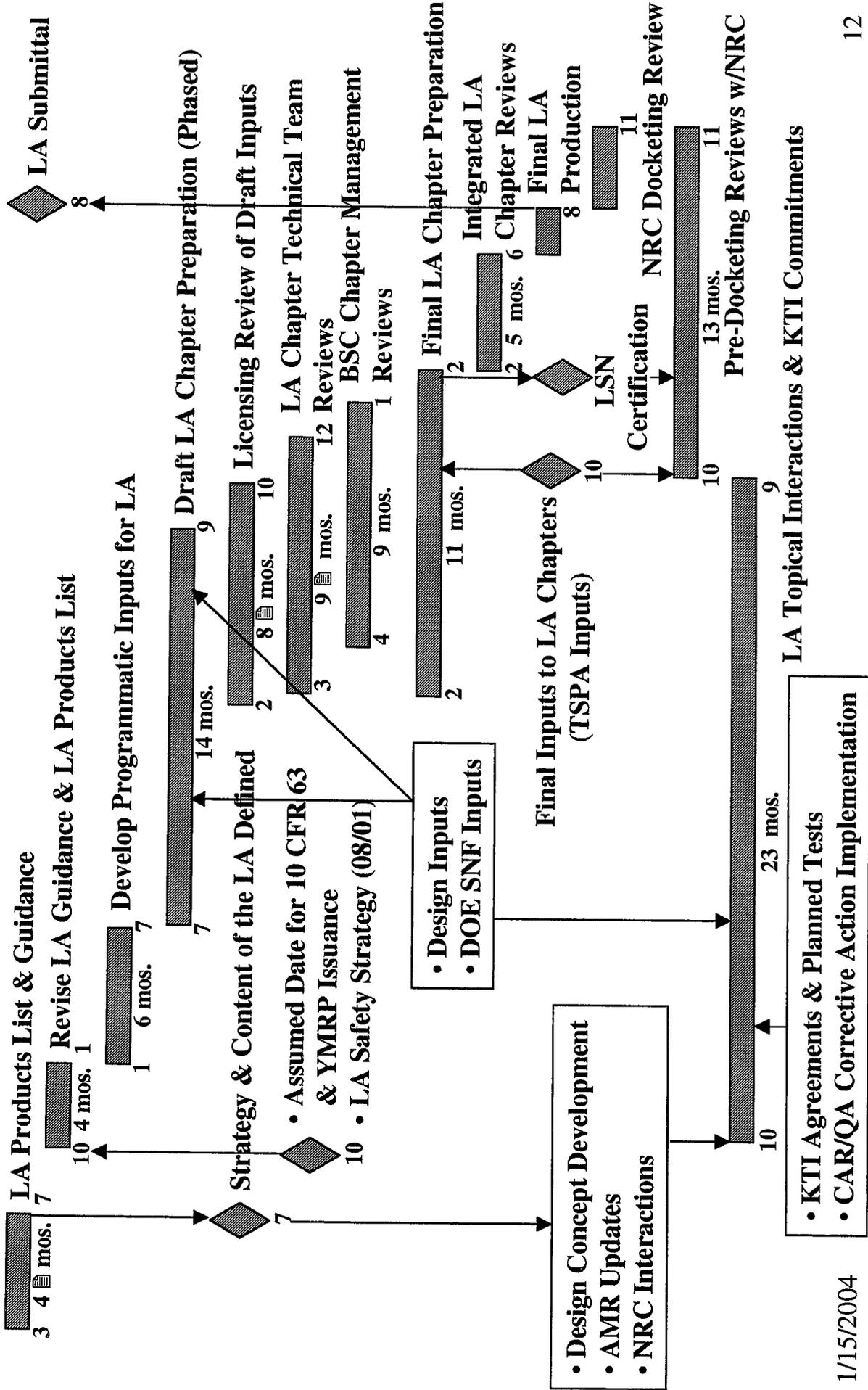
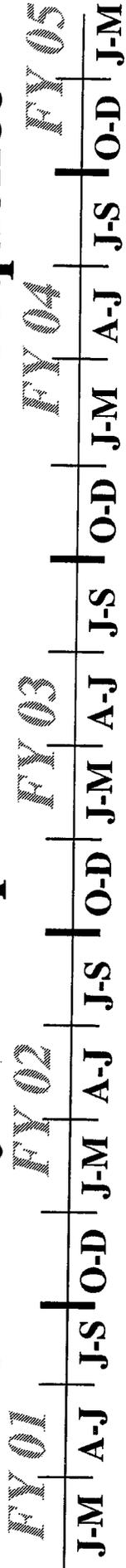
Regulatory Assumptions and Work Sequence

15. The draft LA chapters will be complete within two months after the inputs to the chapters are complete.
16. The schedule will accommodate early and phased review by NRC of programmatic, design, and 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 will be “frozen” at the time of LSN certification. Continued evolution of material will be utilized to support post-docketing interactions with the NRC.

Regulatory Assumptions and Work Sequence

17. LSN certification will occur six months prior to the License Application submittal. There will be no substantive safety related changes between certification of the LSN and License Application submittal (documentation supporting the LSN will be “frozen”). The schedule will be adjusted to allow ISA and TSPA backcheck and adjustment prior to LSN certification.
18. The preclosure safety strategy will continue as described in the last version of the RSS (Revision 4).
19. The postclosure safety strategy will continue to focus on the principal factors contained in RSS Rev 4, augmented by work conducted to resolve KTIs. Continued testing and model development in support of compliance arguments will focus on these areas.
20. The LA and LA Update review schedule will be streamlined such that technical reviews by BSC, DOE, General Council, and Naval Reactors will be held concurrently. Management reviews by BSC (including the NR review) and DOE will be held in series, but will serve only as a confirmatory review rather than another detailed technical review.

Regulatory Assumptions and Work Sequence



Regulatory Assumptions and Work Sequence

FY 01		FY 02		FY 03		FY 04		FY 05	
J-M	A-J	J-S	O-D	J-M	A-J	J-S	O-D	J-M	A-J
J-M	A-J	J-S	O-D	J-M	A-J	J-S	O-D	J-M	A-J

ISA & TSPA Backcheck & Revision

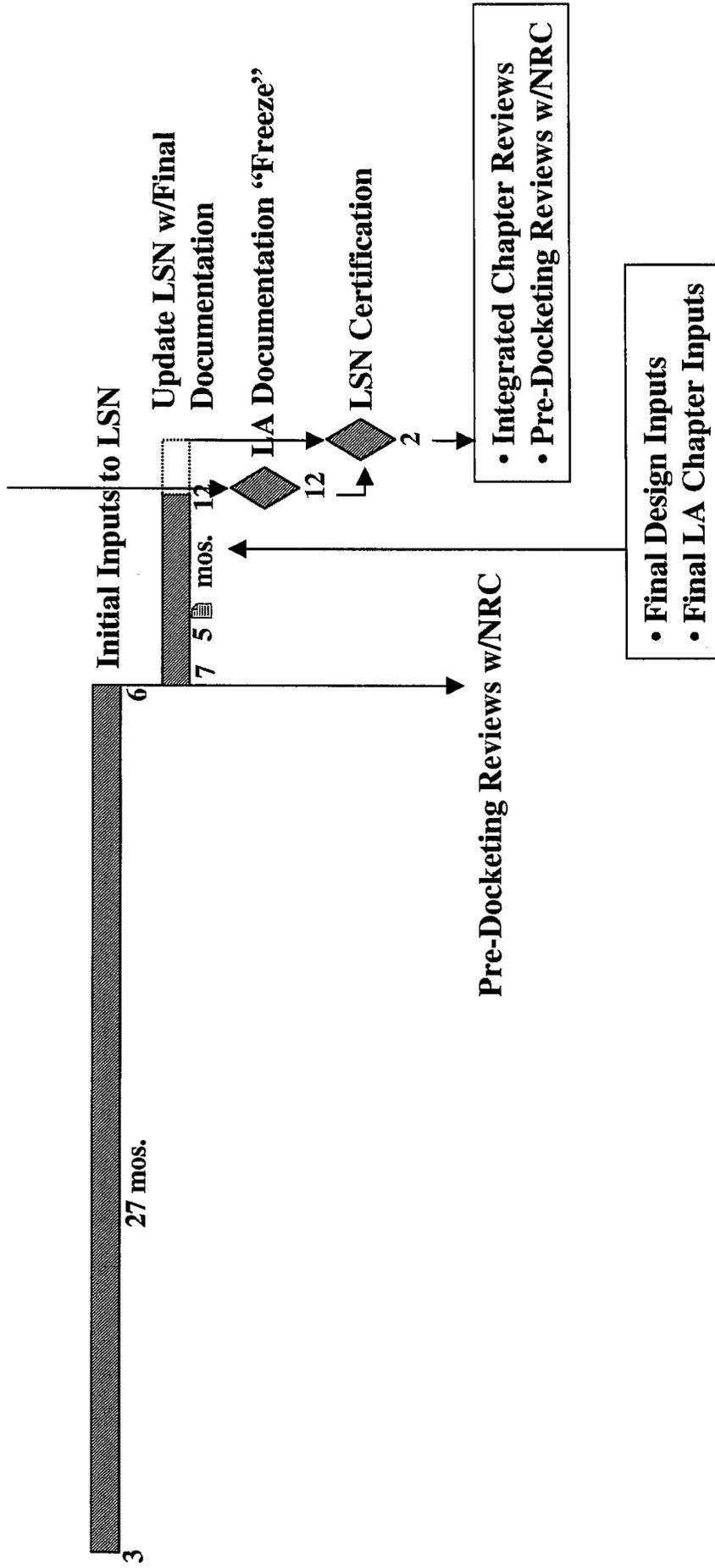


Exhibit 20

Exhibit 20

From: Dyer, YMP
To: Chu, OCRWM

Subject: Approach for LSN Certification

References: April and Jake's letter
Brocoum letter to Ben McGrae

Claudia, I incorporated your changes that still applied with this revision....

If the Yucca Mountain site is designated to become the nation's first geologic repository for High-Level Radioactive Waste, the Department's next major milestone is to submit a License Application to the Nuclear Regulatory Commission (NRC). In order to docket the License Application (LA), the NRC requires that the Licensing Support Network (LSN) be available to facilitate timely NRC technical review, and petitioner discovery-type review, of the Department's LA. LSN provides access to relevant documents before any LA is submitted, and is intended to to supplant the need for the traditional document discovery process after the LA is submitted. Additional information on the regulatory background can be found in Enclosure 1.

It is OCRWM's obligation to fulfill the LSN requirements in 10 CFR 2, Subpart J, and Topical Guidelines 3.69, and certify the LSN at least six months prior to any LA submission. Had steps not been taken years earlier, timely LSN certification would be near impossible.

Anticipating a possible need for LSN certification, YMP took several actions: aligning the records database to facilitate LSN certification; implementing procedures to capture any inclusionary records and trained personnel on these procedures. Without these early steps, manual screening for LSN relevancy would be a necessity for each record. A crosswalk of requirements in 10 CFR 2, Subpart J with RMS Document Types is available in Enclosure 2.

Our approach in certifying the LSN is to:

- Automatically include key documents (VA, SCP, EIS, SR, etc)
- Automatically include records designated as inclusionary in the RMS
- Screen remaining records either manually, or using software queries for:
 - Exclusionary material
 - Documentary material
 - Privileged material (header only)
 - legal
 - preliminary drafts
 - Homeland Security sensitivities
- Use appropriate personnel to screen for classified material (header only)
- Ensure header information for the records is accurate
- Place records onto LSN servers
- Three months prior to initial certification, DOE perform a readiness review

Additional detail on RMS Document Types, Numbers, and Relevancy Method can be found in Enclosure 3. Printed examples of some actual RMS documents are contained in Enclosure 4.

This approach is an attempt to balance the need to fulfill requirements for LSN certification and the NRC's technical review and discovery process; the desires of OGC for litigation support and preparation; and the anticipated time remaining. The first objective however is to ensure all information required to fulfill the criteria in the YM Review Plan (YMRP) is available within the LSN. Risk can be taken in areas where there is no direct connection in fulfilling YMRP criteria. The NRC is interested in a *"more focused set of materials most important to the licensing proceeding. It is not interested in the entire backlog of DOE and other parties' material, some of*

Exhibit 21

Exhibit 21



Requirements for Inclusion of DOE Documents In Licensing Support Network (LSN)



Frequently Asked Questions

Introduction

The Department of Energy is responsible for implementation of the Nuclear Waste Policy Act (NWPA) P. L. 97-425, as amended. This Act provides for the siting, construction, and operation of repositories for the permanent disposal of high-level radioactive waste and spent nuclear fuel, in a manner that fully protects the health and safety of the public and the quality of the environment.

The President has designated Yucca Mountain, in Nevada, as the site for the first repository and the Congress has affirmed this designation. Under the provisions of the NWPA, construction and operation of the Yucca Mountain repository will require DOE to apply for and obtain a license from the U. S. Nuclear Regulatory Commission (NRC). The NRC has issued a regulation, Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-level Radioactive Waste at a Geologic Repository, in 10 CFR 2, Subpart J, which defines the scope and process of discovery for the licensing proceeding. This regulation includes provisions that require DOE to provide the general public and parties to the licensing hearing with electronic access to all documentary material relevant to the licensing proceeding. These documents will be provided in the Licensing Support Network (LSN), which will take the place of the normal document discovery process used in an NRC licensing proceeding. The NRC also has issued regulatory guidance regarding the LSN. The NRC regulations require that the relevant documents be loaded in the LSN and be available electronically six months prior to DOE's submittal of the Yucca Mountain license application.

During August 2002, the General Counsel of DOE and the Director of OCRWM directed DOE program and field offices to search for, preserve, segregate and retain any documentary material that may be relevant to the NRC licensing proceeding.

Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository." The Nuclear Waste Policy Act directs the NRC to issue its licensing decision within 3 years after the DOE license application is submitted. Given this short period of time, the LSN will provide access to all documents that are relevant to the Yucca Mountain license proceeding in advance of the license application submittal and will be used instead of the traditional NRC document discovery process.

Q. Has the Department provided direction on which documents should be included in the LSN and through what process they should be provided?

A. Yes. On May 5, 2003, the DOE General Counsel, Lee Liberman Otis, issued a memorandum entitled "Screening and Processing of Licensing Support Network Documentary Material." The memo (sometimes referred to as the "call memo") provides guidance on identifying potentially relevant documents that must be submitted to CACI for processing into the LSN as well as those potentially relevant documents that must be segregated and retained in the event they must be produced at a later time. This memo also provides direction on the processes for providing the documents to CACI and certifying that all potentially relevant documents have been segregated and either submitted or retained.

Q. How is the NRC defining the term documents for purposes of satisfying the discovery requirements?

A. Document is defined in 10 CFR 2.1001 as " any written, printed, recorded, magnetic, graphic matter, or other documentary material, regardless of form or characteristic."

Q. Are e-mail messages relevant to the licensing proceeding for Yucca Mountain required to be included in the LSN?

A. Yes. E-mail messages and attachments relevant to licensing activities must be included in the LSN. E-mail messages that contain any potentially privileged information, including privacy

maintained by 10 CFR 63.142. Documents that the NRC staff will review for inspections and audits are described in Sections 2.5.1.3 Acceptance Criterion 10 and 2.5.1.3 Acceptance Criterion 18 respectively of the Yucca Mountain Review Plan.

Q. Are management assessments required to be included in the LSN?

A. Management review, via audits and other forms of internal assessment, of QA controlled activities under their purview are required by 10 CFR 63.142. Documents related to these topics must be included in the LSN.

Q. Are documents related to administration of scientific and technical activities required to be included in the LSN?

A. All such documents (e.g., personnel recruitment, assignment of duties, performance evaluations, promotions, provisioning of work areas, budgeting, cost monitoring, etc.) should be excluded pursuant to the general exclusion criteria contained in 10 CFR 2.1005, except those pertaining to the topics discussed in the Management and Organization section of the FAQs.

Modeling and Performance Assessment

Q. Are modeling and uncertainty and sensitivity analyses required to be included in the LSN?

A. Yes. DOE will be required to develop complex predictive models of repository performance. Models will be used to analyze natural features, events, and processes; to develop the design of engineered systems, to assess repository performance; to evaluate the expected impact of the repository on the reference biosphere; and to demonstrate compliance with performance objectives. DOE is required to consider alternative conceptual models of repository features and processes consistent with available data, and to evaluate the effects that

different models have on predicted repository performance. DOE must also explain the technical bases for the models relied on to demonstrate compliance with performance objectives in accordance with 10 CFR 63.113. Documentation on modeling activities is required by 10 CFR 63.16, 10 CFR 63.21, and identified in Draft Regulatory Guide DG-3022.

Q. Are documents related to expert elicitation and peer review required to be included in the LSN?

A. Yes. DOE may elicit advice from the scientific community to ensure that the data, models, methods, and analysis used in the design of the repository are based on the latest available scientific understanding and the full range of expert opinion. Inclusion of documentation on the elicitation of expert opinion is required by 10 CFR 63.21 and listed in DG-3022. Information related to the use of expert elicitation for the model abstractions that NRC anticipates reviewing during licensing is described in Section 2.2.1.3 of the Yucca Mountain Review Plan. Administrative and programmatic review requirements for the NRC staff for evaluating the control of expert elicitation are described in Section 2.5.4 of the Plan.

Q. Are pre-closure safety analysis and post-closure performance assessment, including accident analyses, probabilistic assessments, consequence analyses, and documents related to the demonstration of compliance with public health, groundwater protection, and human intrusion standards required to be included in the LSN?

A. Yes. The two main reports that DOE must produce to demonstrate compliance with NRC performance objectives are a pre-closure safety analysis and a post-closure performance assessment. Any document bearing on information contained in these reports – including description and technical basis of the repository design; identification of structures, systems and components, equipment, and process activities; description of the geologic setting and natural features, events, and processes; technical basis for including or excluding degradation, deterioration and alteration processes of engineered barriers; technical basis for the identification of hazards, event

sequences, and consequences; and choice of supporting data, analytical methods, models, treatment of uncertainties, and assignment of probabilities – is required to show compliance with 10 CFR 63.21 and 10 CFR 63 Subpart E and must be included in the LSN. The detailed scope of information needed to support the Pre-closure Safety Analysis and Post-closure Performance Assessment are described in Sections 2.1 and 2.2 respectively of the Yucca Mountain Review Plan.

Q. Are documents related to validation and verification of software used in support of the Total System Performance Assessment required to be included in the LSN?

A. Yes. Such documents are part of DOE's Quality Assurance program and are required by 10 CFR 63, Subpart G--Quality Assurance. See also Supplement I to DOE's Quality Assurance Requirements and Description (QARD) DOE/RW-0333P.

Performance Confirmation

Q. Should ongoing activities, or plans for future activities, to confirm the adequacy of the design and of engineered or natural barriers be included in the LSN?

A. Yes. 10 CFR 63 Subpart F requires a continuing program, including in situ monitoring, laboratory and field testing, in situ experiments, surveillance, measurement, testing, and geologic mapping, during site characterization, repository construction and operation as part of a performance confirmation program. Section 2.4 of the Yucca Mountain Review Plan describes information NRC will review on the performance confirmation program. Documents related to this program should be included in the LSN.

Q. Are procedures, instructions and drawings, and document control documents required to be included in the LSN?

A. Guidance on the content of the performance confirmation program is contained in Sections 2.4 and 2.5.1.5 of the Yucca Mountain Review Plan. Documents related to the procedures and related documents to be used in the performance confirmation program should be included in the LSN.

Research and Development

Q. Should documents related to research and development to resolve safety questions be included in the LSN?

A. Yes. Section 2.3 of the Yucca Mountain Review Plan addresses the need for information on the research and development program to resolve safety questions related to the design and performance of structures, systems, and components important to safety and the engineered and natural barriers important to waste isolation.

Q. Should documents related to the OCRWM Science and Technology Program be included in the LSN?

A. Yes. Although the OCRWM Science and Technology Program is explicitly distinct from the license application, some of the topical areas addressed by that program are potentially relevant as described in the May 5, 2003, memorandum from the DOE General Counsel, Screening and Processing of Licensing Support Network Documentary Material.

Engineering and Engineered Barriers

Q. What types of Engineering documents must be included in the LSN?

A. Documents related to engineering activities, such as identification and resolution of safety questions, and the design,

procurement, fabrication, manufacture and construction of barrier systems, surface facilities, underground facilities, monitoring equipment, post-closure monuments, and other structures, systems and components important to safety and to waste isolation must be included in the LSN.

Q. Are documents related to the plans, schedules, and conduct of engineering work during site characterization required to be included in the LSN?

A. 10 CFR 63.16 requires that "during the conduct of site characterization activities at the Yucca Mountain site, DOE shall report the nature and extent of the activities, the information that has been developed, and the progress of waste form and waste package research and development to the Commission not less than once every six months. The semiannual reports must include the results of site characterization studies, the identification of new issues, plans for additional studies to resolve new issues, elimination of planned studies no longer necessary, identification of decision points reached, and modifications to schedules, where appropriate. DOE shall also report its progress in developing the design of a geologic repository operations area appropriate for the area being characterized, noting when key design parameters or features that depend on the results of site characterization will be established."

All documents related to such reports to the NRC, including any comments from the NRC, should be included in the LSN.

Q. Are ongoing or future plans and schedules for engineering work required to be included in the LSN?

A. Plans and schedules for engineering work necessary to support construction, receipt of waste and emplacement of waste are required by 10 CFR 63.21. Progress reports on engineering activities during construction (including the identification of deficiencies in design and construction) are required by 10 CFR 63.32. Documents related to these topics should be included in the LSN.

Exhibit 22

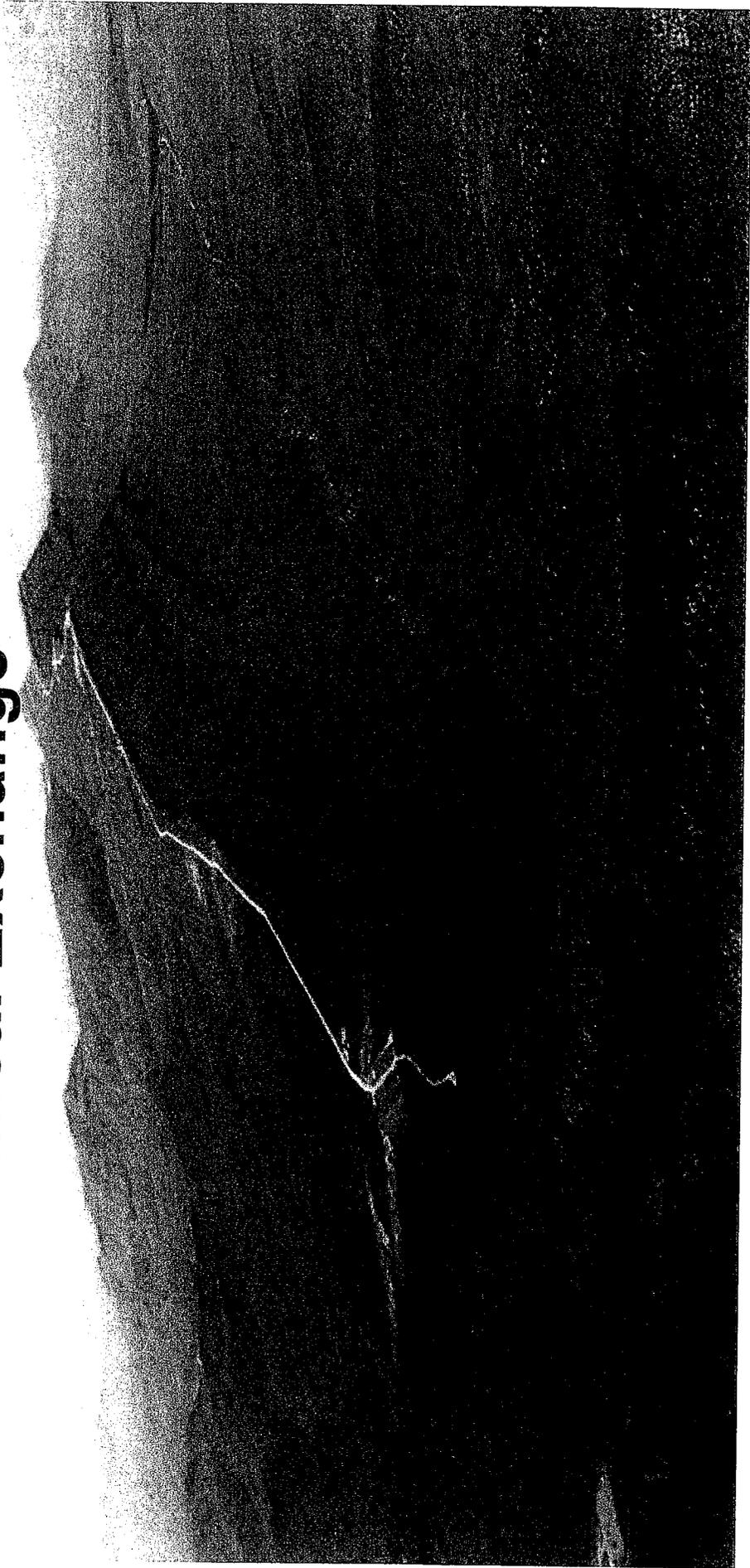
Exhibit 22



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



DOE/NRC Quality Assurance Technical Exchange



Management Plan Ensures Compliance with NRC Regulations, Guidance Documents and Expectations

- Regulation and NUREG 1804 compliance crosswalks
- Project Organization charts
- Schedule requirements
- LA development process

LA Section	LA Section Description	LA Section Number	LA Section Title
1	LA 1.0000	1.0000	LA 1.0000
2	LA 2.0000	2.0000	LA 2.0000
3	LA 3.0000	3.0000	LA 3.0000
4	LA 4.0000	4.0000	LA 4.0000
5	LA 5.0000	5.0000	LA 5.0000

Group	LA Section	LA Section Description	LA Section Number	LA Section Title
1	LA 1.0000	LA 1.0000	1.0000	LA 1.0000
2	LA 2.0000	LA 2.0000	2.0000	LA 2.0000
3	LA 3.0000	LA 3.0000	3.0000	LA 3.0000
4	LA 4.0000	LA 4.0000	4.0000	LA 4.0000
5	LA 5.0000	LA 5.0000	5.0000	LA 5.0000

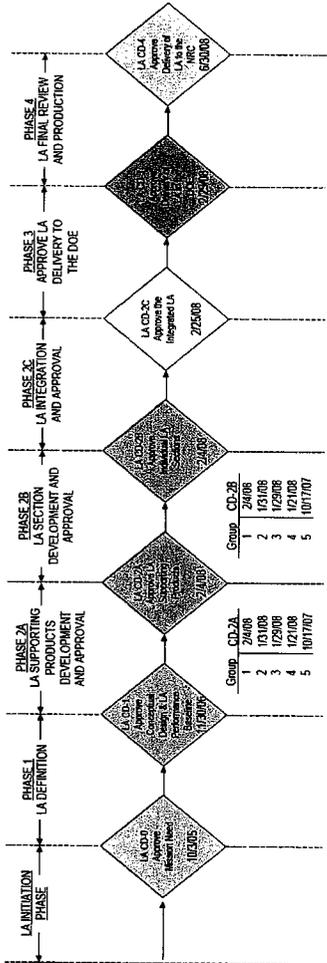


Exhibit 23

Exhibit 23



Department of Energy
Washington, DC 20585

June 8, 2007

Robert R. Loux, Executive Director
Nevada Agency for Nuclear Projects
1761 E. College Parkway, Suite 118
Carson City, NV 89706

Dear Mr. Loux:

Thank you for your letter dated May 16, 2007 requesting assurance that the Department of Energy (DOE) will provide the State of Nevada with access to the Total System Performance Assessment (TSPA) that DOE is preparing for its Yucca Mountain license application. You specifically requested the computer code that will be used for the TSPA as well as access to the computer systems DOE will use for its TSPA calculations.

As a preliminary matter, we disagree with your assertion that the Licensing Support Network (LSN) regulations require DOE to make available the TSPA and its associated computer code at the time of DOE's initial certification. To the contrary, the LSN regulations provide for an initial certification by DOE and then a supplemental certification when DOE submits the license application. That two-part process clearly presupposes that all of DOE's analyses need not be completed at the time of DOE's initial certification, for otherwise there would be no need for a supplemental certification. The rulemaking history of the LSN regulations fully supports this result.

We additionally disagree with your assertion that the LSN regulations require DOE to provide access to its computer systems. The LSN regulations address the production of documentary material and in no way obligate DOE to provide access to its computer systems.

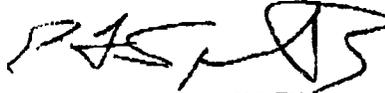
Moreover, we agree with the Nuclear Regulatory Commission (NRC) that, as stated in its May 7, 2007 letter to you, the capability of a third party to independently execute the TSPA computer code is not a prerequisite for developing an adequate understanding of the DOE performance assessment. DOE will support its TSPA in a traceable and transparent manner to allow NRC and others to review whether 1) adequate scenarios were evaluated in the TSPA; 2) models and data credibly represent repository performance; and 3) resulting dose estimates are statistically stable. DOE currently is working on completing the underlying Analysis Model Reports for the TSPA, developing and verifying the TSPA codes and performing the TSPA calculations. Subsequent to completion and verification of the TSPA supporting documentary materials, including the inputs, models, computer programs and computer runs for the final TSPA, we will make those materials available consistent with the LSN regulations.



All that said, and while not required for the licensing proceeding, we would like to discuss with the State of Nevada the possibility of making DOE personnel and resources available to assist them in understanding the TSPA methodology, assumptions, modeling, and calculations. Such assistance would be subject to funding, available resources and other constraints.

If you would like to discuss this matter further, please do not hesitate to contact me.

Sincerely,



Edward F. Sproat, III, Director
Office of Civilian Radioactive
Waste Management

Exhibit 24

Exhibit 24



QA: N/A

Office of Civilian Radioactive Waste Management

***OFFICE OF CIVILIAN RADIOACTIVE WASTE
MANAGEMENT LICENSING SUPPORT NETWORK
CERTIFICATION PLAN***

Revision 0

February 2005

*U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Las Vegas, Nevada*

NRC guidance; (2) the PAPO Board Order (NRC 2004); and (3) senior DOE management expectations.

4.1 REGULATORY REQUIREMENTS

To continue its ongoing efforts to comply with the NRC regulations, the DOE will:

1. Designate an official who will be responsible for administration of its responsibility to make documentary material electronically available.
2. Implement the requirements in 10 CFR 2.1003.
3. Continue training its staff on the procedures for implementing its responsibility to make documentary material electronically available.
4. Ensure that all DOE LSN documents carry the DOE unique identification number.
5. Continue to cooperate with and participate in the advisory review process established by the NRC under 10 CFR 2.1011(d).
6. Certify, through the responsible official designated in compliance with 10 CFR 2.1009(a)(1), to the PAPO that the procedures specified in 10 CFR 2.1009(a)(2) have been implemented, and that to the best of the Certifying Official's knowledge, the documentary material specified in 10 CFR 2.1003 has been identified and made electronically available.
7. Update its certification, through its Certifying Official, at the time the DOE submits the LA.

4.2 PAPO BOARD ORDER

To continue ongoing efforts to comply with the PAPO Board Order (NRC 2004), the DOE will complete the following tasks prior to the initial DOE certification:

1. Review remaining archival and uncategorized e-mail to determine LSN relevancy to the extent that reasonable efforts render such e-mail reviewable.
2. Review encrypted/Foremost e-mail to determine LSN relevancy to the extent that reasonable efforts render such e-mail reviewable.
3. Confirm any claim of privilege through manual review.
4. Create a header for each LSN-relevant document from the employee concerns files.
5. Produce all LSN-relevant documents in existence as of a reasonable cut-off date necessary to ensure that such documents are processed in accordance with NRC standards for making such documents electronically available.
6. Continue to support NRC crawling of the DOE LSN document collection.

Exhibit 25

Exhibit 25



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



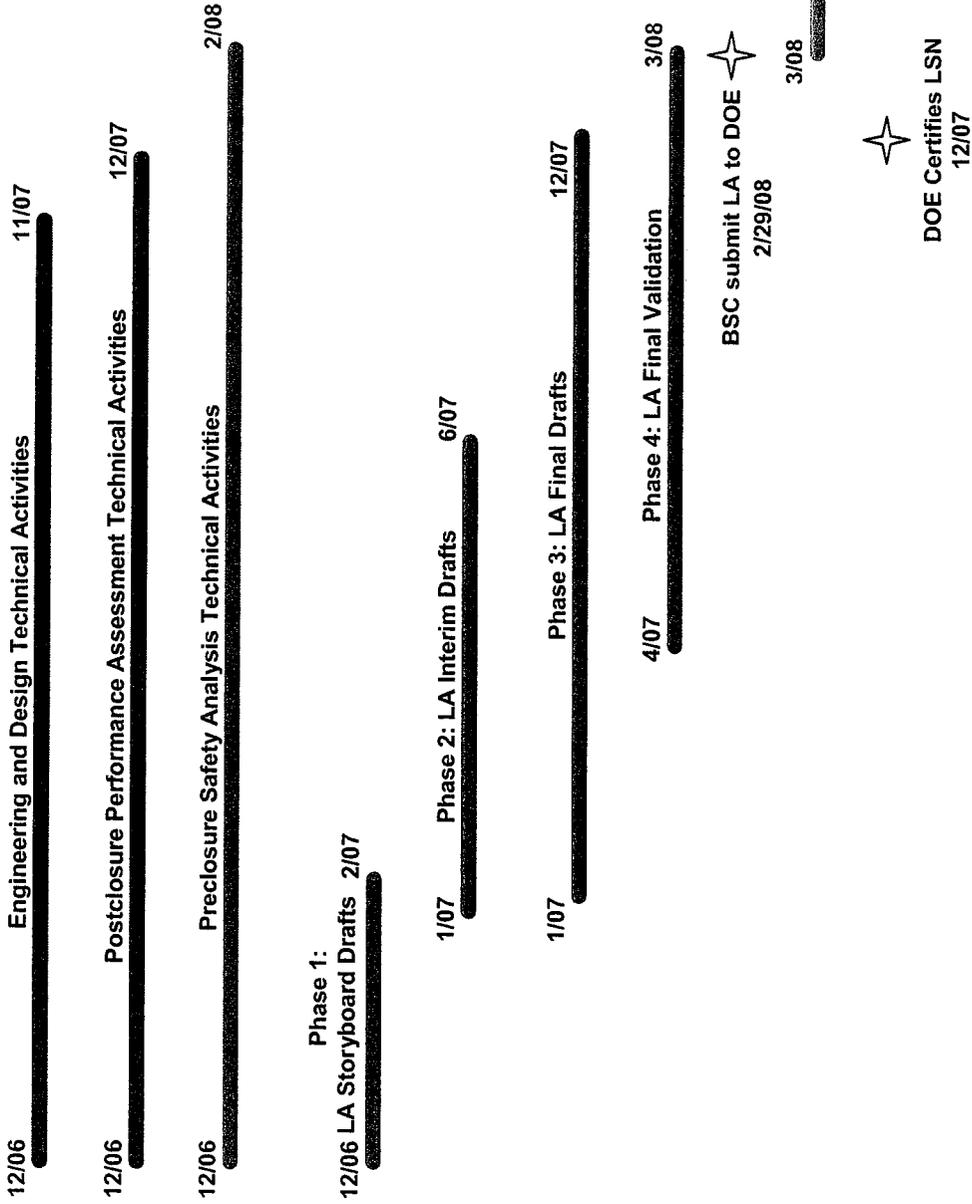
www.ocrwm.doe.gov

DOE/NRC Quarterly Management Meeting

March 27, 2007
Rockville, MD



License Application Project Summary Schedule



Key Technical Issues

- DOE submitted responses to three Additional Information Needs (AINs) in December 2006, as scheduled
 - Radionuclide Transport 3.05, AIN-1 and Structural Deformation and Seismicity 3.01, AIN 2 – Documentation of Alcove 8 and Niche 3 tests
 - Total System Performance Assessment and Integration 2.02, Comment 59 – Transmittal of two Analysis and Model Reports: *In-Drift Natural Convection and Condensation*, and *Multiscale Thermohydrologic Model* (Corrected response transmitted 3/9/07)
 - ◆ This AIN was closed by NRC letter of 3/20/07
- Remaining Key Technical Agreement items will be addressed in the license application

