Perspectives on the Yucca Mountain Site Project

Presentation to:
Nuclear Waste Technical Review Board (NWTRB)

Presentation by:
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U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Topics for Discussion

- YMSCO organizational changes
- Fiscal Year 1999 accomplishments and Fiscal Year 2000 priorities
- Implementation of EDA II and planned testing
- Repository Safety Strategy
- Environmental Impact Statement and Site Recommendation Processes
YMSCO Organization

- Continuing the implementation to the nuclear culture (culture of excellence), Project Office has proposed organizational changes to enhance project management practices
- Project Manager (PM) has proposed two deputy positions
  - Acting Deputy PM, Technical - Don Horton
  - Acting Deputy PM, Operations - Linda Bauer
- In addition, the vacancy for Assistant Manager for the YMSCO Office of Project Execution was filled by Suzane Mellington.
Major Products for FY 1999

- Issued the VA - December 1998
- Completed and released the TSPA-VA Technical Basis Report - December 1998
- Released the Site Description Document - January 1999
- Released Draft Environmental Impact Statement (DEIS) - August 1999
- Selected SR/LA design concept - September 1999
Fiscal Year 2000 Priorities

• Implement quality initiatives including resolution of deficiencies, qualification of data, and model validation.

• Prepare Process Model Reports (PMRs) and System Description Documents (SDDs) to support the Site Recommendation Consideration Report (SRCR)

• Implement Enhanced Design Alternatives II design concept as basis to develop SR design
Fiscal Year 2000 Priorities
(Continued)

• Conduct testing to address key uncertainties in key performance parameters
• Complete TSPA-SR Rev. 00
• Prepare draft SRCR for internal review
• Conduct public hearings on the Draft Environmental Impact statement
• Prepare Final EIS for internal review
• Resolve status of DOE siting guidelines for evaluation of suitability and Site Recommendation
EDA II With Conditions

• Acting OCRWM Director has approved M&O recommendation to implement the EDA II design concept with conditions specified by DOE
• EDA II with conditions will be the basis for the design supporting the SR
• EDA II with conditions assures flexibility to accommodate
  – closure between 50 and 125 years with an option to keep open for as much as 300 years
  – design evolution that affects postclosure thermal conditions
Planned Testing to Address Key Uncertainties

• Planned testing based on
  – input needs for the EDA II design concept
  – input from external oversight groups
  – improved understanding of site conditions
  – elements of the safety case

• Testing will focus on
  – flow and transport properties testing and seepage testing in the Topopah Springs Tuff (Tpt) in cross drift
  – hydrologic characterization of the Tpt Lower Lithophysal unit (Cross Drift)
Planned Testing

• Testing will focus on (Cont’d.)
  – Calico Hills flow and transport testing at Busted Butte
  – Drift Scale Heater Test
  – SZ testing in the 40 Mile Wash area in cooperation with the Nye County Drilling Program
  – Waste package materials and waste form testing
  – Engineered barrier system pilot-scale testing at the Atlas Facility
  – Natural Analogue Studies at Pena Blanca
Repository Safety Strategy (RSS)

- Revision 3 of the RSS is in preparation
- RSS describes the postclosure safety case and is being revised to
  - reflect the updated design concept (EDA II) and improved understanding of the natural system
  - enhance understanding of those principal factors most significant to repository performance
  - provide approach to adequacy of information and prioritizing future work
  - describe implementing methodologies for TSPA and barrier analyses
Completion of the Environmental Impact Statement Process and Preparation of the Site Recommendation Consideration Report
Schedule for Final EIS

Feb - May  |  Jun  |  Jul  |  Aug  |  Sep  |  Oct  |  Nov
09-Feb-00  |       |       |       |       |       |       

End of Public Comment Period

09-Feb-00

Deliver Draft CRD for YMSCO Review

02-Jun-00

Start Initial YMSCO Review

23-Jun-00

Final DOE Concurrence on FEIS

29-Sep-00

2000

YMSCO Submits Proposed FEIS

24-Jul-00

OCRWM Submits PFEIS for Final DOE Concurrence

18-Sep-00

Publish NOA for FEIS

17-Nov-00
Public Availability of DEIS

- Distributed to key government officials, environmental groups, stakeholders and the general public
  - Hard Copy
  - CD ROM
- Available through
  - Internet on the project website at http://www.ymc.gov
  - DOE Office of NEPA Policy and Assistance website at http://tis.eh.doe.gov/nepa
  - by telephone at 1-800-967-3477
- References to the Draft EIS are publicly available in four reading rooms
## DEIS Public Hearing Schedule

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SRCR Contents

Volume 1: Yucca Mountain Site Characterization & Repository Design

- Repository & Waste Package Design
- Site Data
- TSPA Summary

Volume 2: Preliminary Suitability Evaluation

- Preliminary Suitability Evaluation (comparison of Yucca Mountain performance to siting guidelines)

Yucca Mountain Site Description
- Project Description Document
- Monitored Geologic Repository Concept of Operation
- Monitored Geologic Repository Requirements Document

30 Engineering System Description
Documents for:
- surface,
- subsurface, and
- waste package systems

Repository Safety Strategy
- TSPA-SR
- TSPA Methodology & Assumptions
- 9 Process Model Reports
- 148 Analysis & Model Reports
- Preliminary Preclosure Safety Analysis
Adequacy of Information for SR

• Planned work is expected to be adequate to demonstrate that
  – new data will not significantly change the understanding and basis for conclusions about repository performance
  – a defensible compliance position can be presented
SR Process

- SRCR will be supported with extensive documentation
- Supporting documentation being developed by multi-discipline technical teams with close DOE involvement and operating under revised work procedures to ensure
  - integration
  - traceability
  - defensibility
SR Process
(Continued)

• Key supporting documents are the Process Model Reports (PMRs), Analysis and Model Reports (AMRs), System Description Documents (SDDs), and TSPA-SR

• PMRs document the technical basis supporting TSPA-SR and include
  – process model descriptions and assumptions
  – AMRs that document data used, analyses and abstractions
Linkage of Major Programmatic SR/LA Milestones

Rev 0 PMRs

ISM 12/99

EBS 04/00

Bio 04/00

WP 04/00

UZ 04/00

WF 04/00

DE 05/00

SZ 05/00

NFE 05/00

TSPA-SR Rev 00 9/00

TSPA-SR Rev 1 5/01

TSPA-SR Rev 2 11/01

TSPA-LA

Rev 1 PMRs 1/01

Rev 2 PMRs 7/01

SR Consideration Report 11/00

SR 7/01

LA 3/02

Legend

- Analysis/Model Reports that support PMRs
- TSPA Document
- NFE Document
- SR Regulatory Documents
- Document Feeds
- Document Updates

Note: PMR and TSPA dates are DOE approval dates

FY2000

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SR Process
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• System Description Documents (SDDs)
  – document the requirements for the repository design
  – form the basis for the description of the repository
  – provide a demonstration of compliance with repository requirements on a system by system basis for QL-1 and some QL-2 elements

• Basis for the TSPA-SR are the AMRs
Summary

• Project continues its implementation of the culture of excellence
• Focus of work in FY 00 is to prepare a final EIS and the SRCR
• EDA II design concept with conditions is being implemented as the basis for the SR design
• Planned work through FY 00 will lead to evaluation of Yucca Mountain using siting guidelines
Summary

(Continued)

• Adequacy of information for an evaluation of suitability consists of
  – conclusion that additional information is unlikely to change any conclusions on performance of major systems
  – a defensible safety case can be demonstrated
• RSS Rev. 3 will describe the postclosure safety case incorporating the EDA II design features
• FEIS and SRCR are planned to be released in Nov. 2000