

DOE/NRC QA Meeting
June 13, 2001
Rockville, MD

Sign-In Sheet

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

DOE Site Recommendation Process

Presented to:
NRC/DOE Management Meeting

Presented by:
Tim Sullivan
Office of Licensing and Regulatory Compliance
Yucca Mountain Site Characterization Office

June 13, 2001
Rockville, Maryland

**YUCCA
MOUNTAIN
PROJECT**

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Presentation Outline

- **Background**
- **Description of roles and relationships of SR Documentation**
- **Path forward to possible SR Decision**

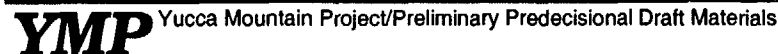
Background

- **DOE had planned to release a Site Recommendation Consideration Report (SRCR) in late 2000**
- **SRCR was deferred to allow**
 - **Enhancement of the technical basis for a site recommendation decision**
 - **Completion of the Inspector General's investigation**
- **As a result, FY01 scheduled work was re-planned to address these needs**

Background

- **Revised SR strategy extended the SR process to allow for incremental release of SR documents**
- **May 2001**
 - **Release of the Science & Engineering Report (S&ER)**
 - **Release of the Supplement to the Draft Environmental Impact Statement (SDEIS)**
- **Summer 2001**
 - **Plan to release the Supplemental Science and Performance Analyses Report (SSPA)**
 - **Plan to release the Preliminary Site Suitability Evaluation (PSSE)**
- **Plan to hold SR Consideration Hearings following release of PSSE**
- **Provide basis for possible SR decision in early FY02**

***Pre-closure not shown here**



Total System Performance Assessment - Site Recommendation (TSPA-SR)

- **TSPA - SR has forecast the performance of a repository for the proposed 10,000 year compliance period, and beyond**
 - **Provides integrated set of conceptual models reflecting the relevant features, events, and processes (FEPs) that could operate after permanent closure of a repository consistent with proposed 10 CFR Part 63**
 - **Includes nominal scenario, disruptive events (igneous activity) scenario, and human intrusion scenario consistent with proposed 10 CFR Part 63**
 - **TSPA-SR Rev. 00 assesses higher-temperature operating mode**

Science and Engineering Report

- **Provides the information identified in Section 114 (a)(1)(A) - (C) of the NWPA**
 - **Description of the proposed repository including preliminary engineering specifications**
 - **Description of the proposed waste form or packaging and relationship between waste form or packaging and the geologic medium**
 - **Discussion of data obtained in site characterization related to safety of Yucca Mountain**
- **Plans for additional low-temperature evaluations**
- **YMSER will be revised as appropriate to address comments to support SR decision**
- **YMSER is a compilation and summary of existing information drawn from AMRs, PMRs, SDDs, and TSPA-SR**

Supplement to the Draft Environmental Impact Statement (SDEIS)

- **Addresses the evolution of the potential repository design, reflecting**
 - **Evaluation of design options**
 - **Ways in which the repository could be operated (operating modes) that could reduce uncertainties and improve long-term performance and operational safety and efficiency**
- **Provides for public review of potential environmental impacts based on the current design with a higher- and lower-temperature operating mode**
 - **Initiates 45 day public comment period**
- **Three public hearings have been completed**

Supplemental Science and Performance Analyses Report (SSPA)

- **SSPA planned for release in summer 2001**
 - **Volume 1 - Scientific Basis and Analyses**
 - ♦ New science and engineering data collected since completion of documents (AMRs) supporting the YM S&ER
 - ♦ Process-level analyses with revised ranges of uncertainties and quantified uncertainties
 - ♦ Process model modification to reflect the potential effects of a lower-temperature operating mode
 - **Volume II - Performance Analyses**
 - ♦ TSPA supplemental model built from TSPA Rev. 00, ICN 1
 - ♦ Evaluates performance assessment results for higher- and lower-temperature operating modes
 - ♦ TSPA sensitivity analyses investigate effects on predicted performance of revised ranges of uncertainty, quantified uncertainties, and lower-temperature operating mode
 - ♦ Compares results to the existing TSPA-SR results to better understand the potential effects of additional information and changes in thermal operating modes
- **Future use of the information in the SSPA in a License Application requires verification under the appropriate QA procedures**

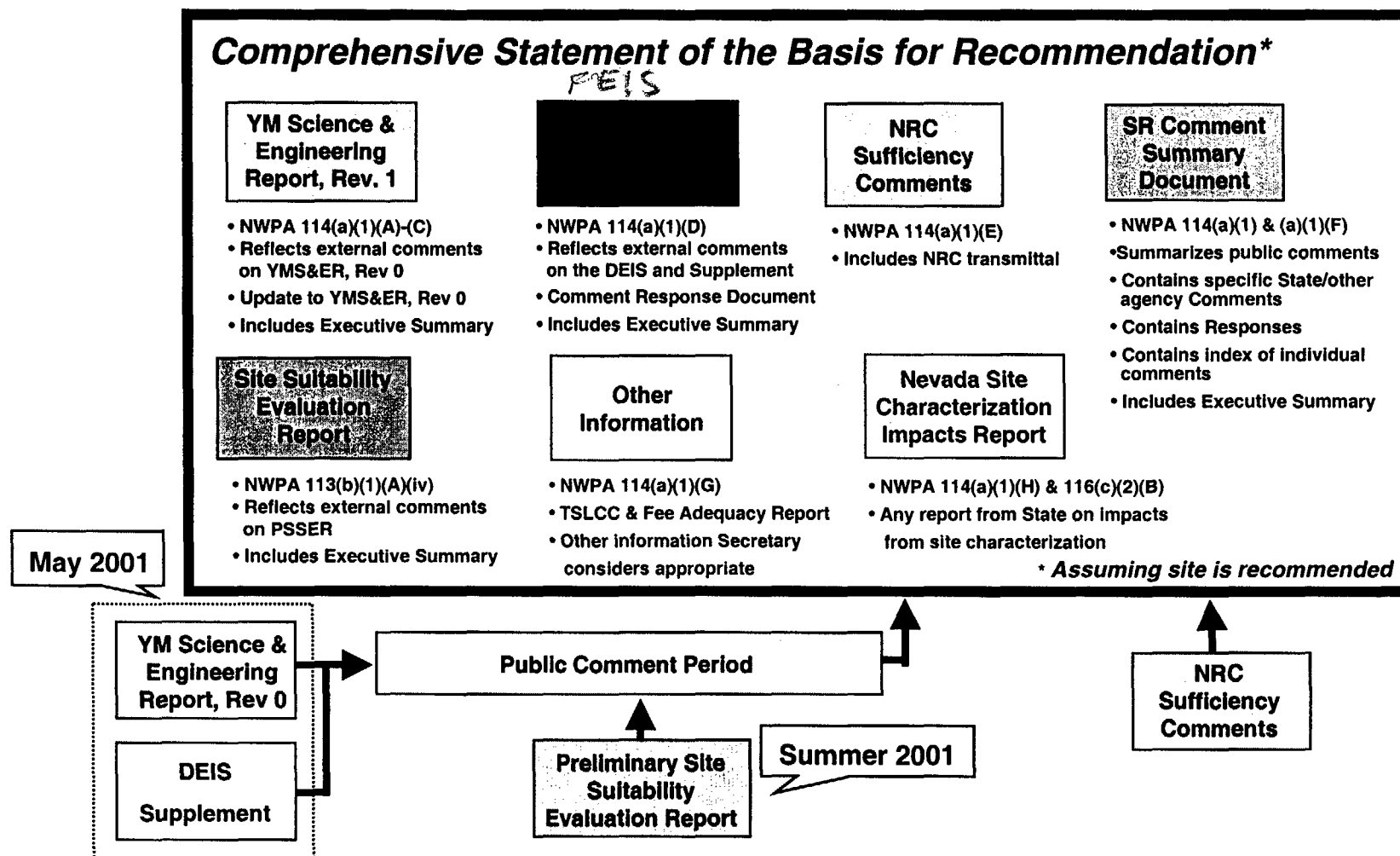
Preliminary Site Suitability Evaluation (PSSE)

- Preliminary evaluation against pre and post-closure site suitability guidelines in DOE's proposed 10 CFR Part 963
- Post-closure evaluation includes
 - ♦ TSPA methodology
 - ♦ Barrier analyses
 - ♦ Criteria evaluations and sensitivity studies
 - ♦ Evaluation of repository performance for a higher temperature and a lower temperature operating mode
 - ♦ Comparison of mean annual doses with standards (10,000 years)
 - ♦ Consideration of uncertainties and variabilities
 - ♦ Sensitivity studies
 - ♦ Alternative features and processes ?
- Release of the PSSE will be accompanied with dates, times, and locations for public hearings, and dates for the close of the public comment period

Path Forward to Possible SR Decision

- **After release of PSSE, SR consideration hearings will be held - Location TBD**
- **After public comment period and SR Consideration Hearings, DOE will prepare materials to support a Secretarial decision whether to recommend the site**
- **Our planning basis is to provide materials to support a possible Secretarial decision in early FY 02**

Proposed SR Documentation Concept



EPA Standard (40 CFR Part 197)

- **EPA standard for a potential repository at Yucca Mountain has been finalized**
 - **Compliance point is 18km instead of 20km**
 - **Representative volume is 3000 ac. ft. instead of 1285 ac. ft.**
 - **Treatment of human intrusion different from that in NRC proposed rule (10 CFR Part 63)**
 - **Minor differences in the treatment of REMI**

Summary

- **SR process was expanded to enhance the technical basis for a possible SR decision**
- **The S&ER and Supplement to DEIS are available for public comment**
- **DOE is evaluating impact of final EPA regulation on SR documents**
- **DOE has announced initiation of the comment period for a possible SR decision**
- **PSSA and SSPA will be released during the comment period to support the technical basis for a possible SR decision**

Backup

Site Recommendation Documentation Structure

AMR	Analysis/Model Report
DEIS	Draft Environmental Impact Statement
EBS	Engineered Barrier System
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
IRSR	Issue Resolution Status Report
NRC	Nuclear Regulatory Commission
PMR	Process Model Report
S-1	Secretary of Energy
SDD	System Description Document
SR	Site Recommendation
SZ	Saturated Zone
TSLCC	Total System Life Cycle Cost
TSPA	Total System Performance Assessment
UZ	Unsaturated Zone
WF	Waste Form
WP	Waste Package

