

LADS Overview and DOE Requirements for LADS

**Presentation to:
Nuclear Waste Technical Review Board (NWTRB)**

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

**Yucca
Mountain
Project**

LADS Overview



- **Continuing characterization work identified uncertainties in natural and engineered barrier performance**
- **Project evaluated alternative design approaches to determine potential for reduction of those uncertainties**
- **Consideration of alternative designs is also required by NRC**
- **License Application Design Selection process intended to provide comprehensive assessment of alternative design concepts**
- **Resultant design concept would be further developed in support of Site Recommendation and License Application**

LADS Overview

(continued)

- **Review was to address fundamentally different design approaches (design alternatives) as well as more detailed design solutions (design features) identified by Repository Design Alternatives Working Group and captured in Viability Assessment**
- **Review was not to be constrained by those VA alternatives and features – additional design solutions were to be identified as appropriate**

DOE Requirements



- **DOE Planning and Control System sheet for FY99 work**
 - » **Statement of Work required development of evaluation characteristics for features and alternatives, and selection criteria for alternatives**
 - » **Statement of Work required establishment of a decision analysis methodology**
 - » **Deliverable description requires a recommendation based upon an analysis “involving performance allocation associated with appropriate standards, defense-in-depth approach, repository safety strategy, and appropriate program enhancements....”**
 - » **Deliverable acceptance criteria require report conclusions to be “reasonable, traceable and clearly stated when evaluated in the context of the available information, standards and DOE guidance”**

DOE Technical Direction



- **DOE technical direction letter provided to M&O on December 23, 1998 provided DOE expectations for LADS**
 - **Establish DOE-lead integration group to provide guidance and resolve technical and policy issues**
 - **Involve DOE staff and management in development of the report recommendation**
 - **Develop complete and high quality technical documentation for the LADS workshops**
 - **Document level of confidence in rankings of evaluation criteria of DA and DF evaluation reports**
 - **Maintain design flexibility by focusing on broad design concepts**

DOE Technical Direction

(continued)

- Document rationale for EDA selections
- Provide an unbiased treatment of DAs and DFs, and discussion of treatment where bias cannot be avoided
- Provide the evaluation process for EDAs
- Define report format (rank ordering vs. grouping of like alternative vs. merit discussion with no ranking)
- Identify status of qualification of data
- Use of conservative PA assumptions where limited data exists, instead of expected values
- LADS report must clearly and concisely document all objectives, guidance assumptions and methodology
- LADS report must specifically address potential bias toward VA reference design

Schedule



- **M&O recommendation to be provided in LADS Report Rev. 00 by April 15, 1999**
- **DOE review and comment resolution incorporation by M&O into Rev. 01 to be completed by May 28, 1999**
- **Project submittal of LADS Report Rev. 01 to DOE RW-1 on May 28, 1999**
- **Project baseline change to be prepared after submittal to RW-1**

Status of DOE Actions



- **Rev. 00 was submitted on April 15, 1999**
- **Rev. 01 was submitted on May 28, 1999**
- **Submittal to RW-1 was deferred pending review for proper incorporation of DOE comments**
- **Submittal has been made to RW-1**
- **Project baseline change being drafted, will be finalized upon completion of input-gathering**

Summary



- **LADS intended to provide basis for narrowing design options**
- **Must be understandable, defensible, documented**
- **Many design solutions may be possible**
- **Selected design approach must then have technical basis adequately developed to support regulatory proceedings**