Overview of Phase 2 Process

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Nuclear Waste Technical Review Board
Panel For the Repository

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Steps in Decision Process for LADS Phase 2

- Refine evaluation criteria
- Strengthen and specify EDAs
- Evaluate EDAs against criteria
- Rank EDAs against each criterion
- Recommend design; possible options
- Document
Phase 2 Evaluation Criteria

• Screening Criteria (required of all EDAs)
  – Meet 10,000 yr. peak dose rate (25 mrem/yr.)
  – Environmental: no unacceptable environmental effects
Phase 2 Evaluation Criteria
(continued)

Evaluation Criteria (applied to each EDA)

1. Safety/License Probability
   - Design margin
   - Degree of Defense-in-Depth
   - Uncertainties in post-closure performance
   - Performance over post-10,000 yrs.
   - Engineering acceptance
Phase 2 Evaluation Criteria
(continued)

2. Cost/Schedule

- Time required and costs associated with:
  » Site characterization and licensing
  » Construction
  » Operations
  » Monitoring
  » Closure
Phase 2 Evaluation Criteria
(continued)

3. Construction, Operations, and Maintenance

4. Flexibility
   - More storage capacity (105,000 MTU)
   - Longer pre-closure (300 yrs.)
   - Earlier closure (50 yrs.)
   - Design changes
   - Unanticipated natural features or findings
Strengthen and Specify EDAs

• Goal: carry strong EDAs into Phase 2; no significant weaknesses
• Compare 8 EDAs from workshop with Phase 2 evaluation criteria
• Strengthen weaker elements
• Specify EDAs sufficiently for analysis
Evaluate EDAs Against Criteria

• Calculations and engineering analyses to address evaluation criteria
• Evaluations based on specified design, but latitude to revise/refine as appropriate
• Summary and documentation of each EDA evaluation
## Rank Each EDA Against Each Criterion

<table>
<thead>
<tr>
<th>Safety/License Prob.</th>
<th>Cost/Schedule</th>
<th>C,O,M</th>
<th>Flexibility</th>
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LADS Two Phase Process

1. Define Design Alternatives and Features, DA/DFs
2. Develop DA/DF Evaluation Criteria
3. Evaluate DA/DFs
4. Identify Enhanced Design Alternatives (EDAs) for Evaluation
5. Develop and Apply EDA Evaluation Criteria
6. Evaluate and Rank EDAs
7. Document and Review Results (L3 & 2 Milestones)
Phase 2 Process
Conclusions

• Evaluation criteria being refined
• Phase 2 EDAs have high potential for success
• Detailed evaluations through March 1-5 workshop
• EDAs ranked by criterion
• Design recommendation based on consideration of all criteria