Office of Repository Development
Project Update

Presented by:
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Deputy Director, Office of Repository Development
U.S. Department of Energy

February 09, 2005
Las Vegas, Nevada
Key Technical Issue Agreements Status Summary
Reflects activity through February 8, 2005

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<th>KTI ID</th>
<th>Agreements Reached</th>
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<th>Responses Submitted In NRC Review</th>
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<th>NRC Needs Additional Information</th>
<th>Responses Remaining to be Submitted</th>
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NRC acknowledges that it is up to DOE to determine how, or whether, to respond to NRC staff feedback in DOE’s response to the agreements.

CLST: Container Life and Source Term
ENFE: Evolution of the Near Field Environment
GEN: General
IA: Igneous Activity
PRE: Pre-Closure Safety
RDTME: Repository Design and Thermal-Mechanical
RT: Radionuclide Transport
SDS: Structural Deformation and Seismicity
TEF: Thermal Effects on Flow
TSPAI: Total System Performance Assessment and Integration
USFIC: Unsaturated and Saturated Flow under Isothermal Conditions
License Application Content and Supporting Documents

- **General Information (GI)** Approximately 400 pages
  - General Description
  - Proposed Schedules for Construction, Receipt and Emplacement of Waste
  - Physical Protection Plan
  - Material Control and Accounting Program
  - Site Characterization

- **Safety Analysis Report (SAR)** Approximately 4,800 pages
  - Repository Safety Before Permanent Closure
  - Repository Safety After Permanent Closure
  - Research and Development Program to Resolve Safety Questions
  - Performance Confirmation Program
  - Administrative and Programmatic Requirements

**Increasing Level of Detail**

**LA**

General Information (~400 Pages) Safety Analysis Report (~5,600 Pages)

Plans Submitted in Support of License:
- Physical Protection, Material Control & Accounting, Emergency, etc.

Principal Supporting Input:
- Analysis & Modeling Reports ~89
- System Description Documents ~26
- Facility Description Documents ~8
- Preclosure Safety Analysis ~23
- Yucca Mountain Site Description-1

Detailed Supporting Input:
- Data
- Calculations
- Studies
- Reference
- Codes/Software
- Detailed Design Drawings
- Specifications
- Vendor Data

1,000s of Documents

Licensing Reviews

Inspection
2004 Organization Climate and Safety Conscious Work Environment Survey

- Second annual project-wide survey conducted by independent experts
- Anonymous process; 65% participation
- 15 management and program categories
- Comparison made with U.S. National and U.S. Government R&T Norms, and last year’s results
- Analysis of results now underway
YMP 2004 Overall Category Scores

Total Percent Favorable (N=1,650)

- SCWE Culture: 84
- Engagement: 83
- Teamwork/Cooperation: 81
- Supervision: 81
- Retaliation: 78
- Quality & Safety Emphasis: 78
- Empowerment: 77
- Goals & Objectives: 75
- Ethics & Integrity: 74
- SCWE Concerns Program: 73
- Openness & Communication: 72
- Mid-management: 71
- Corrective Action Process: 68
- Overall Management: 63
- Rewards & Recognition: 59

+ Indicates a new category for 2004
YMP 2004 Compared with U.S. Government Research & Technology Norm

Normative data not available for all categories. Colored bars indicate a statistically significant difference.
Summary on Relationship Between License Application/Project Baseline and Science and Technology, Systems Engineering and Other Testing and Evaluation Programs

License Application (10 CFR, Part 63)
- General and administrative/program requirements
- Facilities design and operations
- Preclosure/Postclosure safety analysis
- Technical specifications and design basis
- Performance Confirmation
  - Purpose: Program of tests and analyses that is conducted to evaluate adequacy of the information used to demonstrate compliance with the performance objectives
  - Examples:
    - Seepage monitoring
    - Subsurface water and rock testing

System Engineering
- Mission: System integration optimization studies among transportation, waste acceptance and repository operations to ensure maximum program efficiency
- Examples:
  - Utility facility physical interfaces
  - Life cycle cost reductions

Science & Technology
- Mission: Continually enhance our understanding of the repository system and to reduce the cost and schedule for the OCRWM mission
- Examples:
  - Advanced welding
  - Remote material handling
  - Advanced tunneling

Other Testing/Evaluation Programs
- NYE County Drilling/Testing
- University Co-op

Department of Energy • Office of Civilian Radioactive Waste Management
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