Project Plans for Fiscal Year 2002-2003
Repository Design Project

Presented to:
Nuclear Waste Technical Review Board

Presented by:
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Work Scope for FY 2002-2003
Repository Design Project

- **Scope of Project**
  - Waste Package Design
  - Subsurface Facilities
  - Surface Facilities
Work Scope - Goals

- Sufficient work for a docketable License Application (LA) (Draft Yucca Mountain Review Plan -[YMRP])
- Graded approach developing level of detail for LA submittal
  - Guided by latest Q-list (list of safety significant systems structures and components)
    - 10CFR63, Draft YMRP, current Preclosure Safety Analysis
- Address key technical issue agreement items
- Support the project acquisition process
Design Priorities

- Support Performance Assessment (PA) - enhance confidence
- Close integration with science
- Provide flexibility in the design
- Reduce cost
  - Level of detail driven by risk-informed process
  - Value engineering studies
**Work Scope - Integration**

- Reorganization of the design project
- Schedule status reviewed weekly
- Detailed inter-project reviews (Surface, Subsurface, Waste Package, Total System Performance Assessment [TSPA] and LA)
- Weekly interface meetings (management and production teams)
  - Interface logic entered into detail schedule (Approximately 200 logic ties)
  - Information exchange drawings
# Information Exchange between Repository Design and Science

<table>
<thead>
<tr>
<th>Item Description</th>
<th>To/From</th>
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<tbody>
<tr>
<td><strong>Subsurface:</strong></td>
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<tr>
<td>Underground layout (preliminary)</td>
<td>To PA</td>
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<tr>
<td>Thermal conductivity data</td>
<td>To Design</td>
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<tr>
<td>Committed materials</td>
<td>To PA</td>
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<tr>
<td>Seismic design inputs: time histories</td>
<td>To Design</td>
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<tr>
<td>Geotech. rock parameters data</td>
<td>To Design</td>
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<tr>
<td>Underground layout (final)</td>
<td>To PA</td>
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<tr>
<td><strong>Waste Package:</strong></td>
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<tr>
<td>Seismic design inputs: time histories for 10^{-6} earthquakes (final)</td>
<td>To Design</td>
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<tr>
<td>Rock fall impact on waste package and drip shield</td>
<td>To PA</td>
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<tr>
<td>Provide samples for waste package materials testing</td>
<td>To PA</td>
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<tr>
<td>Provide PWR &amp; BWR source terms</td>
<td>To TSPA</td>
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<tr>
<td>Performance of waste package due to igneous intrusion</td>
<td>To TSPA</td>
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<tr>
<td><strong>Surface:</strong></td>
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<tr>
<td>Seismic design inputs: soils layer engineering properties</td>
<td>To Design</td>
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<tr>
<td>Soils report with bearing properties</td>
<td>To Design</td>
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<tr>
<td>Seismic design inputs: WHB time histories</td>
<td>To Design</td>
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<tr>
<td>Wind loads data</td>
<td>To Design</td>
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<tr>
<td>Seismic design inputs: data for staging pad areas</td>
<td>To Design</td>
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Interface values will be provided as an agreement between PA and Design Projects.
Backup
LA Products List

- Fifteen primary LA product types have been identified

1) Project Design Criteria
2) System Description Documents
3) Material Specifications
4) Site Plan/site Layout
5) General Arrangement Drawings
6) Equipment/component Drawings
7) Air Flow Diagrams
8) Piping And Instrumentation Diagrams
9) Mechanical Flow Diagrams
10) Electrical One-line Diagrams
11) Logic Diagrams
12) WP Special Process Equipment Drawings
13) WP Fabrication Specifications
14) WP Technical Reports
15) WP Design Analyses
Design Critical Path

- Studies
  - General Arrangement Drawings
    - Mechanical Design
      - License Application Chapters
        - Late feed: Preclosure Safety Analysis (30 Jan 03)
          - Early feed: Performance Assessment (1 Oct 02)
            - Late feed: Performance Assessment (05 Apr 02 A)
              - Early feed: Performance Assessment (05 Apr 02 A)
                - Preclosure Safety Analysis (05 Apr 02 A)