Repository Safety Strategy-Process Model Reports and Analysis/Model Reports

Presentation to:
Nuclear Waste Technical Review Board (NWTRB)

Presentation by:
Mike Lugo
Manager, Process Model Reports
M&O/TRW

Alexandria, VA
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U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Process Model Reports (PMRs)
Purpose

• The purpose is to document the technical basis supporting each TSPA process model
  – Supports the postclosure safety case for SR/LA

• PMRs will focus the development of technical information on what is relevant to developing a defensible TSPA
  – i.e., the information the Project is relying upon to demonstrate postclosure compliance

• The PMR development process will ensure transparency and traceability of data, information, and references
PMR Scope

• PMRs will address:
  – Descriptions of the models, submodels, and abstractions
  – Relevant data and data uncertainties
  – Assumptions and bases
  – Model results (outputs)
  – Software qualification
  – Model validation
  – Opposing views/alternative interpretations
  – Information to support regulatory evaluations
PMR/AMR/TSPA Relationship

Science and Engineering Field/Lab Activities

Updated Reference Design

148 Analysis/Modeling Reports

- Analyses/Process Models
  - AMR
  - AMR
  - AMR

- Abstractions
  - AMR
  - AMR
  - AMR

TSPA Analysis

TSPA Documentation

Process Model Reports
1. Integrated Site Model
2. UZ Flow & Transport
3. SZ Flow & Transport
4. Near Field Environment
5. WP Degradation
6. WF Degradation
7. EBS Degrad/Flow/Transport
8. Biosphere
9. Disruptive Events

SR
Linkage of Major Programmatic SR/LA Milestones

Rev 0 PMRs

ISM 12/99

EBS 04/00

Bio 04/00

WP 04/00

UZ 04/00

WF 05/00

DE 05/00

SZ 05/00

NFE 05/00

TSPA-SR Rev 00 9/00

TSPA-SR Rev 1 5/01

Rev 1 PMRs 1/01

Rev 2 PMRs 7/01

SR Consideration Report 11/00

SR 7/01

TSPA-LA 11/01

Legend

Analysis/Model Reports that support PMRs
TSPA Document
NFE PMR Document
SR Regulatory Documents
NFE Document Feeds
Document Updates

Note: PMR and TSPA dates are DOE approval dates

Data Qualification
Software Qualification
Model Validation

40% 80% Completed

Goal

Goal

Goal

Note: PMR and TSPA dates are DOE approval dates

FY2000 FY2001 FY2002

Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3
# PMR Team

**PMR Manager – Mike Lugo**  
**PMR Production Coordinator – Jeff Weaver**

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<tr>
<th>PMR</th>
<th>PMR Lead/DOE Lead</th>
<th>PA Representative</th>
<th>Reg. Representative</th>
<th>QA Representative</th>
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<tr>
<td>1. Integrated Site Model</td>
<td>Clinton Lum/Mark Tynan</td>
<td>Cliff Ho</td>
<td>Terry Crump</td>
<td>Harvey Dove</td>
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<td>2. Unsaturated Zone Flow/Transport</td>
<td>Bo Bodvarsson/Russ Patterson</td>
<td>Cliff Ho</td>
<td>Martha Pendleton</td>
<td>Harvey Dove</td>
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<td>3. Saturated Zone Flow/Transport</td>
<td>Al Eddebbah/Russ Patterson</td>
<td>Bill Arnold</td>
<td>Augie Matthusen</td>
<td>Mike Eshleman</td>
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<td>5. Waste Package Degradation</td>
<td>Joe Farmer/Paige Russell</td>
<td>Joon Lee</td>
<td>Ali Haghi</td>
<td>Dan Tunney</td>
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<td>6. Waste Form Degradation</td>
<td>Christine Stockman/Paige Russell</td>
<td>Rob Rechard</td>
<td>Mike Scott</td>
<td>Dan Tunney</td>
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<td>7. EBS Degradation/Flow/Transport</td>
<td>Dwayne Chesnut/Jaime Gonzalez</td>
<td>Bob MacKinnon</td>
<td>Jerry Self</td>
<td>Dennis Threatt</td>
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<td>8. Biosphere</td>
<td>John Schmitt/Russ Patterson</td>
<td>Tony Smith</td>
<td>Kayce Prince</td>
<td>Steve Swenning</td>
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<td>9. Disruptive Events</td>
<td>Richard Quittmeyer/Russ Patterson</td>
<td>Rally Barnard</td>
<td>Terry Crump</td>
<td>Steve Swenning</td>
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