Office of National Transportation Update

Presented to:
Nuclear Waste Technical Review Board

Presented by:
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Office of National Transportation

May 18, 2004
Washington, DC
Completed Milestones

- Created a project management focus for the Office of National Transportation
  - Develop Project Logic, and Assign Project Managers
- Develop FY 04 transportation scope based on available budget
- Issue the Transportation Strategic Plan
- Begin working with State Regional Groups on substantive issues
- Begin building the infrastructure required to begin shipments in 2010
- Announce a record of decision (ROD) on the selection of mode and corridor
- Issue notice of intent to prepare an Environmental Impact Statement (EIS) on the rail alignment and begin scoping meetings to solicit public comment
Transportation Next Steps

• Where we are going
  – Major milestones have been identified
  – These will lead to detailed project plans with cost, schedule and technical baselines
  – Requesting Project Execution Approval for Casks, Rolling Stock, FMF and Nevada Rail
  – Cask and rolling stock requirements activities began this year
  – Development of the Environmental Impact Statement (EIS) for rail alignment has begun
  – We are increasing the focus of institutional collaboration on specific transportation system projects
Transportation Organized to Focus on Project Management

- Fleet Acquisition Project – Define acquisition approach and needs for cask systems, rolling stock, and auxiliary equipment, and facilities to provide operations and maintenance support
- Operational Infrastructure Project – Define, develop, implement, and demonstrate the operational infrastructure needed to support waste transportation and fleet maintenance
- Institutional Project – Work collaboratively with stakeholders to develop the transportation system
- Nevada Transportation Project – Develop the rail infrastructure required in Nevada
Recent Milestones/Key Decisions

- **12/03** -- DOE announced a corridor preference for the Caliente corridor with Carlin as a secondary preference.
- **12/03** -- BLM issued *Federal Register* notice for land withdrawal along Caliente corridor.
- **4/04** -- DOE issued a record of decision (ROD) on the selection of rail as the primary transport mode and selection of the Caliente Corridor.
- **4/04** -- DOE issued a notice of intent to prepare an Environmental Impact Statement on the rail alignment to the Yucca Mountain Repository.
Key Programmatic Interfaces

- Waste Acceptance
  - Standard Contract
    - Disposal Allocations
    - Waste Specifications
    - Waste Acceptance
    - Roles and Responsibilities
  - Waste Generators (Utilities/DOE)
    - Facility Interfaces
    - Site Limitations
    - Service Needs
    - Mode Preference
    - Waste Data
    - Schedules

- Stakeholder Interactions
  - States & Tribes
  - Emergency Responders
  - Special Interest Groups
  - Transportation Industry
  - Utilities
  - Other Interested Parties

- Repository
- Cask Receiving
  - Cask System Envelopes
  - Handling Interfaces
  - Operating Requirements
  - Vehicle Interfaces
  - Fleet Management Facility (FMF) Interfacing

- Fuel and Canister Handling
  - Operating Requirements
  - Handling Interfaces
  - Canister Interfaces
  - Contents Descriptions
  - FMF Interfacing

- Transportation
  - Institutional
  - Operations Planning
  - Fleet Acquisition
    - Cask Fleet
    - Rolling Stock
    - Support Facilities
  - Nevada Rail
### Summary Schedule

**Transportation Program**  
Level 1 Summary Schedule Through FY 2007

<table>
<thead>
<tr>
<th>National Transportation</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tbody>
<tr>
<td>- Fleet Acquisition</td>
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<td>Issue Initial Cask RFP</td>
<td>Issue Final Rolling Stock RFP</td>
<td>Award Cask Conceptual Design Contracts</td>
<td>Begin Category A Deliveries</td>
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<td>- Operations</td>
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<td>Issue Draft RFP for Rolling Stock</td>
<td>Award Cask Conceptual Design Contracts</td>
<td>Initiate Cask Certification</td>
<td>Submit EIS</td>
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<td>- Fleet Management Facility</td>
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<td>FMF Siting Decision Approved</td>
<td>Complete Development of Design Requirements</td>
<td>Begin Design</td>
<td>Begin Construction</td>
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<td>- Institutional</td>
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<td>Initiate Development of Design Requirements</td>
<td>Complete Conceptual Design</td>
<td>Complete Conceptual Design</td>
<td>Final EIS</td>
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<tr>
<th>Nevada Transportation</th>
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<tbody>
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<td>- Mode ROD</td>
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<td>- Alignment EIS</td>
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<td>- Rail Design &amp; Construction</td>
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**Data Date**  
May 6, 2004

**Progress, Forecast, Baseline**

[Image of the schedule with milestones and timelines]
**Cask Acquisition Project Summary**

**Fleet Acquisition**
- Cask Fleet
- Rolling Stock
- Support Facilities

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<tbody>
<tr>
<td>Issue Notice of Potential Interest</td>
<td>Award Cask Capability Assessment</td>
<td>Award Design/Certification</td>
<td>Design</td>
<td>CERTIFICATION</td>
<td>Begin Category C Deliveries</td>
<td>Begin Operations</td>
<td>Complete Cask Deliveries</td>
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<td>Initiate Cask Certification</td>
<td>Initiate Cask Fabrication</td>
<td>Begin Category A Deliveries</td>
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<td>Begin Category B Deliveries</td>
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**DESIGN**
- Functional Requirements: DOE will refine based on vendor input provided in Cask Capability Assessments
- Designs (preliminary and final): Vendors will generate designs for Category B & C casks (i.e., existing designs w/ modifications and new designs) at a sufficient detail level for NRC certification

**CERTIFICATION**
- Vendors will submit licensing applications to the NRC for certification
- Fabrication may not be initiated until vendors obtain NRC certifications

**FABRICATION**
- Fabrication and Delivery: Vendors will fabricate and deliver fully-certified casks to DOE, based on negotiated schedules
### Institutional Overview

#### Define & Start Projects
- Develop routing criteria and identify potential regional suites of routes
- Identify existing emergency preparedness capabilities and ascertain training and resource needs
- Participate in review and revision of DOE Radioactive Material Transportation Practices Manual
- Collaboratively develop 180(c) implementation policy
- Conduct special projects, e.g., barge shipment feasibility study and infrastructure analyses
- Establish tribal relationships for these shipments

#### Policy & Project Work
- Publish a revised Draft 180(c) Policy in the FRN
- Establish Policy on AAR Standard and Dedicated Trains
- Establish Policy on Rail Inspections
- Complete project on emergency preparedness capabilities and needs
- Complete project on barge feasibility
- Complete project on criteria and methodology for route selection;
- Complete the project on shipper infrastructure updates
- Work on updates to the Transportation Practices Manual with stakeholders

#### Policy Implementation
- Begin the grant process for 180(c) implementation;
- Establish suites of transportation routes;

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<tr>
<td>Issue Trans. Strategic Plan</td>
<td>Draft Approach to Tribal Consultation</td>
<td>Issue FRN Draft 180(c) Policy</td>
<td>Issue Regional Suites of Trans. Rt. Final Rt. Criteria Identified</td>
<td>TEC Meeting</td>
<td>TEC Meeting</td>
<td>Ops. Certification w/ States and Tribes</td>
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<tr>
<td>Initial Meeting w/ Regional Groups</td>
<td>Review Cooperative Agreements</td>
<td>TEC Meeting</td>
<td>Issue Revised Trans. Practice Manual</td>
<td>TEC Meeting</td>
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<tr>
<td>Initial Meeting w/ Tribal Officials</td>
<td>Final Rt. Selection Criteria</td>
<td>TEC Meeting</td>
<td>Issue FRN Draft 180(c) Policy</td>
<td>TEC Meeting</td>
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<td>TEC Meeting</td>
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**Department of Energy • Office of Civilian Radioactive Waste Management**
Operations Overview

- FY 2004
  - Draft Concept of Ops.
  - Begin TSRD Update
  - Begin Developing Routing Criteria
  - Issue Final Concept of Ops.
  - Decision on Rail Service

- FY 2005
  - Revise TSRD
  - Issue Final Concept of Ops.
  - Final Routing Criteria
  - Issue TSRD Basis

- FY 2006
  - Issue TSRD
  - Trans. Ops. Center Location Decision
  - Select Trans. Ops. System Services
  - Issue Trans. Ops. Plan

- FY 2007
  - Issue RFP for Trans. Ops. Contractor

- FY 2008
  - Trans. Ops. Center Available
  - Award Trans. Ops. Contracts
  - Commence Cash Training at Purchaser & DOE Sites

- FY 2009
  - Finalize Ops. Sys. Test Plan
  - Initiate Ops. Sys. Test
  - Complete Ops. Sys. Test

- FY 2010
  - Develop Final Campaign Plans
  - Begin Dispatch of Cask to Purchaser Sites
  - Complete Waste Deliveries

**Operations Planning**

- 2004 - Initiate Transportation Planning
  - Establish route development methodology and criteria
  - Develop Draft Concept of Operations
  - Begin update/revision of Transportation System Requirements Document (TSRD)

- 2005 - Update Technical Baseline and Policy Development
  - Issue updates technical baseline - TSRD
  - Issue Final Concept of Operations
  - Issue Routing Criteria

- 2006 - Operational Decisions
  - Develop and issue Transportation Security Plan and Operations Plan

- Currently developing a computer modeling system with Oak Ridge and Sandia that will evaluate the many transportation variables and how changes to these variables effect operational efficiency

- Active participation and leadership in an Internal Working Group to evaluate behavior of casks and spent nuclear fuel

- Coordinating with NRC, DOT, and DHS on a broad range of security issues related to the transportation of spent nuclear fuel and high level waste

- Working on burn up credit analysis that may potentially increase the capacity and efficiency of transportation casks
Rolling Stock Acquisition
Project Summary

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<tr>
<td>Issue NOPI</td>
<td>Award Design Through Testing</td>
<td>Complete AAR Testing</td>
<td>Complete Rail Car Deliveries</td>
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<td>Initiate Prototype Fabrication</td>
<td>Begin Full-Scale Production</td>
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<td></td>
<td>Initiate AAR Testing</td>
<td>Begin Operations</td>
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**DESIGN**
- Functional Requirements: DOE determine requirements sufficient for competition and detailed design of vehicles
- Design and Analysis: Complete design and analysis to Standard requirements
- Preliminary design review (PDR): Submit PDR to Association of American Railroads (AAR) Equipment Engineering Committee, revise the design/submittal as necessary per AAR advice

**PROTOTYPE**
- Prototype: Build a prototype car
- Test the prototype at Transportation Technology Center, Inc and redesign as needed to pass the test
- Demonstration: Submit operators log for a demonstration run over representative route
- Conditional Approval: Submit the test reports to the AAR and revise reports as requested

**PRODUCTION**
- Production Design: Develop detailed shop drawings, tooling and set up
- Production and Delivery: Manufacturing, delivery, acceptance, product support
- Full Approval: After 100,000 service miles submit follow-up test report to Equipment Engineering Committee
**Support Facilities Project Summary**

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<tr>
<td>Initiate Development of Design Requirements for FMF</td>
<td>Complete Development of Design Requirements for FMF</td>
<td>Begin Design</td>
<td>Begin Construction</td>
<td>Complete Construction</td>
<td>Begin Operations</td>
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### REQUIREMENTS/PERFORMANCE SPECIFICATIONS
- Functional Requirements: DOE will refine based on more detailed analysis of support facility assumptions and conduct of operations planning
- Siting Decisions: Facility requirements and equity will be used to develop recommendations for facility siting. Management decisions are required prior to issuance of contracts
- Performance Specifications for Design/Build/Lease Acquisition: DOE will develop conceptual plans and performance specifications at a sufficient detail level for acquiring assets through design/build and/or lease options

### DESIGN
- Contractors will prepare preliminary & detailed designs for various support facilities consistent with all DOE and NRC requirements
- Construction may not be authorized until siting decisions are approved and contractors obtain DOE approval

### CONSTRUCTION
- Facility construction/build-out and/or leasing will be performed according to agreed upon design and performance specifications, based on negotiated schedules

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**Fleet Acquisition**
- Cask Fleet
- Rolling Stock
- Support Facilities
# Nevada Transportation Project

## Timeline

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<td>Issue ROD Mode/ Corridor Selection</td>
<td>Issue ROD for Rail Alignment</td>
<td>Early Construction Decision</td>
<td>Begin Construction</td>
<td>Initiate Testing</td>
<td>Begin Operations</td>
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### EIS and Conceptual Engineering
- Complete Final EIS
  - Select NEPA contractor
  - EIS scoping
  - Determine most viable routes
  - Conduct field surveys/geologic and hydrologic investigation
  - Develop draft EIS
  - Receive and incorporate comments
  - Develop final EIS
  - Issue Record of Decision
- Develop Conceptual Drawings (BSC)
  - Identify viable routes based on EIS
  - Gather detailed topographic data
  - Conduct best-fit modeling/optimization
  - Develop conceptual drawings (for two alternatives)
- Develop Performance Specifications and RFP

### Procurement
- Develop contract documents and specs
- Conduct industry review meetings
- Review bids

### Design-Build
- Conduct detailed survey
- Refine alignment
- Final design of track work, site, structures
- Systems engineering
- Procurement of materials
- Construct rail and facilities
- Install systems, grade crossings

### Testing
- Functional testing and system testing
- Testing and commissioning with operations contractor
- Final test runs with receiving facility
Upcoming Decisions and Activities

- Begin Environmental Impact Statement (EIS) for rail alignment
- OCRWM is soliciting public comments through EIS scoping process until June 1
- Initiate cask and rolling stock procurement activities
- Develop routing criteria and approach to assisting state and tribal emergency preparedness efforts
- Specific projects with the state regional groups
- Begin working with Tribes on a government-to-government basis
Conclusions

- Office of National Transportation has a very challenging set of projects
- Detailed scopes, schedules, and resource requirements are works in progress
  - Nevada Rail construction will be driven by EIS
  - Emergency response training will be driven by collaboratively developed policy
  - Fleet acquisition will be driven by waste acceptance decision and repository capabilities
- Interim milestones supporting detail and baselined project plans are being pursued aggressively
- Transportation will be able to support shipments in 2010