

Development of the Office of Civilian Radioactive Waste Management National Transportation Plan

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ABSTRACT

The Director of the Department of Energy's (DOE) Office of Civilian Radioactive Waste Management (OCRWM) designated development of the *National Transportation Plan* (NTP) as one of his four strategic objectives for the program. The Office of Logistics Management (OLM) within OCRWM was tasked to develop the plan, which will accommodate state, local, and tribal concerns and input to the greatest extent practicable.

The plan will describe each element of the national transportation system that OCRWM is developing for shipping spent nuclear fuel and high-level radioactive waste to the proposed geologic repository at Yucca Mountain, Nevada. The plan will bring together OCRWM's approach for acquiring capital assets (casks, rail cars, and a rail line in Nevada) and its operational planning efforts in a single, comprehensive document. It will also provide a timetable for major transportation decisions and milestones needed to support a 2017 start date for shipments to the Yucca Mountain repository. The NTP will be revised to incorporate new developments and decisions as they are finalized.

This paper will describe the elements of the NTP, its importance in providing a comprehensive overview of the national transportation system, and the role of stakeholders in providing input on the NTP and the national transportation system.

INTRODUCTION

In his July 2006 testimony before Congress, the Director of the Department of Energy's (DOE) Office of Civilian Radioactive Waste Management (OCRWM) outlined four strategic objectives that he intended to pursue and implement during his tenure. One objective is to develop and begin implementation of a comprehensive national spent fuel transportation plan that accommodates state, local and tribal concerns and input to the greatest extent practicable.

DEVELOPMENT APPROACH

To develop the *National Transportation Plan* (NTP), OCRWM's Office of Logistics Management (OLM) assembled a multi-disciplinary team of Federal staff and contractors experienced in radioactive materials transportation planning and logistics, intergovernmental relations, project management, systems engineering, equipment acquisition, regulatory compliance, and trucking and railroad operations.

OLM management emphasized the importance of building on past DOE radioactive materials transportation planning efforts. As a first step, the team reviewed transportation plans and guidance for other DOE programs including the Waste Isolation Pilot Plant, Foreign Research Reactor Program, and Office of Environmental Management (EM). The plan development team drew on EM's *Radioactive Material Transportation Practices Manual* (DOE M 460.2-1) and a *Program Manager's Guide to Transportation Planning* developed by the National Transportation Program (now EM's Office of Transportation). The team also examined guides prepared by state regional groups such as the Western Governors' Association's *Waste Isolation Pilot Plant Transportation Safety Program Implementation Guide* and the Midwest Council of State Government's *Planning Guide for Shipment of Radioactive Materials through the Midwest*.

The team generated an annotated outline which was presented to stakeholders during a plenary session of the Transportation External Coordination Working Group (TEC) meeting on February 1, 2007. Co-chaired by OCRWM and EM, TEC provides an opportunity for broad-based input and information exchange from organizations representing the utility and transportation industries; state, tribal, and local governments; police, fire, and emergency management professional organizations; and labor unions.

The discussion with stakeholders was recorded and reported in the notes of the TEC meeting. Some of the suggestions for the NTP from stakeholders included:

- Provide history of the OCRWM transportation program
- Include a list of resolved and unresolved issues
- Present a concept of operations
- List standards and requirements
- Outline future decisions
- Address the cost of the transportation system

A second draft of the annotated outline was prepared to incorporate stakeholder input from the TEC session along with comments from OCRWM's internal stakeholders—EM and the Naval Nuclear Propulsion Program (NNPP). The revised outline was distributed to members of TEC and internal and other external stakeholders. The State Regional Groups and industry were briefed on the intent and status of the development of the plan at their spring 2007 meetings. These included the Southern States Energy Board, the Midwestern Radioactive Materials Transportation Committee, the Northeast High-Level Radioactive Waste Transportation Task Force, the Western Interstate Energy Board, and the U.S. Transport Council.

In addition to these discussions, written comments were submitted by several state groups and industry associations, as well as internal stakeholders. These included the State of Nevada, Nuclear Energy Institute, State Regional Groups, and the U.S. Transport Council.

At the July TEC meeting, OLM presented a section-by-section overview of the plan being developed. Suggestions and comments of participants are being considered for inclusion in the NTP.

HIGHLIGHTS OF THE PLAN

The *National Transportation Plan* will describe OCRWM's approach to developing and implementing the transportation system required to ship SNF and HLW to the proposed Yucca Mountain Repository. The plan will be a "living document" that will be updated as development of the transportation system progresses. It will address:

- The transportation system as currently envisioned
- The current status of system development
- Activities remaining to bring the system to an operational state and how they will be accomplished
- The organizations and stakeholders involved in each transportation system element and their roles and responsibilities

ORGANIZATION

The plan will be divided into six sections. The Introduction section will provide an overview of the approach to develop the transportation system including the two capital asset acquisition efforts, the National Transportation Project and the Nevada Rail Project, along with the parallel institutional and operational planning efforts. The section will also highlight key transportation documents completed to date, reference policies and requirements that govern the system, and present a timeline for developing the transportation system. The section will conclude with a listing of resolved transportation issues along with the method by which they were resolved.

The Situation Assessment section will be a summary of the transportation system as it is currently envisioned. The section will include discussion of:

- Status of SNF and HLW transportation
- Assumptions - derived from the OLM Business Plan
- Materials to be transported - types and amount of materials to be transported to the repository
 - Commercial SNF
 - DOE SNF
 - NNPP SNF
 - DOE HLW
- Transport modes – mostly rail (by dedicated train) supplemented by truck and perhaps barge

- Types of packages –
 - Transportation, Aging and Disposal canisters
 - Casks to ship bare fuel
 - DOE SNF and HLW casks
 - Commercial dry storage systems at utility sites
 - NNPP SNF casks
- Standard Contract – the contract between DOE and utilities that establishes the basis under which DOE will accept commercial SNF
- Institutional activities – overview of the transportation institutional program
- Operational planning – overview of operational planning activities to date
- Benchmarking – status of the OLM benchmarking project
- Risk Management – overview of the OCRWM risk management process

The System Development section will identify major transportation system components and activities and the current plans for having them in place when needed. There are four major topics that will be covered in detail in this section:

- Acquisition of capital assets – how the capital assets needed by the transportation system will be acquired by the Nevada Rail Project and the National Transportation Project.
 - The Nevada Rail Project is responsible for providing rail access between the repository and the Union Pacific main rail line in Nevada.
 - The National Transportation Project is responsible for the acquisition of shipping casks for truck and rail, special rail cars, any maintenance facilities necessary to maintain the casks, inter-modal transfer equipment, and monitoring and maintenance equipment and an operations center
- Operations development – the operations planning and logistics management activities that will be conducted to ensure the transportation system can successfully perform its mission
- Institutional program – how OCRWM will work, through a collaborative process, with all parties who have an interest in the transportation program
- Key logistics development initiatives – includes two ongoing activities, route identification and emergency preparedness. The latter is focused on implementation of Section 180(c) of the Nuclear Waste Policy Act.

The section on Outstanding Issues and Resolution Methods will present open transportation issues and discuss steps being taken, in many cases through the Transportation External Coordination Working Group, cooperative agreement groups, and other stakeholders, to resolve them.

At a high level, the Organization section will outline the roles and responsibilities of the various entities involved in the development and operation of the transportation system. It includes Federal, State, and Tribal government involvement as well as that of the private sector.

The Baselines section will discuss the preliminary milestone schedules for the Nevada Rail Project and the National Transportation Project. DOE's planning is based on the availability of the Nevada rail line in 2016 and the start of repository operations in 2017. The section also will

contain the target costs for the two capital projects through March 2017. Operational costs, including institutional activities, are not included as part of the capital project performance baselines.

CONCLUSION

A draft of the NTP is currently undergoing an internal review and concurrence process. It will be issued as a draft and widely distributed to TEC members and other stakeholders and posted on the OCRWM website. After a comment period, OLM intends to prepare a comment-response document which will accompany the finalized plan. OLM looks forward to working with its stakeholders to complete the plan.