West Valley
Spent Nuclear Fuel Shipment

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Logistics and Waste Disposition Enhancements

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Background

- The West Valley Demonstration Project is an environmental cleanup project being conducted at a New York State-owned site
- In 1985,DOE took ownership of 125 spent commercial assemblies at the site to allow waste management activities to move forward

The WVDP is being conducted at a former commercial nuclear fuel reprocessing facility.

- Shipping/storage casks were designed and procured to move the fuel to the Idaho National Engineering and Environmental Laboratory (INEEL)

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Preparations for shipment included preparing personnel for cask handling and loading operations.

Background (continued)

- A 1995 legal agreement between DOE and the State of Idaho allowed shipment of the spent fuel from the WVDP after 2000
- Preparations for a 2001 shipment began in 1999
- Initial briefings for potential corridor states and tribes occurred in 1999 through regional state organizations and existing DOE-Tribal interfaces

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1999 - 2001 Preparations

- Potential corridor states and tribes, railroads, and the Federal Railroad Administration (FRA) reviewed and provided input on:
  - Rail route evaluation studies
  - Shipment plans: transportation, emergency preparedness, communications, and security
- Contracts were negotiated with the involved railroads
- Nuclear Regulatory Commission cask licenses for shipping were renewed

Work on the 1.8 mile rail spur at the WVDP was one of many preparations at both the WVDP and INEEL.

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1999 - 2001 Preparations (cont.)

- Shipment information, except specific schedule, was shared with all interested parties
- The 11 corridor states and two tribes, four railroads, FRA, the WVDP, and the INEEL were ready by late summer 2001
- Shipment was postponed in late October 2001 due to other waste management commitments at the INEEL

Casks loaded and awaiting shipment at the WVDP.

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2002 – 2003 Preparations

- In December 2002:
  - DOE Headquarters directed the WVDP and INEEL to plan for the shipment in 2003
  - Approach
    - Proceed with plan from 2001 and make only essential changes
    - Due to heightened national security, provide shipment-specific information on a need-to-know basis only

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2003 Shipment

- Preparations were completed by all parties by the end of June 2003
- Shipment
  - Departed WVDP July 13 at 12:01 .m.
  - Arrived at INEEL July 17 at 2:38 a.m. (17 hours ahead of schedule)
- Shipment went smoothly from all aspects
  - Security
  - Transportation (equipment)
  - Inspections

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Lessons Learned

- Input from organizations involved in the shipment indicated a number of recommendations for future shipments. These include:
  - Railroad Operations
  - Communications
  - Shipment Schedule
  - Emergency Preparedness Training
  - Inspections

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Lessons Learned: Railroad Operations

- Contract vs. Tender
  - Railroad willingness to carry
  - Price Anderson Act
  - Availability of tender rates
  - Planning meetings
  - “Add-ons”

Recommendation: Develop an accepted contracting approach with rail carriers for multiple shipments.

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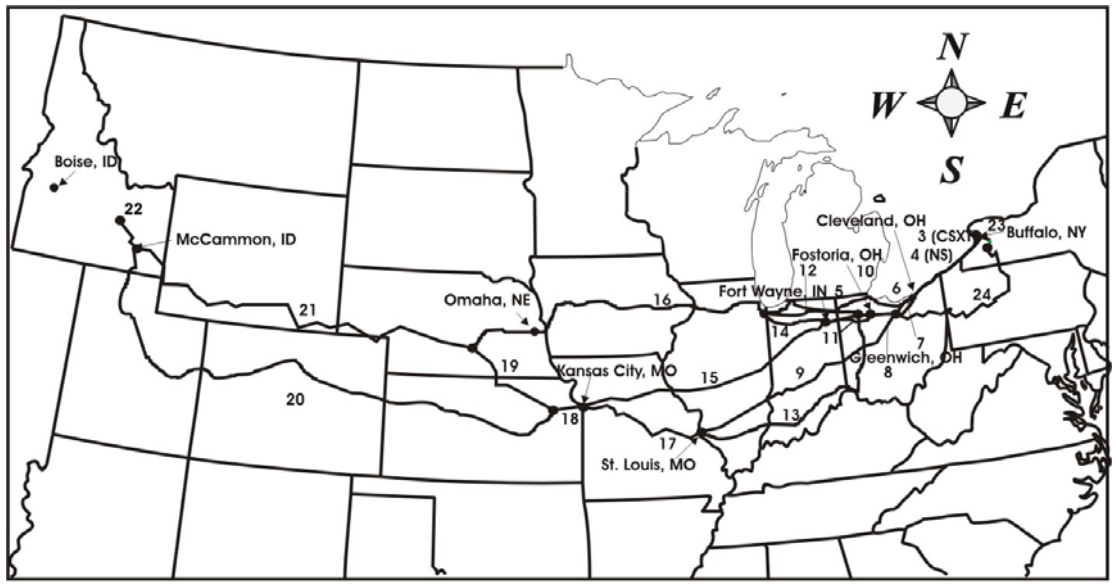
Lessons Learned: Railroad Operations (cont.)

- **Route / Alternate Route**
  - Clearly-defined route
  - selection criteria (i.e., INTRALINE)
  - Selected route changes made only based on strong safety and technical justification
  - Route changes required during transit determined by rail carrier with input from DOE
  - Track inspections for all possible routes not realistic



Not to Scale

Recommendation: Use clearly-defined route selection criteria in conjunction with a computer model, such as INTRALINE or STRACKNET, to determine route.

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Lessons Learned: Communications

- Regional Coordination Meetings
  - Very helpful and successful
- Sensitive Information
  - "Need-to-Know"
  - Issues related to communicating sensitive information
- TRANSCOM
  - Generally worked well; specific issues identified

Recommendations: Clarify guidelines for distributing and controlling sensitive information and enhance TRANSCOM communications.

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Lessons Learned: Shipment Schedule

- Actual ship date fluctuated
- Coordination of en route radiological inspections challenging due to the shifting timeline while shipment was in transit

Recommendation: To the extent possible, adhere to established schedules both for departure and projected arrival times at inspection points.

Lessons Learned: Emergency Preparedness Training

- Differences in levels of preparedness and expectations for DOE funding

Recommendation: When possible, provide 24-month notification to allow states to use their existing planning process to complete training.

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Lessons Learned: Inspections

- Pre-Shipment Inspections
  - Railroad tracks
  - Mechanical
  - Radiological
    - Performed in advance by WVDP and OH
    - Results shared with corridor states
- En Route Inspections
  - Radiological inspections by non-FRA-certified personnel

Recommendation: Develop a protocol to reduce or eliminate en route radiological inspections.

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Recommendations

- Phased Approach
- Accepted contracting system with railroads
- Clarify guidelines for distribution of sensitive information / TRANSCOM enhancements
- Process for establishing and maintaining schedule
- National protocol for en route inspections
- Radiological training for first responders integrated into routine hazardous material training