



West Valley Demonstration Project

West Valley Spent Nuclear Fuel Shipment

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West Valley Spent Nuclear Fuel Shipment

Synopsis

- Department of Energy (DOE) non-classified shipment
- DOE owned commercial fuel
 - 85 boiling water reactor assemblies
 - 40 pressurized water reactor assemblies
 - All had been in pool storage at the West Valley site since the 1970s
- Shipment from western New York to Idaho
 - Involved 2 tribes, 11 states, 4 railroads, 5 Federal Railroad Administration regions
 - Approximately 2,300 miles



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Synopsis (continued)

- Rail shipment
 - DOE selected route
 - Dedicated train; 2 locomotives, 2 cask cars, 3 buffer cars, 1 passenger car
 - Nuclear Regulatory Commission licensed shipping casks
 - Planning and conduct followed DOE Radioactive Material Transportation Practices Manual (460.2-1)
- Shipment successfully completed in just over 4 days; July 13-17, 2003



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West Valley Demonstration Project Site – 1997

- ◆ Only U.S. commercial fuel reprocessing facility ever to operate
- ◆ Occupies about 200 acres of a 3,345 acre NYS owned site
- ◆ 750 commercial assemblies stored here in a pool in 1982 when the WVDP began





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WV spent fuel pool

In the mid-1980s, 625 spent assemblies were returned to four utility owners



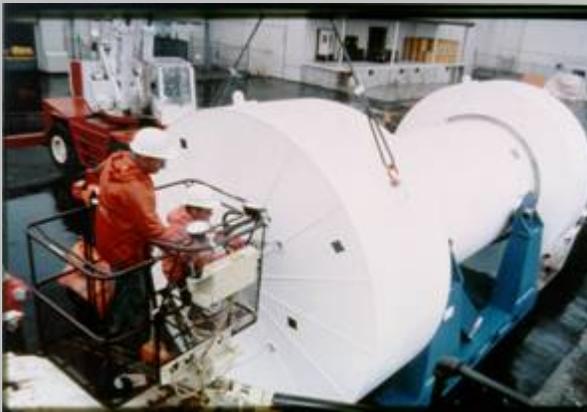
Spent fuel truck shipment from WV



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125 assemblies remained after utility shipments

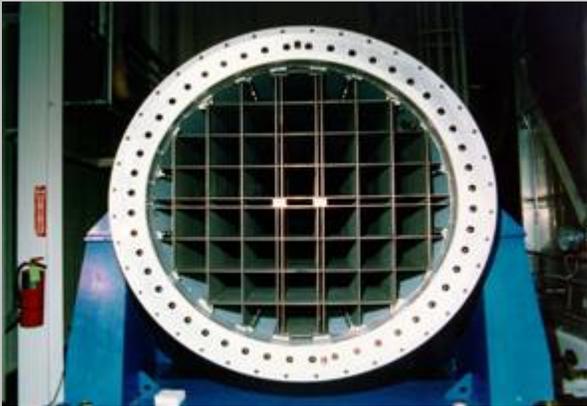


Two shipping/storage casks were fabricated

- ◆ 125 spent assemblies remained after the shipments to utilities
- ◆ DOE agreed to use these assemblies in a dual purpose (shipping/storage) cask demonstration project at the Idaho National Engineering Laboratory
- ◆ Two rail casks were designed and fabricated specifically for the WV fuel



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Interior of one WV fuel cask

- ◆ Shipment in late 1980s postponed to license casks with the NRC
- ◆ Early 1990s shipment halted by issues between DOE and the state of Idaho
- ◆ 1995 Idaho Settlement Agreement allows WV shipment after December 31, 2000



Tri-party fuel issues



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“A Tale of Two Plans”

◆ 1998-2001

- Targeted shipment in spring or summer 2001
- Planning conducted with potentially involved tribes, states, railroads, Federal Railroad Administration during 1999 and 2000
- Shipment postponement announced by DOE on October 18, 2001

◆ 2002-2003

- DOE notified the corridor tribes and states in December 2002 of plans to conduct the shipment in 2003 based on the previous planning and preparation



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Loaded cask going on rail car



Cask with impact limiters

Topic 1 – Casks

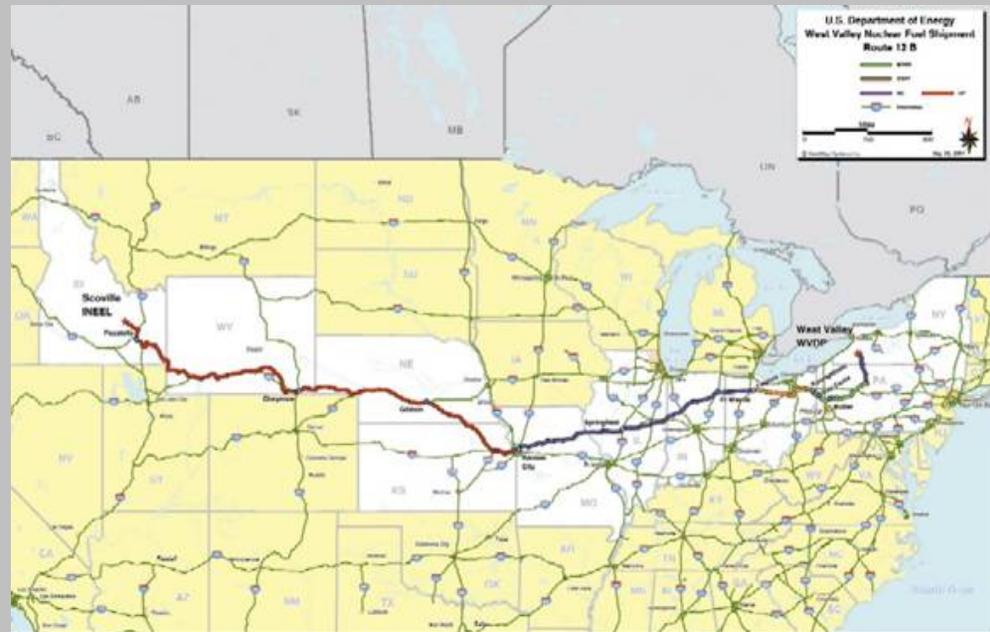
- ◆ Specially designed to ship and store the WV fuel
- ◆ One holds 85 BWR assemblies and one holds 40 PWR assemblies
- ◆ Both weighed about 100 tons loaded
- ◆ Highest dose rate on contact was approximately 8 mrem/hr



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Topic 2 – Route Selection

- ◆ In 1999 Oak Ridge National Laboratory evaluated 12 potential rail routes composed of combinations of 22 segments
- ◆ Ranking based on the following criteria
 - Distance traveled
 - Track quality
 - Number of interchange between railroads
 - Corridor population
- ◆ Second analysis run with 28 possible combinations
- ◆ Rankings remained basically unchanged





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Topic 3 – Emergency Preparedness

“You say tomatoes, I say tomatoes.”

- ◆ Shipment specific Transportation Plan included emergency preparedness
- ◆ Four railroads each provided emergency plans
- ◆ Shipment specific train-the-trainer sessions were provided for tribal and state representatives to assist them in informing emergency personnel (Resource Guide)
- ◆ On-board DOE personnel
- ◆ Communications, tracking, security, preshipment and enroute radiological inspections were all coordinated with corridor tribes and states



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Topic 4 – Security

- ◆ Security coordinated through established law enforcement; tribal, state, county, etc.
- ◆ Railroad companies' security closely involved in planning and conducting the move
- ◆ Federal Bureau of Investigation participated in planning and conduct
- ◆ Law enforcement was an integrated part of communication throughout the move
- ◆ Security planning was on a need-to-know basis



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Pre-shipment inspection at WVDP



En route inspection

Topic 5 – Radiological Monitoring

- ◆ Radiation and contamination survey results from WVDP forwarded to tribes and states
- ◆ Pre-shipment surveys done about 30 days prior to shipment by NYS; results shared with corridor tribes and states
- ◆ Surveys done on-site immediately prior to departure; railroads and several states observed
- ◆ En route surveys done by railroads and states at prearranged locations



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Topic 6 – Public Information

In 2001...

- ◆ The only protected information was the time of the shipment
- ◆ Over 100 media interviews were conducted between January and August 2001
- ◆ Communications email connection with tribes, states, railroads and shipping team proved exceptionally valuable
- ◆ No press releases; media and public learned of the shipment through local responder preparations



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Topic 6 (continued)

“No Significant Negative Results”

- ◆ Press overwhelmingly neutral to positive
- ◆ Local responders the best media resources
- ◆ Electronic information was key
 - Three fact sheets; purpose, safety, route
 - Route maps by state



In July members of Nuclear Information and Resource Service toured a mock fuel shipping cask cross-country following the WVDP shipping route.



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Topic 7 – Conduct Coordination

- ◆ Detailed shipment timeline included...
 - En route inspections
 - Carrier interchanges

- ◆ Communications planning with all involved tribal, state, railroad, and shipping team members
 - Operational validation meeting

- ◆ Status Center at the INEL was the point of timing/coordination during the move

- ◆ Tracked by TRANSCOM



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