

High Burnup Demonstration Cask Transport

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Transportation Committee
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AGENDA



Mission



Task and Teamwork



Shipment Planning Focus Areas



Focus Area Highlights

- Emergency Response
- Armed Couriers
- Intergovernmental and External Engagement



Q & A

MISSION

NE-82 Office of Storage and Transportation

- Construct one or more federal interim storage facilities, using a consent-based siting process, ready to receive commercial spent nuclear fuel (SNF) as soon as practicable



High Burnup Demonstration Cask Transport (HBUDCT) will support the mission by -

- Building public trust and confidence
- Demonstrating ability to safely ship SNF
- Demonstrating the Atlas railcar consist

TASK

- Safely ship the High Burnup Demonstration cask from North Anna nuclear power plant to a yet to be determined DOE site on the Atlas railcar, subject to appropriations



COMMERCIAL BENEFIT AGING MANAGEMENT



- High burnup SNF is in dry storage at many nuclear power plants across the country
- SNF at nuclear power plants requires an understanding of the long-term behavior of the high burnup fuel
- This understanding can be gained by a study of the high burnup assemblies inside the High Burnup Demonstration cask
- Gas sampling results from inside the demonstration cask, along with temperature data from thermocouples placed inside the cask, will support 2028* licensing efforts
 - Fuel examination needed for licensing actions at additional nuclear power plants as early as 2038 (NRC toll gate)

* Calvert Cliffs and Prairie Island NPPs

DOE, LABS, AND INDUSTRY ARE WORKING TOGETHER TO PLAN THE SHIPMENT

Shipment of the High Burnup Demonstration cask is a high priority for DOE's Office of Spent Fuel and High-Level Waste Disposition (NE-8)

Team planning the shipment is led by DOE and includes staff from five national laboratories, the Electric Power Research Institute (EPRI), Orano Federal Services and Orano TN, and subcontractors including equipment fabricators.

THIS WILL BE THE FIRST SHIPMENT OF COMMERCIAL SNF ON THE ATLAS RAILCAR

- Since the last rail shipments of commercial SNF, DOE has sponsored the design, fabrication, and testing of the Atlas railcar and its associated buffer cars and rail escort vehicle
 - The Atlas railcar consist is specially designed and currently certified to meet Association of American Railroads (AAR) Standard S-2043 for railcars carrying High Level Radioactive Material (including SNF)
 - AAR Standard S-2043 was written to minimize the risk of derailments



PROJECT GOALS



Demonstrate the safe and uneventful transportation of spent nuclear fuel using the Atlas railcar consist

Removing the novelty can help with public acceptance



Blaze a trail for future shipments

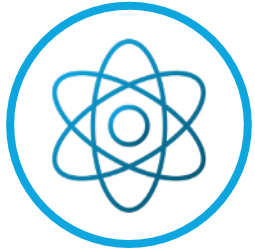
Each shipment is a stepping stone for the next



Grow and maintain operational knowledge of commercial SNF transportation by rail in the US

Let's have an integrated connected “deep bench” of expertise

SHIPMENT PLANNING FOCUS AREAS



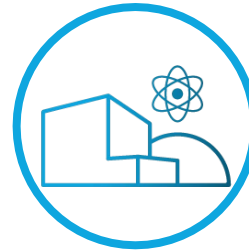
Management and Integration, including contracts, ad hoc advisory teams, and a historian



Logistics Planning



Regulatory Issues



Origin Site Readiness

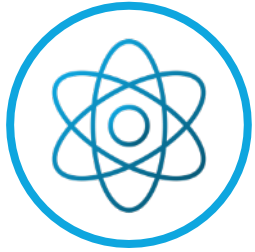


NEPA, including determination of the actions necessary to comply with NEPA



Destination Site Readiness

SHIPMENT PLANNING FOCUS AREAS



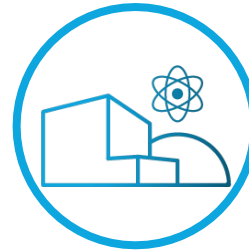
Emergency Response Planning



Operations Planning



Security Planning



Armed Escorts



**Public Outreach and
Communications**



Equipment

TEAM MEMBERS VISITED NORTH ANNA SITE IN MAY

Onsite rail

Potential transload site



EMERGENCY PLANNING AND ROUTE READINESS ACTIVITIES WILL SOON COMMENCE

Once a destination site has been identified DOE will launch a series of activities and engagements to promote readiness along the transportation route. (as was done for previous SNF shipments including Foreign Research Reactor SNF returns and Chalk River shipments to Savannah River Site)*

These may include:

- Tabletop and/or simulation exercises
- Training events using DOE's Transportation Emergency Preparedness Program (TEPP)
- Close coordination with external engagement efforts to familiarize residents from origin to destination with the safe transport of SNF

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SPENT FUEL & HIGH-LEVEL
WASTE DISPOSITION



Picture Credit: Jeff Galan, NNSA

*subject to available funding


CONSIDERATIONS RELATED TO ARMED ESCORTS

- DOE Order 460.2B
 - Requires armed escorts for physical protection of SNF shipments
- Exploring options, for example:
 - Railroad police
 - DOE trained & authorized security personnel
- Intergovernmental and external engagement
 - DOE will engage with site security and local law enforcement agencies (LLEAs) in preparation for shipment



OPPORTUNITIES FOR EXTERNAL ENGAGEMENT

- Conversations and outreach to origin and destination site communities and along route
- A “dry run” with the Atlas consist and empty cask may take place prior to the actual shipment
- Idea: a “road show” with the empty cask for a series of public exhibits (like the Atlas railcar’s show and tell at NTSF, but for a larger audience)
 - This could be part of a new public-facing information campaign about safe and secure SNF transport

A photograph of high-speed train tracks curving into the distance at sunset. The tracks are in sharp focus in the foreground, while the background is heavily blurred, showing a train and surrounding landscape. The sky is a mix of orange, yellow, and blue.

TIME FOR QUESTIONS AND DISCUSSION

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