

Potential recommendation from the SSAB to Dr. Triay:

Using Rail Transport for Moving Waste

Background

As part of the DOE cleanup process, some radioactive and hazardous waste must be shipped from DOE EM sites to disposal sites in other states—sites designed and regulated for final disposal. For example: Until late 2009, all hazardous and low-level radioactive waste shipments from the Los Alamos National Laboratory (LANL) were transported by truck. LANL has 15,000 cubic yards of waste which they planned to move to approved disposal sites over four or five months. Additional legacy waste shipments are scheduled to continue through 2015. Shipment of newly generated waste will also be required.

A site in Utah receives much of this waste. The Nevada Test Site receives some Low-Level Radioactive Waste (LLW). Non-hazardous, non-radioactive waste has been shipped to facilities in Colorado and Texas. A facility in Texas called WCS Site, near Hobbs, New Mexico, is seeking the capability to accept LLW from DOE.

The 15,000 cu yards of waste was from excavation sites at LANL Technical Area 39 (TA-39) and Upper Los Alamos Canyon. Approximately 10,000 cubic yards was LLW and approximately 5,000 cubic yards was waste containing small amounts of Polychlorinated biphenyls (PCBs). Shipment of this waste is regulated as Class 9 material by the Department of Transportation (DOT) because of the presence of PCBs. Class 9 materials are the lowest hazard class of materials transported in the United States. IP-1 certified soft-sided containers are used. These containers are a double sided, flexible 242 cubic feet capacity (8.9 cubic yards) fabric bag, with a capacity of 24,000 pounds each. A small number of metal “intermodal” containers will be used for larger debris.

A rail head in Antonito, Colorado would have been used for shipping this waste to Utah. LANL prefers to use rail cars when shipping to the *Energy Solutions* (ES) licensed disposal facility in Utah. Using rail would eliminate as many as 765,000 highway miles, taking the equivalent of 850 truck trips off of roadways. Additionally, there are other rail heads in New Mexico which might be used by LANL.

These shipments would be comprised of debris such as soil, wood, concrete, asphalt, and metal, all of which can be easily retrieved by LANL, its subcontractors, or the rail carrier (with LANL technical support) in the event of an accident.

Comments and Observations

The Hazardous Materials Transportation Uniform Act of 1990 emphasized the need to assess the risks and benefits associated with the transportation of hazardous materials by truck and rail.

Shipment by rail will ease truck traffic on highways. One intermodal train can haul the same amount as approximately 280 trucks.

Rail freight transportation incurs about 12 percent of the fatalities and 6 percent of the injuries that trucks do, per trillion ton-miles.

Railroads have an outstanding track record in safely delivering hazardous materials -- 99.998 percent of all rail cars containing hazardous materials arrived at destination safely, without any release due to an accident.

Recommendation

No. 1 DOE should identify movement of waste that could use rail.

No. 2 Prior to any shipments, DOE should consult with all involved local communities where loading and unloading may occur, providing information and education about all aspects of the shipments including holding times at rail spurs and training of emergency responders.

No. 3 DOE should consider benefits to local communities involved – such as jobs, rental of facilities, improvement of transfer site, and improvement of local roads.

Intent

The intent of this recommendation is to see that the required complex wide cleanup is completed in the safest way, specifically relative to movement of waste.

References

1. H. Barry Spraggins, (University of Nevada, Reno) The case for rail transportation of hazardous materials, Journal of Management and Marketing Research
2. <http://www.aabri.com/manuscripts/092224.pdf>
3. LA-UR-10-00134 Enhancing Safety through Rail Shipments
4. Applicable regulations and official documents:
 - 49 CFR Parts 171-180
 - 49 CFR Subpart G – Emergency Response Information
 - Nuclear Regulatory Commission 540/541 Uniform Low Level Radioactive Waste Manifests
 - *Supplement Analysis for the Proposed Transport of Low Level Radioactive Waste by Truck and Rail from Los Alamos National Laboratory (LANL) for Disposal at Energy Solutions in Clive, Utah (DOE/EIS-0380-SA-1)*