

Department of Energy Policy Statement for Use of Dedicated Trains for Waste Shipments to Yucca Mountain

POLICY STATEMENT

The Department of Energy (DOE) will use dedicated train service (DTS) for its usual rail transport of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) to the Yucca Mountain Repository site in Nevada when the repository is operational.

BACKGROUND

On April 8, 2004, the Department issued a record of decision on using rail as the preferred mode for transport of SNF and HLW to the repository. Using rail would result in fewer shipments than using trucks and would reduce environmental impacts. The term “dedicated train” refers to train service dedicated to one commodity (in this case, SNF and HLW). Past and current SNF shipping campaigns by DOE programs, including fuel from Three Mile Island and the West Valley Demonstration Project, the Foreign Research Reactor SNF Acceptance Program, and commercial campaigns, have used DTS.

DEDICATED TRAIN SERVICE BENEFITS

The benefits for the use of dedicated trains can be grouped into categories of safety, security, cost and operations.

Safety

SNF and HLW is shipped safely regardless of mode or type of service, primarily due to the stringent regulations in place and the robust nature of the transport packages involved. However, the radiological risk resulting from transport without incident may be lower due to decreased time in transit.

Security

DOE shipments have been and will continue to be made securely using both DTS and general freight service. Escort and other physical protection features can be employed using either type of service. DTS does offer some potential advantages, such as:

- Increased command and control capabilities. Shorter DTS trains allow better visual monitoring from the locomotive and escort car.
- Avoidance of lengthy “dwell times” in rail yards.

System Cost

Analyses indicate that the primary benefit of using DTS is the significant cost savings over the lifetime of the Yucca Mountain project. The cost of DTS is offset by a reduced fleet size and its attendant operations and maintenance.

Operations

The use of DTS will result in several benefits for repository and transportation operations.

- Transit and turnaround times will be shorter using DTS, enabling the repository to operate with fewer casks and fewer railcars (i.e., equipment will not sit idle in rail yards). In contrast, using general freight service would increase the required size of the cask and railcar fleet by about 40 percent due to the increased transit time associated with general freight service.
- Use of DTS provides greater operational flexibility and efficiency for the waste management system due to reduced time in transit, and greater predictability in routing and scheduling.
- Repository operational resources could be better managed by taking advantage of more predictable shipment and receipt schedules.
- Transportation planning and operations would be simplified by narrowing mode and type to mostly rail coupled with the use of DTS.