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**RESPONSE TO REQUEST FOR INFORMATION ON RAIL OPTIONS FOR  
NEVADA TEST SITE**

**11/01/93**

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RESPONSE**



**Department of Energy**

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NOV 1 1996

DOE-0058-97

Dr. Thomas E. Wagner  
Fernald Citizens Task Force  
P.O. Box 544  
Ross, Ohio 45061

Dear Dr. Wagner:

**RESPONSE TO REQUEST FOR INFORMATION ON RAIL OPTIONS FOR NEVADA TEST SITE**

Reference: Memo from Tom Wagner to Jack Craig, "Rail Options for NTS," dated July 15, 1996.

The following provides information on the possibility of intermodal shipment of waste (i.e., rail/truck combination) to the Nevada Test Site (NTS) as requested by the Fernald Citizens Task Force (CTF) in the above referenced memo. The information that follows has been compiled from documentation supporting current remediation plans at Fernald, transportation studies done by various entities in Nevada, and through consultation with officials at both Fernald and the NTS.

The current selected remedies for the shipment and disposal of Fernald waste require the off-site disposal of several specific waste streams and, in general, all material that can not meet the waste acceptance criteria for the on-site disposal facility. As part of the Environmental Protection Agency (EPA)-approved selected remedies, only the waste material to be treated under Operable Unit 4 (OU4); a portion of the waste material from OU3; and a portion of the legacy waste that is still on-site will be shipped to the NTS for disposal. Material from all other OUs will be shipped by rail to a Permitted Commercial Disposal Facility (PCDF) for disposal.

Currently, approximately 50,000 cubic yards of waste material are scheduled to be shipped by truck to the NTS for disposal. The approximate quantities of waste by source are provided in the following:

- Operable Unit 3 - 5,704 cubic yards over the next 10 years;
- Operable Unit 4 - 29,000 cubic yards over 6-7 years, starting in 1999; and
- Legacy Waste - 9,000 cubic yards over the next 3 years.

The remainder of the Fernald waste material that will not be disposed of on-site (436,496 cubic yards) will be shipped by rail to a PCDF. The approximate quantities of waste material to be shipped to the PCDF are as follows:

- Operable Unit 1 - 405,629 cubic yards;
- Operable Unit 2 - 3,100 cubic yards;
- Operable Unit 3 - 767 cubic yards; and
- Operable Unit 5 - 27,000 cubic yards.

Historically, shipments of waste going to the NTS have gone via truck due to the lack of a rail spur directly onto the site. Legacy waste material has been shipped to the NTS from the Fernald Site since the early 1980s. The possibility of using rail shipments to an intermodal facility was evaluated by Fluor Daniel Fernald and the Department of Energy (DOE) as a possible scenario for shipments of the vitrified material from OU4 in a 1995 Waste Container and Transportation Study. This study evaluated the intermodal method versus the "truck-only" method of shipment and determined that the truck-only scenario was the preferred alternative. The results of this study (summarized below) were published in a Final Path Forward Summary Report which was made available to the public in early 1995.

The results of the Waste Container and Transportation Study determined that risk levels to workers and the public were slightly higher with the truck-only scenario; however, the lifetime cancer risk for the maximally exposed individual was well within the acceptable range under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The evaluation of the costs associated with both alternatives determined that the cost of the truck-only scenario would be approximately \$6.8 million less than the intermodal option for all OU4 material. The difference in cost resulted from having to place the containers used to ship the OU4 waste material into sea/land containers to satisfy railroad requirements. The purchase of the sea/land containers and the subsequent need to recycle and reuse the sea/land containers at the Fernald Site once the waste reached NTS (which would be more cost effective than burying the sea/land containers with the waste), makes the use of intermodal transport less desirable.

The DOE did sponsor a Value Engineering (VE) Study completed as a joint effort by a number of federal agencies (including the Department of Interior (DOI) and DOE) and other consultants that was completed in January of 1996. The VE Study did identify a \$3.8 million cost savings if OU4 material was shipped by rail as opposed to being shipped by truck to NTS. The assumptions that were used in the study did not consider several factors that required consideration in the original Waste Container and Transportation Study such as required on-site storage and additional packaging for rail shipment (discussed below) which may explain the difference in the findings. DOE is considering the potential for integrating with OU1 rail shipments in an effort to optimize resources and reduce risks and costs. Additional information will be provided as the results of those evaluations become available.

A number of other implementation problems associated with intermodal transportation were also raised in the OU4 evaluation. The rate of production associated with the vitrification process makes rail shipment impractical. Forty rail cars are required for a "dedicated train" to ship waste from Fernald to the NTS. Intermodal transportation using a dedicated train would require that additional storage space be created on the Fernald Site so that enough vitrified material could accumulate to fill 40 rail cars. Subsequently, the duration of storage would result in additional exposure to workers.

Shipping a few rail cars at a time, as part of another train to Nevada, results in DOE having less control over the waste material. A "non-dedicated" train may stop a number of times in other locations prior to arriving in Nevada thus resulting in the potential for additional exposure to the public.

The intermodal scenario would also take longer to get waste material to the NTS versus the direct truck shipment. Many of these issues would also apply if intermodal transfer of OU3 material or legacy waste were considered.

#### Intermodal Transfer in Las Vegas, NV.

An intermodal transfer facility does currently exist in North Las Vegas. The facility was built by Union Pacific Railroad and is currently used primarily for the shipment of automobiles. Although the site was designed for other uses, concerns related to the proximity of the facility to local populations make the facility undesirable for use in the transfer of hazardous substances from rail to truck. An additional concern (which would apply to any intermodal facility) relates to Department of Transportation regulation 49 CFR 174.16(b) that requires that all material would have to be unloaded from the train, loaded onto trucks and transported to the NTS within 48 hours of its arrival at the intermodal facility. This requirement creates logistical problems due to the quantity of the waste and the number of trucks that would be needed to transport the waste.

#### Intermodal Transfer at Envirocare/Salt Lake City, UT.

There is the possibility of moving the Intermodal Transfer point onto the Envirocare Site for the purposes of intermodal transfer only. However, their permit does not allow the Silo material classified as 11(e) (2) byproduct material to be received at the site for disposal. In addition, an intermodal facility does exist in Salt Lake City that could potentially be used for the transfer of Fernald waste material. However, these options would require shipment and/or transfer in a densely populated area which would create concern among local stakeholders. In addition, intermodal transfer in Utah would require that waste be transported hundreds of miles out of the way with the same logistical problems resulting from 49 CFR 174.

#### Intermodal Transfer in Caliente, NV.

The use of the Caliente, NV., location has been considered by the DOE-Nevada Operations Office (DOE-NV) related to the NTS and the Yucca Mountain Projects. However, Caliente does not currently have an intermodal transfer facility. A rail transportation study was conducted as part of the ongoing Environmental Impact Statement for the Nevada Test Site. The study indicates that the location could be utilized for the intermodal transfer of waste but does not identify the use of a "back road" through Nellis Air Force

Base as a possibility and officials at Nellis Air Force Base were unable to confirm a back road that would prove beneficial for the transport of material to the NTS. The study does identify an alternate route around Nellis that would require truck trips several hundred miles out of the way. DOE-NV officials indicated that past attempts to negotiate the use of a road through Department of Defense property have proven unsuccessful. The transportation study done by DOE-NV also pointed out that the use of any roads in Nevada for the shipment of hazardous materials by truck would have to be approved by the appropriate state permitting agencies. Restrictions on roads used for hazardous substances require that they have a maximum 4-5% grade. In addition, unpaved roads are not recommended and could have seasonal restrictions. These types of issues led to the consideration of only two truck routes to support intermodal shipment of hazardous materials in the DOE-NV study. One route would pass directly through Las Vegas, specifically through a very heavily traveled interchange and was considered undesirable. The second route would pass through populated areas of Pahrump, NV. No other routes were identified as feasible due to the above mentioned concerns or because the route added excessive length to the truck trips.

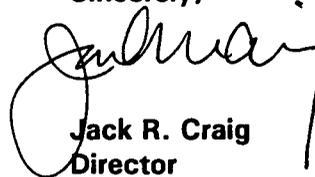
A transportation study considered by the Yucca Mountain Project in Nevada considered a number of potential routes for the shipment of high level waste to the Yucca Mountain/NTS area. Shipment of high-level waste would require either rail shipment or the use of "heavy-haul" trucks. The study identified a number of truck routes to the Yucca Mountain/NTS area to minimize exposure to the Las Vegas area. The study also identified four feasible alternatives for constructing a rail spur to the Yucca Mountain/NTS area. The alternatives ranged in cost from \$483 Million to \$1.05 Billion to construct the rail spur and would not be implemented for a number of years based on the current Yucca Mountain schedule.

The transport of material from the Fernald Site to NTS via intermodal shipment would require the resolution of a number of significant issues related to rail shipment. The ability to establish safe storage onsite until a dedicated train could be filled or the ability to have better control over a non-dedicated train would have to be established before rail shipments would work for OU4.

In addition, modifications at existing intermodal facilities or the construction of a new intermodal facility near the NTS site would be necessary and may prove cost prohibitive. Risks would have to be minimized in the Las Vegas area through utilization of an alternative (road) route (as evaluated in the recent Transportation Strategy completed for the Yucca Mountain/NTS area) as it does not appear that the installation of a rail spur directly to NTS will occur in the near future.

If you have any questions, please contact David Rast at (513) 648-3138.

Sincerely,



Jack R. Craig  
Director

FEMP:Rast

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