STATE OF NEVADA COMMENTS
ON THE DRAFT RAIL TOPIC GROUP PAPER
RAIL ROUTING SELECTION – CURRENT PRACTICES
AND ALTERNATIVE APPROACHES FOR
SPENT NUCLEAR FUEL AND HIGH-LEVEL WASTE

Prepared by
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General Comments

Highly Populated Areas

The paper inadequately addresses what many states consider the major issue in rail routing: large-scale, long-duration shipments through highly populated areas. Cross-country rail shipments of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) would likely use the same routes identified in previous studies by the State of Nevada and DOE. About one-third of the projected civilian SNF shipments to Yucca Mountain would travel through Chicago, and another third would travel through Kansas City. Other heavily impacted cities would include Buffalo, Cleveland, Atlanta, Nashville, St Louis, Cheyenne, Salt Lake City, Denver, San Bernardino, and Las Vegas. Barge-to-rail transfer operations could impact Boston, New Haven, Newark (NJ), Jersey City, Wilmington (DE), Baltimore, Norfolk, Miami, Milwaukee, Omaha, Vicksburg, and other port cities. Since most existing rail classification yards, carrier interchanges, and intermodal transfer facilities are located in highly populated areas, virtually all cross-country rail shipments of SNF and HLW will travel through urban areas unless DOE adopts an alternative routing strategy. Consideration of track class in route selection would further concentrate SNF shipments on mainlines between major cities. The major focus of the paper should be to examine the feasibility and desirability of a DOE rail route selection strategy that would minimize impacts on highly populated areas.

Dedicated Trains

It is difficult to see how the issue of routing for large numbers spent nuclear fuel (SNF) and high-level radioactive waste (HLW) by rail over an extended period of time can be addressed in the absence of a requirement for the use of dedicated trains, or some other form of special purpose trains. Current practices by both the utilities and DOE involve the use of dedicated or special trains when shipping civilian SNF. Requirements for the use of pre-established rail routes would make shipment of SNF and HLW in general freight operationally impractical if not impossible. On the other hand, mandatory use of dedicated trains could facilitate selection of routes to minimize impacts on highly populated areas and to reduce travel delays and security requirements. The paper should

address the issue of dedicated or special purpose trains as a pre-requisite for the implementation of any effective rail routing methodology.

Relative Safety

The relative safety of shipments by rail and other modes should be discussed separately from the issue of rail routing. Such a discussion must acknowledge that maximum use of rail, as proposed by DOE for shipments to Yucca Mountain, can only be achieved by making thousands of barge and heavy haul truck shipments from the 24 reactor sites that lack rail access, and that thousands of heavy haul truck shipments would be required in Nevada if there is no rail spur to Yucca Mountain. It must also be acknowledged that the reduction in the number of shipments can be achieved only by greatly increasing the amount of spent fuel in each cask, which could result in larger consequences in the event of an accident or terrorist attack. Previous DOE studies have estimated that a worst case rail accident in a rural area could result in $620 million in cleanup costs. In the Yucca Mountain Final EIS, DOE acknowledges that a worst case accident in an urban area could cost up to $10 billion.

Specific Comments

Evaluation of Existing Practices

The use of the designations “pros” and “cons” is inappropriate and grossly distorts the purpose of the paper. The statements are not reiterations of the plusses and negatives associated with the alternatives being evaluated, but rather they represent advocacy positions unsupported by the preceding discussion. If “pro” and “con” statements are used, they must be related to the information contained in the discussion of the various alternatives. If the intent is to present positions maintained by advocates and critics of the particular alternative discussed, the section descriptions should appropriately reflect that fact (i.e., “What advocates of the _____ alternative say”; “What critics of the _____ alternative say”).

Specific comments on the evaluation of existing practices as they are presented in the paper are as follows:

First statement in the “pros” section: *“Rail shipment of SNF today is generally considered safe. Issues related to routing of rail shipments periodically arise, but are usually limited in scope or are superceded by other transportation-related issues.”*

This statement is unsupported by anything contained in the preceding discussion on existing practices. In fact, transport of SNF is considered to be extremely risky and hazardous as evidenced by the extraordinary safety measures required for such shipments. Studies by the State of Nevada and independent researchers have demonstrated the vulnerability of such shipments to accidents and terrorist attacks that could result in the release of radioactive materials. There is evidence to suggest that rail shipments pose greater risks because of the larger volumes of radioactive materials

contained in large rail casks and the greater risks of radiological exposures if a worst case accident were to occur. The fact that past shipments have been accomplished without accidents involving significant loss of containment is no guarantee of future performance, especially in light of the vast differences between past shipments and those planned for the Yucca Mountain program (i.e., large numbers of shipments over much longer distances for a sustained period of 30 years or more). This entire statement should be deleted from the "pros" section.

Second statement in the "pros" section: *"SNF is no more (and likely far less) risky to transport than other types of HAZMAT shipped every day by rail; its public policy-related connotations are not sufficient to warrant disparate treatment in routing, and current practices do not."*

Not only is this statement unsupported by the preceding discussion of existing practices, but the very existence of the regulatory and extra-regulatory requirements documented in that discussion contradicts the assertion. SNF poses extraordinary and unique risks that require extraordinary measures when the material is handled and transported. Under existing regulations, SNF is afforded protections that other forms of HAZMAT are not. For example, federal regulations prescribe special highway routing requirements for SNF not required for other types of hazardous materials. Safeguards such as armed escorts, requirements for pre-notification of public safety personnel, and requirements for the certification of shipping containers by the Nuclear Regulatory Commission (NRC) are also unique to SNF shipments. These extraordinary protective measures are indicative of the unique risks posed by this potentially dangerous cargo. They are also an acknowledgement that the public health and safety consequences of an accident involving the release of radiation from a SNF shipment, not to mention the public policy ramifications of such an incident, would be devastating. This entire statement should be deleted from the "pros" section on evaluation.

Third statement in the "pros" section: *"The current regime would likely accommodate substantial increases in SNF rail shipment volume without the potential for undue disruption of rail operations."*

Again, the preceding discussion on existing practices does not support this statement. In fact, there is evidence that a sustained SNF shipping campaign involving hundreds of annual rail shipments over three decades or more could have numerous disruptive implications for rail operations. The American Association of Railroads has expressed concerns over the years about the potential impact on train geometry from the weight and dimensions of rail casks and the rail cars they would be shipped on. State requirements for inspecting SNF shipments could pose special problems for railroads when trains are forced to stop at or near states' borders for inspections. Depending on the classification of the trains used to ship SNF, there could be repeated disruptions to operations from things like speed restrictions, requirements for stopping other trains when a SNF train passes, etc. In short, this statement is not supported and is, in fact, inaccurate. It should be deleted.

Comparative Analysis of the Highway Methodology to Rail Routing

As noted above, the application of routing regulations similar to HM 164 highway routing requirements would almost certainly require the use of dedicated or other special purpose trains. The application of such route selection regulations to SNF shipments in general freight would be impractical and seriously disruptive to rail operations.

In addition, it is not realistic to assume that any statutory or regulatory rail routing scheme could provide states with the same level of authority and control over the identification of preferred alternative routes they are afforded with respect to highway shipments. Permitting states to designate alternative rail routes for SNF within their borders would probably require nothing less than the dissolution of the current system of privately owned track systems – something that is not practically or politically possible. In addition, the paucity of rail routing alternatives and the resulting lack of flexibility (as pointed out in the paper) make state alternative route designations infeasible. Rather, states' interests in the identification of rail routes for SNF shipments must be protected in other ways (such as early and meaningful involvement in DOE's route analyses guaranteed by statute or regulation; requirements that DOE, not the railroads, select routes in collaboration with affected states; and requiring that such route selections be accomplished well in advance of any shipments to provide adequate time for states to prepare).

Pros and Cons for Applying the HM-164 Regulations to Rail

Under the "Cons" section, a bullet should be added to the effect that it would require federal legislation to give states any role in rail routing, something that would be difficult in not impossible to accomplish and that would be resisted strongly by the rail industry.

Non-Regulatory Alternative Approach

The approach discussed as "non-regulatory" should instead be labeled "Extra-regulatory" to more accurately reflect what is intended. The approach requires agreement on the part of DOE and the rail industry to go *beyond* what is required under existing regulations.

Step #1 in the process stipulates that DOE and the shipper would work in consultation with rail carriers to identify potential routes and that "[t]ypically, this activity takes place 10 – 12 months in advance of the scheduled shipment." While ten to twelve months may be sufficient lead time for a few one-time shipments, it is not sufficient for a large-scale SNF shipping campaign of the type required for transportation of SNF to a repository. In studying this issue several years ago prior to the cut-off of funds for regional groups' transportation work, the Western Interstate Energy Board recommended that route identification take place at least 3 and preferably 5 years before the first shipment so as to allow sufficient time for states to develop plans for addressing the shipments and for training and equipping emergency responders and public safety personnel. The time

frame in this section of the paper should specify that route identification must occur a minimum of 3 to 5 years ahead of shipments planned as part of a large and sustained shipping campaign.