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BEFORE THE
NUCLEAR REGULATORY COMMISSION

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DKT. NO. PRM-73-10:
STATE OF NEVADA; RECEIPT OF
PETITION FOR RULEMAKING

ADJ.

COMMENTS OF THE
ASSOCIATION OF AMERICAN RAILROADS

DOCKET NUMBER
PETITION RULE PRM 73-10
(64FR49410)

On behalf of its member railroads, the Association of American Railroads (AAR)¹ submits the following comments in response to the Nuclear Regulatory Commission's invitation to comment on the State of Nevada's petition for rulemaking on requirements for shipments of spent nuclear fuel (SNF).² AAR expects that its member railroads would be involved in all rail shipments of spent fuel to a Nevada repository. Thus, AAR's members have a substantial interest in Nevada's petition.

I. Routing Restrictions Would Be Counterproductive

AAR strongly disagrees with Nevada's assertion that "the NRC should specifically require shippers and carriers to identify primary and alternate routes that minimize highway and rail shipments through heavily populated areas."³ AAR fails to see the connection between routing of shipments through "heavily populated areas" and the threat of sabotage and terrorism which purportedly form the basis for Nevada's petition.

Most importantly, routing to avoid populated areas could have adverse safety implications. The Federal Railroad

¹A trade association whose membership includes freight railroads that operate 75 percent of the line-haul mileage, employ 91 percent of the workers, and account for 93 percent of the freight revenue of all railroads in the United States; and Amtrak, which operates almost all of the nation's intercity passenger trains.

²64 Fed. Reg. 49410 (Sept. 13, 1999).

³64 Fed. Reg. at 49412, 2d col.

⁴FRA establishes maximum speeds for the different track classes. Since the higher track classes incorporate

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Administration divides track into different classes. The higher the class, the more rigorous the track standards.⁴ Because of the density of traffic, track on routes through urban areas typically is built to the higher class standards. FRA data show comparatively few track-caused accidents at the higher track classifications.⁵

Typically, routing to avoid heavily-populated areas would result in large increases in the amount of time a shipment spends in transportation. That is because routes around urban areas are almost always significantly more circuitous. A premise of hazardous materials transportation is that the less time a hazardous material shipment spends in transportation, the better. If Nevada's petition stems from a concern over potential sabotage and terrorism, then one would expect the state to endorse routes that would result in SNF spending less time in transportation, not more.

In 1987, the Department of Transportation told Congress that

[t]he routing of railroad shipments of hazardous materials has been the subject of a number of studies. Based on those studies we have concluded that, absent vast and impractical restructuring of the nation's rail system, efforts to make nationwide changes in rail routing (e.g., routing hazardous materials away from heavily populated areas) would not improve safety.⁶

Nothing has occurred to change that conclusion.

II. Dedicated Trains Should Be Used For SNF Shipments

AAR supports Nevada's request that the NRC require that all

comparatively rigorous standards, higher train speeds are permitted.

⁵FRA divides track into six classes. According to FRA statistics, of the 342 main-line accidents attributed to track problems in 1998, only eleven occurred on track designated as class 5 or 6, the two highest track classifications. Federal Railroad Administration, *Railroad Safety Statistics: Annual Report 1998*, Table 5-10 (July 1999) (also available at <http://safetydata.fra.dot.gov/officeofsafety/>).

⁶Department of Transportation, *Section-by-Section Analysis of Amendments to the Hazardous Materials Transportation Act* (July 29, 1987).

rail shipments of SNF be made in dedicated trains.⁷ The amount of handling required for dedicated trains is substantially less than for regular trains, an important safety advantage. The more a car has to be handled, the greater the risk of an accident, even though the probability of an accident occurring in any event is small. If SNF cars were placed in regular trains, they would have to be "switched" in and out of trains at rail yards. Furthermore, if regular train service were used for SNF shipments, the switching of rail cars in and out of the trains would take time. As stated above, NRC and Nevada should strive to minimize the amount of time SNF shipments are in transportation.

Dedicated trains are essential if premium equipment is to be used for SNF shipments. For example, if dedicated trains were used, the trains could be equipped with electronically-controlled pneumatic brakes, a recent industry innovation that can only be utilized where all cars in a train are equipped with these brakes.⁸ Or, if dedicated trains were utilized, the NRC could require that all the rail cars in trains transporting SNF have premium suspensions. Premium suspensions reduce lateral wheel forces and vertical, dynamic impact forces, which can result in derailments.⁹

In most cases, dedicated SNF trains would be substantially shorter than regular SNF trains. It should be much easier for escorts to monitor SNF cars in shorter trains.

Nevada states that the NRC should weigh the supposed disadvantages of dedicated trains, but the disadvantages Nevada

⁷64 Fed. Reg. at 49413 (2d col.).

⁸ECP brakes have shorter stopping distances than pneumatic brakes -- up to 70 percent shorter. ECP brakes are also more reliable, reduce slack action, improve fuel economy, and result in less wear and tear on wheels. Furthermore, the electronics used for ECP brakes permit constant monitoring by the train crew of the performance and condition of the braking system. The electronics can also be used to monitor other operating characteristics, such as the condition of bearings and wheels. See J. Lundgren, "ECP for Heavy Freight Service: Train Control and Monitoring for the 21st Century" (Transportation Technology Center, Inc. 1999).

⁹See D. Li and L. Smith, "Dynamic Vehicle/Track Testing on the Heavy Tonnage Loop" (Transportation Technology Center, Inc. 1999).

identifies actually are disadvantages for regular trains.¹⁰ Nevada states that dedicated trains may facilitate "target tracking and attack scheduling by potential adversaries, and that multiple casks in a short train may facilitate target selection and weapon delivery." In fact, because of the necessity of switching cars at rail yards were regular trains to be used, to the extent these concerns are valid they are greater for regular trains. The switching process involves separating individual rail cars or groups of cars going to the same destination from other cars, arguably facilitating target selection and weapon delivery. Since the switching process takes time to complete, arguably the opportunity for mischief also increases with regular trains. Finally, it is not apparent that it is easier to "schedule" a dedicated train than cars in a regular train.

III. Escort Concerns

AAR also has several observations regarding escorts. Escort services should not slow the movement of SNF shipments. Thus, SNF trains should contain adequate food supplies for escorts and fulfill other needs that occur en route, so that the trains will not have to stop to fulfill the needs of security personnel. Changes in escorts should occur only when trains have to be stopped for mechanical inspections or crew changes, so that there are no unnecessary delays (currently, FRA regulations require that trains stop every 1,000 miles).

Escort cars need to be compatible with the SNF cars. For example, were cars equipped with ECP brakes used to transport SNF, then the escort cars, too, would need to be equipped with ECP brakes.

Finally, concern for the safety of escorts is another reason why dedicated trains should be used to transport SNF. As stated above, the use of regular trains would require switching SNF cars in and out of trains. Accordingly, escort personnel would have to change trains whenever the trains they were riding in were switched. Rail yards can be dangerous places for those unfamiliar with railroad operations. From the perspective of the escorts, it would be desirable to stay on one train to the maximum extent possible and minimize walking around tracks where rail cars are constantly being moved among trains.

AAR's member railroads are committed to transporting SNF

¹⁰See 64 Fed. Reg. at 49413 (2d col.).

safely. However, routing to avoid populated areas would be inconsistent with safety objectives. Furthermore, the NRC can enhance safety by requiring the use of premium equipment and dedicated trains. AAR's members look forward to working with the NRC and other interested parties on such measures to ensure the safe, efficient transportation of SNF.

Respectfully submitted,

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