



COMMISSIONER

REQUEST REPLY BY: 8/20

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

August 3, 2001

Approved with comments.

Richard A. Meserve 8/10/01

COMJSM-01-0002

MEMORANDUM TO: Chairman Meserve
Commissioner Dicus
Commissioner McGaffigan

FROM: Commissioner Merrifield *JM*

SUBJECT: TRANSPORTATION OF SPENT FUEL

The National Transportation Safety Board is currently investigating the CSX train derailment which occurred in Baltimore, Maryland on July 18, 2001. The 60-car CSX train was carrying hazardous chemicals and flammable products and derailed in a 1.7 mile tunnel below the city of Baltimore. Because the accident occurred in a tunnel, firefighters were not able to put out the resultant fire for several days. Initial reports indicate that temperatures in the tunnel were approaching 1,500 degrees.

This accident emphasizes the importance of transportation safety and specifically the safety of transporting spent nuclear fuel and other high-level waste. I recognize that the NRC staff has developed detailed regulations containing requirements for rigorous testing of shipping casks to ensure their integrity and safety during transportation and during accidents. However, I believe this accident provides us with an opportunity to review our requirements and the steps we have taken to preclude an accident such as this from happening in the first place.

I believe it would be prudent for the staff to follow the National Transportation Safety Board investigation as well as any other related investigation, and to use the resulting information to assess NRC's regulations associated with the transportation of spent nuclear fuel and high-level waste. The staff should determine if NRC's current regulations are sufficient to ensure that a transportation cask would maintain its integrity, and that the public health and safety would be protected, if an accident similar to the one which occurred in Baltimore (i.e. flame temperature, fire duration, presence of flammable and other hazardous cargo) were to occur to a train carrying spent nuclear fuel and high-level waste. Based on my discussions with the staff, I do not anticipate that this request will have significant resource implications. The staff should report back to the Commission with their findings on this issue.

SECY please track.

cc: EDO
SECY
OGC
STP
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CHAIRMAN MESERVE'S COMMENTS ON COMJSM-01-0002

I agree with Commissioner Merrifield that the CSX train accident in Baltimore deserves attention in connection with the transportation of spent fuel and other high-level waste. It is worth mentioning that the staff does attempt to keep pace with rapidly advancing technologies and varying accident scenarios by periodically reexamining our regulatory requirements. Specifically, the staff is currently updating its assessment of how transportation packages perform under extremely severe accidents.¹ Consideration of the accident scenario reflected by the Baltimore accident is a prudent component in these ongoing activities. In fact, I understand that staff has been following the Baltimore accident for exactly this purpose. I join Commissioner Merrifield in encouraging the staff's efforts in this area.

¹ See, e.g., NUREG/CR-6672, "Reexamination of Spent Fuel Shipment Risk Estimates," Vol. 1, Feb. 2000.



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WASHINGTON, D.C. 20555-0001

August 16, 2001

OFFICE OF THE
COMMISSIONER

MEMORANDUM TO: Chairman Meserve
Commissioner McGaffigan
Commissioner Merrifield

FROM: Commissioner Dicus 

SUBJECT: COMJSM-01-0002 - TRANSPORTATION OF SPENT FUEL

In understanding the serious nature of the July 18th CSX train derailment in Baltimore, MD, and in closely following the National Transportation Safety Board's (NTSB) root-cause investigation, I join Chairman Meserve in his support of giving this issue the necessary and appropriate level of attention. From discussions with staff and in reviewing staff's answers to the Chairman's related questions, I believe that staff has been, and continues to be, actively engaged in gathering information and data as it relates to the circumstances and conditions surrounding the accident, as well as evaluating its relationship to spent fuel and high-level waste (HLW) transportation safety. I believe that staff's interest and effort with respect to this situation is the same as they would put forth for all similar situations. Specifically, staff expressed their direct interest in gathering information and data on all severe transportation incidents that could provide risk insights to risk estimates and/or package performance, in order to evaluate and determine if the circumstances and conditions are bound by NRC's transportation safety analysis as an analyzed condition or presents new and/or changing data.

It is my understanding that neither the Department of Transportation's or the Nuclear Regulatory Commission's transportation safety requirements prohibit the coupling of spent fuel/HLW rail cars on the same line as rail cars containing hazardous and/or volatile materials. However, certain separation distances are required (i.e., at least one rail car). It has been the commercial nuclear industry's practice to use dedicated rail cars for the shipment of spent fuel/HLW, and not couple other rail cars to these shipments, that would be carrying hazardous and/or volatile materials. Staff's spent fuel/HLW transportation and/or package performance safety assessments do not take credit for this industry practice. Specifically, staff's response to the Chairman's question of, "*What assurances are there that a spent fuel transportation cask could survive (in a manner that protects public health and safety) an accident similar to that which occurred in Baltimore earlier this week? That is, an accident that involves both fire and a corrosive substance.*" I believe, already addresses those similar conditions as experienced in the Baltimore incident (i.e., flame temperature and duration, and exposure to corrosives).

August 16, 2001

Additionally, and premised upon my personal experience as the Director of the Division of Radiation Control and Emergency Management for the State of Arkansas, and in serving as a member of the Southern States Energy Board's Advisory Committee on Transportation of Radioactive Materials and its TRU Waste Working Group, which included my involvement in conducting transportation accident investigations, emergency response, and package performance testing, I have the utmost confidence in the NRC's transportation safety testing requirements and performance criteria. I would like to thank staff for discussing this matter with my office and commend them for their diligent efforts. Upon its availability, staff should also obtain a copy of the NTSB's final report and identify to the Commission, any safety concerns as they would relate to spent fuel and HLW transportation and package safety.

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COMMISSIONER

August 16, 2001

MEMORANDUM TO: Jeffrey S. Merrifield

FROM: Edward McGaffigan, Jr. *E. McGaffigan, Jr.*

SUBJECT: COMJSM-01-0002 - TRANSPORTATION OF SPENT FUEL

I agree that the recent CSX train derailment in Baltimore provides NRC with an opportunity to confirm the adequacy of our existing requirements and regulatory program for the transportation of spent nuclear fuel and other high-level waste to ensure that they protect public health and safety. This is particularly important in view of a recent press article¹ in which one person alleges that NRC's criteria are outdated "despite combustibles on the roads and rails today that burn at higher temperatures." The Commission and staff need to be prepared to respond to such statements and must ensure that our requirements appropriately bound all realistic scenarios. I encourage the timely completion of the ongoing Package Performance Study which will assist the staff on these matters.

Mindful of the jurisdiction of others over rail shipments in the U.S., I also suggest that the staff coordinate with the Federal Railway Administration (FRA) of the Department of Transportation, other relevant authorities and industry organizations (e.g., American Association of Railroads), to determine whether dedicated trains should be used for the shipment of large quantities of spent nuclear fuel and other high-level waste generated at commercial nuclear power plants. It is my understanding that the Department of Energy (DOE) used dedicated trains when shipping spent fuel from Three Mile Island Unit 2 to the Idaho National Engineering and Environmental Laboratory (INEEL) and foreign research reactor fuel from San Francisco to INEEL, and is currently using dedicated trains for shipping reprocessing wastes from the West Valley Demonstration Project site in New York to INEEL. I also understand that Private Fuel Storage, LLC has proposed, in its application for a Part 72 licensed facility in Utah, to use dedicated trains for the shipment of commercial spent fuel from various reactor sites to Utah. As an alternative to dedicated trains, the staff should work with other authorities in determining whether trains carrying commercial spent nuclear fuel or other high-level waste should be prohibited from

¹ Nuclear Fuel, August 6, 2001, page 11.

carrying other flammable and volatile materials or whether, similar to the FRA requirement for hazardous materials, a minimum "separation distance" between train cars carrying spent nuclear fuel or other high-level waste and train cars carrying other flammable and volatile materials should be maintained.

cc: Chairman Meserve
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