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April 7, 2011

Attn.: Rulemakings and Adjudications Staff
Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 2055-0001
Rulemaking.Comments@nrc.gov
(301) 415-1966

RE: Docket ID NRC-2009-0163 (Proposed Rule)

Physical Protection of Irradiated Reactor Fuel in Transit (NRC 10 CFR Part 73)

The Western Interstate Energy Board's High-Level Radioactive Waste Committee¹ appreciates the opportunity to submit comments on the "Physical Protection of Irradiated Reactor Fuel in Transit", published on October 13, 2010 (Federal Register, vol. 75, No. 197, pp. 62,695-62,715). Western states' concern with this topic dates back several years, as evidenced by Western Governors' Association Policy Resolution 10-2: "Assessing the Risks of Terrorism and Sabotage Against Spent Nuclear Fuel and High-Level Waste Shipments."² We agree with NRC that widespread use of radioactive materials by industry, medical and academic institutions involves risk of theft or diversion for malevolent use in a radioactive dispersal or exposure device. We therefore strongly support the purposes of NRC's proposed rule. At the same time, we have concerns regarding several of its elements:

1. Routing Criteria³

Section III C, Item 3 discusses the Nevada request that NRC should require shippers and carriers to minimize highway and rail shipment through heavily populated (i.e. urban) areas. Item 6 discusses the Nevada request that NRC

¹ The WIEB High-Level Waste Committee consists of gubernatorial appointees from eleven Western states (Arizona, California, Colorado, Idaho, Nebraska, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming).

² http://www.westgov.org/index.php?option=com_wga&view=resolutions&Itemid=53

³ On page 62698, NRC invites comments on its proposed disposition of the Nevada request items 2 thru 7.

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require schedules that minimize delay and stops, and ensure timely delivery.

We agree that each of several routing criteria mentioned in the proposed rule⁴ generally reduce risk, including the risk of radiological sabotage. However, the criteria may conflict in application to particular cases. For example, better quality rail track may go through urban areas, and may reduce travel time and overall radiological risk. Similarly, a delay to avoid an event or accident may reduce radiological risk.

Section III E suggests that NRC intends to approve routes for SNF shipment. However, given the conflicts of criteria and the lack of relevant information⁵, NRC may not be able to pre-approve routes, because it will not have all the relevant information and the tools needed to apply the criteria and resolve the conflicts.

A better approach may be to specify the criteria that generally improve safety and reduce the risk of theft, diversion and radiological sabotage, but then to empower licensees or DOE, in consultation with states, to apply the criteria to particular shipments or shipment campaigns, using state-of-the-art assessment tools and information resources.

2. Dedicated trains⁶

While (in its response to Nevada request item #7) NRC does not require the use of dedicated trains for all rail shipment, it does require (in item #5) that SNF shipments have armed escorts along the entire route, and (in item #6) that shipments be scheduled to avoid delays and stops (e.g. in classification yards). The net effect of items #5 and #6, in combination with other safety and cost considerations, is that dedicated trains are required for cross-country SNF transport.

In this rule or elsewhere, dedicated trains should be required in cross-country rail transport.⁷ The 2006 National Academies' study of spent fuel transport found that "there are clear operational, safety, security, communications, planning, programmatic, and public preference advantages that favor dedicated trains. The committee strongly endorses DOE's decision to transport spent fuel and high-level waste to a federal repository using

⁴ The criteria: avoid heavily populated areas; minimize travel time; use better quality highways or rail track; avoid delays and stops; minimize radiological risk (presumably, as measured by RADTRAN).

⁵ See comment #3 below.

⁶ On page 62698, NRC invites comments on its proposed disposition of the Nevada request items 2 thru 7.

⁷ Fully equipped dedicated trains need not be required in case-by-case resolution of near-site transport issues at shipment origins.

dedicated trains.”⁸

3. Rail Shipment Routing⁹

Section III D correctly describes the process for rail routing outlined by DOT/PHMSA in 49 CFR Parts 172, 174 and 209. However, the current implementation of this rule will not allow NRC to pre-approve routes (applying the criteria specified in III E), and does not support shipment pre-planning in coordination with NRC, states and LLEAs, as discussed in Section III I.

As we understand the implementation of the PHMSA rule, rail carriers (via the American Association of Railroads) received DOT/FRA funding to develop a routing model, and to assemble annual data on the specified 27 factors.¹⁰ Then AAR applies the model, using its own criteria, to determine routes for hazmat rail shipments, including, potentially, shipments of SNF. However, neither the model, nor the input data, nor the routing criteria have been shared with public agencies. Nor have rail carriers systematically sought information on route environs from State, local and Tribal officials. Nor do State officials (or others) understand how such information is incorporated in the model, or how it applies in routing decisions.

If our understandings apply to NRC and DOE as well as to States, the NRC will not be able to apply the criteria in Section III E in order to pre-approve rail routes, and the pre-planning envisioned in Section III I will be limited and of limited value. The implementation of DOT/PHMSA 49 CFR Parts 172, 174, and 202 must be revised as it applies to rail transport of SNF. At minimum, the current DOT/FRA/AAR process¹¹ should be made available for review and critique by NRC and States. If suitable revisions are not forthcoming, the DOT/FRA/AAR process, as it applies to SNF/HLW transport, should be revised.

4. Telemetric Position Monitoring Systems¹²

Under section III H, NRC states that licensees should use a telemetric position monitoring system or an alternative tracking system to capture and transmit information about the location and status of a transport vehicle or package at all times. Under Section III E, NRC identifies several criteria for its

⁸ National Academies. *Going the Distance: the Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States*. 2006. National Academies Press.

⁹ On page 62700, NRC invites comments on the challenges of selecting routes for spent nuclear fuel that met both the DOT and NRC requirements and guidance.

¹⁰ Many of the 27 factors involve route environs, regarding which state and local agencies, not rail carriers, are arguably the best information source.

¹¹ Elements include: the model's route assessment formulation; the calibration information applied; the model's assessment of NRC and other routing criteria.

¹² On page 62700, NRC invites comments on the challenges of selecting routes for spent nuclear fuel that met both the DOT and NRC requirements and guidance.

consideration in pre-approving routes. Under Section III K, NRC states that "In view of the continued advancements in technology, these (current) methods of communication could become obsolete in the near future," and that NRC should describe performance characteristics of such systems. Yet, in the December 15 WGA conference call, NRC staff indicated that the telecommunications aspects of the proposed rule are designed to accommodate existing systems currently in use.

Large-scale, cross-country shipment of SNF is at least several years in the future. NRC is correct in noting the rapid obsolescence in the field of telemetric monitoring and tracking, and the need for performance criteria rather than specific systems specification. Also, we believe, the distinctions in systems needed for preplanning and route assessment and the systems needed for tracking and monitoring in operations are rapidly converging. A single integrated system can serve preplanning and tracking/monitoring purposes for rail or highway shipment of SNF/HLW in the U.S.

In the past, DOE has developed systems such as Transcom, Tragis, and Radtran, but has then specified their use (e.g. in TRU waste shipments to WIPP), thus constraining their development. Licensees other than DOE have limited reason to invest in this area. Perhaps in coordination with DOE, NRC should consider a set of performance requirements that will spur development and deployment of advanced tracking and monitoring of SNF transport equipment, cargo, route conditions and route environs, selecting and communicating relevant information to relevant officials in highly accessible formats, and encouraging continual adoption and updating by planners and operators. Performance criteria could encourage systems that:

- Monitor the condition of trucks, locomotives and rail cars in transit, comparing in-transit conditions with inspections conducted at the shipment origin.
- Monitor characteristics of shipment casks in transit, comparing these with inspections at the shipment origin;
- Monitor shipment location and speed, providing continually updated estimates of arrival times at state boundaries, safe havens, refueling locations, etc.
- Maintain information on key route conditions and route traffic, providing timely alerts and options to those with a need to know.
- Maintain information on route environs, such as the locations of law enforcement resources, tactically disadvantageous positions, and other vulnerabilities and capabilities along routes.
- Communicate relevant portions of the above in real time and in decision-appropriate formats to the relevant officials.

5. Applicability of regulations to DOE shipments

A major outstanding issue for stakeholders is the exemption of DOE shipments of spent nuclear fuel and high-level radioactive waste to a

geologic repository or storage facility constructed under the Nuclear Waste Policy Act (NWPA). The proposed rule discusses this matter under Discussion Items N, O, and P (75 FR 62702-62703). NWPA shipments would continue to be exempt under the proposed rule. In the future, this could create an incongruous situation in which the NRC physical protection regulations would apply to the expected 20 licensee shipments per year, while the projected 250 to 500 or more DOE shipments per year to NWPA facilities would not be regulated by NRC.

Both DOE and NRC have long sought to assure stakeholders that DOE self-regulation would meet or exceed NRC physical protection requirements. But as the proposed rule notes, DOE may exempt itself from NRC standards "if there is a determination that national security or another critical interest requires different action." Stakeholder concerns have been fueled by the DOE position that NWPA shipments would be in compliance as long as their physical protection requirements were "the equivalent" of 10 CFR 73.37. Stakeholders believe DOE self-regulation lacks a credible inspection and enforcement mechanism, and fails to ensure performance of the comprehensive system of critical security planning and operations tasks required under the proposed rule. The fact that 10 CFR Part 73 would not apply to DOE shipments under the NWPA creates a significant gap in security regulation for what potentially would be by far the largest number of prospective shipments in the future.

Thank you for the opportunity to review the proposed NRC 10 CFR Part 73. We support its broad purposes, and will appreciate your attention to the concerns raised above. Please call Jim Williams (WIEB, 303-573-8910 x6) if you have questions.

Sincerely,



Barbara Byron
WIEB HLW Committee Co-Chair



Ken Niles
WIEB HLW Committee Co-Chair

Rulemaking Comments

From: Sharon Irwin [sharon@westgov.org]
Sent: Friday, April 08, 2011 5:20 PM
To: Rulemaking Comments
Cc: Jim Williams; bbyron; ken.niles
Subject: WIEB Comments
Attachments: Comment NRC 10 CFR Part 73 final3.pdf

Sent on behalf of WIEB High Level Radioactive Waste Committee