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State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
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Robert C. Shinn, Jr.
Commissioner

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DRAFT

U. S. Department of Energy
c/o Lois Smith
TRW Environmental Safety Systems
1650 Park Tower Drive, Suite 800
Vienna, Virginia 22180
Attn: Section 180(c) Comments

U. S. Department of Energy
Corinne Macaluso
DOE RW-45
1000 Independence Avenue
Washington, DC 20585

U.S. Department of Energy
Ellen Ott
DOE GC-52
1000 Independence Avenue
Washington, DC 20585

Dear Ms. Smith, Ms. Macaluso, and Ms. Ott:

The Conference of Radiation Control Program Directors (CRCPD) is an organization made up of staff of the radiation control programs in each of the fifty states (except Wyoming, which has no radiation control program), the District of Columbia, and Puerto Rico. Among the responsibilities of state radiation control programs is the statutory mandate to deal with accidents involving radiation. The primary purpose and goal of the CRCPD is to assist its members in their efforts to protect the public, radiation workers and patients from unnecessary radiation exposure in both routine and accident situations. The CRCPD also provides a forum for centralized communication on radiation protection matters between the states and the federal government, and between the individual states.

The CRCPD has formed a committee called the Committee on Radioactive Material Transportation as part of its Environmental Nuclear Council. The committee members are Mark Yeager (SC),

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Bernie Bevill (AR), Gary McNutt (MO), Harold Borchart (NB), Mike Mobley (TN), and Aubrey Godwin (AZ), with Jill Lipoti (NJ) as the chairperson, and Terry Devine as a resource person from the Office of the Executive Director. Each of these members have a master's degree in some aspect of radiation science, one has a Ph.D. in environmental science, and another in nuclear engineering; among them they have more than 200 years of experience in handling and regulating radioactive material and other radiation sources. Recently the committee met and discussed the Department of Energy's requirement to implement a program of technical assistance and funding to train State, local and tribal public safety officials of appropriate local jurisdictions with regard to the transport of spent nuclear fuel or high level radioactive waste. The committee members decided to respond to your notice in the January 3, 1995 Federal Register requesting comment on the implementation options being considered.

The CRCPD is a recipient of a cooperative agreement with the DOE's Office of Civilian Radioactive Waste Management (OCRWM). Some of the Committee members have participated in the Transportation Coordination Group meetings and the Transportation External Coordination Working Group meetings. While we have noted the requests from some of the other participants for radiological equipment and training specifically for the proposed spent fuel and high level radioactive waste (HLRW) shipments, the Committee has reservations about the usefulness and advisability of this expenditure.

The request for comment on the five options or the option to create a new "combo" option seems so broad that there must be some bounding of the problem before any constructive comments can be offered.

Things that have not been decided yet

No decision has been made on where the national repository for spent fuel might be, but only one site is currently being characterized. No decision has been made on whether the transport might be by highway, rail, or barge, although no air travel is being considered. The type of training that should be provided to first responders along the route of travel continues to be considered. No decision has been made on the container that will hold the spent fuel, although a multi-purpose canister is being designed. No decision has been made on the definition of technical assistance. No decision has been made on the amount of funding available for this technical assistance, whatever the technical assistance may be.

Things that we do know

We know where all the nuclear power plants are located, so

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we know the origin of the shipments, even if we don't know the destination. We know the amount of spent fuel that utilities have stored on site, and the rate at which more spent fuel is being generated. We know the characteristics of the spent fuel, and how they change over time. We know how spent fuel casks have performed without fail in more than one thousand highway and rail shipments of commercial power reactor spent fuel during the past thirty years. We are in the third generation of professionals involved in cask design, loading and inspection. We know that some spent fuel casks passed full scale tests to Department of Transportation (DOT) and Nuclear Regulatory Commission (NRC) specifications. We know how to computer model the performance of hypothetical spent fuel casks under various test conditions. We can make predictions about the conditions that a cask might be exposed to under various transport scenarios. We can model the radiation exposure from a cask containing spent fuel at various distances. We can predict the total radiation exposure on a hypothetical transport route. We have much experience in shipping spent fuel, as well as millions of shipments each year of other radioactive materials.

Making funding available

So all we have to comment on is how to take the funding provided by the power companies for the disposal of spent fuel and transfer it to the many smaller governmental agencies that have some jurisdiction along the route of transport. Now it would seem very easy to spread the funding to the states and tribes, and they spread the funding to the local governments. But that means that the states have to set up some sort of administrative procedure that establishes a hierarchy for getting the funding to the communities in proportion to their need for technical assistance. So some portion of the federal funding available would be spent at the state/tribal level on spreading the money to smaller governmental units. If there were an existing mechanism for prioritizing local government needs, it seems that it would present the least administrative burden.

Use of an existing mechanism may not provide flexibility to have new entities get involved, but not such flexibility is actually called for. The spent fuel is in about 100 locations, the repository will be in another, routes will be chosen, but meanwhile local officials request equipment and training. What eligibility criteria should be used? Under Title III of the Superfund Amendments and Reauthorization Act, each state designated a State Emergency Planning Commission, and they, in turn, identified Local Emergency Planning Committees. These committees could be the points of contact regardless of the mode of travel - highway, rail, or barge. They could identify who needs training along the route.

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Training

Let's not overdo the training. We should not attempt to train these local responders to evaluate radiological conditions at a transportation incident involving unknown radionuclides. These shipments will be in distinctive casks, and spent fuel has known characteristics. The training should be in direct proportion to the risk involved. To train each responder with a course such as Radiological Emergency Response Operations (RERO) conveys that the risk is greater than it actually is. It is important to stress prior extensive, uneventful experience in shipping spent fuel and HLRW, and the proven safety of the shipping cask designs.

The individuals who inspect the shipment before it leaves the utility site and those who may inspect the shipment en route are trained by experienced inspectors to the highly developed specifications of government agencies and professional associations, and for comprehensive safety considerations rather than just that of spent fuel and HLRW. The Commercial Vehicle Safety Alliance (CVSA) and CRCPD have developed inspection procedures and have produced videotapes that are used for inspector training and public information.

Regulation of commercial vehicles transporting spent fuel or any other radioactive material is under the authority of the DOT and those state agencies that have entered into agreements with the DOT to assume the duties of inspection and enforcement. The regulations on packaging and transport of radioactive materials, the inspection procedures and the training of the inspectors have been refined through decades of experience, and they have become rather complicated. Both the DOT and the NRC have long standing programs for training inspectors. Officials of the states and provinces of North America participate in the CVSA that, among other accomplishments, has established a uniform vehicle inspection procedure, including radiological inspection/ each such inspection is reciprocally recognized by all states and provinces. Furthermore, the federal and state vehicle inspection and enforcement authorities have formed an organization known as the Cooperative Hazardous Materials Enforcement Development (COHMED) for professional support of their responsibilities. It is contrary to all of this accomplishment to suggest that radioactive materials from a particular class of shipper, or in particular areas of certain states, merit any novel form of inspection by a participant of a short course on the subject some years earlier.

The radiation protection community (Conference of Radiation Control Program Directors, Health Physics Society, American Nuclear Society, etc.) have not adequately conveyed information about just how small the risk is to the emergency responders. It is possible to safely respond to a transportation accident

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involving spent fuel without instrumentation! What a concept! Lifesaving measures can be started before anyone takes a reading. It is important to tailor the training to the risk, and put the risk in perspective with others experienced by firefighters, for instance.

Currently, anti-nuclear groups convey more information to firefighters than the experts do, and they do so in a very convincing way. It would be useful to have a consensus of the risk, where it would be possible to state that the core of health physics professionals at the Department of Energy (DOE), DOT, Department of Defense (DOD), Coast Guard, Environmental Protection Agency (EPA), NRC, states and tribes agree with the procedures and practices that should be followed by a first responder.

First response to transportation accidents involving radioactive materials was the subject of a two-day long televideo conference, in 1989, among representatives of all radiation regulatory agencies, the most experienced support agencies such as the Radiation Emergency Assistance Center (REAC/TS) and DOE Radiological Assistance Program, and diverse participants in the disaster and emergency services offices of each state. The videotape of this conference, available from each state Emergency Management office, remains the definitive work on the subject. It serves very well to inform and reassure responders and concerned citizens.

The essence of the radiation experts' advice to police, fire and rescue in transportation accidents involving radioactive material is stated in the opening paragraph of the "CRCPD Notes on Assistance with Radioactive Material incidents". The "Notes" are updated and distributed at intervals of a few months by each of the federal and state radiological assistance service, REAC/TS, and CHEMREC; none has suggested substantive change in the guidance on immediate action, which is to rescue and treat victims, extinguish fires and take reasonable steps to limit the spread of contamination without waiting for a radiological survey.

This guidance clearly implies that police, fire and rescue personnel are not to be equipped and trained to evaluate radiation hazards in transportation accidents. Adequate equipment and proficiency to recognize spent fuel can be conveyed in a short course, but it cannot be constrained from subsequent, perilous misapplication to other types of radioactive material with which the instrument will not respond well. Neither can the operability of the equipment nor the proficiency of the personnel be retained through years of non-use, as is amply demonstrated in the decades of Civil Defense - Federal Emergency Management Agency (FEMA) experience with police, fire, rescue and other volunteers.

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The guidance of the radiation experts is based on the findings that the packaging required by NRC and DOT for shipment of radioactive material has proven adequate in tens of millions of shipments during the past forty years, in which not one accident has caused a radiation injury or lingering contamination. Among these are 2600 shipments of irradiated fuel from commercial power and research reactors during 1964-1989 (ORNL/Sub/88-997962/1), notably 1100 highway and 100 rail shipments of commercial power reactor spent fuel between 1979 and 1991 (NRC Commissioner Kenneth Rogers, April 1992). Many of these shipments were across most of the country, e.g. from northern Michigan to California. There is nothing novel about the proposed shipments of the OCRWM program.

Escorts

To get around the fact that there is no health physics staff within most local government emergency response units, an escort has been proposed. While this is the most certain way to provide "expert" advice at the scene, it can convey that the risk is greater than it actually is, and it may evolve some interesting jurisdictional problems. State, tribal, and local governmental agencies have a strong tradition of "home rule", and would prefer that their own people were trained to adequately deal with any emergency rather than take advice from an outsider. Civil Defense - FEMA has had decades of experience in equipping and training local radiation monitoring personnel. Local emergency responders have a high turnover rate, few encounter an incident involving radioactive materials of any form, and many do not maintain their radiation monitoring equipment in spite of expensive FEMA maintenance and calibration services and refresher training in each region. So this approach is expensive and unreliable. If the shipment escort could be the constant amid all of the turnover of local responders, there would be good reliable health physics advice available for locals to use if they felt the need. However, this is also a very expensive undertaking for such a small risk.

Tracking

A good tracking system which informs states about where the transport vehicle is at all times is invaluable in reassuring locals that shipments are going as planned. As this is safeguards information, it must be afforded adequate protection from disclosure, so the governor's designee for high level radioactive material transport should be the individual who receives this information. This is a mechanism already in place, thus avoiding administrative duplication. The individual would be able to provide advice to locals in responding, and that advice would come from someone very familiar with this type of transport, who is a native of that state. The trust factor would

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be present by using the Governor's designee. Also, the Governor's designee knows the routes planned, the road conditions, the weather conditions, and other myriad factors that may go from the technical to the political.

Stakeholders

All of the above mechanisms for providing training, technical assistance and funding have to do with the technical characteristics of transporting spent fuel and none of the political realities. There will be opposition to transport of spent fuel because some people simply do not like nuclear energy, and have decided that the best way to voice their opposition is by opposing waste shipment and disposal. This has happened regardless of whether the waste is spent fuel, medical patient waste, naturally occurring radioactive material, low level radioactive waste, or transuranic material and has nothing to do with the risk of the transport, but merely with the origin of the material. So there must also be a number of cooperative agreements to facilitate communication with stakeholders. This is technical assistance, even if it is just a mechanism to provide technical answers to emotional reactions. To actually accomplish a shipment of spent fuel from point A to point B, the political, social, and societal issues must be confronted at the local level as was successful in the 1960's. The existing structure of the Transportation Coordination Group, Transportation External Coordination Working Group, and the cooperative agreements can provide the feedback and professional support that the DOE needs. Without that, the effort cannot be successful.

What surely is needed, universally and continually, is training for first responders in recognition and safe procedures with hazardous material of all types. This clearly is a shared responsibility of the shippers, carriers and government, who in fact do provide this information and training through a plethora of courses (National Task Force on Hazardous Materials Emergency Preparedness, "Training Resources Catalog," April, 1993). DOE is doing its share by continuing the public services, begun under the Atomic Energy Commission, of its Radiological Assistance Program and emergency communications center as well as support of REACT/TS.

Sincerely,

Jill Lipoti, Ph.D.
Chair
Committee on Transportation