

TESTIMONY OF HOWARD J. DUGOFF, ADMINISTRATOR
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION, ON S.535
BEFORE THE SUBCOMMITTEE ON SCIENCE, TECHNOLOGY AND SPACE
OF THE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
U.S. SENATE - JULY 18, 1979

Good Morning:

I am pleased to have the opportunity to appear before you this morning to discuss the provisions of S.535 which is designed to accomplish a variety of things concerning the shipment of nuclear waste and spent fuel. Since representatives of the Research and Special Programs Administration appeared before this subcommittee last August 16, there have been several developments in the transportation of hazardous materials, in general, and radioactive materials in particular, which I will make reference to at appropriate points in my comments upon S.535.

Before specifically discussing S. 535, I would like to turn to a recent related development. On July 10, 1979, the Governors of the three States that are currently accepting low-level commercial radioactive waste for disposal wrote joint letters to the Department of Transportation and the Nuclear Regulatory Commission. Governors Dixy Lee Ray of Washington, Richard Riley of South Carolina, and Robert List of Nevada, prompted, in part, by two recent incidents involving radioactive materials transportation at Beatty, Nevada, expressed their serious concern with the Federal Government's inspection and enforcement of packaging and transportation requirements for low-level radioactive wastes. The letter to DOT indicated certain specific components that the Governors wanted included in a plan to be devised by DOT and NRC by August 1, 1979, for implementation no later than September 1, 1979.

Representatives of DOT and NRC have been meeting in order to address the specific concerns raised by the Governors. The most recent meeting, on July 13, included discussions with Dr. Ralph DiSibio, Director of the Nevada Department of Human Resources. As a result of this meeting, DOT and NRC have agreed, in principle, to undertake the following actions:

1. NRC will amend their regulations, thus allowing NRC to enforce DOT regulations at licensee sites. This will provide significant additional personnel to the inspection and enforcement of shipper activities.
2. DOT and NRC provided for inspectors to be placed on-site when the Beatty, Nevada, facility reopened yesterday and they will remain there during the initial reopening phase. The general policy will provide for periodic unannounced inspections to be made of shipments at all three burial sites, with enforcement action taken as appropriate.
3. A special bulletin will be issued notifying shippers of the necessity of complying with packaging and transportation requirements for radioactive waste and informing them that these requirements will be strictly enforced through a Federal/State enforcement effort.
4. DOT and NRC, in conjunction with the three States, will develop a program to improve the overall regulation of radioactive waste transportation and disposal.

DOT considers the States' concerns to be legitimate and will be working closely with the States involved, and with NRC, during the planning process and, of course, during the implementation of this program.

Turning now to S. 535, the Department of Transportation supports many of the objectives embodied in S.535 and hopes to work more closely with the Congress in improving the safety of hazardous materials transportation. We recognize also the appropriate concern about the transportation of spent fuel, nuclear waste, and other radioactive materials, in particular, which the bill reflects.

We believe that S.535 serves a useful purpose in directing attention to the need for State involvement in planning and for enhanced emergency response through better emergency preparedness and improved forecasting. We all share the same goal which is greater assurance of overall safety in the transportation of spent fuel and nuclear waste.

Having said that, however, I must add that it is our belief that most of the authority which S.535 would confer upon the Department of Transportation in designating us the lead agency for regulating this activity has already been conferred upon the Secretary by the Hazardous Materials Transportation Act of 1974 (HMTA). As such, I believe the bill is unnecessary. An exception to this is the grant authority contained in section 5 of the bill, which would add a new section 116 to the HMTA and about which I will have more to say later. I will also offer technical comments should Congress decided to enact this bill.

S.535, in addition to designating the Department as lead agency, would require the development of a national emergency response plan for dealing with radiological emergencies in transportation; the review of the safety and logistics of foreign shipments of spent fuel before acceptance by the United States; and the establishment of a State grant program to fund independent safety analysis and review of transportation aspects of any proposal to develop a long-term storage facility for spent fuel or nuclear waste.

We feel that the existing interagency arrangements, within which the Department of Transportation discharges its responsibilities under the HMTA provides a fundamentally sound approach to the task of providing for the safe transportation of radioactive materials, including spent fuel. It may be useful to restate those arrangements once again as you embark on this set of hearings, and to outline the interaction between executive branch agencies and the specific role of the Department of Transportation in this regulatory scheme.

The Environmental Protection Agency provides Federal radiation guidance pertaining to health effects and sets general environmental standards. Specifically, EPA establishes acceptable population radiation exposure standards. The Nuclear Regulatory Commission and the Department of Transportation use these standards in establishing their packaging specifications. The Department of Energy regulates the radioactive materials transportation activities of its prime contractors, which include national laboratories weapons production facilities and uranium processing plants. DOE shipments that are made for purposes of national security and under escort are exempted from DOT regulations. However, DOE imposes safety and packaging requirements that are generally in accord with NRC's and DOT's. The Department of Energy also provides liaison with State and local governments on sensitive issues, including storage, transportation, and disposal of nuclear waste. The Nuclear Regulatory Commission sets packaging standards for fissile materials and for quantities of radioactive materials, other than low specific activity materials, exceeding certain (Type A) limits. NRC issues regulations for transport controls over its licensees to assure common defense and security. The NRC

also must approve package designs and associated transport controls proposed for fissile materials and larger quantities of radioactive materials.

Under the Hazardous Materials Transportation Act, the DOT develops, issues, and enforces regulations for the packaging and transportation of all radioactive materials, including waste materials, as part of its overall Federal regulations for hazardous materials transportation. These regulations are applicable both to persons who ship radioactive materials as they package and offer such materials for transportation, and to carriers of radioactive materials as they load and transport such materials in their vehicles. The regulations provide protection to transport workers and the general public from the hazards of radiation.

Primary reliance for safety in transportation of radioactive material is placed on the packaging. The DOT regulations prescribe general standards and requirements for all packages of radioactive material, and for handling and storage of those packages by carriers. For packages which contain no significant fissile radioactive material and only small quantities of other radioactive materials, the DOT establishes the standards and requirements to provide adequate assurance of containment and shielding of the radioactive material. While these small packages, termed Type A packages, may fail in an accident situation, the radiological consequences would be limited because of the limited radioactivity of the package contents.

When the radioactive content of a package exceeds the small Type A quantity limit, as is the case with spent fuel, it may only be transported in a Type B package--one which will survive transportation accidents. A Type

B package must be designed to withstand a series of specified impact, puncture, and fire environments, providing reasonable assurance that the package will withstand the most severe transportation accidents and its design must be independently reviewed by the NRC engineering staff to verify its accident resistance.

The standards which have been established in the DOT and NRC regulations provide that the packaging shall prevent the loss or dispersion of the radioactive contents, provide adequate shielding and heat dissipation, and prevent nuclear criticality of certain kinds of special nuclear materials under both normal and accident conditions of transportation. The normal conditions of transportation which must be considered are specified in the regulations in terms of hot and cold environments, pressure differential, vibration, water spray, impact, puncture, and compression tests. Accident conditions which must be considered are specified in terms of impact, puncture, and fire conditions.

In 1977, the Energy Research and Development Administration, in conjunction with Sandia Laboratories, conducted a series of performance tests involving spent fuel shipping casks in accident conditions. The tests verified the accident survivability of the casks but left open the question of thermal integrity. DOT is now participating in an interagency assessment of the ability of the casks to withstand fire tests. The examination will include torch fire tests and pool fire tests and is scheduled for completion in 1981.

Procedures applicable to the shipment of packages of radioactive material require that a package be labeled with a unique radioactive materials label. In transportation, the carrier is required to exercise control over radioactive material packages, including loading and storage in areas separated from persons, and to limit the aggregation of packages to limit the exposure of persons.

The procedures the carrier must follow in case of an accident include notification of the shipper and the DOT, isolating any spilled radioactive material from personnel contact pending disposal instructions from qualified persons, and holding vehicles, buildings, areas, or equipment from service or routine occupancy until they are cleaned to specified values. Radiological assistance teams are available through a Federal interagency program to provide equipment and trained advisory personnel, if necessary, to help manage accidents involving radioactive materials.

Next, I would like to turn to the specific questions which the subcommittee has raised in its invitation to the Department to appear today.

First, you asked whether any changes need to be made in the division of responsibilities between the executive branch agencies in order to fulfill the intent of section 2 of the bill. Among other things, that section declares it to be the policy of the Congress "that the Department of Transportation has the principal responsibility for regulating, monitoring, and ensuring the safety and security" of the transportation of nuclear waste and radioactive commercial spent fuel, and that these efforts may best be conducted by appropriate consultation with the Nuclear Regulatory Commission. In general, as we described earlier, this is how the system works today.

However, we do have reservations as to the fashion in which the general intent is further specified in proposed section 115(a) of the HMTA (section 5 of the bill), in which the regulating of packages is said to remain with the NRC. This is at variance with a longstanding memorandum of understanding between DOT and NRC (and their predecessors) under which, as I mentioned earlier, DOT is responsible for packaging regulations for Low Specific

Activity materials and for smaller quantities of all non-fissile radioactive materials. We think that this division has worked quite well and that it should not be altered after such a long period of satisfactory experience. In the event that Congress takes action, we suggest that that section be amended as follows:

" . . . commercial spent fuel, except that this responsibility may be carried out in conjunction with the Nuclear Regulatory Commission according to agreement of the Secretary and the Nuclear Regulatory Commission."

We are also unclear as to the intent regarding "logistical aspects" of shipments. If this is to mean ensuring an adequate supply of packages and vehicles, arranging for shipments, and generally managing the transportation of nuclear waste and spent fuel, the Department considers these promotional activities to be an inappropriate addition to its hazardous materials safety regulatory program.

In connection with the intent expressed in section 2 of the bill, you ask also whether a separate office should be established within DOT having overall responsibility. As you know, the regulation of transportation of all hazardous materials, including radioactive materials, has been conducted since 1975 by the Materials Transportation Bureau, now a part of the Research and Special Programs Administration. We are not aware of any compelling arguments which would dictate the establishment of a separate office for radioactive materials transportation within the Department. Indeed, while the transportation of radioactive materials may, perhaps, present safety problems of a different nature from most other dangerous commodities which are transported daily, there are far more commonalities involved in the rulemaking, enforcement, and the philosophy of emergency response than there are differences. It would be, in our view, unwise and unfortunate to fragment the coordinated

efforts which now exist in the Department in the area of hazardous materials transportation.

Another area in which the subcommittee expressed interest concerns the interim final rule, amending 10 CFR Part 73, recently published by the Nuclear Regulatory Commission dealing with the protection of spent fuels in transportation. Concurrently with this rule the NRC issued a guidance document (NUREG-0561) to assist in the implementation of the rule's provisions. The rule is restricted in applicability to shipments of reactor irradiated fuel by persons licensed by NRC. It imposes certain reporting and approval requirements on the shipment of this specific class of radioactive materials designed to protect the security of these shipments from unauthorized intrusion.

The purpose of the NRC issuance is to safeguard materials that have national security implications against theft or sabotage while in transit. NRC's rule includes some aspects, such as reporting and routing, that also fall within the sphere of DOT rulemaking authority. However, NRC has stepped into these areas in the interest of increased security over material being shipped from its licensees. The subject of security is one in which we recognize that NRC is properly engaged and the NRC rule, in addressing security issues, also benefits safety. While safety is the purpose of the DOT regulations, these regulations are generally only directed towards the prevention of accidental, inadvertant, or careless releases.

As you know, our rulemaking on the highway routing of radioactive materials (HM-164) has not been completed. We plan to issue a notice of proposed rulemaking in September 1979 and a final rule at about this time next year. Among the possible regulatory approaches which were outlined in the advance notice of proposed rulemaking were some which could involve DOT approval of routings. We note that the general rule established by NRC is

to route the shipment in such a way as to avoid, where practicable, heavily populated areas. It seems unlikely to us that this general, good common-sense requirement would be inconsistent with any routing requirements that might emerge from the investigations now underway in our HM-164 rulemaking.

At this point, I would like to refer to several provisions of the bill which seem to us to be at variance with existing requirements under our regulatory authority and which provisions do not clearly lead to a better way of doing things.

Proposed section 117(a) and (c) of the HMTA would mandate actions which in principle are currently carried out through regulation. We are somewhat unclear as to the intent of the requirement in proposed section 117(b) for reporting to the Congress. If the reason for the reporting is to notify the Congress of an impending shipment of spent fuel under the President's policy for acceptance of limited amounts of spent fuel, this would appear to be duplicative of the Congressional review provisions of Section 303 of the Nuclear Non-Proliferation Act of 1978. Current international regulations which are reflected in the Department's hazardous materials regulations require that shippers give notice to countries through which certain shipments of radioactive materials will travel fifteen days before the shipment begins. Therefore, the Department already receives advance notification for all radioactive materials import shipments, including those covered by S. 535. Imposition of a ninety-day requirement as prescribed in proposed section 117(a) will create an inconsistency between our domestic and international regulations, with the effect being a greater burden on shippers who must be aware of the varying requirement.

Proposed section 117(c) of the HMTA is troublesome in that it could significantly change the relationship which has been developed with other member countries of the International Atomic Energy Agency. Within the spirit of the international regulations, the Department, as the national competent authority, reviews documentation and certification received from the competent authority of the exporting country to ensure that the containers and procedures proposed for the foreign shipment provide an equivalent level of safety to those of domestic shipments. The language of this section could be interpreted as an inflexible requirement that import shipments be subjected to administrative approval procedures identical to those for domestic shipments, thus nullifying the international relationships now existing. To correct this situation, the section could read--

" . . . certified by the Secretary to be safe for shipment. The Secretary shall also ensure that the shipment procedures for any such containers provide an equivalent level of safety as such shipments within the United States."

To implement paragraphs (7) and (9) of section 6 of S.535 (proposed section 109(e)(7) and (9) of the HMTA) would involve imposing additional reporting requirements on the shipping industry and the container and vehicle manufacturing industries. Given the possible economic implications of such requirements, plus the unconfirmed contribution to safety, consideration should be given to less than annual updates to such information or to the use of sampling data to achieve the objective.

The remaining two paragraphs of section 6 of the bill, (6) and (8), address reviews which are already performed and are central to the Department's hazardous materials safety program. Further, the routing recommendations in (8) are also the subject of the current regulatory proceeding mentioned above.

Finally, I would like to address the matter of Federal-State relationships in connection with the transportation of spent fuel and nuclear waste. For one thing, the Department supports the need for emergency response planning at the State and local levels. Through the existing Interagency Radiological Assistance Program, under the lead of the NRC, the Department now participates in providing planning assistance to States. As a result of the Interagency Review Group on Nuclear Waste Management's (IRG) examination of the transportation issues, the IRG's March 1979 Report to the President recommends transferring the lead for radiological incident planning for transportation to this Department. A related Departmental project, scheduled for completion later this year, is a checklist and guidelines for States to follow in developing and implementing radiological transportation incident plans.

The Department and NRC are currently, on an ad hoc basis, contracting with a limited number of States (five currently, with the anticipated addition of five more) to perform surveillance of radioactive shipments. This program is mutually beneficial since the States provide our two agencies with data on package performance and radiation exposure, and the States obtain information about shipments moving through their jurisdictions. The IRG in its March 1979 Report to the President recommended that the Department and NRC review this existing State program with a view toward expanded participation and additional Federal funding. In fact, present plans are for DOT to spend approximately \$150,000 for this program in FY 1980.

It is difficult at this point for the Department to comment in any detail about the grant program which is authorized in proposed section 116 because of overall planning in which we are now engaged with respect to the entire

hazardous materials program. One observation which can be made, however, is that the proposed program is narrowly tailored as is to be expected considering the specific purposes of the bill. That provision would make funds available to States within which nuclear waste or commercial spent fuel is to be transported as a result of the establishment of a storage or disposal facility. The funds could be used by the States to conduct independent reviews of the safety and logistics of shipments associated with those facilities.

We, in the Department, feel that the ability of the States to improve planning, analysis, and response with the assistance of the Federal government deserves study on a broader basis than that and should be conducted within the context of the transportation of hazardous materials in general. We plan to conduct this type of study internally. Therefore, we are not prepared to support the establishment of the grant program described in S. 535 at this time.

In the meanwhile, you should be aware of those budget priorities which the RSPA has established for itself in the hazardous materials programs which will affect Federal-State cooperation and will include, of course, radioactive materials transportation.

We plan to spend more on information concerning commodity flow and incident data, since these are basic ingredients in planning and in the development and implementation of emergency response programs. The system development and communications which are integral to the success of emergency response will also receive important new funding. These areas of intensified effort, however, cannot realize their maximum potential for protecting our communities without more and better training of State and Federal officials. That area will also receive greater attention and funding in our RSPA budget.

