



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

NOV 1 9 1979

The Honorable Les Aspin  
United States House of  
Representatives  
Washington, D.C. 20515

Dear Congressman Aspin:

I am pleased to respond to your letter of October 18, 1979, to Chairman Hendrie, which requests a complete report on the transportation of spent fuel through Wisconsin.

The NRC regulatory program for spent fuel considers both safety and safeguards. In broad terms, safety requirements concern measures to protect against radiological consequences from acts of nature, neglect by man, and accidents caused by man. Safeguards requirements, on the other hand, are designed to protect against deliberate, malevolent acts that could cause a radioactive hazard to the public or to property.

Transportation of spent fuel is regulated primarily by the Department of Transportation (DOT) and by the Nuclear Regulatory Commission (NRC). The NRC safety regulations are set forth in Title 10 of the Code of Federal Regulations, primarily in 10 CFR Part 71 (see enclosure 1). The DOT regulations are set forth in Title 49 of the Code of Federal Regulations, primarily in 49 CFR Parts 170-189. These regulations apply both to persons who ship spent fuel or who offer it for transport and to carriers who load and transport spent fuel. The regulations provide for protection of both transport workers and the general public from radiation hazards.

Special packaging provides the primary assurance that spent fuel can be transported safely. These special packages, often referred to as casks, are designed to survive transportation accidents. The regulations provide general standards and requirements for all packages containing radioactive material, including spent fuel casks. A cask must be designed to withstand a series of specified impact, puncture, and fire environments, thereby providing reasonable assurance that the package will withstand serious transportation accidents. The cask design is initially reviewed by the NRC staff to verify its resistance to accidents. A certificate must be issued by the NRC before a cask fabricated from that design can be used to transport spent fuel.

The standards that have been established in the regulations provide that a cask shall prevent the loss or dispersion of the radioactive contents, provide adequate shielding and heat dissipation, and prevent nuclear criticality 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.

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Both the safety and safeguards of nuclear shipments, including spent fuel shipments, are a subject of continuing review by the NRC. From the safety viewpoint, studies have shown that no additional regulations are needed at this time. A copy of one of these studies -- Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes (see enclosure 2) -- is enclosed for your use. It is the view of the NRC staff that the regulations of the DOT and NRC already in force are adequate to protect the public and the environment against unreasonable risks from accidents and human error.

Recently, however, one of the continuing series of safeguards studies revealed the possibility of serious consequences to the public health and property, if one postulates successful sabotage of a power reactor spent fuel shipment in a heavily populated area. Although the studies have revealed no identifiable threat to spent fuel shipments, and although casks in which spent fuel is shipped are highly resistant to sabotage, we nonetheless concluded that it would be a prudent precaution to issue interim regulations for the protection of spent fuel shipments against sabotage, while awaiting results of a research program in this area. These interim regulations (see enclosure 3) were issued on June 15, 1979, along with another document, designated NUREG-0561 (see enclosure 4), which provides guidance for licensees when complying with the interim requirement.

We expect that these regulations will continue in force until we can obtain results from an ongoing research program designed to determine the response of spent fuel and spent fuel casks to sabotage and the related parameters necessary to estimate the health and safety consequences. At that time, about one or two years hence, these requirements may be amended, rescinded, or made permanent, as appropriate.

The aim of the interim regulations is to protect spent fuel against sabotage in heavily populated areas. This is to be done through a series of measures including route restrictions, preplanning of shipments, and coordination with law enforcement agencies along the route to provide assistance if needed.

In general, current licenses do not authorize persons who possess spent fuel to ship it from one location to another. A licensee who wishes to make a spent fuel shipment must apply to the NRC for authorization to do so. The NRC staff thus has the opportunity to review the licensee's plans for the shipment and to assure that the licensee has the capability to comply with all applicable requirements.

The NRC has an inspection and enforcement program to assure that licensees do in fact comply with the safety and safeguards requirements during the shipment process. Current inspection plans call for inspection at the point of origin or the point of destination of each spent fuel shipment to determine the licensee's capability to comply with applicable requirements. In addition, about 40 percent of shipments by road and about 30 percent of shipments by rail are to be inspected en route.

The NRC is empowered to take enforcement action where licensees are not satisfying NRC requirements, or are conducting operations that might endanger the public or the environment or adversely affect the common defense and security. Several levels of action are available to the NRC:

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- Written Notices of Violation are provided for all noncompliance with NRC requirements, independently of whether there is a need for stronger enforcement action.
- Civil monetary penalties are considered for licensees who evidence significant or repetitive items of noncompliance, particularly when a Notice of Violation has not been effective. Civil penalties may also be imposed for particularly significant first-of-a-kind violations.
- Orders to "cease and desist" operations, or for modification, suspension, or revocation of licenses, are used to deal swiftly and conclusively with licensees who do not respond to civil penalties or to deal with violations that constitute a significant threat to public health and safety or to the common defense and security.

Presently, if an accident occurs, State and local governments are primarily responsible for overseeing the response of carrier, shipper, and others and for taking any actions deemed necessary to protect health and safety. To assist State and local governments, the Federal Government has a program called the Interagency Radiological Assistance Plan, which constitutes 13 signatory agencies, facilities, personnel, and other properties of these agencies that could be called into action to assist and operate under the direction of the State or local authorities (see enclosure 5). The program is under the aegis of the Department of Energy, which has access to and directs the activities of several laboratories of national scope. The plan is organized to include eight regional coordinating offices, which are charged with the responsibility and authority to convene radiological assistance teams. When called, a team will report to the scene of an accident or other radiological emergency and lend assistance to the local emergency response personnel already on the scene. The teams, operating under the general direction of State and local authorities will seek to minimize injuries to people, minimize loss of property, cope with radiological hazards, and protect the public health and safety.

The Federal Government also provides training for State and local government emergency response personnel. A 1978 draft catalog of these courses is attached (see enclosure 6). Eighteen persons from State and local government in Wisconsin have attended these courses over the past four years (see enclosure 7); five attended the course in Radiological Emergency Response Planning (see page 5 of the catalog); two have attended the Technical Management Course for Radiological Emergency Coordinators (page 7 of the catalog); and eleven have attended the Technical Operations Course for Radiological Emergency Response Teams (page 10 of the catalog). This course includes training for transportation accidents.

The subject of emergency preparedness in transportation of radioactive materials is under active consideration by both the NRC and the DOT. Recently, a joint NRC/DOT study group completed a report on emergency preparedness (see enclosure 8) in which were developed several recommendations (pp. S19-S20), including Federal rulemaking, on response planning by shippers and carriers and by State and local agencies.

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I turn now to your question concerning spent fuel shipments in Wisconsin. Following is a summary of shipments of spent fuel having originated in, terminated in, or passed through Wisconsin, during the period October 1, 1977 to September 30, 1979:

<u>Date</u>	<u>No. of Shipments</u>	<u>Amount of Spent Fuel (gms.)</u>
March, 1979	5	587,813
April, 1979	3	353,019

In addition, the following shipments of fuel particles from power reactor water clean-up systems were made:

<u>Date</u>	<u>No. of Shipments</u>	<u>Amount of Material (gms.)</u>
December, 1977	1	45
February, 1978	1	15
July, 1978	1	59
January, 1979	1	27
June, 1979	1	51

In the interest of security, it is our policy not to disclose routing information to the public. Inasmuch as this letter will be placed in our public document room, we have not included routing information. We ask Federal, State, and local officials who receive the information to not make it public. If you would like the information on that basis, please let us know and we will be pleased to furnish it to you or your designee in a letter that is withheld from public disclosure.

We hope the information provided here will be helpful to you. Please let us know if we can be of further assistance.

Sincerely,

ORIGINAL SIGNED BY R. G. SMITH

Lee V. Gossick, Executive Director  
for Operations

Enclosures: See next page

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Enclosures:

1. 10 CFR Part 71
2. NUREG 0170
3. 44FR34466/7
4. NUREG 0516
5. DOE/EV-0010
6. Catalogue of Federal Interagency  
Training Courses For Radiological  
Emergency Response
7. Attendee List
8. NUREG 0535

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