



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

COMM
CORR

July 30, 1979

Ms. L. Jordan
C-M Citizens for Safe Energy
P.O. Box 905
Cheraw, SC 29520

Dear Ms. Jordan:

Representative Ken Holland has referred your April 4, 1979 letter to this agency for response. We are pleased to address the items raised in your letter.

Your letter first asks for information on the roads and schedules to be used by trucks in hauling wastes from the Three Mile Island power station to the burial ground in South Carolina. At present, the State of South Carolina prohibits the receipt at the burial facility of bulk radioactive liquids, transuranic radioactive material, or radioactive waste from Unit No. 2 of the Three Mile Island power station. Under existing regulations, neither the Nuclear Regulatory Commission (NRC) nor the Department of Transportation (DOT) prescribe specific highway routes for the transportation of radioactive waste. The DOT regulations require the use of alternate routes, where practicable, to avoid "heavily populated areas, places where crowds are assembled, tunnels, narrow streets, or alleys" (Title 49, Code of Federal Regulations, Part 397.9). In some cases, existing State and local requirements restrict use of bridges, tunnels, and roads for carriers of radioactive and other hazardous materials. In addition, portions of highways which are unfit for travel by heavy vehicles carrying hazardous materials have traditionally been closed to traffic by State traffic authorities acting in concert with local officials.

We have contacted the South Carolina Bureau of Radiological Health, Department of Health and Environmental Control, and have learned that the State of South Carolina currently adopts by reference the DOT regulations. In addition the State imposes certain requirements on the burial facility operated by Chem-Nuclear, Inc., at Barnwell, South Carolina, which effectively restrict the transportation of certain radioactive materials in South Carolina. Moreover, the State requires all incoming material for disposal to be solidified and posts an inspector at the burial facility to inspect all incoming vehicles.

790814 0275

650 199

Transportation of radioactive materials is regulated at the Federal level by both the NRC and the DOT. These two agencies partition their regulatory responsibilities by means of a Memorandum of Understanding. Enclosed is a brief description of the NRC and DOT requirements for the transportation of radioactive materials, including nuclear fuel and waste (Enclosure 1). We recently completed an environmental impact statement on the transportation of radioactive materials (Enclosure 2). One of the conclusions was that no special restrictions on routing are needed to assure safety. However, we continue to evaluate the safety aspects of the transportation of radioactive materials to see where safety improvements can be made. For example, in May the Commission approved for publication in the Federal Register a proposed rule under Title 10 of the Code of Federal Regulations, Part 73, requiring special safeguards features to protect certain types of waste shipments (Enclosure 3).

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 public health and safety. If the State or local response team needs advice on radiological matters, Federal resources are available for consultation. These resources will usually be a team dispatched from a nearby Federal installation under the auspices of the Interagency Radiological Assistance Plan. 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, in which were developed several recommendations for Federal rulemaking and response planning by shippers, carriers, and State and local agencies. We are soliciting public comments on this document, a copy of which is enclosed (Enclosure 4).

As a result of recent initiatives by State and local authorities to impose routing controls on nuclear shipments, the DOT has initiated a rule-making proceeding to examine the transportation safety aspects of highway routing for radioactive materials. The examination will include consideration of routing decisions now being made by carriers and of the methods by which those decisions are made, as well as the safety effects of existing and possible Federal, State, and local highway routing controls.

A copy of the DOT notice of that proceeding is enclosed (Enclosure 5). The NRC plans to cooperate with the DOT in this proceeding consistent with a Memorandum of Understanding between the two agencies. This proceeding is expected to take about two years to complete.

So much interest has been expressed in Three Mile Island waste shipments that the NRC has established special procedures relating to it. NRC personnel at the TMI site monitor the preparation of each waste container and independently measure the radiation levels around it. The NRC then

POOR ORIGINAL

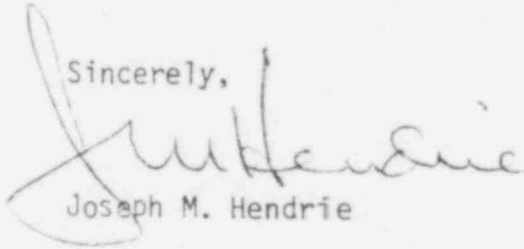
660 200

notifies, among others, each State government, to provide information on TMI waste shipments in advance of the actual movement of the material.

Your final concern relates to a nuclear power plant supposedly being planned or built by Carolina Power & Light Company in Wallace, South Carolina. Carolina Power & Light is associated with three nuclear power plant facilities in the Carolinas. They are: (1) Brunswick Units 1 & 2 at Southport, N.C., which have been operational for years; (2) H. B. Robinson Unit 2 at Hartsville, S.C., which also has been operational for several years; and (3) Harris Units 1-4 at Chatham, N.C., which have been under construction since January, 1978. We know of no other nuclear power plants currently being planned for the near term future by Carolina Power & Light. If Carolina Power & Light has any long-term plans for additional nuclear plants, they have not notified the NRC of those plans. If the plant in Wallace is already under construction, it must be a fossil fueled power plant rather than a nuclear power plant.

We hope this information will be helpful to you. If we can be of further assistance, please let us know.

Sincerely,



Joseph M. Hendrie

Enclosures:

1. Transportation of Nuclear Fuel and Waste
2. "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes" NUREG-0170
3. Federal Register notice, proposed rule, 10 CFR Part 73
4. "Review and Assessment of Package Requirements (Yellowcake) and Emergency Response to Transportation Accidents, NUREG-0535
5. "Highway Routing of Radioactive Materials: Inquiry" Federal Register 43, 36492 (August 17, 1978).

cc: w/enclosures
The Honorable Ken Holland
U.S. House of Representatives

650 201

TRANSPORTATION OF NUCLEAR FUEL AND WASTE

The transportation of nuclear fuel and waste is regulated principally by the Department of Transportation (DOT) and by the Nuclear Regulatory Commission (NRC). The regulations of the NRC are found in Title 10 of the Code of Federal Regulations, primarily in 10 CFR Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions." The regulations of the DOT are found in the Code of Federal Regulations, primarily in 49 CFR Parts 170-189, "Hazardous Materials Regulations" (for shippers and road, rail, water and air carriers). 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 material 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, and to undeveloped film from damage.

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 standards and requirements provide adequate assurance of containment and shielding of the radioactive material. While these small quantity packages, termed Type A packages, may fail in an accident situation, the radiological consequences would be limited because of the limited package contents.

When the radioactive content of a package exceeds the small Type A quantity limit, 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 packaging will withstand most severe transportation accidents, and its design must be independently reviewed by the NRC engineering staff to verify its accident resistance. Finally a certificate must be issued by the NRC before a Type B package fabricated from that design can be used to transport radioactive material.

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 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.

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.

Recent studies indicate that approximately 2.5 million packages of radioactive materials are currently being shipped in the United States each year. Within the limitations of the regulatory standards, radioactive materials may be safely transported in routine commerce using conventional transportation equipment.¹ No special restrictions on the speed of vehicle or routing are needed to assure safety.² In its recent reexamination of its regulations on packaging and transportation of radioactive materials, the NRC staff concluded that the environmental impacts of normal transportation and the risk attendant to accidents involving radioactive material shipments are sufficiently small to allow continued shipments by all modes and that no changes to the regulations are needed at this time. Two documents, "Environmental Survey of Transportation of Radioactive Materials To and From Nuclear Power Plants," WASH-1238, and "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes," NUREG-0170, provide additional information on this topic.

¹Section 201 of the Energy Reorganization Act as amended by Public Law 94-79 imposes special restrictions on the air transport of plutonium.

²According to the DOT, of the more than 32,000 hazardous material incident reports submitted to the DOT during the five year period 1971-1975, only 144 were noted to involve radioactive materials. Of these 144 incidents, only 36 showed any release of contents or excess radiation levels. In most cases, releases involved minor contamination from packages of low specific activity materials, exempt materials, or Type A quantities of radioactive materials.