

HIGHWAY ROUTING OF RADIOACTIVE MATERIALS HM-164 -- AN OVERVIEW

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INTRODUCTION

Progress toward the February 1, 1982, implementation of a national standardized highway routing system for large quantity nuclear materials, including irradiated reactor fuel, was recently stalled in a U.S. District Court in New York City, the very place where initiating events for such rulemaking began over six years ago. The purpose of this paper is to examine the U.S. Department of Transportation's (DOT's) Docket Number HM-164 by: (1) looking at background events which led to the highway routing rulemaking; (2) briefly following the course of the rulemaking; (3) looking at the most important basic issues; and (4) examining one of the most serious problems facing a standardized highway routing system today.

BACKGROUND

The first restriction on radioactive materials in the New York City area was imposed by bridge, tunnel, and turnpike authorities who closed off most of the bridges, tunnels, and tollways leading into and out of the island of Manhattan to certain radioactive and other hazardous materials. This restriction left only a somewhat tortuous and congested route open through the city for access to Long Island. For example, spent fuel shipments from Brookhaven National Laboratories travelled the Long Island Expressway, across the lower level of the 59th Street Bridge, to Manhattan, then north on Third Avenue, across the Third Avenue Bridge to the Bronx, and then via the Major Deegan Expressway to Interstate 95 and the George Washington Bridge. On January 15, 1976, this remaining route was closed when New York City authorities amended the New York City Health Code and effectively banned the transportation of high level radioactive materials, including specified quantities of plutonium, enriched uranium, certain teletherapy sources, and spent reactor fuel through the city of New York by requiring a Certificate of Emergency Transport, issued only:

For the most compelling reasons involving urgent public policy or national security interests transcending public health and safety concerns and that economic considerations alone will not be acceptable as justification for the issuance of such Certificate.

Associated Universities, Inc., which operates Brookhaven National Laboratories, asked DOT whether the New York ordinance might be preempted by federal requirements published under the Hazardous Materials Transportation Act (HMTA). DOT concluded, in April 1978, that the HMTA could preempt local requirements such as those New York City had implemented, but because the highway routing authority had not been executed under the HMTA, the City's health code amendment could not be preempted by HMTA requirements. This was an internal DOT decision and the New York City ordinance was left to stand unchallenged in the courts.

HIGHWAY ROUTING RULEMAKING

In August 1978, DOT opened Docket Number HM-164 and invited public comment on the need for specific DOT routing requirements. In November 1978 a public hearing was held in Washington, D.C., where a substantial cross section of industry and public interest groups presented their views. Although few state and local officials came forward at that time, DOT received more than 550 written comments on the subject. These comments generally followed the same pattern as those received after publication of the proposed rule. Basically, public interest groups and individuals opposing nuclear energy disapproved of any federal regulations that would permit movement of most nuclear materials; other individuals and organizations favored wider federal preemption of state and local laws; state governments, for the most part, supported a general routing rule, but urged provision for state input; local governments, both rural and urban, generally opposed transportation of nuclear materials through their jurisdictions; the motor carrier industry supported a general routing rule that would give carriers some degree of flexibility and one that would be keyed only to vehicles requiring placarding; shippers were concerned about future controls over other hazardous materials, but supported a general routing rule for nuclear materials; and, finally, bridge, tunnel, and turnpike authorities were concerned that their facilities might become part of a designated hazardous materials route with subsequent increased insurance rates.

As a result of these comments, DOT's Research and Special Programs Administration (RSPA) drafted a proposed rule, which was published in the January 31, 1980, Federal Register, under the auspices of the Materials Transportation Bureau (MTB).

Following publication of the proposed rule, a series of seven public hearings was held in the spring and summer of 1980. These hearings were conducted in the cities of Philadelphia, Chicago, Atlanta, Denver, Seattle, Boston, and New York. The majority of the commentators at these hearings were antinuclear activists who objected, for the most part, to any shipment of nuclear waste and spent fuel. State and local officials were concerned primarily with the preemptive nature of the rule and generally insisted on some form of prenotification requirement to satisfy their own health and safety concerns, especially in support of emergency response matters. Industry participation at the hearings was small. The majority of industry comments were directly submitted to DOT in written form during the comment period and were generally supportive of the proposed rule.

On January 19, 1981, the final rule, differing slightly in some respects from the proposed rule, was published in the Federal Register. The major intended purpose of the rulemaking, however, remained the same: that is, to provide a nationally consistent highway routing system for radioactive materials by giving DOT regulatory authority under the HMTA to preempt inconsistent state and local regulations.

In February 1982, a U.S. District Court Judge ruled against the DOT in a suit asking for an injunction against HM-164 that was filed by the city of New York. The judge's order was handed down in a complex 130-page technical decision that addresses many areas, most of which are still being analyzed by both parties in the suit who now have four weeks in which to comment on the technical aspects of the decision. Basically, the order centers on the court findings that a worst case highway accident had not been thoroughly analyzed and that all transportation modes, particularly that by water, had not been considered. DOT has also indicated that it is seriously considering an appeal of this decision. Meanwhile, however, the DOT has also indicated that it will not implement the rulemaking relating to large quantity shipments in parts of the country where state and local routing restrictions or bans exist, until such time as the issue is resolved in court.

Highlights of HM-164, affecting 49 CFR Parts 171, 172, and 177 are as follows:

It establishes a system of "preferred" highways which include interstate routes and state-designated alternative routes.

- It establishes a general routing rule for all radioactive materials which require placarding. This general rule requires the carrier to choose routes which minimize risk to the public.
- It establishes additional specific requirements for large quantity shipments of radioactive materials. These requirements include adherence to preferred routes, written route plans, and driver training certification.

BASIC ISSUES

Preemption

One of the most important aspects of HM-164 is that it does not allow state and local governments to do certain things. This is the preemptive nature of the rulemaking and the part that attempts to establish a standardized national highway routing system. This, too, is probably the most controversial part as it would preempt an estimated 200 existing, often conflicting, state and local laws affecting the routing of radioactive materials. These laws are appearing with increasing frequency and affect not only shipments of large quantity radioactive materials, but low level material and other forms of hazardous materials as well. The effect of this hodgepodge of state and, especially, local laws is to make motor carrier transportation impossible through certain areas, such as New York City, and makes compliance by the shipper and carrier very difficult. This is a problem that will not go away easily and is a classic confrontation between the federal government and state and local governments over perceived health and safety concerns for its citizens.

HM-164 specifically prohibits any state or local action that:

- Prohibits the transportation of large quantity radioactive materials by highway between any two points.
- Establishes a routing rule for placarded radioactive material which is other than large quantity or establishes a routing rule for non-placarded radioactive material.
- Conflicts with Nuclear Regulatory Commission (NRC) physical security requirements.
- Requires additional or special personnel, equipment, or escort.
- Requires additional shipping papers or labeling.
- Requires additional route plans.

- Requires prenotification.
- Requires accident reporting other than as necessary for emergency assistance.
- Unnecessarily delays transportation.

In addition, HM-164 would not allow those bridge, tunnel, turnpike, or toll facilities presently banning certain radioactive materials to continue to do so, should they be designated part of preferred route. Should this happen, another series of court actions would very well be likely, as the officials of these facilities claim insurance rates are prohibitively high for certain radioactive materials.

The rule does not prevent state governments from establishing their own routing requirements. In fact, it encourages states, with cooperation from local authorities, to establish their own system of preferred routes and alternative highways. DOT issued guidelines in August 1980 which use a risk assessment approach for the selection of preferred routes. To date, about half a dozen states are engaged in developing their own system of preferred routes. HM-164, however, establishes criteria which states must satisfy in enacting a routing rule. A state routing rule must:

- Be established by a state routing agency.
- Be based on a comparative, radiological risk assessment.
- Be based on solicitation and consideration of input from affected local jurisdictions.
- Ensure reasonable continuity of routes between jurisdictions, including adjoining states.

Prenotification

The issue of prenotification has been one of the most troublesome and now puts two federal agencies in direct conflict with one another. On June 30, 1980, Congress mandated that the NRC develop regulations requiring licensees to notify state governments in advance of certain shipments of radioactive wastes. As a result of this mandate, DOT did not address federally imposed prenotification requirements in HM-164 but, instead, waited for the NRC to take action. It was hoped at DOT that NRC prenotification rulemaking would be consistent with HM-164 and could, therefore, be included in the new rule by simple reference. However, this was not to be the case. The NRC issued its final ruling on

January 6, 1982 (effective July 6, 1982). The NRC prenotification rule addresses two categories of nuclear waste: large quantity waste, requiring Type B containers; and irradiated reactor fuel. These regulations specifically do not preempt state prenotification requirements and, thus, are totally at odds with HM-164 which declares state and local prenotification requirements inconsistent. Furthermore, the NRC action did not promote a federal prenotification "network" scheme, as had been hoped by some, but rather left prenotification as a matter to be conducted directly between the shipper and the office of the affected state governor.

In an interesting turnaround, however, DOT has recently stated that prenotification maybe permissible for those states that host waste disposal sites. The justification given for such a decision is that such prenotification may be necessary to support management of waste disposal sites.

Emergency Response

Emergency response and emergency preparedness are concerns often voiced by state and, especially, local officials who are wary of the capabilities of their own emergency response resources in the event of a serious accident involving nuclear material. Most have expressed a desire for direct federal aid in this area, especially in light of the fact that their state and local routing regulations may be preempted by federal law. DOT is currently developing a set of "DOT initiatives" to provide limited emergency preparedness assistance to state and local governments. It is highly unlikely, however, that these initiatives will be in the form of hard cash or equipment. More likely, such assistance will be in the form of written material such as training programs or as guidance for establishing emergency response plans and programs. This is not apt to satisfy state and local officials who will probably continue to push for more direct emergency response assistance and who, lacking that assistance, will continue to resist preemptive rulemaking like HM-164.

PUBLIC PERCEPTION

The single most serious problem facing the implementation of HM-164, and probably the most serious problem facing the nuclear industry today, is public perception. Most members of the general public simply do not realize that there is a difference between low level waste, high level waste, spent nuclear fuel, and defense wastes. Most members of the general public do not realize that, in addition to nuclear power plants, there is also a large nuclear industry. For example, the public generally does not know of well logging, nuclear medicine, radiography, and the many other industrial uses of nuclear materials. Mention the work "nuclear" and

the public perceives only an ominous, glowing, spent fuel pool or a huge sinister cooling tower emitting radiation. This is not meant to ignore genuine concerns regarding spent fuel and other high level waste forms, but simply to point out that the public often perceives all nuclear materials as dangerous high level waste.

Federal preemption of state and local restrictions on shipments of radioactive materials is frustrated by such public perception. Basically, the opposition to preemption centers on elected public officials who want to stay elected and who want to be seen as protecting the health and safety of their constituents in matters of radioactive and other hazardous materials, especially those materials that this same constituency perceives to be unnecessary in, and a threat to, their particular part of the world. At least with respect to radioactive and hazardous materials, public perception drives political policy and political decision making. Furthermore, public pressure on elected officials in such matters is intense at the grassroots level. Certainly a good example of this is the case of New York City, where a loud and vocal group of citizens has, so far, successfully blocked the implementation of HM-164. Negative public perception is sustained by newspaper articles such as those that appeared on the op-ed page of the February 9, 1982, New York Times, headlined, "Broadway at 57th: Hiroshima." The article was rife with questionable facts and preyed on emotions and fear. Yet, this is what the public reads and, therefore, perceives. While there will probably always be antinuclear elements who will never be persuaded otherwise, the general public must somehow be persuaded that nuclear waste management is everyone's responsibility, not just the government's, the electric utility's, or someone else's.