DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172, 173, 177

[Docket No. HM-164, Amdt. Nos. 171-59, 172-64, 173-143, 177-52]

Radioactive Materials; Routing and Driver Training Requirements

AGENCY: Materials Transportation Bureau (MTB), Research and Special Programs Administration, DOT.

ACTION: Final rule.

SUMMARY: These amendments establish routing and driver training requirements for highway carriers of large quantity packages of radioactive materials. Such carriers are required to follow highway routes designated by appropriate State agencies. In the absence of State action, carriers are required to use Interstate System highways subject to the specific conditions set forth in the rules. In addition, carriers are required to prepare written route plans for eventual submission to the Department of Transportation. Irradiated reactor fuel must be shipped under a comprehensive physical security program approved by the Department to be equivalent to that established by the Nuclear Regulatory Commission.

Motor vehicles carrying any radioactive material for which placarding is required, other than those containing large quantity packages as identified in the regulations, must comply with a general routing rule to minimize radiological risk. Also contained in this document is a Departmental policy statement which addresses the appropriate role of Federal, State and local governments in the regulation of radioactive material transportation.

EFFECTIVE DATE: February 1, 1982.

ADDRESS: Copies of public comments and supporting documents (Final Regulatory Evaluation and Environmental Assessment; Supplement to Docket HM-164: Summary and Analysis of Public Comments) are available for inspection and reproduction at the following address: Dockets Branch/DOT/RSPA/MTB, Room 8426, 400 7th Street, S.W., Washington, D.C. 20590, (202) 426-3148.

FOR FURTHER INFORMATION CONTACT: John C. Allen, Office of Hazardous Materials Regulation, (202-472-2726) or Douglas A. Crockett, Office of the Chief Counsel, Research and Special Programs Administration (202-755-4972), 400 7th Street, SW., Washington, D.C. 20590.

SUPPLEMENTARY INFORMATION:

I. Background

The history of these amendments is summarized in the Notice of Proposed Rulemaking (NPRM) of January 31, 1980 (45 FR 7140). Individuals interested in this docket should review that publication as well as the Advance Notice of Proposed Rulemaking (ANPRM) of August 17, 1978 (43 FR 36492) since references are made to both documents. To set the context for the present discussion, however, the most important background items relating to these amendments are briefly summarized here.

In 1976, truck shipments of irradiated reactor fuel (spent fuel) from Brookhaven National Laboratories' Long Island facility were interrupted by an amendment to the New York City Health Code. The Health Code amendment had the practical effect of banning most commercial shipments of radioactive materials in or through the City. Associated Universities, Inc., which operates Brookhaven National Laboratories, asked DOT whether that ordinance was preempted by Federal transportation safety requirements issued under the Hazardous Materials Transportation Act (HMTA) (49 U.S.C. 1801 *et seq.*). On April 20, 1978, DOT published an Inconsistency Ruling (43 FR 16954) in which it viewed the City's Health Code amendment as an extreme routing requirement intended to protect the very dense urban population found inside the City. DOT concluded that the HMTA could preempt local requirements such as New York City had implemented, but because highway routing authority had not yet been exercised under the HMTA, the City's Health Code was not preempted by HMTA requirements. Since this ruling a number of other State and local governments have either passed, or proposed, legislation that severely restricts transportation of certain radioactive materials through their jurisdictions.

The Department of Transportation subsequently published the ANPRM entitled "Highway Routing of Radioactive Materials; Inquiry" in August, 1978. The public was invited to comment on the need and possible methods for establishing routing requirements pertaining to highway carriers of radioactive materials under the HMTA. A public hearing was held in conjunction with the ANPRM on November 29, 1978 in Washington, D.C. The Department received over 550 comments from a broad cross-section of the public including representatives from State and local governments, public interest and environmental organizations, the motor carrier industry, the shipping industry, bridge and turnpike authorities, Federal agencies, and Congressional officials, in addition to the many individual citizen comments. Based upon these comments and the Department's own judgment an NPRM was published on January 31, 1980.

The NPRM set out specific proposals for routing certain types of radioactive materials shipped by highway, and driver training requirements. The stated purpose of those proposals was to reduce the possibility of exposure and inadvertent releases in normal and accident situations in transportation, and to clarify the scope of permissible State and local actions. The four month public comment period scheduled in the NPRM was subsequently extended to five months. The Materials Transportation Bureau (MTB) conducted seven public hearings from late March to early June of 1980. The seven hearings were held in Philadelphia, Atlanta, Chicago, Denver, Seattle, Boston and New York. In addition, MTB conducted public meetings in Akron, Ohio, Eugene, Oregon and Union City, California. The Department has recieved and reviewed over 1,000 public comments on the January 31 notice. In addition, over 1,600 pages of transcripts from the seven public hearings have been reviewed as well as statements made at the three public meetings.

Because of the great interest generated by these routing proposals and because of the many and varied issues involved, DOT has decided to include an extended discussion of public comments as a supplement to the final rules document. Although principal comments are discussed in this preamble, inclusion in the docket of a supplementary discussion of public comments allows the Department to provide more detailed responses than would be practical in the preamble. For those readers interested in public comments on the Advance Notice, a summary is provided on pages 7141 and 7142 of the January 31 NPRM. In addition to the supplement of public comments, all individual public comments and all public hearing transcripts are available for inspection at the address previously listed.

Other essential background information covered by the NPRM includes an analysis of the existing DOT safety program for the transportation of radioactive materials, DOT accident experience with nuclear material transportation, a technical discussion of projected public risk from the transport

of radioactive materials in the United States, the Nuclear Regulatory Commission (NRC) physical security program for shipments of spent nuclear fuel by its licensees, DOT's interrelationship with NRC's transport requirements, and an extensive discussion of the proposed routing and training requirements. The present document will reference some of this information. However, those discussions will not be restated here except as they relate to substantive public comments.

II. General Discussion

The Department of Transportation has examined the transportation of radioactive materials exhaustively since issuing the ANPRM nearly two and a half years ago. This process has included the review of over 1600 public comments and 2000 pages of transcripts from public hearings in addition to a number of risk assessment studies on the subject. On the basis of these comments, documented risk studies and past accident experience for radioactive material transport, the Department has concluded that the public risks in transporting these materials by highway are too low to justify the unilateral imposition by local governments of bans and other severe restrictions on the highway mode of transportation. Other modes of transport generally do not appear to offer alternatives which clearly lower public risks to the extent that use of the highway mode should be substantially restricted. DOT also believes, however, that these currently low risks will be further minimized by the adoption of driver training requirements and provisions of a method for selecting the safest available highway routes for carriers of large quantity radioactive materials, as accomplished in this rule.

The estimated low risks in transporting radioactive materials also support the belief that the present packaging requirements are adequate to protect the public. A detailed discussion of DOT's packaging requirements was presented in the NPRM. As was clearly pointed out in the proposed rules, this rulemaking is not an examination of packaging requirements, the adequacy of which is assessed by DOT and NRC on a continuing basis. There has been no new documented evidence presented during the public comment process to show that the current packaging requirements result in unacceptable risks to the public.

Many commenters question the need for these routing rules and some view them as nothing more than a method of accommodating the transportation requirements of the nuclear power industry. Some maintain that State and local restrictions have been applied mostly to nuclear fuel cycle shipments such as spent fuel and have not frustrated shipments of radiopharmaceuticals or other "necessary" small quantity radioisotopes. They suggest that DOT's stated intention of providing uniformity and consistency, at least in part, to ensure shipments of needed nuclear medical materials is based on an invalid perspective.

The Department has examined many of the local restrictions for radioactive material transportation and continues to believe that many result in unnecessary restrictions on the transportation of all types of radioactive materials, including non-fuel cycle materials. Some public comments support this. For example, the Society of Nuclear Medicine presented the following comments at the Chicago hearing on April 3, 1980.

> The Society has great concern for the proliferation of State and local statutes and ordinances enacted to control the transportation of radioactive materials into, through, and out of these jurisdictions. It can be stated that this non-uniformity of controls in the transportation of these medical necessities constitutes one of the most rapidly increasing and serious impediments to nuclear medicine health care delivery with which we are faced. Thus, the Society views with favor those portions of this docket which will provide for uniformity of regulation, on a national basis, while still providing for adequate state and local input in the implementation of the final rule.

The Society points out that over 3,300 medical centers, hospitals and clinics in the U.S. are engaged in nuclear medicine, and it estimates that one out of every two patients admitted to hospitals require some type of "nuclear medicine procedure."

The Petroleum Equipment Suppliers Association, a trade association representing 251 companies that supply goods and services to over 10,000 companies engaged in petroleum drilling and production, point out that the relatively small quantities of industrial isotopes which its members ship are often covered by State and local restrictions:

> Increasingly, state and municipal governments are enacting routing restrictions and prohibitions and requirements for prenotification and escorts. The rising tide of these regulations and ordinances threaten not only to burden interstate commerce involving the use of radioactive sources by (oil and gas well) service companies, but to actually destroy the ability of these companies to provide these services. Without these services the exploration and production of oil and gas in this country will effectively cease.

DOT remains firm in its belief that the impact of piecemeal State and local restrictions on the transportation of all radioactive materials, including non-fuel cycle materials, signifies a need for nationally consistent routing rules.

It is also the Department's determination that public safety can be improved through a nationally uniform rule that ensures the use of available highway routes that are known to be safe for large quantity radioactive materials. In developing this rule, three basic conclusions underlie the approach taken:

(1) Route selection should be based on some valid measure of reduced risk to the public,

(2) Uniform and consistent rules for route selection are needed from both a practical and safety standpoint, and

(3) Local views should be carefully considered in routing decisions since routing is a site-specific activity unlike other transport controls such as marking and packing.

With respect to the first conclusion, DOT is of the opinion that an assessment of risk to the public should include a consideration of both normal radiological exposure which is inherent in the transportation of radioactive materials as well as a consideration of potential accidents which could result in additional radiological exposure. Further, an assessment of risk to the public from accidents involving large quantity radioactive materials should include a balanced consideration of factors which affect both the likelihood of an accident as well as the consequences.

Many commenters seem to be concerned only with consequence—particularly high consequence accidents involving large quantity radioactive materials in a heavily populated urban center. Local authorities, for example, are concerned with postulated "worst-case" accidents because of a fear that their emergency response capabilities are insufficient for such hypothetical catastrophes. The Department, also, is concerned with such events and is mindful of the large economic consequences estimated for such hypothetical events by a recent draft environmental assessment completed for the NRC by Sandia National Laboratories (Transportation of Radionuclides in Urban Environs: Draft Environmental Assessment", July, 1980). These estimates relate to a scenario which assumes the worst credible accident for certain truck shipments of spent fuel and polonium in densely populated urban areas. One could conclude from the study that a way to lower the possibility of such high

consequences is to reroute the shipments away from urban areas entirely. However, the study also indicates that this may not be the best alternative if one considers overall risks to the public, since routes that avoid the urban areas may have much higher accident rates which increase the chance of a severe accident occurring in the first place. It is DOT's opinion that public policy for the routing of radioactive materials should be based not only upon a concern for worst-case accident consequences, but also upon all other factors which contribute to the overall risk involved in transporting large quantity radioactive materials. This policy is embodied in this rulemaking by requiring use of Interstate highways which generally have much lower accident rates than other roadways, while at the same time requiring that cities be avoided where possible by using either Interstate beltways or State-designated bypass routes to minimize the possibility of worse-case accidents.

With respect to the second conclusion, DOT recognizes the need to balance local and national interests in providing for uniformity and consistency in routing. DOT is providing a national framework for highway routing of radioactive materials within which State and local concerns can be addressed. This framework is needed because of the current patchwork of conflicting State and local routing requirements. It is recognized that there may be local situations which are so unusual that they cannot be adequately accommodated within this framework. These situations can be called to the attention of the Department through existing administrative channels that may involve either special or general rulemaking. However, because of the role of the State governments in designating routes and the nature of the routing guidelines being provided to the States which stress the participation of local govenments, DOT does not expect such situations to be numerous.

The third conclusion, which concerns the need for local input in routing decisions, also serves as a basis for the routing rules developed under this rulemaking. Routing as a safety control for the transport of any hazardous material is different from the more traditional safety conrols such as packaging, package marking, vehicle placarding and loading. Routing is largely a site-specific activity which cannot be entirely accommodated at the Federal level. Therefore, DOT is encouraging a decentralized decision-making process in this area within a Federally-provided regulatory framework. The Department believes that in the interest of uniformity and safety, it is both appropriate and practical for many routing decisions to be made at the State level. The fifty State governments are in a better position than the Federal government to respond to local concerns and likewise are in a better position than the 23,000 or so local jurisdictions to consider overall safety impacts from routing decisions. To ensure adequate consideration of local viewpoints, DOT believes an advisory group primarily composed of local officials should be established in each State to periodically review the effectiveness of the State/local consultation (discussed in more detail elsewhere in this document).

III. Federal/State/Local Role in Routing Radioactive Materials

The Hazardous Materials Transportation Act grants DOT the authority to regulate the transportation of hazardous materials. Among other things, section 105(a) of the HMTA specifically identifies routing as one form of regulation that the Secretary may deem necessary and appropriate for the safe transportation of hazardous materials. Before the issuance of the ANPRM for Docket HM-164, the Department had not implemented routing regulations for any hazardous material under this clear authority granted by the HMTA. A general routing provision does exist at 49 CFR 397.9 providing guidance to carriers and drivers of placarded motor vehicles. That provision predates the issuance of the HMTA and has not yet been adopted in regulations issued under the authority of that Act.

However, a number of actions by State and local governments relating to a specific hazardous material (radioactive material) and a specific mode of transportation (highway) have raised the question of whether more specific Federal routing requirements should be issued. The DOT must consider the overall safety impact of piecemeal, uncoordinated local actions on hazardous material transportation. The ANPRM and the NPRM made clear the Department's intention to consider only routing requirements for radioactive materials shipped by highway, the focus of most State and local actions, rather than undertake a comprehensive regulatory proceeding to consider all classes of hazardous materials and all modes of transportation. The fact that this proceeding considers only one hazard class and one mode does not rule out future Federal actions for other hazardous materials and other modes of transportation.

By issuing these regulations the Department has made the determination that routing requirements can improve safety—not only by providing for the use of the safest highway routes, but also by addressing the safety impacts of narrowly conceived local actions. In order to fulfill the mandate on hazardous material routing, it is DOT's responsibility to set out a national framework within which legitimate local concerns can be addressed. To establish this framework the DOT has the authority to make the basic decision as to what radioactive materials pose a significantly serious risk such that routing controls are necessary, and how these materials should be routed. The Department has made these decisions in this rulemaking and a brief synopsis now follows.

First, a general routing rule is established for all radioactive material shipments by highway which require a warning placard. These include many of the thousands of shipments of radiopharmaceuticals, industrial isotopes, and low-level wastes that are made annually. The general rule emphasizes that the carrier choose routes which minimize radiological risk by considering such factors as population, accident rates, and transit time.

Second, special requirements apply to motor vehicles transporting large quantity packages of radioactive materials. These requirements include preferred routing, written route plans and driver training certification. Preferred routes are identified as Interstate highways and State-designated routes.

The Interstate highway system lays the basic Federal framework for providing safe and efficient routes for large quantity radioactive materials. Accident rates along these roadways are sharply lower than on any other type of roadway. Several studies also support the safety and efficiency of the Interstate highway system for the carriage of hazardous materials. In comments to Docket HM-164, the NRC developed a hypothetical case study of routing alternatives using information generated by NUREG 0170 ("Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes", December, 1977). Both the NRC case study and NUREG 0170 are discussed extensively in the NPRM and in the Final Regulatory Evaluation and Environmental Assessment prepared in support of this document. The case study clearly shows that use of Interstate highways generally

result in lower radiological risks from the transportation of radioactive materials. Also, pilot tests were conducted for the Federal Highway Administration to apply routing criteria developed for all hazardous materials ("Development of Criteria to Designate Routes for Transportating Hazardous Materials by Highway", July, 1980). These tests were performed with the help of local officials in Nashville, Tennessee and Seattle, Washington and the results clearly demonstrate the advantages of the Interstate highways as compared to other roadways in minimizing risks associated with hazardous material transportation.

Carriers of large quantity radioactive materials are required to use Interstate beltways when possible to avoid city centers. Carriers are allowed off the Interstate system only to follow a State-designated route; in a documented case of emergency; to obtain necessary fuel or vehicle repairs; or to travel to and from a pick-up or delivery site not located on an Interstate System highway.

The Department believes that use of Interstate highways ensures a safe route of travel for large quantity radioactive materials. However, the Department recognizes the limitations of relying solely on the Interstate System and, as already mentioned, the inherent site-specific nature of routing. There is a clear need for a mechanism to accommodate these factors. Several examples serve to point this out:

1. Most points of origin and destination for large quantity radioactive materials shipments are not located on interstate highways. Additional safety benefits may be realized if access routes between the Interstates and these points are designated by the State.

2. The low accident rate associated with interstate highways is based on a national average. DOT recognizes there are situations where accident rates will be higher for a particular segment of an Interstate than for a nearby alternate route.

3. The accident rate is not the only important element to consider in assessing risk to the public—one must also consider the consequences of a serious accident, even though the probability of that accident may be small. Therefore, the population along the route of travel should also be considered. Since Interstate highways serve to connect population centers, the benefits of using an Interstate highway with its lower accident rate going through a city should be carefully examined and compared with the benefits of using a more circuitous, secondary road around the city.

4. Use of the Interstate highway system may necessitate circuitous travel resulting in some increase in normal radiological exposure and, in some cases, higher accident risks. More direct non-Interstate routes may exist which could provide greater safety to the public.

The task which confronted DOT in this rulemaking was to provide for a more site-specific analysis to resolve these situations while at the same time maintaining national uniformity and a safe, viable transport system for nuclear materials.

Many commenters feel that local governments should be responsible for routing within their jurisdictions. First, they argue that local governments have the primary responsibility for protecting the health and safety of their citizens and therefore should determine if routes through their jurisdictions are acceptable. It is the town, city or county which provides initial emergency response to protect health and property in the event of an accident. Secondly, they argue that route selection is a site-specific process and that local officials are the most knowledgeable of local roads and local conditions. However, DOT sees serious problems from both a practical and safety standpoint associated with placing ultimate routing authority with each of the 23,000 local jurisdictions in the country.

Local jurisdictions are inherently limited in perspective with respect to establishing routing requirements. While the Department recognizes that local governments are accountable only to their own citizens, such a limited accountability has some undesirable effects. For example, a routing restriction in one community may have adverse safety impacts on surrounding jurisdictions. Also, some communities in determining that they do not have the appropriate expertise or manpower to perform a routing analysis, may find attractive the option of completely prohibiting the transport of radioactive materials through their jurisdictions. This has already happened in some cases. Uncoordinated and unilateral local routing restrictions placed on carriers of radioactive materials would simply not be conducive to safe transportation. There is a clear need for national uniformity and consistency.

DOT believes that the role of State governments is the key for ensuring that the safest highway routes are used by carriers of large quantity radioactive materials. A State government has a much broader perspective than local governments since it is charged with providing for the safety and welfare of all its communities. The safety impacts of a routing decision on all communities within the State can be assessed.

There are a number of other advantages to the exercise of route designation authority at the State level. States have the capability to incorporate local input directly into their routing analyses through existing State administrative and lawmaking procedures. At the same time States have the capability of working with the Federal government and are familiar with implementing regulations under a variety of Federal programs. States often have the greater manpower and technical training necessary to perform a routing analysis which adequately considers all factors related to public risk. For example, many States exercise authority under the NRC's Agreement State Program to regulate possession and use of certain source and by-product nuclear materials. Many States have radiation safety officials as well as knowledgeable transportation officials available to collaborate on a routing analysis.

States not only have the capability to consider local viewpoints on route selection, but also can address concerns of tunnel, turnpike and bridge authorities. The Department does not seek to force the use of all such facilities for nuclear material transportation. Rather this rulemaking establishes a system by which the State can consider the use of these facilities on the basis of overall risk to the public. A State government, after a careful evaluation of the total risks to the public, may conclude that a safer route is available and that certain facilities should be avoided.

Many commenters have reservations about the role of the States and the efficacy of the State route designation process. Probably the greatest reservation is shown by local officials who are concerned that the States may not actively pursue local interests before routes are designated. The State Planning Council on Radioactive Waste Management submitted comments supporting the concept of State-designating routing. However, the Council, composed of State and local officials, strongly encouraged DOT to "develop appropriate mechanisms and procedures to enable local participation in routing decisions."

The Department also wants to ensure that local communities have input into the State route selection process. DOT believes that the key to incorporation of local viewpoint into routing decisions is the cooperation between State and local governments before designation of

routes. The Department has considered establishing specific guidelines for States to follow to ensure a formalized procedure for local consultation. However, there is great difficulty associated with this approach given the variations in organizational structure, and administrative processes from State to State.

Instead, the Department is taking two steps to ensure that consideration is given to local viewpoints. First, the final rules contain a general requirement that the States consult with affected local jurisdictions before establishing a preferred route. DOT believes that the States must adequately consider local input, especially in light of the routing guidelines which necessitate the accumulation of local data relating to accident rates, population characteristics and other information that would require local cooperation.

However, the Department also understands that reasonable differences of opinion may exist in this sensitive area. As a result, DOT believes that each State should establish an advisory group composed largely of city and county officials. The purpose of the group would be to meet periodically, recommend to the State appropriate methods of consulting with local jurisdictions, and review the effectiveness of those measures in actual practice. Such State advisory groups would provide a valuable oversight function that should help to continually improve the State routing program.

State officials commented that the preferred routing system places a large burden on State governments and requested clear guidance from DOT on routing decisions. The Department also believes this to be extremely important in the interests of both national uniformity and safety. As a result, DOT is preparing a publication entitled "Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials" ("DOT Guidelines") which is discussed in more detail elsewhere in this preamble.

IV. Prenotification and Time-of-Day Restrictions

An extremely large number of commenters favored some type of requirements relating to prenotification and time-of-day controls. The Department notes that most State officials strongly endorsed these measures. In light of these public comments the Department has carefully reconsidered both types of controls.

Prenotification

A number of reasonable arguments have been made in support of prenotification: To aid the State in its route designation activity; to ensure better enforcement by utilizing State and local enforcement personnel in addition to Federal inspectors; and to more rapidly facilitate emergency response capability in case of vehicular accident. Prenotification on a case-by-case basis for all shipments of radioactive materials would result in a severe burden not only on shippers and carriers but also on the governmental units receiving this voluminous information with a doubtful increase in safety. Many commenters agreed with DOT, except for shipments of certain high-level radioactive materials. In most cases, the desire for prenotification by State and local officials centers around spent fuel and certain other nuclear waste materials.

On June 30, 1980, Congress enacted legislation (section 301 of the NRC Authorization Act, Pub. L. 96-295) directing the NRC to develop regulations which will require its licensees to provide State governments with advance notification for certain shipments of nuclear wastes. The NRC issued an NPRM on this matter on December 9, 1980 (45 FR 81058), proposing to require prenotification for licensee shipments of all wastes required to be shipped in Type B packaging, which include spent fuel. The NRC has asked for the public to comment on the NPRM before March 9, 1981. Since these proposals would apply to a substantial number of shippers and carriers regulated by DOT, a discussion of the proposed requirements bears on the issue of prenotification raised in comment on the proposals for highway routing made in this docket by DOT.

In its NPRM, NRC proposed two sets of prenotification requirements. One set of proposed requirements concerns shipments of spent fuel in quantities greater than 100 grams mass. Such shipments are large quantity shipments subject to the routing requirements established by DOT in this docket when transported by highway. This treatment of spent fuel separately from other nuclear wastes is necessary because spent fuel shipments are also subject to physical security requirements which the NRC has imposed to guard against theft and sabotage. Information concerning exact schedules used in spent fuel shipments therefore must be considered sensitive. In the NPRM, the NRC proposes to require licensees to notify the governor of each State through which a shipment will pass at least four days before arrival at the State boundary. The notification would identify the shipper, carrier, receiver, the material to be transported, and the times of departure from origin and arrival at the State boundary. The licensee would have to immediately notify the State governor if the transportation schedule changes by more than six hours.

The confidentiality of information concerning the exact schedule of such sensitive shipments (i.e. dates and times of shipments) would have to be protected by the governor's office as if it were national security information (see proposed 10 CFR 73.21 in the NRC NPRM). Although treated as confidential, the information could be passed on to local officials as long as it is tranferred under the security conditions described by NRC in its proposal. Other shipment information would not be considered confidential. Confidential information could be declassified ten days following the departure of the shipment (or the last shipment in a series) from the State.

The second set of prenotification requirements proposed by NRC in its NPRM would apply to any other nuclear wastes that are required to be shipped in Type B packaging. This category of materials includes large quantity radioactive waste shipments which also are subject to the routing system established in this docket. The NRC would require advance notice of shipment to the governor at least four days before the beginning of an estimated seven-day period of departure from the shipment origin. Information to be supplied would include the point of origin, the estimated seven-day period or periods of arrival both at the State boundary and at the shipment destination, and a point of contact for schedule changes. Prenotification information for nuclear wastes, other than spent fuel as described previously, would not be considered sensitive information and the State governor would not have to protect its confidentiality. The NRC estimates that over 24,000 waste shipments, including spent fuel, will be subject to these advance notice requirements annually, although only a small portion will be large quantity shipments.

The NRC prenotification proposals would not apply to two particular groups of large quantity radioactive materials shipments. First, nonlicensee shipments of nuclear waste, primarily those in support of DOE research and development activities, are not covered by the NRC prenotification proposals. Second, radioactive materials that are not waste products (primarily large

source teletherapy shipments and possibly some other large source medical and industrial isotopes) also are not covered by the NRC prenotification proposals.

Further, there remain some unanswered questions concerning the nature of a prenotification system—what specific materials should be covered, how early the advance notice should be given, how the State or local governments would handle what may be voluminous paperwork, and what information is necessary. Congress has provided an indication of what is appropriate in this controversial area and the NRC is considering proposals which will not be made final for some time.

Another recent development also may prove useful to DOT in determining the efficacy of a prenotification system. The Puget Sound Council of Governments (PSCOG) is conducting a study in prenotification for certain materials as part of a comprehensive regional study of hazardous materials transportation under contract to DOT. PSCOG will present its findings on the effectiveness and practicality of advance notice to DOT in early 1981.

Two other facts also should be noted. First, the NRC intends to publish an atlas of all highway routes that have been approved for shipment of spent fuel. This information therefore will be publicly available to all State and local governments and other interested parties. Second, the existing NRC physical security program for spent fuel requires confidential notification and coordination with affected local officials (local law enforcement agencies) concerning approved routes.

In light of these considerations, DOT has decided not to take final action at this time concerning prenotification. In order to prevent a possibly severe inconsistency between NRC and DOT transportation requirements, the DOT will have to wait at least until final rules are issued for NRC licensees before undertaking a rulemaking proceeding to consider specific prenotification requirements for other types of large quantity shipments. In its further consideration of prenotification, DOT will also consider the role of escort vehicles provided by State or local governments. This subject is addressed later in this document in the general discussion of the preemptive effects of Docket HM-164.

Time-of-day restrictions

Many commenters are also strongly in favor of some kind of time-of-day restriction for nuclear material transportation. Again, most commenters are concerned with high-level nuclear wastes and spend fuel. There are practical as well as safety problems associated with uncoordinated time restrictions. For example, it has been estimated that the average shipment distance for a large quantity package of radioactive materials is approximately 2,200 kilometers. This implies travel through a large number of State, county and municipal jurisdictions. Even if the various time restrictions for these jurisdictions were known in advance by the carrier, delays enroute could be numerous. Some commenters argue that the delays caused by certain time restrictions are justified on the basis of the increased accident risks which exist during rush hour traffic in an urban area. However, the Department must also consider the added risks of normal radiological exposure accruing to the vehicle driver and bystanders at any temporary delay site. This may be a more important consideration from the standpoint of overall public risk, especially when one considers that several temporary delays could occur for each shipment. Also, there may be additional security problems related to the temporary delay of spent fuel shipments.

The Department does see some need for a coordinated effort to carefully examine the transportation of large quantity materials during periods of heavy rush hour travel in large urban areas. DOT believes that the States can address this situation as part of their route designation program by providing for suitable alternative routes to avoid certain heavily traveled highways during peak travel times. This would amount to a time of day restriction on certain highways, but would not require the hazardous material be unnecessarily delayed in one area.

V. Other Transportation Controls Realted to Routing

The notice of proposed rulemaking also addressed a number of other State and local actions generally related to the routing of radioactive materials. This included not only prenotification and time-of-day restrictions, but also escort requirements, restrictions pertaining to special personnel or equipment and any other action which would have the effect of unnecessarily limiting the transportation of radioactive materials through a jurisdiction. For the most part, DOT views these transport controls differently from the site specific nature of routing in one important aspect. These requirements are not directly related to characteristics that are peculiar to a specific geographical location. With the possible exception of the previously mentioned prenotification and time-of-day restrictions, the Department does not believe that public safety concerning the transportation of radioactive materials can be measurably improved by such State and local actions.

The Department has noted that the rationale supporting the need for various State and local actions often involves concerns in three areas: the adequacy of the emergency response system for hazardous material transportation; questions over liability for nuclear materials involved in highway accidents; and doubts over the effectiveness of the Federal enforcement of regulations. As a result, many citizens, as well as some State and local officials, believe that additional controls at the State and local level are justified, no matter how fragmented they may be. The Department does not subscribe to this philosophy. Even in cases where criticism may be justified, piecemeal State and local action instituted because of a concern over these issues and limiting the carriers' ability to function would not solve the problems. In fact, steps are now being taken by DOT and other Federal agencies to improve Federal, State and local capabilities in these critical areas.

With respect to emergency response, the Department of Transportation has prepared a comprehensive training program for responding to radioactive material transportation accidents. This training program "Handling Radioactive Materials Transportation Emergencies" is directed to "first-on-the-scene" emergency service personnel such as local fire, police and ambulance organizations. The comprehensive training package consists of slides, tapes, student workbooks and instructor guides. It is a simple and straightforward instruction kit to provide local and State personnel with a basic understanding of the subjects of radiation and associated hazards, packaging required for nuclear material, transportation regulations, protective measures and procedures, and planning and preparedness for transportation accidents. DOT has been coordinating the development of this training program for the past two years with emergency service personnel as well as State and local officials. This 6 to 8 hour training package supplements the 20 hour training program already available to emergency response personnel responding to other hazardous material transportation emergencies. The entire training program will be distributed to governors of each State upon request.

A booklet entitled "Response to Radioactive Materials Transportation Accidents" is also nearing completion. It was distributed as an interim edition in the spring of 1980 and the response from State radiation control program directors and emergency management authorities has been very favorable. It is intended to provide local emergency response authorities with basic information on the first steps to take at the scene of an accident until the arrival of State or other radiological response teams.

The Federal Emergency Management Agency (FEMA) is the agency primarily responsible for coordinating Federal assistance to State and local governments that are developing plans for responding to radiological accidents at both fixed nuclear facilities and at the scene of transportation accidents. FEMA has taken a number of steps toward this end. Recently proposed rules (45 FR 42341) were published on procedures and criteria for reviewing and approving the adequacy of State and local plans and preparedness. FEMA has also established the Federal Radiological Preparedness Coordinating Committee (FRPCC) consisting of a number of separate Federal agencies including DOT. This committee is coordinating all Federal assistance and guidance to various State and local agencies for developing and testing emergency response plans. The FRPCC responsibilities in this area include the following:

—Establish policy and guidance to other Federal agencies

—Develop preparedness criteria

—Provide direct assistance to State and local governments

—Review and approve State radiological emergency plans and preparedness

—Implement a program of public education

—Develop and manage an emergency response training program including field test exercise materials

—Issue guidance for radiation instrumentation systems.

The Department of Transportation is providing assistance to FEMA in the preparation of Federal guidance to State and local governments for use in developing the transportation portions of radiological emergency response plans. DOT will also assist FEMA in its review and approval of State and local plans and in the evaluation of exercises to test those plans.

In support of this effort, a Federal interagency task force was recently organized. The task force, with participation by State and local authorities, is preparing an important planning document "Guidance for Developing State and Local Radiological Emergency Response Plans for Transportation Accidents." Federal agencies including DOT, NRC, FEMA, DOE and the Environmental Protection Agency have collaborated on this effort to provide State and local authorities with guidelines to develop effective response plans. A preliminary guidance document will be published in the Federal Register for public review and comment during the first quarter of 1981.

A committee composed only of State and local officials has been organized to provide direct input into activities conducted by this task force. The Interorganizational Advisory Committee, composed of State civil defense and radiation control authorities and local emergency management officials, should prove to be an effective sounding board for planning and guidance documents developed by the task force.

It should also be noted that the routing scheme established by this docket will enhance State and local emergency response planning. The International Association of Fire Chiefs, in its comments to Docket HM-164, states:

* * * we fully support Docket HM-164, Highway Routing of Radioactive Materials, for the following reasons:

1. Some nation-wide method for the routing of radioactive truck shipments is necessary. For each local jurisdiction to impose specific routing requirements would present an untenable situation. However, under the proposed regulations, each state would establish the routing after reviewing local input. The key here is to require local jurisdiction input.

2. The requirements that the carrier file a route plan with MTB is very important. In this way MTB will be able to provide data on routes, amounts, and shipment frequencies. This data will then be used by the local fire departments for their emergency response planning guides.

Questions over the adequate availability of funds to reimburse local jurisdictions and individuals affected by nuclear transportation accidents seem to be another impetus to various State and local actions. Final responsibility for nuclear transportation accidents really depends upon accident specific factors and will usually be settled in the courts. Some of the factors affecting financial responsibility include the nature of the accident itself, the shipper or carrier involved, the type of radioactive material involved and the geographic location of the accident. For most types of radioactive materials the extent of financial liability and the types of costs to be reimbursed would be determined by the applicable State tort law.

If the origin or destination of the radioactive material is an indemnified facility such as a nuclear power plant, the provisions of the Price-Anderson Act (42 U.S.C. 2210) assure a source of funds to cover certain personal injury and property damage claims. The law extends to persons other than the licensee, such as the carrier, who may be liable for an accident. Insurance coverage up to $560 million per accident is provided by a combination of licensee private insurance policies and indemnity agreements between the licensees and the NRC.

The Federal Highway Administration (FHWA) is now in the process of determining appropriate levels of financial responsibility for motor carriers of hazardous materials. On July 1, 1980, the President signed the Motor Carrier Act of 1980 (Pub. L. 96-296) into law. Section 30 of the Act, among other things, establishes minimum levels of financial responsibility for motor carriers transporting hazardous materials in interstate or intrastate commerce (applicable to vehicles with a gross weight rating of 10,000 pounds or more). The purpose of section 30 is to assure the public that a motor carrier maintains an adequate level of financial responsibility sufficient to satisfy most claims covering public liability, property damage and environmental restoration.

The minimum levels set in the Act include $5 million for each vehicle operated by carriers of large quantity radioactive materials and certain other hazardous materials. DOT has unlimited authority to adjust this level upward and may also adjust downward to not less than $1 million for each vehicle for an initial two-year period.

The FHWA's Bureau of Motor Carrier Safety (BMCS) issued an ANPRM (Docket No. MC-94, 45 FR 57676) entitled "Minimum Levels of Financial Responsibility for Motor Carriers" on August 28, 1980. The purpose of the notice is to obtain public comments and data and to eventually make any necessary adjustments to the minimum levels scheduled by Congress to go into effect on July 1, 1981.

Many commenters have also suggested that doubts about Federal enforcement efforts have resulted in increased State and local regulatory activities. The major criticism of commenters to this docket is that the preemptive effect of DOT's routing rules will eliminate or frustrate enforcement efforts at the State and local level. It is contended that State and local enforcement is needed to supplement the Federal inspection effort.

Although it is clear that this rulemaking will preempt certain State

and local actions, DOT does not believe this will reduce enforcement efforts at any level. States have been increasingly active in the enforcement of Federal highway safety and hazardous material transport regulations. Many States have adopted the Federal Motor Carrier Safety Regulations and the Federal Hazardous Materials Regulations as strongly encouraged by DOT. Most States already have enforcement systems in place to carry out the provisions of these regulations. A number of States have initiated substantial hazardous material training programs for law enforcement and other personnel. DOT has provided training to State and local personnel at its Transportation Safety Institute in Oklahoma City. Such State-level enforcement activities will not be hampered by these final rules. In fact, it is DOT's contention that enforcement, particularly at the State level, will be enhanced by the States routing function provided by this rulemaking.

At the Federal level, the Department's BMCS has the primary responsibility for ensuring compliance with the Hazardous Materials Regulations by motor carriers. BMCS is now authorized 210 hazardous material or safety specialists in the field and expects additional positions next fiscal year. BMCS is now administering a four-State demonstration program which funds approximately 100 additional State inspectors. Also, pending before Congress is the Commercial Motor Vehicle Safety Act which, if enacted, would authorize a 50-State grant program that could result in a total of 2,200 State inspectors for motor carrier safety. Moreover, the NRC's enforcement staff of over 100 inspectors is directing its inspection efforts increasingly toward the transportation activities of their licensees. This will enhance the overall enforcement program particularly for transporters of nuclear fuel-cycle materials.

A number of commenters note that penalties were not mentioned in the January 31 NPRM and suggest the need for such. Penalties for violation of radioactive materials transportation requirements under the HMTA are the same as prescribed for other hazardous materials. Civil penalties may include a maximum fine of $10,000 for the occurrence of each violation for each day. Criminal penalties may include a fine and imprisonment up to $25,000 and five years. Civil and criminal penalty actions can be take against container manufacturers as well as shippers and carriers of radioactive materials. In addition, the States provide for civil and criminal penalties under their own legislation and the levels vary from State to State.

The Department believes that much is being done in the areas of emergency response planning and training, carrier financial responsibility, and regulatory enforcement. Furthermore, both local and State expertise have been solicited to help in the process of strengthening various programs. DOT certainly recognizes the legitimate concern and acknowledges the expertise of State and local officials in these areas. However, independently applied restrictions which frustrate the ability of a motor carrier to safely and expeditiously move nuclear materials are not the proper approach to enhance over-all public safety. It is DOT's opinion that State and local concerns can be more adequately satisfied under programs coordinated at the Federal level which incorporate State and local viewpoints.

VI. Preemptive Effect of Docket HM-164

Because of the extensive nature of the Part 177 amendments, the relationship among the levels of regulation of the different categories of radioactive materials, and the need for an understandable interface between Federal and State regulation of radioactive materials transportation, DOT believes that certain regulatory actions by State and local governments should not be taken. To explain this view, DOT sets out its policy on the relation of State and local regulation to the Federal requirements in Part 177 in a new appendix to that part. An appendix appears to be a more appropriate method of stating this policy than the regulatory text used in the January 1980 notice of proposed rulemaking, and an appendix permits a more extensive discussion of the policy. The section-by-section analysis appearing later in this preamble details the specific reasons for the policy. Some general issues will be discussed here.

The structure of the amendments to Part 177 accommodates State regulation of carriers' routes in defined circumstances, as well as some limited local regulation. Briefly, an appropriate State-wide agency may designate routes for motor vehicles transporting large quantity radioactive materials. Local governments, if permitted by State law, may exclude such motor vehicles from locations from which they are excluded by Part 177 or by State action consistent with Part 177. For placarded vehicles carrying lesser quantities of radioactive materials, both State and local governments may adopt § 177.825(a) verbatim. Section 177.825(a), established in this rulemaking, requires a carrier to consider certain information in route selection and to provide general guidance to the motor vehicle operator as to routes used. While State regulation is circumscribed as regards routes used by such carriers, adoption of § 177.825(a) will permit a State to directly enforce that provision without necessary recourse to Federal enforcement personnel. The same purpose is served by the limited local regulation permitted for placarded carriers of both large quantity and less than large quantity shipments. Routing restrictions for unplacarded motor vehicles are not necessary. The preemptive effects of the final rules in this docket are intended to occur at the effective date of the rules.

The basic justification for publishing a statement concerning the preemptive effects of Docket HM-164 was questioned by many commenters. The HMTA expressly preempts State and local requirements that are "inconsistent" with HMTA requirements, both the law itself and regulations issued under it. DOT has previously established procedures to permit it to interpret the HMTA's preemptive effects when so requested by State or local governments, or by other interested persons. These procedures, codified in Part 107 of 49 CFR, offer a less expensive alternative for resolving preemptive issues than litigation althought such issues are ultimately judicial in nature. It is apparent that new rules which deal extensively with matters of regulatory concern to State and local governments, such as those published in this Docket, will necessitate guidance from DOT as to the preemptive effects on State and local authority. DOT believes that this guidance will be considerably more useful if provided, as far as possible, before the rules become effective. The Part 177 appendix is intended to serve this purpose.

Underlying the appendix are several conclusions about the Federal-State relationship in the area of radioactive materials transportation. First, as expressed in the Part 107 preemption procedures, DOT believes that "inconsistent", as used in the HMTA, refers to State and local rules that directly conflict with HMTA requirements, and also to those that are "an obstacle to the accomplishment and execution" of the HMTA (§ 107.209(c)(2)). Therefore, the policy statement in the appendix concerns characteristics of State and local regulatory activity that are necessary to effect, or to avoid hindering, accomplishment of the goals and

purposes of the Part 177 amendments. Those amendments balance complementary national, State and local interests in regulating motor carriers to ensure that public health and safety are served by Federal, State and local rules that are widely applied and understood and that are based on a comprehensive examination of factors affecting radioactive materials transportation safety.

This rulemaking does not delegate Federal authority to regulate motor carriers, a fact that has been misunderstood by many commenters. The rules published in Docket HM-164 define and make Federally enforceable the use of Interstate System highways for carriers of large quantity radioactive materials. They also make Federally enforceable those routes designated by appropriate State agencies, based on DOT's own determination that such routes, if derived from an adequate safety analysis like the "DOT Guidelines" are likely to result in a further reduction of radiological risk that is reliable and reasonably related to the costs of evaluating, enforcing and using selected routes. Further, DOT has concluded that route designations that do not meet the conditions outlined in the Part 177 appendix are unreliable tools for minimizing radiological risk, may result in unconsidered safety impacts, may unnecessarily burden commerce, and generally result in a confused patchwork of safety regulation that is not conducive to compliance.

In the appendix, DOT has not attempted to specify in detail the process to be used by a State agency in route designation except in two respects. A safety analysis as described must be performed to ensure reliable results, and the designating State agency must consult with affected local or neighboring State jurisdictions. State consultation with affected local jurisdictions is necessary to ensure that the information used to perform a safety analysis is the best available. It is important, for this reason, that the consultative process between the State routing agency and local governments be both substantive and thorough.

In considering this need, DOT has concluded that an appropriate method for effecting the consultative process should include public notice and opportunity for comment, public hearing when appropriate, and direct notice to affected local juridictions. To ensure that these processes are adequate, DOT also believes that a standing advisory body consisting largely of local officials who are concerned with routing issues should be establish in each State to recommend to the State appropriate consultative methods and to evaluate the effectiveness of those methods in actual use. This is particularly important in States that are likely to impose frequent routing decisions or to deal with particularly controversial issues. An *ad hoc* advisory body may suffice in States that are unlikely to take frequent routing action. For example, a State that expects only limited traffic in large quantity shipments on an acceptable Interstate route may wish to conduct an initial review of the routes of travel using an advisory body convened for that specific purpose. Another consideration related to the State-local consultative process concerns routing actions which local governments believe should be taken within their jurisdictions. A local jurisdiction which requests State action, for example to shift traffic from an urban segment of Interstate highway, should identify potential alternate routes to the appropriate State routing agency and state why those other routes may be a better choice for routing large quantity shipments. A State advisory body might be able to provide a useful preliminary evaluation of local requests of this kind and to identify any need and possible methods for further State-local consultation.

Commenters also raised questions about the effect of this rulemaking on the local authority of Indian tribes. DOT believes that, where an Indian tribe has effective routing authority similar to that exercised by a counterpart State agency, it should be exercised as described in the Part 177 appendix. Tribal regulatory authority over motor carriers must exist separately from the Part 177 amendments, since those amendments do not delegate any such authority. The source of tribal authority may differ from that of State authority, in that tribal authority is recognized by treaty or Acts of Congress. Consequently, it is possible that limits on tribal authority may occur as a result of Federal law other than the HMTA. Rather than a question of HMTA preemption, tribal routing authority may involve a question of the proper relationship between the HMTA and other Federal law. In specific situations, it may be necessary to examine other Federal law to determine the practical limits on tribal authority to impose routing controls on motor vehicles carrying radioactive materials. In the Part 177 amendments, DOT is treating Indian tribes as it treats States. DOT recognizes, however, that specific factual and legal circumstances may differ from those that affect State authority and is prepared to examine these circumstances on an individual basis, as the need is shown.

DOT's decision against required use of escort vehicles is discussed in the section-by-section discussion of the new appendix to Part 177. However, an obvious relationship exists between prenotification and the voluntary provision of escort vehicles by jurisdictions through which a large quantity shipment may pass. DOT intends to examine situations where an escort might be provided voluntarily by a local jurisdiction, under circumstances in which the presence of an escort is not a precondition to passage through the jurisdiction, and in which the transport vehicle is not delayed at the jurisdictional boundary. Escort vehicles in some cases may also be provided by shippers of spent fuel under the existing NRC physical security program for transit through some heavily populated local jurisdictions. In view of this, DOT intends to examine the possible impact of such voluntary, locally provided escort services on the DOT routing rules, existing NRC physical security rules and proposed NRC prenotification rules.

VII. Section-by-Section Discussion of Final Rules

Summary of Changes from NPRM

There are several important changes from the proposals issued in the NPRM based upon the Department's review of the public comments. First, new provisions are added to Part 172 to aid shippers, carriers and enforcement personnel in the identification of radioactive materials shipments which are subject to the preferred routing system. These provisions include a new shipping paper entry and a white placard background applying only to shipments involving a large quantity package of radioactive materials.

Secondly, new definitions for "State routing agency," "preferred route", and "State-designated route" are added to the regulations. These definitions are added to answer questions concerning the appropriate routing agency designated by the States and the manner by which States exercise their authority to designate preferred routes.

The wording of both the general routing rule (proposed § 177.825(a)) and the preferred routing rule (proposed § 177.825(b)) have been modified somewhat. Although the effect of the general routing rule remains the same, the criteria for the carriers to use in selecting a route has been revised to make the rule more manageable and enforceable. Several points concerning the preferred routing rule may not have

been clear in the NPRM and should be emphasized.

It is important to emphasize that the final rule establishes the Interstate highway system as a self-functioning Federally prescribed routing network capable of providing for the safe movement of nuclear materials even if the States choose not to designate routes. However, because the level of safety provided through use of Interstate highways may be improved by site-specific evaluations, DOT believes that the States should be extended as much flexibility as possible in their route designation process. For example, the final rule does not require a carrier to use Interstate beltways or bypass routes when other routes have been designated by the States as substitutes. The States can consider the need for circumferential routes to avoid urban areas on a more site-specific basis in their own routing analyses. The beltway provision still applies to carriers using Interstate System preferred routes when the States have not designated another route. This flexibility is consistent with the routing guidelines being developed for the States.

Another change to the preferred routing rule is the reference to the DOT Routing Guidelines as criteria for States to use in designating preferred routes. As will be covered in more detail in the next section, the guidelines will provide the States with a clear, step-by-step procedure for performing a routing analysis that is both more understandable and flexible than the criteria presented in the January 31 NPRM.

The last major change between the proposed and final rule involves inconsistency between Federal and State/local transportation requirements. Proposed paragraph (d) of § 177.825 has been deleted. Instead of addressing this topic in the routing rule itself, DOT has chosen to include an expanded discussion of DOT policy in a separate appendix to Part 177 as mentioned previously.

The remainder of the final rules are basically unchanged from the NPRM, except for redesignation of certain paragraphs. The following section-by-section discussion provides a synopsis of DOT's rationale for each section including reference to substantive public comments. A more detailed discussion of public comments is provided in the previously mentioned docket supplement.

§ 171.7 Incorporation of State routing guidelines by reference

The publication "Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials" (DOT Guidelines) is incorporated by reference in § 171.7. Repeated reference has been made to the need for State and local involvement in routing decisions on the one hand, and the need for uniformity and consistency of those decisions on the other. Many commenters, particularly State officials, support the preferred routing system for large quantity nuclear material to accommodate this goal, but only if DOT provides clear and practical guidelines for use by State authorities. The DOT Guidelines are intended to fulfill this function.

In developing the guidelines, the Department has drawn upon two recent research projects. The first is a study completed for the FHWA entitled "Development of Criteria to Designate Routes for Transporting Hazardous Materials by Highway". This research project involved a study of all factors which contribute to the selection of highway routes for all hazardous materials classes. The most important factors related to the lowering of public risk are then selected as the basic criteria upon which an agency should base its highway routing decisions. Although the Department does not consider this generic research to be final, the study does establish a methodology which can be useful after further refinements are made relating to the particular class of hazardous materials for which routing is to be evaluated.

With this in mind, the Department initiated another research project to develop routing criteria oriented specifically to the peculiar characteristics of radioactive materials transportation. This study is being conducted for the Materials Transportation Bureau and is titled "Guidelines for Selecting Routes for Highway Shipments of Large Quantity Radioactive Materials". The routing guidelines developed thus far provide flexibility to the appropriate State and tribal routing authorities, either to de-designate the use of an Interstate highway and provide an alternative, or to identify other appropriate routes. Further refinements in the guidelines are expected after the completion of pilot tests to be conducted with the help of two State governments in January 1981. It is expected that the guidelines will be published and made available to State agencies shortly thereafter.

Another important element of the guidelines relates to recommendations for the soliciting of local input into routing decisions. It should be noted that the routing guidelines provide for substantial local input in themselves. Much of the data necessary to perform the routing analysis will be generated from local sources: accident rates, population statistics, conditions of roadways, emergency response capabilities, property values, evacuation capabilities, and location of facilities such as schools and hospitals which require special consideration. Nevertheless, the Department believes it essential that the State specifically provide for a process of consultation with appropriate local authorities.

§ 171.8 Definitions

A number of commenters suggested that DOT specifically identify the agency in each State that would have the authority to designate preferred routes. As stated previously, the Department has no authority to do so. The designation of routes for large quantity radioactive materials is an authority which only the States can exercise for themselves. Each State has legal and organizational peculiarities relatings to the regulation of radioactive material transportation. Often, authority is divided among various agencies within the same State. Consequently, each State should determine for itself the appropriate routing agency within the general definition established by § 171.8.

The definition of "State routing agency" includes interstate compacts and appropriate Indian tribal authorities (see the discussion of § 177.825(b) relating to Indian lands). As specifically mentioned in the NPRM, this definition excludes a bridge/tunnel/turnpike authority unless that authority also is empowered to impose such rules concerning radioactive materials transportation on State highways generally. Routes designated by a State routing agency may be enforced by that agency, or by any other appropriate State agency. This definition may apply to more than one agency in a single State sharing responsibility for designating preferred highways.

Two other definitions are added. The first is the definition of a "preferred route". A preferred route includes "State-designated routes" which is also defined in § 171.8. A definition for State-designated routes is necessary to clearly show the criteria the State must follow in establishing preferred routes: application of DOT routing guidelines or an equivalent routing analysis, prior consultation with affected local agencies, and coordination with adjoining States to ensure continuity of routes.

§ 172.203(d)(1)(iii) Shipping papers

For identification and enforcement, a requirement is added to § 172.203 to require the shipper to enter "Large quantity" as part of the hazardous material description on the shipping paper. This will alert the carrier that he has received a package of radioactive materials for which routing controls are required and that a route plan must be prepared.

§ 172.507 and § 172.527 Placarding

Vehicle identification requirements are added to Part 172 to require a white background for the RADIOACTIVE warning placard. The white background will aid enforcement personnel to distinguish between large quantity shipments and other placarded shipments for which preferred routing is not required.

Public comments strongly favored some method of distinguishing between vehicles which contain large quantity packages and vehicles which do not contain large quantity packages but which still require the RADIOACTIVE warning placard. DOT considered several methods of accomplishing this. The white placard background is determined to be the most passive system considering effectiveness and cost of implementation. The white background system has been used for some time to distinguish certain hazardous materials shipped by rail for the purpose of car handling.

§ 173.22 (b) and (c) Shipper's responsibility for physical security, and filing of route plans

Without change from the proposals in the NPRM, the Department is adding provisions to § 173.22(b) to require shippers of irradiated reactor fuel (spent fuel) to provide physical protection under either a plan now required by the NRC (see "Physical Protection of Irradiated Reactor Fuel in Transit", 45 FR 37399, June 3, 1980, and 10 CFR Part 73) or a plan approved by MTB. Also, a provision is added to § 173.22(c) to require shippers of a large quantity package of radioactive materials to file a copy of the route plan prepared for that shipment within 90 days following the shipment with DOT. The Department intends to consolidate the information contained in the route plans and supply it to interested parties. For further discussion of route plans and physical security see the discussion of § 177.825(c) and § 177.825(e), respectively.

§ 177.810 Tunnels

Section 177.810 is revised to except radioactive materials from requirements that restrict their transportation through urban vehicular tunnels used for mass transportation. An informative sentence is also added which directs carriers to § 177.825. This action is being taken to facilitate achievement of the basic objective of the general routing rule to minimize radiological risk and to allow the States flexibility to designate preferred routes for large quantity shipments. The States, in exercising their routing prerogative under this rule, may determine through their routing analysis that a safer route exists which does not require the use of tunnels and other such facilities. In that case, the States may reimpose restrictions for large quantity radioactive materials.

Many commenters questioned the rationale behind the exception for radioactive materials in § 177.810 as opposed to restrictions for other hazardous materials. The State of California, which retains control over the shipment of hazardous materials through its tunnels, held that it is imperative that the State maintain the flexibility to prohibit such transportation. The Maryland Department of Transportation objected to the proposed revision of § 177.810 and took the position that any vehicle required to display the RADIOACTIVE placard should not be permitted to traverse an urban vehicular tunnel used for mass transit. DOT does not believe that this is necessarily the case from a health and safety standpoint. Traditional locally imposed restrictions on tunnel traffic frequently focus on explosives and flammable gases, for which the confinement provided by a tunnel may act to exacerbate the risk. In cases involving radioactive materials, the fact of confinement does not operate to increase overall risk.

For large quantity shipments, it is DOT's position that tunnel restrictions should not be based merely on the nature of the facility but on the overall risks between available routes, and that such restrictions should be imposed only by an agency with State-wide responsibilities that permit adequate consideration of other alternative routes. Thus, use restrictions on tunnels and similar facilities should not be determined solely by facility operators, but rather their use should be available for consideration as possible alternatives in the State procedures leading to route selection. The amendment to § 177.810 is necessary for States to be able to evaluate the site-specific risks involved over various routes without being hampered by locally imposed constraints which may be counterproductive. One proper factor that a State agency would consider in route designation is the potential property damage to the tunnel itself in the event of an accident.

In the absence of a State routing agency's action to review the status of tunnels and similar facilities located within its jurisdiction, a large quantity carrier will generally be limited to such facilities that are part of an Interstate System highway. Other placarded carriers could use such facilities only after considering the safety factors specified in new § 177.825(a)

§ 177.825(a) General routing rule

Paragraph (a) of this section is adopted with some change in wording from that proposed. The basic objective of the general routing rule remains the same: the carrier must examine all available highway routes and choose a route that minimizes radiological risk to the public. In making this determination, the carrier must consider available information on the most important factors which contribute to the minimization of radiological risk. These factors are identified in the final rule as population, accident rates of available highways, transit time, and the time of day and day of week during which the shipment occurs.

The NPRM also included such factors as terrain, physical features, weather conditions, and effectiveness of local emergency planning. These factors have been deleted from § 177.825(a) of the final rule for various reasons. The influence of terrain and physical features on public risk from transportation is largely accounted for by considering accident rates of the alternative roadways. It is not believed that these factors should be singled out for special consideration by the carrier since they are only two factors which contribute to overall highway accident rates. Weather condition is a factor over which the carrier has no control, has little advance knowledge of, and could often change during actual transportation. Determining the effectiveness of local emergency planning would be a difficult burden to place on the carrier in light of the subjective judgement that would be necessary and the lack of available information to the carrier. It is the Department's belief that effective emergency response planning is an activity that all communities should be involved with. As already discussed, DOT and FEMA are collaborating to provide an emergency response training and preparedness program to achieve

this end. Economic factors such as property values have not been included because they generally follow population density and are not otherwise readily available to carriers.

The last major change to the general routing rule involves the replacement of the term "risk radiological exposure to the fewest persons" with "minimize radiological risk." Risk minimization is the basic goal to be achieved. Certainly limiting exposure to the fewest people possible is one element of reducing overall radiological risk, but it is not the only consideration.

Many commenters reviewing this section took exception to what they called the non-specific, unquantifiable criteria carriers and drivers must evaluate in choosing a route which will minimize radiological risk. There was general agreement that placarded vehicles carrying other than large quantity packages of radioactive materials should not be forced to comply with the very specific routing rules established for those shipments. However, no one offered a more acceptable rule to govern general routing requirements. While most of those persons commenting on this section considered the lack of precise, measurable factors to be an advantage which carriers could use to operate vehicles at their own discretion, the American Trucking Association (ATA) expressed its concern over the rule's implication that only one possible route could qualify. The ATA went on to state that, given the dynamic state of affairs of the prescribed criteria, the optimum route could vary even during the course of actual transportation, and carriers would find themselves subject to the whim and fancy of respective State and local governments in issuing citations for unacceptable route selection.

DOT does not expect that any of the suggested actions of carriers or compliance personnel will occur with such frequency that the value of the rule as a general statement of meaning or intent will be diminished, especially in light of the improved wording of the rule. For clarification purposes DOT does acknowledge that more than one route could qualify as an acceptable alternative and it is not incumbent on the carrier or driver to make detailed calculations in selecting the most appropriate route.

The public interest group Rural America was alarmed by DOT's emphasis on routing vehicles carrying such materials in a manner that might affect the health and safety of small towns and rural people. Such a policy, they said, reflects the Department's failure to recognize the needs and rights of populations residing in rural areas, and they see in the rule a discriminatory stance regarding sparsely populated areas. In directing carriers to select routes which minimize radiological risk DOT does not agree that it is merely shifting a burden from one group of persons to another, although it is true that population density is one factor the carrier must consider. Rather, DOT expects to see a decrease in the amount of exposure to all persons in the general population.

The Department once again would like to point out that this general routing rule applies to thousands of shipments involving relatively low-hazard radiopharmaceuticals, and other medical and industrial isotopes. These shipments often involve multiple pickups and deliveries, interchanges with other modes of transportation, and the comingling of radioactive materials with non-hazardous materials on the same vehicle. A general requirement to accommodate a great number of shipments in such a complex transportation environment will necessarily involve some vagueness. The rule is intended to guide motor carriers by specifying important factors to consider in evaluating a number of available routes.

§ 177.825(b) Preferred Routes for Large Quantity Radioactive Materials

In the notice of proposed rulemaking DOT discussed its reliance on the Interstate System of highways as being the primary roadways over which radioactive materials shipped under a route plan are to be carried. The general designation as preferred highways is, therefore, granted to these highways based upon an overall performance rating with respect to lower accident rates and their capacity for reducing transit times. For the most part, public comment expressed support for this proposal as well as the related provision which allows States the prerogative to modify the preferred status of Interstate highways and designate other roads as acceptable alternatives.

Some commenters argued that specific segments of the Interstate System are not as safe as statistics indicate for the system as a whole and that DOT should not make such widespread designations without performing a mile by mile review of the roadway. The NPRM recognized that each mile of the entire 42,500 miles of Interstate highway is not so consistent in design engineering or accident history that there would be an even correlation of the system's parts equal to that of the whole. That is one of the reasons why an option is extended to the States which enables them to modify the preferred status of those segments for which there is a more acceptable alternative. As a basic system, however, even in the absence of State action, the Interstate System highways are well-suited for the use required by the rule. It also serves as a measure for use by the States in their designation of some additional highways which provide an essentially equivalent or greater level of safety. This basic system of highways as primary routes also supports emergency response planning by increasing the confidence of planners in their knowledge of routes of travel.

The requirement that carriers of large quantity radioactive material packages use an Interstate circumferential or bypass route around a city was generally recognized by commenters as a reasonable precaution. This requirement did not, however, receive unanimous approval.

One commenter suggested that the use of beltways would not automatically result in the avoidance of all heavily populated areas. The City of Baltimore expressed its opinion that during peak-hour traffic patterns, it may be less hazardous to direct shipments over an Interstate through route rather than over a beltway and wanted this option left open to the States in their modification of Interstate highways and designation of other preferred routes. Comments from the State of Massachusetts pointed to situations where some metropolitan areas have multiple beltways and they feared that the rule as proposed might allow for routing over the shorter circumferential route, even though a second route, with superior design standards and lower population density, is available.

In response to these comments, DOT must reaffirm its belief that packages of large quantity radioactive materials can be transported over any Interstate highway, and most other comparable routes, with a confident level of safety. However, this does not imply that reasonable routing rules should not be imposed by State governments which increase this level of confidence. Consequently, in applying a rule which addresses the broad national interest DOT has chosen to direct carriers to use urban Interstate circumferential beltways in the belief that, when considering both normal and accident conditions of radioactive materials transportation, an aggregate benefit will be realized. States are encouraged to exercise their option to designate other streets and highways as preferred routes and to modify the status of Interstate highways. Such action, if justified, could

include the direction of traffic onto Interstate through routes or onto a specific Interstate bypass. Each of the above referenced comments regarding beltways, then, would seem to be satisfied through a responsible exercising of the State's prerogative to designate routes and modify the status of Interstate highways. The guidelines developed by DOT to assist the States in their selection of preferred highways, and for similar use by local units of government in their consultation with the States, is also an effective means by which comprehensive, safety related routing decisions can be made.

In commenting on which radioactive materials should be restricted to preferred highways few persons took exception to the choice of large quantity packages. As a matter of fact there was widespread agreement, among those persons acknowledging the need to transport radioactive materials, that the Interstate System of highways and equivalent roads are the most appropriate routes for large quantity packages. As pointed out in the NPRM, Docket HM-169 will probably eliminate the term "Large Quantity". For routing purposes, some multiple of A_2 values (see the discussion on package curie limits in Docket HM-169, 44 FR 1852, January 8, 1979) will very likely be used to identify radioactive material packages now described as large quantity packages in § 173.389.

Several Indian organizations expressed a concern that the NPRM failed to recognize "the unique legal status of Indian tribal governments and tribally-owned lands." Specifically they contended that Indian tribes are, in effect, quasi-sovereign governments possessing rights of self-government under the terms of various treaties with the Federal government. As such, organizations such as the Council of Energy Resource Tribes (CERT) maintain that Indian tribes have the same prerogative as State governments to designate preferred routes for large quantity radioactive materials across tribal lands.

Commenters from Indian organizations support their arguments from the legal standpoint that DOT's preemptive authority may be limited by tribal ownership rights. CERT contends that:

* * * Indian tribes do not lose title to the land on which State or interstate highway rights-of-way are obtained through negotiated agreements between the tribes and the State government. Thus, a tribe may not have relinquished its right to restrict the use of the easement for a purpose that the tribe feels endangers the health and safety of its people. The DOT may not have the authority to preempt such tribal restrictions because the Hazardous Materials Transportation Act does not expressly apply to Indian lands.

Indian commenters did not voice an objection to the transportation of radioactive material across their lands per se. The comments were oriented toward allowing the route-designation option with the Indian tribes the same as for the States. It is pointed out that many Indian reservations are located near mining or milling activities associated with nuclear materials as well as Federal disposal sites for radioactive waste materials. Further, many Indian lands are crossed or are in proximity to highways used for transportation of all types of nuclear materials.

The applicability of the HMTA to Indian tribal lands will depend on the specific facts and laws involved. Generally, however, DOT does recognize the special status of Indian tribal governments in the Federal system. Accordingly, the final rules allow Indian tribal governments to exercise routing authority in a similar manner as provided for the State governments. This is accomplished by including appropriate Indian tribal authorities in the definition of "State routing agency" in § 171.8.

While the Interstate System of preferred highways will permit the transport of radioactive materials between any two points, DOT recognizes that in some instances this may involve an excessive amount of time and mileage thereby reducing the overall effectiveness of the safety objectives intended by this rulemaking. However, rather than prescribing an arbitrary numerical percentage increase against which carriers would have a blanket approval to use non-Interstate System highways, DOT believes that the States are fully competent to deal with such actual cases as they arise and will respond to them in an appropriate fashion. It is anticipated that particular situations which involve a regular flow of materials will come before the State in the form of requests or petitions from carriers seeking the designation of preferred highway for a certain non-Interstate highway. Considering the key role played by the States in designating routes, it is believed that this approach is the most reasonable method to address circuitous travel that may result occasionally from use of the Interstate System. Also, this will likely result in the selection of a route based on a documented measure of public risk rather than one based on an arbitrary percentage figure. It is expected that the States, in considering the approval or denial of the carrier request or petition, will perform a routing analysis similar to that prescribed by the DOT Routing Guidelines. DOT will reevaluate the final rules in the first year after they become effective and will consider whether or not they need to be modified to provide other methods of dealing with circuitous travel.

One final point on the State designation of routes should be made. Commenters have questioned whether such a State-designate route would be established on a shipment by shipment basis or be a generic route established to handle shipments on a continuing basis. DOT is of the opinion that the application of the DOT routing guidelines or some other equivalent routing analysis by a State routing agency would be sufficient to establish preferred routes for routine use by carriers of large quantity radioactive material packages. State-designated routes are not considered to be shipment specific routes except under unusual, one-time-only shipment situations (see Section VI.D. of Appendix A to Part 177).

§ 177.825(c) Route Plans

An essential component of the final rule is the route plan prepared by the carrier or its designated representative. This document must be prepared by carriers of large quantity packages in compliance with the preferred routing system established in § 177.825(b). A similar requirement already exists for carriers transporting packages of Class A or Class B explosives. Admittedly, there are a great number of variables to be considered in route planning when one looks at the aggregate of total packages, multiple shipping locations, and widespread destinations. However, for any particular shipment the routing possibilities are somewhat limited by the safety criteria established by DOT and the practical alternatives such as available roadways. Accordingly, DOT does not forsee any severe administrative burdens being required of carriers beyond their capacity to perform, nor does it expect that carriers will be indiscriminate in their selection of routes. Certainly DOT recognizes the interest of shippers in routing decisions and expects that they will be very influential in the final selection. However, carriers remain the party with ultimate responsibility for compliance with § 177.825(c) and they are cautioned to carefully evaluate any route plan submitted for their adoption by other parties.

The proposal to require the preparation and filing of route plans for large quantity radioactive materials

packages drew a considerable amount of public comment. For the most part, persons who would be the beneficiaries of the information contained therein supported the proposed requirement while shippers who would be responsible for the administrative filing of the route plans seriously questioned the need for this information by DOT or any other unit of government. The objections can be synopsized as follows: that the States have not expressed any interest in such data; that DOT seems to want the data only for purposes of passing it on to the States; and that the filing of such information could lead to serious problems related to proprietary information as well as security.

In answer to these comments, DOT fails to agree that the States are not interested in the data which can be extracted from written route plans, that proprietary information would not be protected, or that the potential for sabotage would increase by any noticeable degree. Quite to the contrary, DOT is of the opinion that the States and other units of government extending all the way to cities and towns have expressed a very affirmative desire to share completely in the accessibility of detailed information contained in the route plan. Their motives in obtaining such data appear to be in fulfilling their role in compliance and emergency response preparedness activities related to protection of the local public health and safety. Many of these jurisdictions suggest a requirement for duplicative filing of route plans with all interested units of government. Such a burdensome filing requirement has not been adopted, and DOT believes it can meet the needs of local government through its periodic reports and answers to specific inquiries regarding any of the reportable information.

With respect to proprietary information and security, information which DOT can be expected to release on these shipments will deal with statistical accounting of package contents, routes used, identification of origins and destinations and the like. Effectively this is no more information than is currently available to those who wish to monitor the shipping activities of the relatively few facilities at which large quantity radioactive materials packages are handled. Also, any information for which confidential treatment is requested and justified may be protected from disclosure under 49 CFR 107.5. DOT remains firm in its belief that the requirements for preparation and filing of written route plans are reasonable and necessary.

There was an almost unanimous call from State and local officials, as well as interested persons, seeking information contained in the route plan prior to the actual transfer of the radioactive materials. These requests will be satisfied in part by the previously mentioned NRC rulemaking which will necessitate the prenotification of any interested State in which spent fuel or a Type B waste shipment is to be transported.

Other commenters interested in the specific form and substance of DOT's reports to the States requested clarification and updating as to how this information will be provided and to what agency. The agencies of primary interest in these reports is expected to be those organizations in the various States which are empowered to designate preferred highways. Consequently, they will be the principal addressees. In addition, copies will be furnished to the Office of the Governor of each State, to the tribal governments, and to the extent possible any other organization or interested party specifically identified by any of the aforementioned. All other persons would be free to inspect these reports in the Offices of MTB, or may acquire copies of them.

§ *177.825(d) Driver training*

DOT has added one provision to the route plan requirement that requires the carrier to submit a supplement to an original route plan when the carrier is forced to deviate from the route plan for emergency or other reasons. The supplement must be submitted to the shipper within 30 days following the deviation and must document the reason for the deviation and the route actually used. This supplement is required when the carrier must leave the preferred route temporarily even in cases to access rest, fuel or vehicle repair stops unless the facility used is actually located along the preferred route.

Requirements pertaining to driver training and certification are incorporated in these final rules with only minor changes from that proposed. These requirements are redesignated as § 177.825(d) (see § 177.825(b)(3) and § 177.825(c) in the MPRM). The large majority of commenters favored some type of driver training requirements for operators of vehicles carrying large quantity radioactive materials. Most of the criticism of the driving training requirements involves the extent of training to be required and the method of ensuring that adequate training is provided.

Many commenters maintain that training should not be left to the discretion of the carrier and that the carrier training program should be inspected and certified by DOT. Others commented that the proposed training was not specific enough. Some commenters also expressed their belief that DOT should be responsible for establishing the entire training program, addressing the minimum number of hours required and details on the actual content of training materials.

On the other hand, some shippers and carriers criticized the proposed training requirements as unnecessary and, in some cases, duplicative of existing training requirements. Also, it was maintained that truck drivers should not be expected to become experts on hazardous materials regulations or on the properties and hazards of radioactive materials. There was a feeling that the additional cost of providing driver training just for the transportation of one particular type of hazardous material could result in the loss of some transportation service for these materials.

In response to these criticisms it should first be mentioned that the driver training requirements are based on similar proposed requirements for drivers transporting another hazardous material. Docket HM-115 (44 FR 12826, March 8, 1979) proposed training for drivers of certain tank trucks carrying flammable cryogenic liquids. The Department's intention in Docket HM-164 has been to develop an effective driver training program that is consistent with that for cryogenic liquids and possibly for other types of hazardous materials in the future.

The current DOT stance on hazardous materials driver training, as established by HM-115, is to require that training be provided for the material involved and that the training program be implemented within the general guidelines provided by the Department. Any driver training requirement must be able to accommodate the many variables involved in hazardous materials transportation such as: the different materials and different associated hazards; the varying level of knowledge and experience of truck drivers; and the wide difference in the effectiveness of various methods of training. For this reason, it is believed that the driver training requirement must be of a general nature and that it is the Department's role to set out the major requirements which allow the flexibility to develop an individualized training program that will accomplish the safety objectives desired. It is not believed that DOT certification of the individual driver training program is needed at this

time. Compliance with the driver training requirement for large quantity radioactive materials, just as for any other hazardous materials requirement under the HMTA, will be the subject of safety inspections conducted by MTB, BMCS and various State enforcement personnel. The enforcement of the driver training program will also be aided by the requirement that the driver be furnished with a certificate stating that such training has been provided.

In response to comments from carriers and shippers, DOT believes that driver training for radioactive materials is necessary as a reasonable precaution for large quantity shipments and that truck drivers would not have to become regulation specialists in order to comply with the training objectives. Further, costs necessary to establish a training program should not be high or result in scarcity of service. To some extent, DOT agrees with the contention that some of the proposed requirements duplicate existing training requirements in the Hazardous Materials Regulations. This is true of the requirements proposed in the NPRM (§ 177.825(c)(1) (ii) and (iv)) relating to the motor carrier safety regulations and the operating and handling characteristics of the vehicle. Existing §§ 177.804 and 397.1 now require that drivers be familiar with motor carrier safety regulations, including those in Part 397 for hazardous materials. Minimum requirements for all truck drivers, including provisions relating to the operation of the motor vehicle, are addressed in Part 391 "Qualifications of Drivers". Consequently, the proposed training requirements relating to these areas have not been included in the final amendments.

§ 177.825(e) Physical security requirements for spent fuel

Paragraph (e) is added to this new section to incorporate the requirements proposed in § 177.825(b)(4). The effect of this paragraph is to require motor carriers to transport shipments of irradiated reactor fuel in compliance with a physical protection plan established by the shipper. These plans, approved by DOT or NRC, may sometimes involve transportation requirements different from those specified in § 177.825 but designed to assure at least an equal measure of protection to public safety, and take precedence over the other rules published in § 177.825. Shipments affected by this paragraph include those made by any NRC licensee, and consignments from the DOD and DOE transported by for-hire carriers (except defense-related shipments accompanied by personnel specifically designated by or under the authority of those agencies to preserve national security). A number of commenters expressed their disapproval with the provisions of this regulation which effectively designates NRC as the lead agency for matters involving transportation security for spent fuel.

While the responsibility for prescribing physical protection requirements applicable to special nuclear materials and highly irradiated spent fuel offered for transportation by NRC licensees has been relegated to the NRC, through the memorandum of understanding (MOU) currently in effect between DOT and NRC (44 FR 38690, July 2, 1979), DOT believes that the Hazardous Materials Regulations should contain a specific rule which requires those shippers not otherwise licensed by NRC to comply with safeguards designed to ensure physical security of spent fuel.

DOT recognizes that a considerable amount of "for hire" transportation of spent fuel is performed under security arrangements in support of operations conducted by the DOD and DOE. In the case of shipments escorted by personnel specifically designated by or under the authority of those agencies, for the purpose of national security, a broad exception is granted in §§ 173.7(b) and 177.806(b) which frees common and contract carriers from compliance with the Hazardous Materials Regulations.

This exception was issued with the understanding that it could be revised at some subsequent date if time and experience demonstrated the need. In the more than 30 years that this exception has been in force the DOT is not aware of any instance where the public health and safety have been jeopardized because of shipper or carrier noncompliance with the specific requirements of the Hazardous Materials Regulations. The DOT, therefore, is not inclined to remove the exception at this time since the original conditions of issuance still remain.

The proposal that DOT more closely regulate packages of large quantity radioactive materials shipped by or under the direction of the DOD and DOE attracted a great deal of interest and comment. Some commenters were surprised to learn that, in addition to the exceptions for national security in §§ 173.7(b) and 177.806(b), shipments transported by the military and other government agencies, using their own personnel and transport vehicles, are not subject to the Hazardous Materials Regulations and urged the inclusion of such agencies as regulated carriers. Others followed this topic by indicating that military shipments can and do have accidents, and could pose a grave threat to the communities through which they travel.

The question of DOT jurisdiction and authority over such governmental transportation activities was most recently discussed by MTB in its Docket HM-145A, Notice No. 78-6 (43 FR 22626, May 25, 1978), Transportation of Hazardous Waste Materials. In that document DOT restated its determination not to exercise its authority over Federal, State or local government agencies that carry hazardous materials as a part of a governmental function, using government employees and vehicles. The Department believes that such transportation continues to be conducted in a responsible manner. Also, no new information has come to the attention of DOT regarding the actual occurrence of serious incidents involving hazardous materials transported by this class of carriers. Therefore, it is the opinion of DOT that an extension of its regulations to the degree sought by these commenters is unnecessary at this time.

A matter closely related to the above involves shipments made by governmental agencies through common or contract carriers without escorts provided by such agencies. Essentially, these shipments must be in general compliance with DOT's requirements for safe transportation. Certain exceptions, however, do permit DOD and the Bureau of Alcohol, Tobacco and Firearms (ATF) to make shipments of hazardous materials in packagings not otherwise prescribed by the regulations. Of particular concern to the matter at hand is the treatment of physical security controls applicable to unescorted shipments of spent fuel made by or on behalf of the DOD or DOE. Highly irradiated spent fuel elements pose identical biological and radiological risks regardless of their origins; be it the reactor vessel of an electrical power plant, nuclear submarine or research facility. Other factors also remain relatively constant. For instance, highways retain their same characteristics regardless of who uses them, spent fuel casks are of the same basic designs, and in many cases it is quite conceivable that the carrier, vehicle and driver used to transport shipments for an NRC licensee one week would subsequently be employed by a DOD or DOE contractor to perform a similar service. The same conclusions that justify requiring a licensee to provide physical protection in compliance with a plan established

under regulations prescribed by the NRC apply to others who ship spent fuel.

Consequently, the final rule is adopted in the same form as proposed, thereby requiring the respective departments (unless they perform the transportation with their own vehicles) to either submit copies of their physical protection plans to MTB for approval, or, when necessary to preserve the national security, provide an escort of personnel specifically designated by or under their authority. Shipments of irradiated reactor fuel by DOE in support of its research and development activities are not generally considered by DOT to be carried out to preserve national security (as opposed to defense-related shipments made by both DOD and DOE) and are therefore subject to this Department's regulations.

A number of commenters criticized the exception for physical security of spent fuel shipments and some even expressed their belief that it merely allows spent fuel to be shipped under the cloak of secrecy and security thereby avoiding DOT safety rules. It is difficult for DOT to follow the logic of this contention when one considers that the NRC security rules are much more stringent than the DOT safety rules proposed for large quantity radioactive materials. (The NRC physical security program is discussed on page 7144 of the HM-164 NPRM). Nevertheless, this may be a moot point in the near future. DOT has been notified by NRC that NRC licensees shipping spent fuel may be required to follow DOT's preferred routing system, including the use of State-designated routes. The licensees would be relieved of the requirement to obtain prior route approval from the NRC as long as they use preferred routes. In addition, the licensees would have to continue to adhere to all other requirements in the NRC security program including continuous monitoring of shipment, communication with local law enforcement agencies, vehicle immobilization features, escorts, and prenotification to both the NRC and possibly to State governors.

Part 177 Appendix

A new appendix is added to Part 177. It sets out DOT policy and advice on how State and local governments can exercise their own authority over motor carriers in a manner that will be consistent with rules in Part 177 concerning radioactive materials. Sections I and II are introductory. Sections III, IV and V discuss the three categories of radioactive materials shipments, previously addressed in the preamble, which depend on whether or not the motor vehicle transporting the material is required by Part 172 to be placarded, and if so, whether the material is a large quantity radioactive material. Section VI concerns radioactive materials generally.

Sections I and II—Section I states the purpose of the appendix. Section II defines "routing rule" for purposes of the appendix. Emergency action by State or local authorities to deal with immediate threats to public health and safety, as where a highway is impassable, is not a routing rule. Also, the definition excludes rules of the road that apply to vehicles without regard to the hazardous nature of their cargo. "Routing rule" does refer to governmental action that so affects or burdens commerce as to selectively redirect hazardous materials traffic.

Section III—discusses State and local rules that affect motor vehicles transporting large quantity radioactive materials.

State rules. A State cannot make transportation between two points impossible by highway. The radiological risks in transporting large quantity radioactive materials by highway are small and total preclusion of shipments cannot be justified on that basis. A prohibition on use of Interstate System highways is justified only where an equivalent alternate route is specified that offers risk minimization at least equal to the forbidden Interstate segment. Because of their average accident rate and usual design features, Part 177 requires use of Interstate System highways unless a safer route is designated by an appropriate State routing agency after consulting with local jurisdictions and evaluating the actual routes involved.

The fact that a route may be designated for use on a temporary basis for a limited time does not invalidate a demonstrated safety benefit and is encouraged. For example, if justified by safety analysis, a State agency can designate alternate routes in support of time-of-day restrictions in congested areas. A State agency might specify a safer route to be used instead of an Interstate System highway segment or instead of a State-designated route during periods of peak local traffic.

Criteria in Section III.A.2. of the appendix describe necessary features of preferred highways designated by States. One criterion is that preferred routes are designated by a State agency with authority under State law to impose its routing rules anywhere in the State. The rules must be similarly enforceable by State authority anywhere in the State although not necessarily by the same agency. One State agency, for example, could impose routing rules that are enforced by the State police. The State agency must be able to exercise this authority on all public roads in the State regardless of the boundaries of local jurisdictions such as cities and counties, or special authorities such as operate toll roads. This broad authority is necessary for two reasons. First, neither the appendix nor Part 177 delegates regulatory authority over motor carriers. State law must provide that basic regulatory authority. Second, the State agency must be able to consider *any* public highway in its route selection process with knowledge that the lowest risk route may be selected and its use enforced.

A local jurisdiction is not likely to consider all the routing options that affect it and is not normally responsible for considering the impacts of its own rules on other jurisdictions. Similar problems can occur at the State level. The total number of State agencies concerned with transportation of radioactive materials, however, is considerably more limited than the number of local jurisdictions that conceivably might exercise routing authority, a factor which reduces the potential for confusion and enhances compliance.

A closely related criterion in Section III.A.2. specifies that route selection by a State agency be preceded by consultation with affected jurisdictions. Impacts of routing decisions must be considered regardless of the jurisdiction in which they may occur. Affected jurisdictions will include such entities as cities and counties, and may also include neighboring States. Where neighboring States are affected, the impacted local jurisdictions there must be consulted, preferably through a similar State-wide agency. Local jurisdictions know local conditions that affect, or may be affected by traffic in hazardous materials. Without consideration of local views on such matters as accident rates, risk minimization efforts are hampered.

The criterion does not specify the consultation process, although some local governments in commenting asked that the process be spelled out. DOT believes that the rulemaking process used, like the basic rulemaking authority of a State agency, is largely a matter of State law. To ensure reliable results, however, it would be appropriate to provide public notice, opportunity to comment, and a hearing if justified (as in informal Federal rulemaking) and to individually notify and request comments from those local jurisdictions which can be identified as likely to be

affected by the routing decisions under consideration.

DOT also believes that each State should establish an advisory group composed largely of city and county officials. The purpose of the group would be to meet periodically, recommend to the State appropriate methods for consulting with local jurisdictions, and review the effectiveness of those measures in actual practice. Such State advisory groups would provide a valuable oversight function that should help to continually improve the State routing program. DOT views adequate, substantive local consultation as essential to State route designations. State routing rules that are not preceded by adequate local consultation are unreliable and inconsistent with the Part 177 amendments established in this docket. A failure in local consultation will jeopardize the enforceability of State route designations for large quantity carriers.

Another criterion in Section III.A.2. specifies that the State designation is preceded by a comparative risk analysis of possible routes. A comparative analysis is essential to ensure that risk is indeed being minimized. The "DOT Guidelines" provide a basic analytical technique that may be used to minimize radiological risk. A more sensitive analysis based on that technique also is acceptable.

Local rules. Local governments may regulate the routes of carriers of large quantity radioactive materials, but only in support of State and Federally designated preferred highways. Local prohibition of motor vehicles transporting large quantity radioactive materials is consistent with Part 177 only so far as the vehicles' presence is forbidden by Part 177 (or by State route designations consistent with Part 177). On the other hand, Part 177 presumes that no local routing rules will apply to motor vehicles on preferred highways where Federal and State route designation is exclusive, or to vehicles at locations off the preferred highways under circumstances permitted by Part 177 (*e.g.* a fuel or repair stop).

Sections IV and V—Section IV concerns rules that apply to placarded motor vehicles which do not contain a large quantity of radioactive material. Section V concerns rules that apply to unplacarded vehicles.

A State or local routing rule that attempts to regulate placarded vehicles not transporting large quantity radioactive materials is consistent with Part 177 only if the rule is identical to § 177.825(a). The language of that section is by necessity general. Since uniform application is intended (in part to aid compliance), § 177.825(a) should not be subject to interpretations that vary between jurisdictions. Local variations in the language of § 177.825(a) would invite varying interpretation and application of the rule. Section 177.825(a) is intended to be nationally uniform. More stringent regulation of placarded motor vehicles is not necessary given the hazard level involved, and will impose unnecessary burdens on commerce that do not provide a reasonable safety benefit.

A State or local routing rule that attempts to regulate radioactive materials that are permitted by Part 177 to be carried in an unplacarded vehicle is not consistent with that part. Such rules are unnecessary, given the very limited hazard involved.

Section VI—Section VI concerns a variety of other State and local rules that are associated with routing rules.

State and local rules cannot conflict with physical security requirements imposed by the NRC. Part 177 permits a carrier to vary from its requirements if necessary to comply with the NRC physical security program. By making NRC physical security rules enforceable under the HMTA, DOT intends that State and local rules also permit necessary variances.

State or local rules that require special personnel, equipment or escort are not consistent with Part 177. Precautions of this nature are taken under NRC rules to ensure the physical security of spent fuel shipments, with which local or State rules may conflict. Their imposition for transportation safety alone serves little purpose and poses serious difficulties for carriers. The existence of State and local requirements for special equipment may effectively dictate the continuous use of the equipment in all jurisdictions. Varying requirements between jurisdictions pose additional problems that may necessitate equipment changes and delays *en route,* or avoidance of an otherwise desirable route. Containment and packaging equipment are themselves exclusively set by Federal regulations. Special personnel and escort requirements pose similar problems. State and local escort requirements in particular are a source of delay in transportation if the escort is not required for the entire journey. Whether an escort vehicle is provided by the carrier or by a local jurisdiction, if presence of an escort vehicle is a condition of entering the jurisdiction, the transport vehicle is likely to have to stop at jurisdictional boundaries to establish communication with the escort vehicle. It also is likely that delay will result from the early arrival of a transport vehicle or the late arrival of an escort vehicle.

Earlier in this document, DOT stated its intention to further consider requirements for prenotification to State governments of large quantity shipments, following completion of an NRC rulemaking on prenotification for shipments of nuclear waste. Because the voluntary provision of escort vehicles by local governments is closely related to prenotification issues, such voluntary escort servcies will also be reconsidered at that time.

Shipping paper entries and other hazard warning devices bear little special relationship to local safety problems. In fact, the utility of such measures heavily depends on their universal recognition. Variations in hazard warning devices dilute the effectiveness of those required by Parts 172 and 177, which are understood nationally and internationally, and may hamper emergency response.

State and local requirements for filing route plans or other documents containing shipment specific information pose a potential for unnecessarily delaying motor vehicles. In many cases such requirements are redundant with Federal requirements concerning safety and security. They are not likely to measurably enhance local emergency response capabilities. When applied at a State or local level, they are likely to result in an inefficient use of emergency preparedness resources.

Accident reports imposed by State or local governments that are necessary to ensure immediate emergency assistance are consistent with Part 177. Accident reports required at a later time are duplicative of requirements of Part 177 (which references §§ 171.15 and 171.16). Reports submitted to DOT are publicly available, and States may make prior arrangements for DOT to provide them with copies of incident reports as they become available. The appendix does not concern general accident report requirements, such as a State requirement that any motor vehicle accident involving injury or substantial property damage be reported to the State police during a stated period following the accident.

Prenotification was discussed previously in the preamble. Prenotification requirements by State and local governments, if found necessary, will be established in a nationally uniform manner. Unless DOT reaches and acts on a conclusion that prenotification rules are necessary, beyond those Congress has directed NRC to impose on certain radioactive wastes, independent State and local

prenotification requirements are not consistent with Part 177.

Lastly, because of the importance of expediting radioactive materials shipments, due to the risk and added normal dose attendant to delay, other forms of State and local regulation that affect motor carriers of radioactive materials should not result in unnecessary delay (see § 177.853(a)). A delay is unnecessary unless it is required by an exercise of State or local regulatory authority over a motor vehicle that so clearly supports public health and safety as to justify the safety detriment and burden on commerce caused by the delay (such as in an emergency).

§ 397.9 Routing for hazardous materials

The Bureau of Motor Carrier Safety is revising 49 CFR 397.9 of the Federal Motor Carrier Safety Regulations in amendments published elsewhere in this Federal Register issue. This will direct the motor carrier's attention to the new routing requirements for radioactive materials in § 177.825. The amendment is needed to prevent an inconsistency between routing provisions required for radioactive materials in § 177.825 and those required for other hazardous materials in § 397.9(a).

VIII. Environmental and Economic Impact

DOT has prepared a Final Regulatory Evaluation and Environmental Assessment (DOT Assessment) in support of these final rules (copies may be obtained from the Dockets Branch previously cited). It is clear from the available technical information referenced in the Assessment that radiological risks in transporting radioactive materials resulting from both normal exposure and accidents are very low. Even if one allows that the risk estimates developed by these technical risk studies are underestimated by an order-of-magnitude, the projected overall risks from the transportation of radioactive materials would still be extremely low. Furthermore, one cannot ignore historical accident experience which is shown to be quite good for radioactive material transportation when compared to other hazard classes by MTB's incident reporting system (1971–1980). Although historical experience by itself may not necessarily be the best method of projecting future events, the low historical accident rates do tend to support the research conclusions that the risks in transporting nuclear material by highway are low.

The primary operational effect of these rules is to require or encourage use of the Interstate System by carriers of radioactive materials. Although carriers transporting packages containing a large quantity of radioactive materials are generally required to use either the Interstate System or State-designated preferred highways, carriers transporting packages containing lesser quantities are likely also to tend to use the Interstate and preferred highways especially in areas of heavy population.

Adoption of the preferred routing system which utilizes Interstate System highways and State-designated highways for large quantity radioactive materials is determined to be the appropriate course of action for routing. This alternative has the potential for the greatest safety impact and is feasible and cost effective considering the marginal safety benefits involved.

DOT agrees that "high consequence" accidents in densely populated urban areas should be of great concern, but not to the extent that public policy on hazardous material routing should be formulated solely on the basis of avoiding such "worst case" accidents. For example, the high consequence estimates of the 1980 Urban Environs Study referenced earlier may be reduced substantially by avoiding the city but overall public risk may actually increase if the carrier is forced to use poor, secondary and circuitous rural roads. Nevertheless, it is clearly a reasonable precaution to minimize the possibility of "worst case" accidents by requiring use of a circumferential Interstate highway if it is available. If one is not available, a State may conduct a routing analysis to examine availability of other routes for comparison with the Interstate through route.

Overall radiological effects of this rule include a reduction in total latent cancer fatalities attributable to normal dose and a lesser reduction in the annual latent cancer fatality accident risk (based on NUREG 0170 projections). Some additional reduction in radiological consequences should result from State designation of preferred highways. A slight increase in nonradiological consequences may result from routing on preferred urban bypasses or circumferentials. Overall, environmental impacts should be negligible.

Economic costs are expected not to exceed $330,000 annually under 1985 levels of shipping activity and mostly would consist of costs for driver training and route plan preparation and filing. Some additional cost may result from the new placard background and shipping paper requirements for large quantity shipments. Also, this estimate does not include possible additional insurance costs to State and local bridge and tunnel authorities. MTB requested, but did not receive, any quantitative data on this subject.

Because of the level of costs anticipated and the limited potential for environmental impact, MTB does not consider the preparation of an environmental impact statement or a regulatory analysis necessary for these amendments. As mentioned, a more detailed examination of costs and environmental impact is available in the Final Regulatory Evaluation and Environmental Assesment.

DOT intends to conduct an evaluation of the final rule a year following its effective date. This evaluation will consider the rule's efficacy as regards public health and safety, and its actual effects on carriers, and State and local jurisdictions, with particular attention to any difficulties that have appeared during the rule's implementation. As part of that evaluation, notice will be published to solicit public comment, and a direct solicitation of comments will be made to the States and to interested groups such as the National Governors Association and the National League of Cities. As previously indicated, DOT also will be reexamining prenotification as well as its relation to escort vehicles voluntarily provided by State or local governments sometime following publication (in early 1981) of final NRC prenotification rules for nuclear waste shipments. An advance schedule for both proceedings will appear in a future Federal Register publication of the DOT Regulations Agenda.

Work on the DOT Guidelines, referenced herein, will be continued and the document is expected to be released in the first half of 1981, following pilot tests early in the year.

In consideration with the foregoing, 49 CFR Parts 171, 172, 173, and 177 are amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. In § 171.7 paragraph (d)(23) is added to read as follows:

§ 171.7 Matter incorporated by reference.

* * * * *

(d) * * *

(23) USDOT, "Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials"

2. In § 171.8 the following definitions are added in the appropriate alphabetical sequence:

§ 171.8 Definitions and abbreviations.

* * * * *

"Preferred route" or "Preferred highway" is a highway for shipment of large quantity radioactive materials so designated by a State routing agency, and any Interstate System highway for which an alternate highway has not been designated by such State agency as provided by § 177.825(b) of this subchapter.

* * * * *

"State-designated route" means a preferred route selected in accordance with U.S. DOT "Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials" or an equivalent routing analysis which adequately considers overall risk to the public. Designation must have been preceded by substantive consultation with affected local jurisdictions and with any other affected States to ensure consideration of all impacts and continuity of designated routes.

* * * * *

"State routing agency" means an entity (including a common agency of more than one State such as one established by Interstate compact) which is authorized to use State legal process pursuant to § 177.825 of this subchapter to impose routing requirements, enforceable by State agencies, on carriers of radioactive materials without regard to intrastate jurisdictional boundaries. This term also includes Indian tribal authorities which have police powers to regulate and enforce highway routing requirements within their lands.

* * * * *

PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

3. In § 172.203 paragraph (d)(1)(iii) is amended by adding the following sentence at the end of the paragraph:

§ 172.203 Additional description requirements.

* * * * *

(d) * * *

(1) * * *

(iii) * * * For the shipment of packages containing large quantity radioactive materials (see § 173.389(b) of this subchapter), the words "Large quantity" must be entered in association with the basic description.

* * * * *

4. Section 172.507 is added to read as follows:

§ 172.507 Special placarding provisions: Highway.

Each motor vehicle used to transport a package of large quantity radioactive materials (see § 173.389(b) of this subchapter) must have the required RADIOACTIVE warning placard placed on a square background as described in § 172.527.

5. In § 172.527 the section heading and paragraph (a) are revised to read as follows:

§ 172.527 Background requirements for certain placards.

(a) Except for size and color, the square background required by § 172.510(a) for certain placards on rail cars, and § 172.507 for placards on motor vehicles containing a package of large quantity radioactive materials, must be as follows:

* * * * *

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

6. In § 173.22 paragraph (b) is revised and paragraph (c) is added to read as follows:

§ 173.22 Shipper's responsibility.

* * * * *

(b) Prior to each shipment of fissile radioactive materials, and Type B or large quantity packages of radioactive material (see § 173.389 of this subchapter), the shipper shall notify the consignee of the dates of shipment and expected arrival. The shipper shall also notify each consignee of any special loading/unloading instructions prior to his first shipment. For any shipment of irradiated reactor fuel, the shipper shall provide physical protection in compliance with a plan established under—

(1) Requirements prescribed by the U.S. Nuclear Regulatory Commission, or

(2) Equivalent requirements approved by the Associate Director for Hazardous Materials Regulation, MTB.

(c) Within 90 days following acceptance by a carrier of any package containing a large quantity radioactive material (see § 173.389(b)) for transportation by public highway, the shipper shall file the following information with the Associate Director for Hazardous Materials Regulation, MTB (this paragraph does not apply to packages shipped in compliance with physical security requirements of the U.S. Nuclear Regulatory Commission in 10 CFR Part 73):

(1) The route plan required under § 177.825(c) of this subchapter (any supplement to the route plan prepared in accordance with § 177.825(c) of this subchapter shall be filed within 90 days of receipt from the carrier);

(2) A statement identifying the name and address of the shipper, carrier and consignee; and

(3) A copy of the shipping paper or the description of the radioactive material required by §§ 172.202 and 172.203 of this subchapter.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

7. Section 177.810 is revised as follows:

§ 177.810 Vehicular tunnels.

Except as regards radioactive materials, nothing contained in Parts 170–189 of this subchapter shall be so construed as to nullify or supersede regulations established and published under authority of State statute or municipal ordinance regarding the kind, character, or quantity of any hazardous material permitted by such regulations to be transported through any urban vehicular tunnel used for mass transportation. For radioactive materials, see § 177.825 of this part.

8. Section 177.825 is added in Subpart A, to read as follows:

§ 177.825 Routing and training requirements for radioactive materials.

(a) The carrier shall ensure that any motor vehicle which contains a radioactive material for which placarding is required is operated on routes that minimize radiological risk. The carrier shall consider available information on accident rates, transit time, population density and activities, time of day and day of week during which transportation will occur. In performance of this requirement the carrier shall tell the driver that the motor vehicle contains radioactive materials and shall indicate the general route to be taken. This requirement does not apply when—

(1) There is only one practicable highway route available, considering operating necessity and safety, or

(2) The motor vehicle is operated on a preferred highway under conditions described in paragraph (b) of this section.

(b) Unless otherwise permitted by this section, a carrier and any person who operates a motor vehicle containing a package of large quantity radioactive material as defined in § 173.389(b) of this subchapter shall ensure that the vehicle operates over preferred routes selected to reduce time in transit, except that an Interstate System bypass or beltway around a city shall be used when available.

(1) A preferred route consists of—

(i) An Interstate System highway for which an alternative route is not designated by a State routing agency as provided in this section, and

(ii) A State-designated route selected by a State routing agency (see § 171.8 of this subchapter) in accordance with the DOT "Guidelines for Selecting Preferred Highway Routes for Shipments of Large Quantity Radioactive Materials".

(2) When a deviation from a preferred route is necessary (including emergency deviation, to the extent time permits), routes shall be selected in accordance with paragraph (a) of this section. A motor vehicle may deviate from a preferred route under any of the following circumstances:

(i) Emergency conditions that would make continued use of the preferred route unsafe.

(ii) To make necessary rest, fuel and vehicle repair stops.

(iii) To the extent necessary to pick up, deliver or transfer a large quantity package of radioactive materials.

(c) A carrier (or his agent) who operates a motor vehicle which contains a package of large quantity radioactive material as defined in § 173.389(b) of this subchapter shall prepare a written route plan and supply a copy before departure to the motor vehicle driver and a copy to the shipper (before departure for exclusive use shipments, or otherwise within fifteen working days following departure). Any variation between the route plan and routes actually used, and the reason for it, shall be reported in an amendment to the route plan delivered to the shippper as soon as practicable but within 30 days following the deviation. The route plan shall contain—

(1) A statement of the origin and destination points, a route selected in compliance with this section, all planned stops, and estimated departure and arrival times; and

(2) Telephone numbers which will access emergency assistance in each State to be entered.

(d) No person may transport a package of large quantity radioactive material, as defined in § 173.389(b) of this subchapter, on a public highway unless—

(1) The driver has received within the two preceding years, written training on—

(i) Requirements in Parts 172, 173, and 177 of this subchapter pertaining to the radioactive materials transported;

(ii) The properties and hazards of the radioactive materials being transported; and

(iii) Procedures to be followed in case of an accident or other emergency.

(2) The driver has in his immediate possession a certificate of training as evidence of training required by this section, and a copy is placed in his qualification file (see § 391.51 of this title), showing—

(i) The driver's name and operator's license number;

(ii) The dates training was provided;

(iii) The name and address of the person providing the training;

(iv) That the driver has been trained in the hazards and characteristics of large quantity radioactive materials; and

(v) A statement by the person providing the training that information on the certificate is accurate.

(3) The driver has in his immediate possession the route plan required by paragraph (c) of this section and operates the motor vehicle in accordance with the route plan.

(e) A person may transport irradiated reactor fuel only in compliance with a plan if required under § 173.22(b) of this subchapter that will ensure the physical security of the material. Variation for security purposes from the requirements of this section is permitted so far as necessary to meet the requirements imposed under such a plan, or otherwise imposed by the U.S. Nuclear Regulatory Commission in 10 CFR Part 73.

9. In Part 177 Appendix A is added after § 177.870 to read as follows:

Appendix A to Part 177—Relationship Between Routing Requirements In Part 177 with State and Local Requirements.

I. *Purpose.* This appendix is a statement of the Department of Transportation policy regarding the relationship of State and local rules with Federal rules in Part 177 of this subchapter for routing motor carriers transporting radioactive materials. The purpose of this appendix is to advise a State or local government how it can exercise authority over motor carriers under its own laws in a manner that the Department of Transportation considers to be consistent with rules in Part 177 (see 49 U.S.C. 1811(a)). This appendix and Part 177 do not delegate Federal authority to regulate motor carriers.

II. *Definition.* "Routing rule" means any action which effectively redirects or otherwise significantly restricts or delays the movement by public highway of motor vehicles containing hazardous materials, and which applies because of the hazardous nature of the cargo. Permits, fees and similar requirements are included if they have such effects. Traffic controls are not included if they are not based on the nature of the cargo, such as truck routes based on vehicles weight or size, nor are emergency measures.

III. *Large quantity radioactive materials.* A. *State routing rules.* A State routing rule which applies to large quantity radioactive materials is inconsistent with Part 177 if—

1. It prohibits transportation of large quantity radioactive materials by highway between any two points without providing an alternate route for the duration of the prohibition; or

2. It does not meet all of the following criteria:

(a) The rule is established by a State routing agency as defined in § 171.8 of this subchapter;

(b) The rule is based on a comparative radiological risk assessment process at least as sensitive as that outlined in the "DOT Guidelines";

(c) The rule is based on evaluation of radiological risk wherever it may occur, and on a solicitation and substantive consideration of views from each affected jurisdiction, including local jurisdictions and other States; and

(d) The rule ensures reasonable continuity of routes between jurisdictions.

B. *Local routing rules.* A local routing rule that applies to large quantity radioactive materials is inconsistent with this Part if it prohibits or otherwise affects transportation on routes or at locations either—

1. Authorized by Part 177, or

2. Authorized by a State routing agency in a manner consistent with Part 177.

IV. *Quantities of radioactive materials required to be placarded.* A State or local routing rule that applies to a radioactive material (other than a large quantity radioactive material), for which Part 177 requires placarding, is inconsistent with Part 177 unless it is identical to § 177.825(a) of this part.

V. *Radioactive materials for which placarding is not required.* A State or local routing rule that applies to a radioactive material for which Part 172 does not require placarding is inconsistent with this part.

VI. *Other related State and local rules.* A State or local transportation rule is inconsistent with Part 177 if it—

A. Conflicts with physical security requirements which the Nuclear Regulatory Commission has established in 10 CFR Part 73 or requirements approved by the Department of Transportation under § 173.22(b) of this subchapter;

B. Requires additional or special personnel, equipment, or escort;

C. Requires additional or different shipping paper entries, placards, or other hazard warning devices;

D. Requires filing route plans or other documents containing information that is specific to individual shipments;

E. Requires prenotification;

F. Requires accident or incident reporting other than as immediately necessary for emergency assistance; or

G. Unnecessarily delays transportation.

(49 U.S.C. 1803, 1804, 1808, 49 CFR 1.53 and App. A to Part 1)

Note.—The Materials Transportation Bureau has determined that this document will not result in a major economic impact under the terms of Executive Order 12221 and DOT implementing procedures (44 FR 11034), nor require an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 et seq.). A regulatory evaluation and environmental assessment is available for review in the docket. Review of recordkeeping requirements under the Federal Reports Act

is required by the Office of Management and Budget prior to the effective date of this document.

Issued in Washington, D.C. on January 13, 1981.

L. D. Santman,

Director, Materials Transportation Bureau.

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Federal Highway Administration

49 CFR Part 397

[BMCS Amdt. No. 80-1]

Radioactive Materials; Routing Exemption

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Final rule.

SUMMARY: The FHWA is amending the Federal Motor Carrier Safety Regulations to exempt radioactive materials from the routing provisions contained in 49 CFR 397.9. This action is necessary in order to remove the possibility of duplicative rules. The authority to establish routing requirements under the Hazardous Materials Transportation Act is delegated to the Director, Materials Transportation Bureau, Research and Special Programs Administration, DOT. A final rule contained in Docket HM-164 published elsewhere in this issue is issued by MTB which addresses this routing. Removal of any implied reference to radioactive materials routing from § 397.9 will avoid duplicative Departmental regulations on the same subject.

EFFECTIVE DATE: This rule becomes effective February 1, 1982.

FOR FURTHER INFORMATION CONTACT: Mr. Joseph J. Fulnecky, Bureau of Motor Carrier Safety, (202) 426-1700; or Mr. Gerald M. Tierney, Office of Chief Counsel (202) 426-0346; Federal Highway Administration, Department of Transportation, 400 Seventh Street, SW., Washington, D.C. 20590.

§ 397.9 [Amended]

For the reasons set out in the summary, 49 CFR 397.9 Routes, is amended by adding at the end of paragraph (a) the following sentence:

(a) * * * This paragraph does not apply to radioactive materials (See § 177.825 of this title).

* * * * *

Note.—The FHWA has determined that this document does not contain a significant regulation according to the criteria established by the Department of Transportation pursuant to Executive Order 12044. Due to the fact that this amendment is of nonsubstantive nature and intended to simply clarify existing provisions, a full regulatory evaluation is not considered necessary. For the same reasons, publication of this amendment for notice and comment could not reasonably be anticipated to result in the receipt of useful information.

(49 U.S.C. 304; 49 CFR 1.48(b) and 301.60)

(Catalog of Federal Domestic Assistance Program Number 20.217, Motor Carrier Safety)

Issued on: January 13, 1981.

Kenneth L. Pierson,

Director, Bureau of Motor Carrier Safety.

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