

Discussion Paper and Recommended Routing Process

WESTERN INTERSTATE ENERGY BOARD

March 1988

**ROUTE SELECTION FOR SHIPMENTS TO
A HIGH-LEVEL RADIOACTIVE WASTE REPOSITORY
DISCUSSION PAPER AND DRAFT RECOMMENDATION**

ROUTE SELECTION FOR SHIPMENTS TO A HIGH-LEVEL RADIOACTIVE WASTE REPOSITORY

INTRODUCTION

The Nuclear Waste Policy Act of 1982, as amended in 1987, instructs the Department of Energy to concentrate on Nevada in its search for a repository site for the permanent disposal of spent fuel and high-level radioactive waste. The need for a second repository will not be decided until at least 2007. Most of the commercial spent fuel is located in the eastern United States. Shipments of spent nuclear fuel from commercial nuclear power plants and high-level radioactive waste from national defense activities will increase dramatically when the first repository begins operations.

Transportation routes for spent nuclear fuel and certain amounts of high-level radioactive waste are currently selected in accordance with the rules of the United States Department of Transportation. This paper: 1) examines and advantages and disadvantages of the existing route selection system and its application to shipments to a repository; and 2) discusses options for resolving specific route selection issues.

EXISTING ROUTE SELECTION PROCESS

The United States Department of Transportation (DOT) adopted the rule (commonly known as HM-164 because of its docket number) which must be used for selecting highway routes for highway route controlled quantities of radioactive materials, which includes the spent fuel and high-level radioactive waste to be shipped to a repository. (There are currently no DOT route selection regulations for rail or barge shipments.) DOT has designated the interstate highway system as the preferred system for these shipments unless a state (or tribe) has designated an alternative preferred route (or routes). The state designation system must use a methodology that considers safety and involves discussions with affected jurisdictions. The carrier then assembles a route from the interstate highway system and the state-designated alternative preferred routes. Carriers must also use interstate bypasses and beltways around cities where available. The route selected by the carrier must reduce (not minimize) transit time, although DOT does not require carriers to time each route exactly.

Deviations from the preferred route are allowed: under emergency conditions that make the preferred route unsafe; to make necessary rest, fuel and vehicle repair stops; and to pick up and deliver shipments off the interstate system. When a deviation is necessary, the carrier must pick a new route by considering available information on accident rates, transit time, population density and activities, time of day and day of week.

The Nuclear Regulatory Commission also exercises route approval authority over spent fuel shipments (it chooses not to exercise this authority over high-level radioactive waste shipments) for safeguards (sabotage protection) purposes.

A APPLICATION TO REPOSITORY SHIPMENTS

The shipments to a repository will differ from existing radioactive materials shipping campaigns in several important respects. Shipment numbers will increase greatly over current levels. A single shipper – the United States Department of Energy (DOE) – will be involved, as compared to the numerous utilities and other parties who may ship radioactive materials today. Shipments through western states will be to a single destination – a repository in the West. Nearly all shipments within the West may also have a single origin if DOE constructs a monitored retrievable storage (MRS) facility in the East to repackage and consolidate shipments to a repository. Finally, the repository shipping campaign will last at least twenty years. Therefore, it is useful to examine whether the existing route selection system is the most appropriate process for selecting routes to a repository.

Following is an examination of some specific route selection issues as they relate to repository shipments. The chart summarizes the options identified by the Committee for various route selection issues. The issues and options are discussed in greater detail following the chart.

ROUTE SELECTION ISSUES

How Many Routes?

- Single route from origin to repository with alternate(s)
- Multiple routes

Considerations:

Multiple routes may more equitably spread risk

Multiple routes increase shipper flexibility

Single route can maximize safety

Single route permits infrastructure and emergency response resources to be concentrated

When Should Route(s) Be Selected?

- Just before shipment
- Well in advance of shipment

Considerations:

Route decision just prior to shipment requires either: preparations to be made on all possible routes or no preparations to be made

Early routing decision would permit improvements in infrastructure and emergency response capabilities

Should consider repository site selection schedule, balancing extra lead time allowed by an early routing decision and the increased work needed if routing decisions are made while multiple sites are being considered for a repository

Who Should Select Route?

- Carrier
- State(s) and tribes
- DOE
- DOT
- Other party (e.g., National Academy of Sciences)

Considerations:

Carrier selection of routes is simple and minimizes deadlocks (at least early in the process)

Carrier selection (or informal DOE selection process) limits lead time and reduces certainty in routes to be used

State/tribal route selection makes maximum use of detailed information on local risks

State/tribal route selection may lead to discontinuities and delays

State/tribal route may not result in the lowest risk routes actually being used because they are not enforceable

National agency or group making route selection could permit early, formal route decisions with adequate time for modification by a state or group of states (including arbitration if needed)

What Process Should Be Used to Select Routes?

- Local-to-National process
- National-to-Local process

Considerations:

Starting at the local level and then assembling a national route does not require states to wait for some other group to act at the national level

Starting at the national level and later making local adjustments to the national route eliminates need to study routes which may never be used, eliminates need for states to reach consensus on certain issues, and may make it easier for states to reach consensus on national route identification issues.

How Many Routes?

The existing DOT routing rule allows for the use of many different routes. While carriers are required to reduce transit time, they are not required to time all possible routes exactly and select the fastest one. Therefore, a carrier can use several routes for a single shipping campaign. Also, factors such as weather and road conditions can influence route selection by decreasing the speed at which the shipments will travel or by increasing the likelihood that shipments will be stopped due to road closures, both of which would increase transit time.

A carrier probably could not justify taking a route that would increase shipment time from one day to one week. On the other hand, it is unlikely that DOT would require a carrier to change its route because it might shave one hour from a three-day trip. While it is uncertain at what point between these scenarios DOT would intervene to require the use of a faster route, there appears to be enough flexibility to allow the use of multiple routes for cross-country shipments.

There are advantages to applying the DOT approach to repository shipments. Multiple routes spread the risk among a larger number of people, which may be considered more equitable than concentrating the risk along a single transportation corridor. Using a larger number of routes increases the transportation system's flexibility by having several routes to choose from if one route becomes temporarily less desirable because of inclement weather, road construction, special events, etc. Finally, using multiple routes may decrease any potential sabotage risk by making it more difficult to determine which route a shipment will be using, although it would probably be relatively easy for a saboteur to follow the shipment from the point of origin.

There are also advantages to narrowing the potential transportation routes to one primary route, with one or more alternate routes to be used whenever the primary route is unavailable or undesirable (e.g. inclement weather). Risk can be minimized by limiting shipments to the safest routes. Designating a limited number of routes can produce an additional benefit, independent of the routes chosen; limited resources can be concentrated on the designated routes to enhance safety. For example, rather than training emergency response personnel in an entire state or region to prepare for shipments which may be conducted on numerous routes, only those persons on the designated routes would require training and equipment to handle potential spent fuel and high-level radioactive waste transportation incidents.

When Should Route(s) Be Selected?

Under the existing DOT route selection system, routes must be selected at least seven days in advance of each shipment, since the carrier is required to provide the corridor states with seven days advance notification of each shipment. There is no requirement that a carrier select a single route at the beginning of each shipping campaign to be used for all shipments. Route selection for repository shipments, if the carrier is to select the route as under current rules, obviously must wait until DOE has selected a carrier for the

repository shipments. DOE's current plan is to finish negotiating contracts with carriers six months before the repository begins operations. (DOE's "Transportation Institutional Plan," Aug. 1986, p. 14).

Whether the timing of route selection decisions under the current rule is adequate for the repository shipping campaign depends partially on the number of routes that will be used for repository shipments. If it is decided that many routes will be used to spread the risk of shipments, all states would need to prepare along all interstate highways and there may be no advantage in identifying the routes earlier. Formal identification at an early stage of the multiple routes to be used might not provide the states any information they couldn't obtain with a road atlas.

If it is decided that the route selection system should be changed to provide for a limited number of routes, the timing of the route selection decision would become more important. Formal route identification would inform the states which route from the highways available would actually be used for shipments. This would allow states to designate alternative routes and to make preparations along the chosen route by identifying necessary infrastructure improvements, improving emergency response capabilities, etc. The unique character of the repository campaign becomes important because improvements that were not considered feasible for a few isolated shipments might be feasible when considering the hundreds or thousands of shipments to be made each year for twenty years under the repository program. However, these improvements would require more time than would be available under the current route selection system.

The timing of route selection should also be examined as it relates to the repository site selection schedule. DOE has been instructed to conduct site characterization at Yucca Mountain, Nevada; if the Nevada site proves unsuitable, DOE is to report to Congress and await further direction. It is possible to develop a contingent set of routes now, with final selection delayed until the repository site is chosen. This would allow the most lead time for any necessary route improvements, but would require analysis of a new set of routes should Nevada be disqualified. At the other extreme, all route selection work could be postponed until after final site selection (or Nuclear Regulatory Commission licensing of a repository) for the first repository. Route selection could also proceed at an intermediate pace by conducting the more generic tasks of developing a route selection process now and waiting until after site selection to analyze and select routes.

Who Selects Routes?

As discussed above, under the current system the carrier assembles the routes from the interstate highways and any alternative preferred routes designated by states or tribes.

The major advantages to carrier selection of routes are its simplicity and minimization of deadlocks in route selection. The carrier selects the route among the interstates and state- or tribe-designated alternatives as they exist at the time of route selection. If one

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state is attempting to designate an alternative route that an adjacent state disapproves of, the carrier does not have to wait until the dispute is resolved, but can legally use the interstate highway system until an alternative has been designated. Allowing the carrier to select a route avoids any possible deadlock that could result from requiring groups of states to select the route through their region.

Carrier selection of routes also has disadvantages. Allowing the carrier to select the route may not allow states sufficient lead time to prepare for shipments along the chosen route. The alternative is to prepare along all possible routes, which is extremely wasteful. Also, selection of the route for the repository shipping campaign may be too important a decision to be left to the carriers to make on an ad hoc basis.

If carriers do not select the routes, routes can be selected by individual states, groups of states or some national body.

Allowing states to select the final route has the advantage of placing the decision in the hands of those most likely to know about the condition of the various possible routes within their jurisdictions. However, there may be discontinuity problems when adjacent states cannot agree on a route.

It may not be possible for states to be solely responsible for selecting the routes, especially if it is decided that there will be a single route to a repository. Individual states only have the authority to designate routes within their borders. The only way a state can eliminate an interstate highway route from use is to designate an alternate route within that state. Therefore, even if states were able to set aside any differences and agree on an acceptable cross-country route from each origin, there is no existing legal means of enforcing such an agreement, short of an act of Congress. DOT's routing rules only allow a state to designate an alternate preferred route within the state's borders. No mechanism exists for states A, B, C, X, Y, and Z to decide that shipments should proceed over an interstate highway in states X, Y, and Z rather than one in states A, B, and C. No federal or state agency would have the authority to enforce the route through civil penalties or criminal sanctions. (Similar problems would result from tribal designation of routes.)

The states' limited authority may not be a practical problem if it is decided that all possible interstate highway routes will be used for shipments to a repository. Then each state's role would be limited to making any desired adjustments to the interstates within its borders and working out any discontinuities with adjacent states. However, this process could result in a deadlock.

Some national body (e.g., DOT, Nuclear Regulatory Commission, National Academy of Sciences) could serve as a forum for states (and other parties) with differing interests to work together on a route selection methodology. This body could resolve disputes among neighboring states. However, even if states agree in advance to be bound by the group's decision, there is still the problem discussed in the two preceding paragraphs. Neither the states, nor the Nuclear Regulatory Commission or the National Academy of

Sciences currently has the authority to select a single national route. However, if it seems desirable to authorize one of these groups to select a national route, this could be accomplished through an Act of Congress. DOT, through the Hazardous Materials Transportation Act, may have sufficient authority to identify routes through formal rulemaking, but has not chosen to exercise this authority.

For repository shipments, DOE will take title to spent fuel at the utilities' gates and DOE will be the shipper. As the shipper, DOE has the authority, through the contracting process to specify the route its carrier will take (provided it does not violate DOT rules). Therefore, DOE could take the lead role and provide the forum for discussion and has the authority to impose its decision on the carrier.

A disadvantage of allowing DOE to identify the routes is that DOE has no experience in route specific analysis. DOT has more experience in this area, through its sponsorship of several hazardous materials routing analyses. DOE and DOT could work together, with DOT providing assistance or taking the lead in developing a route selection process and/or conducting the analysis of routes. DOE could then implement the routing decision in its carrier contracts.

What Process Should Be Used to Select Routes?

Under the current rules, the entire interstate highway system has been designated as the preferred route unless states (or tribes) designate alternate routes. Route selection starts at the state level, with a state's designation of alternative preferred routes or its acceptance of the status quo. The carrier then assembles a national route from the interstate highways and the state designated routes.

Route selection could also proceed in the opposite direction. A national route could be selected first, possibly by DOE or the carrier. State and local governments could then make adjustments to this national route if they desired.

One advantage of using the current method (local-to-national) for repository shipments is that states do not have to wait for some other organization (such as DOE or the carrier) to select the national route before examining alternatives to the interstate highway system within their borders. This is especially true if many routes will be used for repository shipments. (See discussion above under How Many Routes?) Many states, especially those closest to the repository, will be able to assume that any reasonably direct interstate highways within their borders will eventually be used for repository shipments and can start designating alternatives to these interstates long before the national routes are officially announced.

The national-to-local method has significant advantages, especially if there will be a single primary route to a repository. By starting at the national level, resources would not be wasted on a detailed analysis of a proposed alternative to an interstate highway segment which may never be included in the national route. A state would not have to grapple with the issue of whether an urban bypass is preferred only to discover years later

that the national route does not pass within 500 miles of that urban area. Another advantage is that if the national route is selected first, there is no need for states to reach agreement on many issues. For example, a state may employ different factors when deciding whether it is preferable to bypass an urban area than it will use when selecting the best route from New England to a repository. Thus, it is possible that, given the opportunity to later fine-tune the national route on a state or regional basis, states will be able to agree upon a much more limited list of factors to be used at the gross level of a national route selection.

RECOMMENDED ROUTING PROCESS

Background:

The Western Interstate Energy Board's High-Level Radioactive Waste Committee has developed a recommended routing process for use with repository-related high-level waste shipments.

The Western Interstate Energy Board (WIEB), an association of sixteen western states, was established by interstate compact in 1970. Since 1984, the Board and its High-Level Radioactive Waste Committee have been examining high-level radioactive waste transportation issues. Routing was one of the identified areas of concern. An appropriate process for selecting routes was viewed as an important component of a complete transportation safety program (See WIEB and WGA resolutions below).

The Committee examined routing issues to determine the acceptability and adaptability of the existing route designation system for shipments to a high-level waste repository. In 1986, WIEB staff, under a contract with the Department of Energy, prepared a report reviewing existing state and federal routing methodologies for radioactive and hazardous materials and proposed factors to be considered in routing decisions based on the suggestions of the Committee's members. In April 1986, the Committee formed a Routing Task Force to further analyze routing issues and to make a recommendation to the Committee. The Routing Task Force recommended, in December 1986, an overall decision process for routing repository shipments. That recommendation, with some minor modifications, forms the overall basis for this recommendation.

In its review, the Committee examined the existing route selection system as established by DOT's regulations. The Committee believes that the existing route selection system has several good points that should be preserved in a route selection process for shipments to a high-level waste repository:

- 1) roles are established for state and local government participation in the route selection process;
- 2) route selection is to be based on a comparative analysis which considers safety;
and

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- 3) in designating alternative preferred routes, states are required to consult with affected jurisdictions

The Committee believes that several aspects of the current system may be unsatisfactory for shipments to a high-level waste repository, thus making an enhanced route selection methodology desirable. First, the Committee believes that it will not be publicly acceptable for carriers to select routes for shipments to a repository. (See discussion below under Steps 1-3.) Second, it was deemed desirable to establish a single route (and one or more alternate routes) for shipments from each origin to a repository. However, individual states have no authority to select routes beyond their borders, thus making it necessary to involve a national body in the route selection process. (See discussion below under Steps 1-3.) Finally, the existing system would not give states sufficient advance notice of the routes to be used for shipments to a repository to permit states to prepare for the shipments.

The Committee examined two general approaches to route selection; “national-to-local” or “local-to-national.” In the “national-to-local” approach, route selection starts at the largest scale; national routes are selected first, with regional or state alterations made later. In the “local-to-national” approach, route selection starts at the smallest scale; states (and then regions) designate alternatives to the interstate highway system and the national route is assembled from these pieces.

The Committee’s recommended approach for making routing decisions is diagrammed on the last page of this document. It is the “national-to-local” approach.

**RESOLUTION OF THE
WESTERN INTERSTATE ENERGY BOARD**

**Highway Routing of High-Level Waste Shipments Under
The Nuclear Waste Policy Act**

WHEREAS, the Nuclear Waste Policy Amendments Act of 1987 directs the Department of Energy to initially concentrate on Nevada in searching for a site for a permanent high-level radioactive waste repository;

WHEREAS, siting a repository in Nevada would cause significant increases in the number of spent fuel and high-level waste shipments through western states;

WHEREAS, the High-Level Waste Committee of the Western Interstate Energy Board, an association of sixteen western states, has been examining high-level waste transportation issues for several years and has identified route selection as a key component of a safe, publicly acceptable transportation system;

WHEREAS, the High-Level Waste Committee believes that the existing route selection process can be enhanced to meet the unique needs of the repository program (large numbers of similar shipments by a single shipper to a single destination over a long period of time);

WHEREAS, the current practice of allowing the carrier to select the route may be neither publicly acceptable nor in the public interest for the Department of Energy's shipping campaign to the repository;

WHEREAS, the large scale of the repository shipping campaign makes it necessary for states to make early preparations along the routes to be used and the current practice of selecting routes shortly before shipments begin will not give states sufficient time to prepare for repository shipments;

WHEREAS, the Department of Energy is responsible for conducting shipments to the repository;

NOW THEREFORE BE IT RESOLVED, that the Western Interstate Energy Board believes the Department of Energy should immediately assume responsibility for identifying routes to be used for shipments of spent fuel and high-level waste to a repository through the process developed by the Board's High-Level Waste Committee and attached to this resolution or through another process agreed upon by the Department of Energy, states, and tribes;

BE IT FURTHER RESOLVED, that the Western Governors' Association be advised of the need for action by the Department of Energy to implement a process for the early identification of routes.

Western Governors' Association
Resolution 88-001

Nuclear Waste Transportation (Excerpts of Resolution)

A. BACKGROUND

3. Western corridor states are concerned that without a national transportation plan, prepared in cooperation with corridor states, the safe and uneventful transportation of these wastes cannot be accomplished in a timely and coordinated manner. Specific corridor state concerns include; selecting routes; ensuring safe drivers, vehicles, and cargo; imposing restrictions for bad weather and road conditions; notifying states officials; tracking shipments; designating safe parking areas; educating and informing the public; supplementing existing state revenue resources; and developing effective state and local emergency preparedness and response capabilities. Effective emergency preparedness and response requires integrated plans and procedures, radiation detection and communication equipment, training, retraining and periodic drills.
6. Corridor states have substantial responsibility in assuring the safety of their residents and for responding to any accident which might occur. In times of decreasing state budgets the agencies charged with this responsibility do not have the resources to do the job being placed on them by these federal programs.

B. GOVERNORS' POLICY STATEMENT

1. The objective of the Western Governors' Association is the safe and uneventful transportation of spent fuel and nuclear waste from current temporary storage facilities to more suitable interim or permanent repositories. The western governors are committed to working with Congress and DOE to achieve this objective.
2. The western governors urge Congress to take the following actions for attaining this objective by seeking:
 - a. Authority for the Department of Energy to take the overall responsibility for shipments of nuclear waste. This responsibility includes the accountability for addressing the legal requirements of state and other federal agencies and for coordinating planning and shipping programs with corridor states, notwithstanding the distribution of legal authorities among federal agencies;
 - c. Clarification of congressional intent that DOE prepare in cooperation with corridor states, the WGA Nuclear Waste Task Force, and the Western

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Interstate Energy Board, a comprehensive plan and program for the transportation of nuclear waste shipped under NWPA; and

- d. Guidance to be given to DOE to initiate as a first step in the cooperative effort for NWPA shipments, the identification of national nuclear waste transportation corridors, as proposed by the Western Interstate Energy Board in its March 1988 resolution.

Adopted July 12, 1991
Readopted July 23, 1991

Under the Committee's recommended approach, the Department of Energy (with active involvement by states and federal groups such as DOT, the National Academy of Sciences, the National Transportation Safety Board and the Nuclear Waste Technical Review Board) would propose the criteria to be used in selecting the national route (and one or more alternate routes) from each origin and later would propose the national routes to be used. States (in consultation with local governments) along the national route would then make adjustments to the national route if they so desired, working with neighboring states if necessary. All of this would be accomplished well in advance of repository shipments so that any necessary improvements (such as increased emergency response capabilities or infrastructure improvements) could be made before shipments begin.

The Committee did not address the role of tribes in route selection. The Committee, however, notes that the tribes by law and right in many ways have responsibilities analogous to states and that their participation in route selection needs to be incorporated in any final routing process.

The following discussion of the Committee's proposed route selection process should be read in conjunction with the previous discussion on the individual routing issues.

The Process:

Selection of a National Route (Steps 1-3)

Description:

The Department of Energy, with input from the states and various federal groups, develops a route selection methodology (including the route-selection criteria to be used) and then implements the methodology to identify a national route (and one or more alternate routes) for shipments to a repository. The national route identification would be divided into three steps: development of a decision-making methodology, DOE's final action on the methodology, and national route identification. The purpose is to clearly separate the development of the methodology from the route selection. Criteria for route selection and the weights given to route selection factors should be agreed upon before these factors are assessed for specific routes.

Discussion:

The starting point of the process is the Committee's belief that it would not be acceptable for carriers to select routes for shipments to a repository. The Committee believes that such a publicly important decision should not be left to case-by-case decisions by individual carriers. The possible advantage of avoiding potential deadlocks among states by allowing the carrier to select the route is outweighed by the importance of selecting routes early in the repository program so that any necessary route improvements can be made.

The Committee believes that the advantages of selecting a single primary route from each origin to a repository (with one or more alternates to be used if the primary route is unavailable) outweigh the benefits of spreading the risk among a large population. As discussed earlier under "How Many Routes?," choosing one route increases safety by allowing shipments to proceed only over the most suitable route and allows limited resources for infrastructure improvements, emergency response, etc. to be concentrated along a single route.

The Committee proposes the "national-to-local" approach to route selection because of its potential for: increasing the possibility for consensus on route selection by reducing the number of factors that must be considered for national route identification; decreasing the time needed to agree upon a national route; and conserving resources by relatively quickly narrowing the possible routes. These factors were discussed earlier under "What Process Should Be Used to Select Routes?"

DOE is proposed as the lead agency for developing the route selection methodology because DOE, as the shipper, has the authority through the contracting process to specify the route its carrier will take (provided it does not violate DOT rules). It is important that a national body take the lead role to provide a forum for states (and other parties) with

differing interests to work together on a route selection methodology. It is logical that DOE be that national body because no one else at the federal or state level has the authority to impose the routing decision on the carrier (with the possible exception of DOT which may have sufficient authority under the Hazardous Materials Transportation Act).

While it is essential that DOE be involved in designating the cross-country route, this does not mean that states should not be involved in designating routes or in developing the criteria for route selection. Rather, as shown in the first step of the diagram, DOE could take the lead role in developing the route identification methodology with input from the states.

The second step (DOE takes final action on the methodology) would separate the methodology from its application. If DOE were to take “final action” on the methodology, perhaps in the form of a rule or a published final policy statement, it might be possible to limit any challenges to the methodology to a certain time frame under the Administrative Procedure Act. Later, when national routes were actually identified, dissatisfied parties would not be able to challenge the methodology itself – e.g., how the factors were selected and weights were assigned. The only issue open to challenge at this stage would be whether the methodology was accurately applied. The Committee believes that this three-step process has the potential for decreasing the amount of time needed to make an acceptable route selection.

In the third step, DOE would use the methodology developed in the first step to analyze the potential routes and would identify the national route from each origin to a repository.

State Adjustments to National Route (Steps 4-5)

Description:

Each state along the national route decides if an alternative route is desirable. (Step 4). If so, the state (or group of states) makes adjustments to the national route, in consultation with local governments. (Step 5)

Discussion:

After a national route is identified for each point of origin, each state along the route would decide if an alternative route would be desirable. If not, no further route designation action would be necessary.

If some states believe that an alternative to a segment of the national route would be preferable, there are several options. An individual state could alter the route within its borders, joining the national route before leaving the state. The state would use the current Department of Transportation regulations for designating an alternative preferred route or another acceptable procedure. If a state desires a change which would alter the

route in surrounding states, there are two options. The affected states could work together from the beginning to select a mutually desirable route, with each state then designating the agreed-upon route as the state designated preferred route. Alternatively, each of the affected states could work independently at first, working together at a later stage only if discontinuities result. In the last approach, arbitration may be necessary to solve continuity problems. If no agreement is reached on state adjustments to the national route after arbitration and other conflict resolution mechanisms, the national route would be used.

Route Improvements (Step 6)

Description:

Improvements are made to the route.

Discussion:

Once the state alterations to the national route were completed, any necessary infrastructure improvements, new construction, emergency response preparations, and any other necessary actions along the designated route would be implemented. Shipments would then proceed along the designated route.

Notes

It may be desirable to have one or more alternate routes in case problems arise on the designated route – e.g., road construction or adverse weather. If so, the process above can be conducted simultaneously for the preferred and alternate routes.

The recommended process was discussed almost exclusively within the context of highway shipments. While aspects of the process may apply equally to rail, the rail issues need to be more fully examined before a routing process for rail can be proposed.

The recommended process is very similar to the process that is being used to select routes for shipments of transuranic waste to the Waste Isolation Pilot Plant in New Mexico, which is scheduled to begin operations in 1988. In September 1986, DOE identified the route it intends to use from each origin and asked states to comment on these routes and suggest alternatives if DOE's identified route is not acceptable. In some cases, a state has suggested an alternative route that would impact other states and these states must work together to resolve their differences. Unlike the WIPP routing process, the proposed routing process for shipments to a repository would be conducted well in advance of proposed shipments and the initial DOE route identification would be based on criteria agreed upon in advance through a public process.

Utah abstained from the Committee's finding that it will not be acceptable for carriers to select routes to a repository.

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RECOMMENDED ROUTE SELECTION PROCESS

