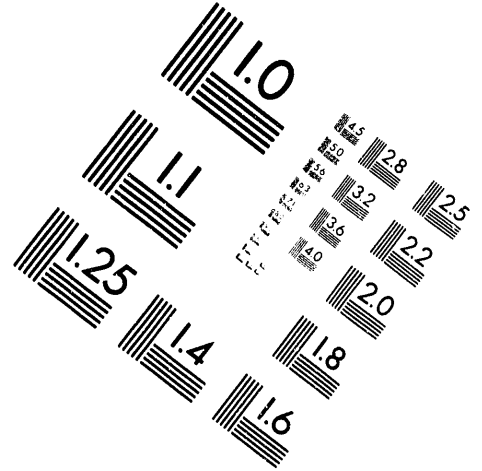
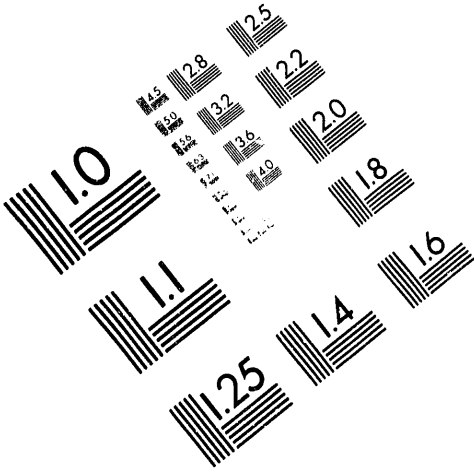




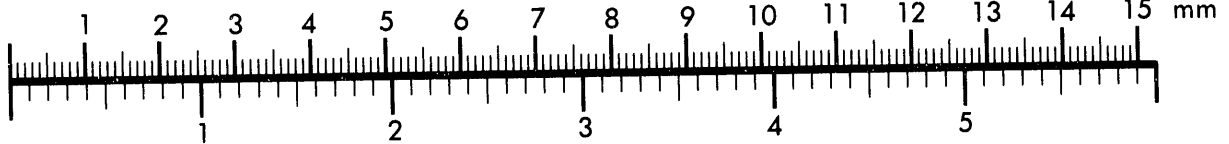
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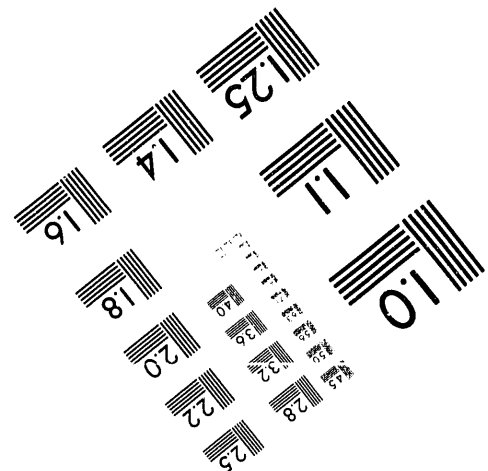
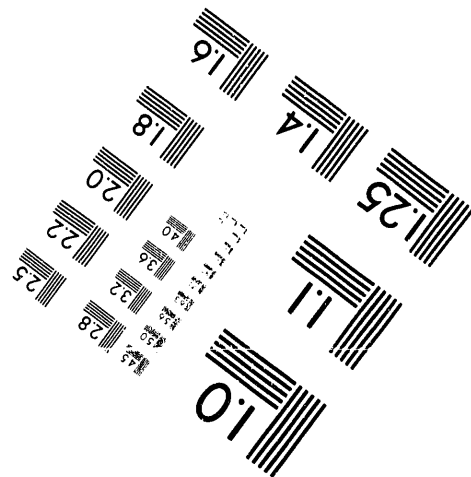
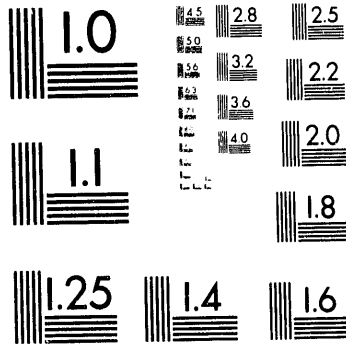
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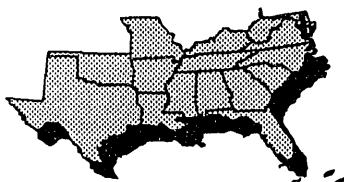
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Southern Routes for High-Level Radioactive Waste: Agencies, Contacts and Designations

Updated May 1991

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Southern States Energy Board

Southern Routes for High-Level Radioactive Waste: Agencies, Contacts and Designations

Updated May 1991

Prepared for U.S. Department of Energy
under Cooperative Agreement
DE-FC02₁-87CH10324

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MASTER

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Introduction

The ***Southern Routes for High-Level Radioactive Waste: Agencies, Contacts and Designations*** is a compendium of sixteen southern states' routing programs for the transportation of high-level radioactive materials. The report identifies the state-designated routing agencies as defined under 49 Code of Federal Regulations (CFR) Part 171 and provides a reference to the source and scope of the agencies' rulemaking authority. Additionally, the state agency and contact designated by the state's governor to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73 are also listed. This report also examines alternative route designations made by southern states and the lessons that were learned from the designation process.

State Authority to Designate Preferred Routes (The HM-164 Process)

Pursuant to the rulemaking authority granted under the Hazardous Materials Transportation Act (HMTA), the Department of Transportation (DOT) has promulgated a comprehensive set of regulations, commonly referred to by its rulemaking docket numbers HM-164 and 164A, concerning the highway routing of nuclear materials. Under these regulations, carriers of highway route-controlled quantities of nuclear material are required to use preferred routes, defined as interstate system highways or state-designated alternatives that provide an equal or greater level of safety (49 CFR 177.825).

In order to develop a system of state designated alternative routes, the state must designate a 'state routing agency,' defined as an entity authorized to use the state legal process to impose routing requirements on carriers of radioactive material (49 CFR 171.8). From a procedural standpoint, the state routing agency must select routes in accordance with DOT's ***Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials*** or an equivalent analysis. This publication provides guidance to the states concerning comparative radiological risk assessment, local considerations and the impact and continuity of routes between adjoining states. DOT's regulations also require states to provide written notice to DOT of all state-designated alternative routes for the purpose of creating a central repository of such information. A state-designated route is not effective until notice is received. If a state fails to designate a system of state preferred routes, the interstate highways within the state will be deemed acceptable routes for the transportation of radioactive materials. The HMTA prohibits and preempts any state or local requirements that are inconsistent with the act or its implementing regulations. The federal consistency of a state or local regulation can be ascertained by requesting an advisory inconsistency ruling from DOT.

Accompanying 49 CFR Part 177 is a policy statement appendix that identifies those areas of state and local regulation that DOT deems inconsistent with federal regulations. This appendix provides that a state or local transportation rule is inconsistent with Part 177 if it:

- (1) conflicts with [NRC] physical security requirements;
- (2) requires additional or special personnel, equipment or escort;
- (3) requires additional or different shipping paper entries, placards or other hazard warning devices;
- (4) requires filing route plans or other documents containing information specific to individual shipments;
- (5) requires prenotification;
- (6) requires accident or incident reporting other than that immediately necessary for emergency assistance; or
- (7) unnecessarily delays transportation (§ 46 Fed. Reg. *supra* note 21, at 5,317).

The validity of the DOT routing regulations has been upheld against state challenge (See ***New York City v. United States Department of Transportation***, 715 F.2d 732 (2d Cir. 1983), cert. denied, 465 U.S. 1055 (1984)).

While DOT's policy statement is advisory and does not have the force and effect of law, it provides important guidance on patterns of DOT rulings and inconsistency proceedings. The courts have shown substantial deference to DOT's views on shipments of radioactive materials.

If a state or local requirement is found by DOT to be inconsistent with the HMTA or the implementing regulations under HMTA § 112(a), such a finding provides the basis for application to DOT for a discretionary waiver of preemption under HMTA § 112(b). In this regard, HMTA § 112(b) requires a waiver applicant to demonstrate the following:

- (1) that the preempted state or local requirement affords an equal or greater level of protection to the public as compared with the federal standards; and
- (2) that it does not unreasonably burden commerce (See 49 CFR

Although states have the option to designate alternative preferred routes, federal hazardous material transportation regulations generally preempt state and local regulations on the same matter. This reflects the DOT's view that hazardous material transportation safety can be better achieved through a uniform system of regulation rather than through a collection of varied and/or inconsistent state and local regulations.

Despite federal preemption in this area, the states may develop their own system of preferred routes for the transportation of radioactive materials. Local government, on the other hand, have not been encouraged to do the same owing to the belief that state governments are in a better position to perceive the overall objectives of a uniform national highway routing system. However, local officials have been encouraged to establish advisory organizations to present local views to state officials.

State Routing Agencies

According to 49 CFR 171.8, a state routing agency is an entity that is authorized to use the state legal process to impose routing requirements, enforceable by state agencies, on carriers of radioactive materials. Consequently, the selection, establishment and authority of a state routing agency is determined by state legislative action and/or executive branch decision. In most southern states the legislature has enacted measures that identify and require a specific state agency to promulgate regulations, rules and policies regarding the transportation of radioactive material into, within or through the state. The state agencies may be required to develop regulations for a variety of transportation issues including routing, hazardous materials definitions, permits, advance notification, escorts and bonding requirements among others.

Several state statutes contain general grants of rulemaking authority over the transportation of hazardous materials including radioactive materials. There is some question whether a general grant of authority is sufficient to place the subject agency within the federal definition of a state routing agency. The failure to meet the federal definition could conceivably make any route selected by that agency invalid as a state alternative preferred route. Even if a statute is drafted in a manner which places the agency within the federal definition, the agency's failure to adhere to procedures developed for the selection of alternative preferred routes could expose the route designation to legal challenge.

Advance Notification Agencies

The U.S. Nuclear Regulatory Commission (NRC) requires advance notification to governors or their designees concerning the transport of high-level radioactive materials and spent fuel shipments. The prenotification for spent nuclear reactor fuel shipments is addressed in 10 CFR Part 73 and the advance notification of large quantity radioactive waste shipments in 10 CFR Part 71. In the South, all governors have designated a state agency and contact for receiving prenotification information. The state contact listing is updated annually in the Federal Register on or about June 30.

The state agencies responsible for routing and advance notification in the South fall into seven general departmental categories including health, public safety, transportation, public service, state police/highway patrol, emergency management and nuclear waste. Only in Texas is the prenotification for spent fuel and large quantity shipments divided between two separate agencies. The following table indicates the state departmental authorities for routing and advance notification.

Primary Southern States Departments Responsible for Radioactive Material Routing and Advance Notification

State Dept./States	AL	AR	FL	GA	KY	LA	MD	MS	MO	NC	DE	SC	TN	TX	VA	WV
Health	R	N	R/N		N							R/N		R/N*		
Public Safety	N								R		R/N			N**		N
Transportation					R			R								
Public Service Commission				R/N									R			
State Police/ Highway Patrol		R				N	N			N						
Emergency Management								N	N				N		R/N	
Human Resources										R						
Environmental Quality						R										

R - Routing

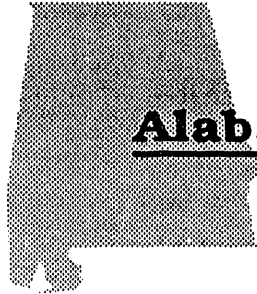
N - Prenotification Department

* large quantity shipments

** spent fuel

Source: **Federal Register**, Vol. 53 No. 126, June 30, 1988, p.24818.

State-By-State Routing and Advance Notification Agencies and Contacts



Alabama

State Routing Contact: Aubrey Godwin
Director
Radiological Health Branch
Alabama State Board of Health
434 Monroe Street, Room 510
Montgomery, Alabama 36130-1701
(205) 242-5315

Under Ala. Code §22-14-4, the Alabama Board of Health has been designated as the state radiation control agency and empowered to promulgate rules regulating by-product, source and special nuclear materials. This statute covers a number of transportation related issues including permit fees, materials licensing and operator training. However, the statute does not contain a direct grant of authority to promulgate rules governing the routing of radioactive materials shipments. Since the Board of Health is not directly authorized to impose routing requirements on carriers of radioactive materials, it may not meet the CFR definition of a state routing agency.

As a practical matter, issues relating to routing are addressed by the Board of Health in consultation with other state agencies. Therefore, the board is listed above as the state routing agency.

The state agency designated by the governor to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73 is the Alabama Department of Public Safety. The contact to receive advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Col. Ned McHenry
Director
Alabama Department of Public Safety
P.O. Box 1511
Montgomery, Alabama 36192
(205) 261-4378



State Routing Contact: Capt. Larry Fletcher
Arkansas State Police
P.O. Box 5901, Number 3
Natural Resources Drive
Little Rock, Arkansas 72115
(501) 224-2882

There is no state agency, under Arkansas statutory law, directly vested with authority to impose routing requirements on carriers of radioactive materials pursuant to 49 CFR 171.8. Under Ark. Code Ann. 23-2-202, the Arkansas Transportation Safety Agency assumed those powers granted to its predecessor agency. The Transportation Safety Agency, however, was abolished in 1989, and no replacement has been named.

The Arkansas Hazardous Waste Management Act of 1979, Ark. Code Ann. §8-7-201, authorizes the Arkansas Department of Pollution Control and Ecology to promulgate and enforce all rules and regulations relating to the transportation of hazardous waste. The act defines hazardous waste as any waste or combination of wastes including radioactive wastes which may cause, among other things, a substantial hazard to human health. While this statute does not directly mention the routing of radioactive materials, the act does grant authority to promulgate rules relating to the transportation of radioactive material. Consequently, the Department of Pollution Control and Ecology could be construed as the state routing agency based on a broad interpretation of the federal definition in 49 CFR 171.8.

The governor has selected the Arkansas Department of Health's Division of Radiation Control and Emergency Management to receive shipment notification and routing information according to 10 CFR Parts 71 and 73. The contact to receive advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Greta J. Dicus, Director
Div. of Rad. Control & Emergency Mgmt. Prgs.
Arkansas Department of Health
4815 West Markham Street
Little Rock, Arkansas 72201
(501) 662-2301
After hours: (501) 661-2136 or 661-2000



State Routing Contact: Dan Thoss
Public Health Physicist
Florida Department of Health and
Rehabilitative Services
P.O. Box 15490
Orlando, Florida 32858
(407) 297-2095

The Florida Radiation Protection Act, Fla. Stat. Ann. § 404.011, establishes the Department of Health and Rehabilitative Services as the authoritative state routing agency. The department is mandated to adopt reasonable rules governing the transportation of radioactive materials including criteria for departmental approval and designation of routes within the state. Fla. Stat. Ann. § 404.20(1)(a). In addition, the act provides that rules adopted by the department may also be enforced within their respective jurisdictions by the Department of Highway Safety and Motor Vehicles and the Department of Transportation.

The state agency designated by the governor to receive advance notification and shipment routing information according to 10 CFR Parts 71 and 73 is the same as the state routing agency. The contact to receive advance notification within the Department of Health and Rehabilitative Services' Office of Radiation Control is listed below.

Advance Notification Contact: Harlan Keaton
Public Health Physicist Manager
Office of Radiation Control
Florida Department of Health and
Rehabilitative Services
P.O. Box 15490
Orlando, Florida 32858
(407) 297-2095



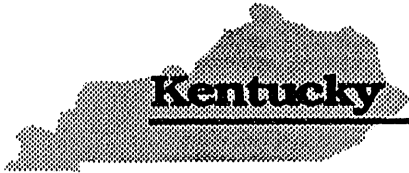
State Routing Contact: Lucia Ramey
Director of Compliance and Safety
Transportation Division
Georgia Public Service Commission
1007 Virginia Avenue, Suite 310
Hapeville, Georgia 30354
(404) 559-6602

Under the Transportation of Hazardous Materials Act, Ga. Code Ann. 46-11-1, the Georgia Public Service Commission is given authority to promulgate transportation regulations and permit requirements consistent with the federal rules. This legislation allows the commission to make changes in shipper-proposed routes as a precondition to the grant of a transportation permit. Consequently, the act establishes the Public Service Commission as the routing agency under federal rules.

According to the Georgia Public Service Commission, all spent fuel and large quantity shipments have taken place on federal interstate highways. The commission has, therefore, not moved to develop any alternate preferred highway routes. On issues concerning truck weight, length and width, the commission defers to the Department of Transportation.

The governor has designated the Public Service Commission as the agency to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The contact to receive advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Al Hatcher
Director
Transportation Division
Georgia Public Service Commission
1007 Virginia Avenue
Hapeville, Georgia 30354
(404) 559-6600



State Routing Contact: Milo D. Bryant
Secretary & Commissioner of Highways
Transportation Cabinet
State Office Building, 10th Floor
Frankfort, Kentucky 40622
(502) 564-4890

Kentucky has adopted legislation relating to the transportation of hazardous material including radioactive waste. Under Ky. Rev. Stat. Ann. §174.410, the Secretary of the Transportation Cabinet is responsible for regulating the movement of all radioactive materials transported by all carrier modes within the state in a manner consistent with the federal regulations. This legislation does not contain a specific grant of authority to impose routing restrictions on carrier. However, the statute's general grant of authority to control the movement of all radioactive materials may be sufficient to place the Transportation Cabinet within the federal definition of a state routing agency.

The governor has designated the Radiation Control office in the Department for Health Services as the agency to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The contact to accept advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Donald R. Hughes, Sr.
Director, Division of Community Safety
Cabinet for Human Resources
275 East Main Street
Frankfort, Kentucky 40621
(502) 564-3700



Louisiana

State Routing Contact: Dr. L. Hall Bohlinger
Manager, Inspection & Enforcement Division
Radiation Protection Division
Department of Environmental Quality
Second Floor, Box 82135
Baton Rouge, Louisiana 70884-2135
(504) 765-0160

The Louisiana Nuclear Energy and Radiation Control Law, La. Rev. Stat. Ann. §30:2101, was enacted to ensure the safety and welfare of the people and environmental resources of Louisiana by providing an efficient system to regulate and control all sources of radiation within the state. To that end, La. Rev. Stat. §30:2104 provides that the Secretary of Environmental Quality may promulgate rules, including route designations, governing the transportation of radioactive materials. Consequently, the Department of Environmental Quality is vested with authority to impose routes on carriers pursuant to 49 CFR 171.8.

Additionally, La. Rev. State Ann. §30:2110(G) provides that regulations adopted by the secretary may be enforced by other state agencies according to mutual understandings between such agencies. Consequently, the actual implementation and enforcement is performed by the state police.

The governor chose the state police as the state agency to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The contact for advance notification for spent fuel and large quantity radioactive waste shipments is the same as listed below.

Advance Notification Contact: Capt. William Spencer
Louisiana State Police
7901 Independence Blvd.
P.O. Box 66614
Baton Rouge, Louisiana 70896
(504) 925-6121



Maryland law is silent regarding the establishment of a state routing agency. However, activities relating to the routing of radioactive waste shipments--including the development of a comprehensive routing plan--have been addressed by a core group of state agencies composed of the Department of Transportation, State Police and the Department of the Environment.

The Maryland State Police is the governor's designated agency to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The contact to receive advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Col. James E. Harvey
Chief
Service Bureau
Maryland State Police
1201 Reisterstown Road
Pikesville, Maryland 21208
(301) 486-3101



Mississippi

**State Routing Contact: Robert L. Hollimon
Mississippi Highway Department
P.O. Box 1850
Jackson, Mississippi 39215
(601) 359-1213**

The Mississippi Radiation Protection Law of 1976 authorizes the State Board of Health to promulgate regulations governing the transportation of radioactive materials in the state, including the designation of state routes. Therefore, the Board is the official state routing agency as defined under 49 CFR 170.8.

Under Miss. Code Ann. 45-14-25(2)(a), regulations adopted by the agency may be enforced, within their respective jurisdictions, by other state agencies, according to mutual understandings between such agencies. Consequently, actual authority over the routing of shipments is exercised by the Highway Department.

The governor has also formally designated the Emergency Management Agency as the department to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The contact to obtain advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

**Advance Notification Contact: James E. Maher
Director
Mississippi Emergency Management Agency
P.O. Box 4501
Fondren Station
Jackson, Mississippi 39216
(601) 352-9100**



State Routing Contact: Mr. Richard C. Rice
Director
Department of Public Safety
Truman Building, Box 749
Jefferson City, Missouri 65102
(314) 751-4905

There has been no statutory enactment vesting any division of state government with power to adopt regulations governing the routing of radioactive materials. Shippers of high-level waste must adhere to the applicable federal regulations.

The governor has designated the Emergency Management Agency as the department to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The agency contact for advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Richard D. Ross
Director
State Emergency Management Agency
1717 Industrial Drive
P.O. Box 116
Jefferson City, Missouri 65102
(314) 751-9779
After hours: (314) 751-2748



North Carolina

State Routing Contact: Dayne Brown
Chief
Radiation Protection Section
Division of Facility Services
North Carolina Department of Human Resources
701 Barbour Drive
Raleigh, North Carolina 27603-2008
(919) 571-4141

Under the North Carolina Radiation Protection Act, N.C. Gen. Stat. Ch. 104 E-1, the Department of Human Resources is designated as the state agency to administer the statewide radiation protection program. The act also created the North Carolina Radiation Protection Commission, which is authorized to promulgate rules and regulations relating to the transportation of radioactive materials, including designation of routes which are to be used for the transportation of radioactive materials (N.C. Gen. Stat. 104 E-15).

The state agency selected by the governor to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73 is the North Carolina Highway Patrol. The contact to receive advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Major Walter K. Chapman
Director
Administrative Services
North Carolina Highway Patrol Headquarters
P.O. Box 27687
Raleigh, North Carolina 27611
(919) 733-7952
After hours: (919) 733-3861

Oklahoma

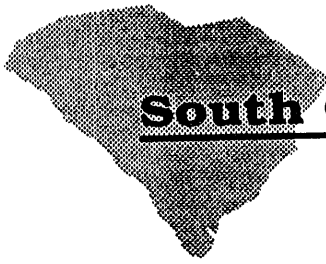
State Routing Contact: Lt. Garry Thomas
Oklahoma Department of Public Safety
Highway Patrol Division, Troop S
3600 N. King Avenue
P.O. Box 11415
Oklahoma City, Oklahoma 73136-0145
(405) 521-6104

The Oklahoma Motor Carrier Safety and Hazardous Materials Transportation Act, Okla. Stat. Ann. 47 §230.1, authorizes the Department of Public Safety to promulgate regulations relative to motor carrier safety in the transportation of hazardous materials. Hazardous material is broadly defined as a substance or material capable of posing an unreasonable risk when transported in commerce. The statute lacks any specific reference to the agency's authority to impose routing restrictions and, therefore, may not be sufficient to place the department within the federal definition of a state routing agency.

The Oklahoma Highway Patrol's Size and Weights Section (Troop S) of the Oklahoma Department of Public Safety is the responsible state routing agency for high-level radioactive materials. The agency's authority involves strictly routing and does not include specific responsibility for hazardous materials. Instead, the agency relies on the technical support of several other agencies, including the Department of Public Safety's Hazardous Materials Section, the Department of Transportation, the Health Department and the State Civil Defense Agency.

There is no specific state or local legislation that affects the routing of radioactive materials. The state follows federal routing guidelines.

The Oklahoma Department of Public Safety is also the governor's designated state agency to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73. The contact for advance notification for spent fuel and large quantity radioactive waste shipments is the state Highway Patrol's representative listed above.



South Carolina

State Routing Contact: Heyward Shealy
Chief
Bureau of Radiological Health
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201
(803) 734-4700

According to the South Carolina Radioactive Waste Transportation and Disposal Act of 1976, S.C. Code Ann. §13-7-110, the Department of Health and Environmental Control has regulatory authority over high-level radioactive waste transportation into or within the state, including the authority to impose routing requirements on carriers. Therefore, the act establishes the department as the official routing agency under the federal rules. The legislation also requires shippers to: comply with all applicable state and federal laws, rules and regulations; hold the state harmless for any radiological claims; purchase a permit for transport through the state; and provide the state with advance notification of shipments.

The Department of Health and Environmental Control may call upon the Highway Department and Governor's Office to provide technical transportation and routing support.

The state agency selected by the governor to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73 is the South Carolina Department of Health and Environmental Control. The contact for advance notification for spent fuel and large quantity radioactive waste shipments is the same as listed above.



Tennessee

State Routing Contact: Paul Melander
Tennessee Public Service Commission
460 James Robertson Parkway
Nashville, Tennessee 37243-0505
(615) 741-0484

Tennessee has enacted legislation regarding the transportation of spent nuclear fuel. Tenn. Code Ann. §65-15-126 requires transporters of spent nuclear fuel to provide advance notice to the Tennessee Emergency Management Agency which in turn shall notify the Tennessee Public Service Commission. The act defines spent nuclear fuel in accordance with the definition found in 42 U.S.C. §10101(12) and (23). The act assess a fee for any shipments received at, or departing from, any nuclear power station or reactor spent fuel storage facility located within the state. Fees also are assessed for any shipments that pass through the state. Fees are set at \$1,000.00 per cask for truck shipment and \$2,000.00 per cask for rail shipments. A bond or surety must be provided in advance of shipment to guarantee payment of the fees. Both the shipping fees and the surety bond are paid by the owner of the facility except when the shipment is passing through the state, in which case the shipper is responsible for payment of the surety bond and fees. All fees are collected by the commission and are deposited into the state general fund.

The act requires an escort for all shipments that pass within or through the state. Any training, manpower and equipment necessary for the escort service shall be in accordance with standards established by the commission.

Finally, the act authorizes the commission to adopt further regulations concerning the transportation of spent nuclear fuel as long as such regulations are not more restrictive than those adopted by the NRC or DOT.

The act is silent regarding the authority to impose routing requirements on carriers. Consequently, the commission does not meet the federal definition of a state routing agency. Despite the lack of direct statutory authority, however, the commission is the state agency most actively involved in the routing of radioactive materials and, therefore, it is at least a *de facto* routing agency.

The state designee to receive advance notification and shipment routing information under 10 CFR Parts 71 and 73 is the Tennessee Emergency Management Agency. The contact to be informed in advance of spent fuel and large quantity radioactive waste shipments is provided below.

Advance Notification Contact: John White
Assistant Deputy Director
Tennessee Emergency Management Agency
State Emergency Operations Center
3041 Sidco Drive
Nashville, Tennessee 37204
(615) 252-3300
After hours: 1-800-258-3300



State Routing Contact:

**David Lacker
Chief
Bureau of Radiation Control
Texas Department of Health
1100 W. 49th Street
Austin, Texas 78756-3189
(512) 835-7000**

Under the Texas radiation control statute, TCA Health and Safety Code § 401, the Department of Health is designated as the Texas Radiation Control Agency. The act further provides that the Commissioner of the Department of Health is required to designate an individual to be director of the Radiation Control Program. This legislation also authorizes the agency to formulate rules and guidelines providing for the transportation and routing of radioactive material within the state. Therefore, this statute establishes the department as the authoritative routing agency for the purposes of the federal rules.

Unlike other southern states, the governor has selected two separate agencies to receive advance notification and shipment routing information for large quantity and spent fuel shipments. The state agency to receive advance notification and shipment routing information for large quantity shipments under 10 CFR Part 71 is the Texas Department of Health, Bureau of Radiological Health. The Texas Department of Public Safety, meanwhile, is the state agency to receive advance notification and shipment routing information for spent fuel shipments under 10 CFR Part 73. The contacts to receive their respective advance notification and shipment routing information are listed below.

Advance Notification Contact:
(10 CFR Part 71)

**Dr. Robert Bernstein
Commissioner
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756
(512) 458-7375**

Advance Notification Contact: Col. Joe Milner
(10 CFR Part 73) Director
Texas Department of Public Safety
5805 N. Lamar Blvd.
Austin, Texas 78752
(512) 465-2000



Virginia

State Routing Contact: James Holloway
Chief
Technological Hazards Branch
Virginia Department of Emergency Services
310 Turner Road
Richmond, Virginia 23225
(804) 674-2406

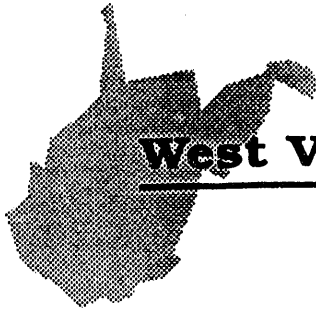
Virginia statutory law relative to the transportation of radioactive materials contains no grant of authority sufficient to place any state agency within the federal definition of a state routing agency found in 49 CFR 171.825.

Va. Code Ann. § 44-146.3C requires the Coordinator of the Department of Emergency Services to maintain a register of shippers and monitor the transportation of hazardous radioactive materials. The authority to maintain a list of shippers and monitor the transportation of radioactive materials does not constitute the authority to impose routing requirements on carriers necessary to comply with the federal definition of a routing agency.

As a practical matter, information and activities relating to the transportation of radioactive materials, such as notification of proposed routes, material shipped, transportation mode and shipment schedule, are handled by the Department of Emergency Services. Consequently, the department listed above is the state routing agency.

The state agency receiving advance notification and shipment routing information under 10 CFR Parts 71 and 73 is the Virginia Department of Emergency Services. The contact to accept advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Michael M. Cline
Director of Operations
Virginia Department of Emergency Services
310 Turner Road
Richmond, Virginia 23225
(804) 674-2407
(804) 674-2400 (24 Hours)



West Virginia

There has been no formal executive or legislative action giving any state agency rulemaking authority over routing of radioactive waste shipments. Transporters of radioactive materials need only comply with applicable federal regulations.

The state follows federal routing guidelines and recommendations for approving high-level radioactive waste shipment routes. The state's acceptance and approval of NRC-designated routes is the responsibility of the West Virginia Department of Public Safety. The Department also coordinates with the Office of Emergency Services and the Department of Health. However, no formal executive or legislative action has been taken in the state to designate an agency for technical development and policy review concerning routing into and through the state.

The state agency designated by the governor to accept advance notification and shipment routing information under 10 CFR Parts 71 and 73 is the West Virginia Department of Public Safety. The contact to receive advance notification for spent fuel and large quantity radioactive waste shipments is listed below.

Advance Notification Contact: Col. J. R. Buckalew
Superintendent
Department of Public Safety
725 Jefferson Road
South Charleston, West Virginia 25309
(304) 746-2111

Alternative Route Designations and Lessons Learned by State Agencies



Arkansas

Routes were established after consultations among and between a number of state agencies, including the Arkansas Transportation Commission and the state police. Additionally, valuable input was provided by the emergency response agencies located in Little Rock, North Little Rock and Pulaski County. There is no single agency in the state at present, however, that exercises authority to designate alternative routes.

State designated alternative routes are:

Memphis to Fort Smith: - I-40 to the Oklahoma state line.

Memphis to Texarkana - I-40

Memphis - I-40 to I-440 in North Little Rock thru Little Rock to I-30. I-440 to I-30 (in lieu of I-430, I-630 and that portion of I-30 connecting I-40 and I-440).

I-30 to the Texas state line.

For shipments from the north take I-55 to I-40.

For routes around Little Rock take I-440 to I-40 or I-30.

Lessons Learned:

Arkansas did not employ DOT's Guidelines for Selecting Preferred Routes for Large Quantity Shipments of Radioactive Materials as the basis for designating routes and, in fact, it is unclear what guidelines were used. The state police indicated that officials from the agencies mentioned above examined a map of Arkansas routes and selected the interstate highway systems listed there. The state intends to review the route designation process outlined in HM-164 and revise existing alternative routes in a manner consistent with DOT's Guidelines or an equivalent routing analysis. To date, however, the state has not consulted with DOT. Regardless, Arkansas' alternative routes apparently are simply state certification of DOT preferred routes.



Kentucky

Authority to designate alternative routes for the state of Kentucky is vested in the Kentucky Department of Transportation. The designation of existing alternative routes was accomplished in meetings of a core group of state agencies headed by the state DOT and including the radiation control office in the Cabinet for Human Resources and the Division of Disaster and Emergency Services of the Department of Military Affairs.

Kentucky employed a straightforward approach to designating routes that considered both population density and road conditions. For example, road conditions dictated the selection of I-64 through Louisville as opposed to the I-264 beltway owing to extreme congestion and construction work in and around the beltway. The state has not addressed the question of designating alternative routes once construction is completed, although officials are not likely to allow large numbers of shipments through downtown Louisville once the beltway congestion is alleviated.

Alternative routes for Kentucky are: I-64 is the East/West route (with I-264 in the Louisville area prohibited from being used because I-65 is being designated as an alternative route); I-24 is the western Kentucky North/South route; I-65 is the central North/South route through Louisville (with I-264 in the Louisville area prohibited from being used because I-65 is being designated as an alternative route); I-71 is a North central route (with I-264 in the Louisville area prohibited from being used because I-71 is being designated as an alternative route); I-71/I-75 is the central North/South route past Lexington and to and from Cincinnati except that I-275 in the Covington-Newport-Cincinnati area must be used as an alternative route to I-71/I-75 from the junction of I-71/I-75 with I-275 to the Ohio state line; and I-471 in the Newport area cannot be used because the beltway, I-275, is required to be used instead.

Lessons Learned:

Kentucky attributes the successful designation of alternative routes to the communication between state agencies. Face-to-face meetings allowed for input by affected agencies. Also, the state will sometimes use an interstate highway through a city, as is the case in the Louisville area, when the beltway around the city is undergoing construction or is otherwise too congested.

 **Maryland**

In 1981, a core group of 10 state agencies, led by the Maryland Department of Transportation, issued a study entitled ***Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials*** to devise an acceptable highway routing plan for the shipment of radioactive materials through the state. Using the DOT's ***Guidelines*** the core group studied available routes and made designations based on factors such as road quality and population density. The results of this analysis indicated that use of the proposed non-interstate routes posed no greater risk than the use of the interstate highway system.

Alternative routes listed by the state are U.S. Highway 301 from Delaware to Virginia and Routes 40 and 48 to Morgantown, West Virginia. DOT has no record of these listings.

In May 1990 the State Highway Department eliminated both of these alternative routes. Based on a non-technical review of the designations, the Highway Department determined that the designated routes were unsafe.

Lessons Learned:

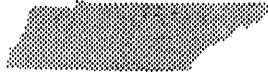
The process of establishing alternative routes outlined above was enhanced owing to the direct input of a number of state agencies. The fact that diverse agencies of state government acted in concert rather than as separate entities expedited the process.

One major lesson learned is that route selection must be reviewed periodically to account for changes in road conditions and population density. The state Highway Department was given this responsibility and chose to eliminate all alternative routes in the state.

This elimination resulted in Virginia being forced to decertify two of its alternative routes. More importantly, it forced shippers who had used the east-west routes along Routes 40 and 48 to use the much more circuitous routes interstate routes through Pennsylvania and West Virginia. These routes add approximately eight to ten hours to transportation times, demonstrating the effect decertifying routes may have on a shipper.

Route 40 and 48 is currently being upgraded to an interstate and within a year will become a DOT designated route.

There is also a question as to whether there were ever any official designated alternative routes in Maryland as the DOT never had any record of the routes being filed.



Tennessee

The Tennessee Public Service Commission is the lead state agency involved in the routing of high-level radioactive materials. Alternative routes presently in use in Tennessee were originally established due to the desire to reroute all truck traffic around Knoxville during the Tennessee World's Fair. This practice remained in force after the conclusion of the fair.

Beginning in 1985, the PSC staff conducted an analysis of potential routes as the initial step in the rulemaking process. This analysis considered a number of factors similar to those in DOT guidelines, including population density, road conditions, noise levels and access to the roadway in the event of an accident. The staff then proposed alternative routes for the transportation of hazardous materials, including high-level radioactive waste, based on the statistical data generated by this analysis.

In 1987, the PSC held public hearings on the designation of alternative routes. As a result of these proceedings, the commission promulgated rules restricting the routing of vehicles transporting hazardous materials in Knox County.

The alternative route in Tennessee is I-640 (in lieu of I-40 in the Knoxville area). This route has been filed with the U.S. Department of Transportation in compliance with HM-164A.

Lessons Learned:

The risk analysis and subsequent public hearings allowed for the input of interested parties prior to adoption of the proposed route. It is unclear what effect the alternative route designation had in Tennessee, as DOT regulations mandate the use of interstate beltways where available.



Alternative routes have been established for Virginia using both outside contractor and internally-generated studies. No state agency has been vested with statutory authority to designate alternative routes in the state; however, the Department of Emergency Services has assumed such authority.

The internally-generated studies were based primarily on the DOT's **Guidelines**. These studies were performed by Emergency Services in cooperation with the state radiation health agency and in conjunction with the Nuclear Regulatory Commission (NRC) and were accomplished in part by actually running the proposed route and conducting "table top" analyses of the proposed routes. The use of internally-generated studies, however, was eventually challenged by several interest groups based on the fact that the agency charged with responsibility for designating routes was also conducting the study. These groups favored the use of an independently-conducted routing study.

The state subsequently employed a contractor to recommend alternative routes. The contractor's report, like the internally-generated study, was based on the risk analysis methodology contained in DOT's **Guidelines**.

Alternative routes for Virginia are: VA Route 207 between Port Royal and I-95; US Route 29 north and south between I-66 and I-64; US Route 17 north and south from US 301 to I-81; VA Route 208 from I-95 to US Route 522; US Route 522 from VA Route 208 to I-64; VA Route 155 from I-64 to VA Route 5 at Charles City; VA Route 5 east and west from Charles City to VA Route 156 south; VA Route 156 north and south to VA Route 10; VA Route 10 east and west to US Route 58; US 460 east and west between Petersburg and US 58; US 58 east and west from Portsmouth to I-95; US 17/258 from I-64 to VA Route 10; US 460 east and west between Lynchburg (Mt. Athos Road) and US 220 Alt. to US 11 to I-81; and US 460 east and west from the West Virginia state line to VA 100 at Pearisburg to Dublin to I-81.

Lessons Learned:

Cost is a major drawback to the use of contractor-generated studies. The study conducted for Virginia cost approximately \$98,000.

In Virginia, alternative route designations have been part of an ongoing process; several of the initial routes have been replaced owing to changes in road conditions and population density. For example, the state, in consultation with the NRC, now bans shipments over I-77 to and from West Virginia. Additionally, new routes have been designated on an as-needed basis.

Virginia believes that the routes presently in use are sufficient and no significant changes are anticipated in the near future. However, two alternative routes in Virginia that connected with Maryland routes have been eliminated

because of Maryland's decision to eliminate its alternative routes. These routes were: U.S. Route 15 between the Maryland state border and I-66; U.S. Route 301 between the Maryland state line and Virginia Route 207. This adjustment demonstrates the need for interstate cooperation and communication in designating alternate routes.

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Appendix A

Letter Re: Kentucky Route Designations

SANDY 10-



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KENTUCKY 40622

WALLACE G. WILKINSO
GOVERNOR

MILO D. BRYANT
SECRETARY
AND

October 3, 1988

COMMISSIONER OF HIGHWAYS

Ms. M. Cynthia Douglass, Administrator
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Ms. Douglass:

In accordance with 49 C.F.R. 177.825 I am pleased to report to you the preferred routes in the Commonwealth of Kentucky for the transportation of route controlled quantities of radioactive materials. Kentucky state law, KRS 174.410, designates the Secretary of the Transportation Cabinet as the person responsible for controlling and regulating the movement of all radioactive materials within the Commonwealth.

Only the Interstate Highways in Kentucky may be used to transport these larger quantities of radioactive materials. These highways are I-24, I-64, I-65, I-71, I-75, and I-275. In northern Kentucky the use of I-71/75 is further restricted in accordance with our administrative regulation 601 KAR 5:190 (copy attached). In Jefferson County, I-264 was deliberately omitted from this list since because of high population densities around the Watterson Expressway and the reconstruction of that highway currently taking place we intend all of the subject materials to be transported on either I-65 or I-64.

If you need additional information or wish to discuss this further, please contact me.

Sincerely,

Milo D. Bryant
Secretary and
Commissioner of Highways

NOV 14 REC'D
30415

permits are included in this chapter. (11 Ky.R. 1100; eff. 3-12-85.)

603 KAR 5:190. Vehicles prohibited on I-75 and I-71.

RELATES TO: KRS 189.231

PURSUANT TO: KRS 189.231

NECESSITY AND FUNCTION: KRS 189.231 authorizes the Secretary of Transportation to restrict or regulate traffic on state-maintained highways in such manner as is reasonably necessary to promote the safety and convenience of the traveling public. The purpose of this administrative regulation is to promote public safety by restricting and regulating the use of a specific portion of a state-maintained highway from certain types of vehicles.

Section 1. Definitions. As used in this regulation, the hereinafter set forth terms shall have the following meaning:

(1) "Truck tractor" means any self-propelled vehicle designed to support and/or to draw the front end of a trailer, semitrailer or mobile home.

(2) "Semitrailer" means a vehicle designed to be attached to and/or have its front end supported by a truck tractor. It is intended to be used for the carrying of freight, cargo, or merchandise and has a load capacity in excess of 1,000 pounds.

(3) "Mobile home" means a movable or portable dwelling in excess of 102 inches, constructed to be towed on its own chassis by a truck tractor, connected to utilities, and designed without a permanent foundation for year-round living.

(4) "Trailer" means any vehicle designed for carrying persons or property and being drawn by a motor vehicle and being so constructed that no part of its weight rests upon the towing vehicle.

Section 2. Prohibition. All truck tractor-mobile home combinations in excess of 102 inches in width, truck tractor-semitrailer combinations, and truck tractor-semitrailer-trailer combinations except as identified in Section 3 of this regulation, are prohibited from operating in a northbound direction on that portion of Interstate Highway 75 and 71 (I-75 and I-71) in Kenton County from the junction of I-75 and I-71 and Interstate Highway 275 (I-275) to the Ohio state line located on the I-75 Brent-Spence Bridge, a distance of seven and one-tenth (7.1) miles.

Section 3. Exceptions. Those truck tractor-mobile home combinations, truck tractor-semitrailer combinations, and truck tractor-semitrailer-trailer combinations having local trips in that portion of the Cincinnati-Northern Kentucky urbanized area located within the perimeter of I-275 or within a two (2) mile arc of I-275 on the northern side of I-275 between U.S. 22 and U.S. 27 may travel upon the restricted-use section of I-75 and I-71 northbound for the purpose of such local trips. Such a vehicle operator shall have in his possession a bill of lading, manifest or other proof showing the necessity for the local trip within the excepted area. Such proof is subject to inspection by Transportation Cabinet Vehicle Enforcement Officers and other local and state law enforcement officers. (13 Ky.R. 602; eff.

11-11-86; Am. 1258; eff. 2-10-87; 1908; 6-9-87.)

603 KAR 5:210. Extended weight coal haul system.

RELATES TO: KRS 177.9771, 189.230

PURSUANT TO: KRS 177.9771(10)

NECESSITY AND FUNCTION: KRS 177.9771 requires the Secretary of Transportation certify those public highways which meet certain criteria as the extended weight coal haul system. KRS 177.9771(9) requires the Secretary of Transportation to meet with certain local governing bodies and give consideration to their concerns before adding to or deleting from the extended weight coal haul road system. This regulation identifies the extended weight coal haul road system and establishes procedures to be followed by local governing bodies requesting consideration be given to their concerns. The Transportation Cabinet will promulgate separate administrative regulation pursuant to KRS 177.9771(10) and 189.230 regarding bridge weight limits.

Section 1. The following terms when used in the regulation shall have the following meaning:

(1) "Local governing body" means the fiscal court of any county, the city council or commission of a city of the first through fourth classes, or the council of an urban county government.

(2) "KY" means a state numbered highway maintained by the Kentucky Department of Highways.

(3) "US" means a United States numbered highway maintained by the Kentucky Department of Highways.

(4) "I" means an interstate and defense highway maintained by the Kentucky Department of Highways.

(5) "CR" means a public highway, road, or street not maintained by the Kentucky Department of Highways.

(6) "LENGTH" means the length of a road segment in miles.

(7) "FROM" means the beginning milepoint and terminus of a road segment.

(8) "TO" means the ending milepoint and terminus of a road.

(9) "LN" means line.

(10) "RD" means road.

(11) "CO" means county.

Section 2. Resolutions of local governing bodies issued pursuant to KRS 177.9771(9) making recommendations to the Secretary of Transportation shall be submitted to: Secretary of Transportation, Transportation Cabinet, State Office Building, Frankfort, Kentucky 40622. The resolution must set forth a specific description of the road or road segments under consideration. The resolution must further set forth with specificity those conditions which give rise to inherent and definite hazards or create special conditions which the Secretary of the Transportation Cabinet needs to consider.

Section 3. The following highways, or portions thereof, are certified as meeting the criteria of and are hereby designated as the extended weight coal haul road system:

Appendix B

Highway Routes for Shipment of Radioactive Materials (Maryland)



Maryland Department of Transportation

*State Highway Administration
Baltimore, Maryland*

Bureau of Highway Maintenance

**HIGHWAY ROUTES FOR SHIPMENT OF
RADIOACTIVE MATERIALS**

**CORRIDOR COMPARISON STUDY
I-95 vs US 301**

RECEIVED

DEC 29 1981

OFFICE OF ENVIRONMENTAL
PROGRAMS

DECEMBER, 1981

PREFERRED HIGHWAY ROUTES
FOR
LARGE QUANTITY SHIPMENTS
RADIOACTIVE MATERIALS

MARYLAND DEPARTMENT OF TRANSPORTATION
DECEMBER 1981

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INTRODUCTION

On January 19, 1981 the U.S. Department of Transportation issued final regulations for the routing of radioactive materials by highway.

On February 26, 1981 Governor Harry Hughes designated the Maryland Department of Transportation as the lead agency in preparing a highway routing plan.

A Core Group was established in the Spring of 1981 with representatives from the following agencies:

- Department of Natural Resources
- Department of Health & Mental Hygiene
- Department of Public Safety & Correctional Services
 - including Maryland State Police
- State Fire Marshall's Office
- Civil Defense & Disaster Preparedness Agency
- Department of Transportation which includes:
 - State Highway Administration
 - Maryland Port Administration
 - Toll Facilities Administration

PURPOSE

The purpose of the Core Group was to devise an acceptable highway routing plan for the shipment of radioactive materials. The implementation of the plan is to be effective February 1, 1982.

Using the "Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials" published by the US DOT Research and Special Programs Administration in June 1981, the Core Group studied available routes in Maryland including impact on adjacent States.

In most instances the Interstate Highway System was the best, if not only, route to be considered. There were no suitable alternate routes to I-83 in Baltimore County, I-70 between Baltimore City and Hancock or I-81 in Washington County.

As a result the Interstate Highway System with the exception of the sections through Baltimore City (I-83 Jones Falls Expressway, I-95 inside the Baltimore Beltway), I-295 inside the Capital Beltway and I-95 between the State of Delaware and the Commonwealth of Virginia is being recommended as the preferred highway routes.

Because of the large urban areas of Baltimore and Washington, a study was made to determine if US 301 would be preferred over I-95. The "Guidelines" previously mentioned were used and it was established that both Primary and Secondary Comparison Factors indicated that US 301 would be the preferred route. However, I-95 still must be considered because of other connecting interstate highways.

... has been made with a parent ... at
a federally sponsored workshop in Columbia, South Carolina
in September 1981 and by mail in October 1981.

The Commonwealth of Virginia has supported the use
of US 301, as it has been the approved route for years,
under the old standards.

The Commonwealth of Pennsylvania has not made a
study for these routes, but they stated they would give
consideration to their use.

The State of Delaware appears to support the use
of US 301, but they have a problem area and their study is
not complete.

No reply has been received from the State of West
Virginia regarding the use of US 48.

RECOMMENDATION

✓ The Core Group recommends the following routes be
designated as the Preferred Highway Routes for the Shipment
of Radioactive Materials.

INTERSTATE HIGHWAYS

- I-70 Baltimore Beltway (I-695) to Pennsylvania State Line
(north of Hancock) - 72.5 miles
- I-81 Pennsylvania State Line to West Virginia State Line
- 12.1 miles
- I-83 Baltimore Beltway (I-695) to Pennsylvania State Line
- 23.3 miles
- I-270 Frederick Freeway (I-70) to Capital Beltway (I-495)
- 32.8 miles
- I-270Y Capital Beltway (I-495) to I-270 - 2.0 miles

I-495/I-95 Virginia State Line (Cabin John) to Virginia
(Capital State Line (Alexandria) - 42.2 miles
Beltway)

I-695/MD 695* Baltimore Beltway via Key Bridge - 24.2 miles

*Not Interstate

OTHER STATE HIGHWAYS

US 48 I-70 (Hancock) to West Virginia State Line - 86.5 miles

U.S. 40

to 48

US 301 Delaware State Line to Virginia State Line via
William Preston Lane and Nice Memorial Bridges -
123.31 miles

J.F.Kennedy Memorial Highway Delaware State Line via JFKMH, plus, I-95
(I-695 west of Baltimore City or MD 695 via Key
Bridge), I-95 to Capital Beltway and I-95 or
I-495 to Virginia State Line - 111.7 to 119.3
miles

*U.S. 50 from
MD RT. 3 to
I-95 ?*

The procedure used in this study was based on the "Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials" published by the US Department of Transportation, Research and Special Programs Administration, Materials Transportation Bureau, June 1981.

The States are not required to use the "Guidelines" if they have their own procedures that will enable them to make "an equivalent routing analysis which adequately considers overall risk to the public."

The figures developed are not a true risk analysis because actual risk figures were not developed but for comparative purposes only. Factors that were common to the routes being considered were not included.

ROUTE COMPARISON FACTORS

Risk factors were divided into two (2) categories: Primary and Secondary.

Primary Risk Factors

Normal Radiation Exposure

Although a shipment may meet DOT regulations, safe levels of radiation still result in exposure of people along the route. The number of people subject to such exposure could vary with the route.

The radiation dose is figured by considering the persons along the route, in other vehicles, truck crew and at truck stops.

The principal difference affecting public health risks are frequency of severe transportation accidents and the number of people that could be affected.

Population was the major consideration using a ten and twenty mile wide band and applying "Health Consequences Band Multipliers."

Economic Risk from Accidents

The affect of a severe accident will result in the contamination of various types of land uses along considered routes, and include decontamination costs as well.

The land use in the two previously mentioned bands were identified and "Economic Consequences Multipliers" were applied.

Secondary Risk Factors

Emergency Response

The effectiveness of emergency response factors are manpower, timing, planning, equipment, mobilization of police, technical personnel and cleanup.

An overall factor has been determined for each land development type such as city, town, rural and industrial, etc.

Evacuation

Factors contributing to an effective evacuation include type of area to be evacuated, means of egress, planning, communications, large public and private facilities.

An overall factor has been determined for each land development type such as city, industrial, rural, etc.

Special Facilities

Certain areas have sufficient economic or public safety importance to require special consideration. Hospitals, prisons, schools, churches, etc. are some of the facilities considered. The number of each of the special facilities is determined and a factor is applied to value established.

Traffic Fatalities and Injuries

Rates expressed in fatalities and injuries per vehicle mile are applied in this comparison analysis.



U.S. Department
of Transportation

Research and
Special Programs
Administration

8 MAR 1982

405 South 17th Street, S.W.
Washington, D.C. 20590

Mr. Lowell K. Bridwell
Secretary
Maryland Department of Transportation
P. O. Box 8755
Baltimore-Washington International Airport
Maryland 21240-0755

RECEIVED

MAR 10 1982

SECRETARY
OF TRANSPORTATION

Dear Mr. Bridwell:

Thank you for your letter of January 14, 1982, and the Maryland routing plan for nuclear materials which was enclosed. I would like to congratulate you and your staff on the organization of this task in the State of Maryland and the expeditious manner in which the routing plan was developed.

Your letter requests our approval of the routes selected by the State. The recent nuclear routing regulations promulgated by the Department do not entail our approval of State routing plans. Generally speaking, the regulations establish a framework by which States may designate additions to, or alternatives from, the Interstate highway system. Although we do encourage the States to review routes within their jurisdiction, we do not require the States to designate routes. Consequently, an advance approval process for those routes which are designated at the State-level and which are supported by a site-specific State routing analysis would serve no useful purpose unless a dispute arises.

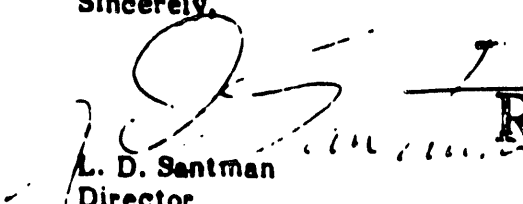
A formal method for obtaining an advisory review of State actions, such as route plans, does exist in our inconsistency ruling procedures (49 CFR Part 107 Subpart C). If a serious dispute arises in comments received from county governments or from other affected parties, it may serve a purpose to mediate the matter. In the decision process you have documented, we see no indication that a substantial unresolved dispute exists.

Our primary concern for State route designation is that the criteria established by DOT are followed; i.e., the routes are designated by the appropriate State agency, a safety analysis (such as our DOT Guidelines) is performed showing the relative safety of the chosen route, and that appropriate coordination with adjoining States and affected local governments is pursued. I can say that it appears that the Maryland routing plan has thus far fulfilled those requirements.

If you have any further questions on this matter please contact me.

Sincerely,

cc: ✓ Jerry Day


L. D. Santman
Director

Materials Transportation Bureau

RECEIVED

AUG 31 1984

SCIENTIFIC AND HEALTH
ADVISORY GROUP

Committee
Md. Cas.

October 20, 1951

Mr. W.H. Aaroe
West Virginia Department of Health
Industrial Hygiene Division
151 Eleventh Avenue
South Charleston, West Virginia 25303

Dear Mr. Aaroe:

As a result of a regulation established by the US Department of Transportation regarding the shipment of radioactive materials, routing and driver training requirements, the Maryland Department of Transportation has initiated a study group to designate preferred routes in Maryland.

In Maryland, for the most part, we have designated the interstate system as our preferred route. However, since there are no interstate routes west of Hancock, we have designated US 45 as the preferred route.

We would appreciate you giving favorable consideration to the continuation of this designation in West Virginia. We would also welcome any comments or suggestions regarding this route.

Very truly yours,

Pierce E. Cody, III
Chief, Bureau of Highway Maintenance

PEC/dal

cc: Mr. F.L. Dewberry
Mr. J.H. Day

STATE HIGHWAY ADMINISTRATION

**HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
CORRIDOR COMPARISON STUDY - I-95 VS US 301
DELAWARE STATE LINE TO VIRGINIA STATE LINE
PRIMARY and SECONDARY RISK FACTORS**

		I-95	US 301	TOTAL FACTOR VALUES	NORMALIZED VALUES	
					I-95	US 301
1	PRIMARY RISKS FACTORS					
2	NORMAL RADIATION EXPOSURE	2.5	2.2	4.7	0.53	0.47
3	PUBLIC HEALTH RISKS	35.73	8.95	44.68	0.80	0.20
4	ECONOMIC RISKS	6.906	9.691	16.597	0.42	0.58
5	TOTAL FIGURE OF MERIT				1.75	1.25
6						
7						
8						
9						
10	SECONDARY RISKS FACTORS					
11	EMERGENCY RESPONSE CAP.	9.1	10.96	20.06	0.15	0.55
12	EVACUATION	15.42	12.24	27.66	0.56	0.44
13	LOCATION OF SPECIAL FACILITIES	4140.0	630.0	4770.0	0.87	0.13
14	TRAFFIC FATALITIES	209.0	787.7	1082.7	0.19	0.81
15						
16	TOTAL FIGURE OF MERIT				2.07	1.93
17						
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HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
 (CORRIDOR COMPARISON STUDY - I 95 VS US 801
 DELAWARE STATE LINE TO VIRGINIA STATE LINE
 ROUTE DESCRIPTION I-95



SECTION	LOCATION	NO. OF LANES	MEDIAN WIDTH (FT)	AADT % TRUCKS NUMBER	TR. ANNUAL NO. OF TRUCKS DEATHS	ACCIDENT RATE/100 MILE MILES	ACCIDENT DATE/1000 SHIPMENTS	POPULATION 0-3 MILES	POPULATION 3-6 MILES
1	Wesport Main Bridge WV Bridge to I-195	6	50	95700 11%	10	179.76	0.05	57921	50816
2	I-195 to MD 175 MD 175 to Susquehanna Sprink Rd Susquehanna River to I-695	8	100	10527 63600 17%	4	57.96	0.01	27298	80725
3	I-695/I-95 to Anne Arundel Co Line AA Co Line to MD 10 MD 10 to East of Curtis Creek Bridge	6	25	11009	0	126.89	0.03	38185	42371
4	KEY BRIDGE KEY BRIDGE to MD 20 MD 20 to I-95/I-695	1	30	10%	0	01.95	0.01	22851	29358
5	I-695 to Susquehanna River Bridge Susquehanna River Bridge Susquehanna River Bridge to Delaware State Line	6	35	4600 16%	7	01.95	0.01	22851	29358

HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
 CORRIDOR COMPARISON STUDY - I-95 vs US 301
 DELAWARE STATE LINE TO VIRGINIA STATE LINE
 ROUTE DESCRIPTION U.S. 301



SECTION	LOCATION	NO. OF 12 FOOT LANES	MEDIAN WIDTH (FT)	AADT % TRUCKS NUMBER	TRUCKS NO. OF TRUCKS	DEATHS	TRUCK ANNUAL ACCIDENT RATE / 100 MIL. VEH MILES	ACCIDENT RATE / 1000 SHIPMENTS	POPULATION 0-3 MILES	POPULATION 3-6 MILES
1	GOV. NICE MEM. BRIDGE	2	0	18800						
	GOV. NICE BRIDGE to CHARLES/P.A. GED. CO. LINE	1	50	15%	2800	1	225.36	0.06	29067	10253
3	CHARLES/P.A. GED. CO. LINE to MD 5	1	50	24300						
	MD 5 to TRUMAN MILL TP.	1	75	15%						
	TRUMAN MILL TP. to MD 241	1	31							
	MD 241 to USS/801	1	66	2615	5	170.07		0.04	68531	76076
2	US 50 to MD 70	1	30	92300						
	MD 70 to Severn River Bridge	1	10							
	SEVERN RIVER BRIDGE	1	1							
	SEVERN RIVER BRIDGE to EAST OF MD 2	1	20	10%						
	EAST OF MD 2 to W.P. LANE MEM. BRIDGE	1	20							
	W.P. LANE MEM. BRIDGE	5	300+							
1	W.P. LANE MEM. BRIDGE to MD 8	1	70	3690	1	140.22		0.03	106653	91800
	MD 8 to MD 18-B (WEST of KENT NARROWS)	1	50	12500						
	MD 18-B to KENT NARROWS	1	18	10%						
	KENT NARROWS to DELAWARE STATE LINE	1	60							
	DELAWARE STATE LINE					9	171.91	0.05	21759	9017

where,

- D = normal radiation exposure comparison factor
- P = average population density along the route (people per sq. mi.)
- L = length of route (miles)
- v = average speed of vehicles on the route (mph)
- C₁ is a constant = 6.7 X 10⁻⁵
- T = average traffic count on the route (vehicles/hr)
- C₂ = conversion factor determined from Table 3.2-1
- C₃ = conversion factor determined from Table 3.2-1

These doses can be combined into a single comparison factor given by the following expression:

$$D = \frac{2L}{v}C_1 + \frac{L}{v}C_2 + \frac{1}{3}C_3 + \frac{L}{v}$$

TABLE 3.2-1. Conversion Factors for Use in Estimating Routine Radiation Exposure Factor

Distance Between Opposing Traffic Lanes (ft)	C ₂	Vehicle Separation Distance = $\frac{1}{2}$ (ft)	C ₃
10	1.9x10 ⁻⁹	10	1.8x10 ⁻⁵
20	9.5x10 ⁻¹⁰	50	1.6x10 ⁻⁵
30	6.0x10 ⁻¹⁰	100	1.5x10 ⁻⁵
40	4.4x10 ⁻¹⁰	200	1.3x10 ⁻⁵
50	3.7x10 ⁻¹⁰	300	1.0x10 ⁻⁵
60	2.9x10 ⁻¹⁰	400	8.6x10 ⁻⁶
70	2.5x10 ⁻¹⁰	500	7.3x10 ⁻⁶
80	2.2x10 ⁻¹⁰	600	6.0x10 ⁻⁶
90	1.9x10 ⁻¹⁰	700	5.3x10 ⁻⁶
100	1.6x10 ⁻¹⁰	800	4.0x10 ⁻⁶
150	1.0x10 ⁻¹⁰	900	3.3x10 ⁻⁶
200	7.4x10 ⁻¹¹	1000	3.0x10 ⁻⁶
300	4.9x10 ⁻¹¹	1200	1.3x10 ⁻⁶

Ref: Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials - June 1961.

NORMAL TRANSPORT EXPOSURE

$$D = \frac{PL}{V} C_1 + \frac{L^2}{V^2} C_2 + \frac{L^3}{V^3} C_3 + \frac{L}{V}$$

Segment 1

$P = 268,815 \div 274.92 = 978 \text{ veh/mi}$ $C_1 = 6.7 \times 10^{-3}$

$L = 45.82 \text{ Miles}$

Avg Dist Opposing Lanes = $67'$

$v = 55 \text{ MPH}$

C_2 (Table 3.2-1) = 2.5×10^{-10}

$T = 46,100/24 = 1921 \text{ veh/hr}$

Avg Veh Separation Dist = $(55/1921)(5280) = 151'$

$D_1 = \underline{0.9}$

C_3 (Table 3.2-1) = 1.8×10^{-5}

Segment 2

$P = 304,025 \div 146.76 = 2071 \text{ veh/mi}$

$C_1 = 6.7 \times 10^{-3}$

$L = 24.46$

Avg Dist Opposing Lanes = $57'$

$v = 55 \text{ MPH}$

C_2 (Table 3.2-1) = 2.9×10^{-10}

$T = 44,600/24 = 1858 \text{ veh/hr}$

Avg Veh Separation Dist = $(55/1858)(5280) = 156'$

$D_2 = \underline{0.5}$

C_3 (Table 3.2-1) = 1.3×10^{-5}

Segment 3

$P = 279,968 \div 134.4 = 2083 \text{ veh/mi}$

$C_1 = 6.7 \times 10^{-3}$

$L = 22.40$

Avg Dist Opposing Lanes = $223'$

$v = 55 \text{ MPH}$

C_2 (Table 3.2-1) = 7.4×10^{-11}

$T = 63,600/24 = 2650 \text{ veh/hr}$

Avg Veh Separation Dist = $(55/2650)(5280) = 110'$

$D_3 = \underline{0.5}$

C_3 (Table 3.2-1) = 1.5×10^{-5}

Segment 4

$P = 379,961 \div 159.54 = 2382 \text{ veh/mi}$

$C_1 = 6.7 \times 10^{-3}$

$L = 26.59$

Avg Dist Opposing Lanes = $80'$

$v = 55 \text{ MPH}$

C_2 (Table 3.2-1) = 2.2×10^{-10}

$T = 95,700/24 = 3988 \text{ veh/hr}$

Avg Veh Separation Dist = $(55/3988)(5280) = 73'$

$D_4 = \underline{0.6}$

C_3 (Table 3.2-1) = 1.6×10^{-5}

ROUTE TOTAL $D_1 + D_2 + D_3 + D_4 = 2.5$

NORMAL TRANSPORT EXPOSURE

$$D = \frac{PL}{V} C_1 + \frac{L^2}{V^2} C_2 + \frac{L^2}{V^2} C_3 + \frac{L}{V}$$

Segment 1

$$P = 21,750 \div 154.42 = 141/\text{sq. mi.}$$

$$L = 51.63 \text{ Miles}$$

$$V = 55 \text{ MPH}$$

$$T = 12,250/24 = 510 \text{ veh/hr.}$$

$$D_1 = \underline{0.9}$$

$$C_1 = 6.7 \times 10^{-5}$$

$$\text{Avg Dist Opposing Lanes} = 122'$$

$$C_2 \text{ (Table 3.2-1)} = 1.6 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/510)(5280) = 569$$

$$C_3 \text{ (Table 3.2-1)} = 6.0 \times 10^{-6}$$

Segment 2

$$P = 105,655/143.88 = 734/\text{sq. mi.}$$

$$L = 21.33 \text{ Miles}$$

$$V = 55 \text{ MPH}$$

$$T = 32,900/24 = 1371 \text{ veh/hr}$$

$$D_2 = \underline{0.4}$$

$$C_1 = 6.7 \times 10^{-5}$$

$$\text{Avg Dist Opposing Lanes} = 35'$$

$$C_2 \text{ (Table 3.2-1)} = 4.4 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/1371)(5280) = 212$$

$$C_3 \text{ (Table 3.2-1)} = 1.3 \times 10^{-5}$$

Segment 3

$$P = 68,331/127.98 = 534/\text{sq. mi.}$$

$$L = 23.98 \text{ Miles}$$

$$V = 55 \text{ MPH}$$

$$T = 24,300/24 = 1013 \text{ veh/hr}$$

$$D_3 = \underline{0.4}$$

$$C_1 = 6.7 \times 10^{-5}$$

$$\text{Avg Dist Opposing Lanes} = 105'$$

$$C_2 \text{ (Table 3.2-1)} = 1.6 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/1013)(5280) = 287$$

$$C_3 \text{ (Table 3.2-1)} = 1.0 \times 10^{-5}$$

Segment 4

$$P = 34,067/309.78 = 110/\text{sq. mi.}$$

$$L = 26.57 \text{ Miles}$$

$$V = 55 \text{ MPH}$$

$$T = 18,800/24 = 783 \text{ veh/hr}$$

$$D_4 = \underline{0.5}$$

$$C_1 = 6.7 \times 10^{-5}$$

$$\text{Avg Dist Opposing Lanes} = 43'$$

$$C_2 \text{ (Table 3.2-1)} = 4.4 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/783)(5280) = 371$$

$$C_3 \text{ (Table 3.2-1)} = 8.6 \times 10^{-6}$$

$$\text{ROUTE TOTAL } D_1 + D_2 + D_3 + D_4 = 2.2$$

HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
CORRIDOR COMPARISON STUDY - I 95 VS US 301
DELAWARE STATE LINE TO VIRGINIA STATE LINE
PUBLIC HEALTH RISK

SEGMENT	0 to 3 MILES			3 to 6 MILES			
	POPULATION (000)	MULTIPLIER	TOTAL	POPULATION (000)	MULTIPLIER	TOTAL	
I-95	1	268	.75	201	.95	.25	24
	2	384	.75	288	422	.25	106
	3	279	.75	209	207	.25	52
	4	379	.75	284	503	.25	126
US301	1	21	.75	16	9	.25	2
	2	105	.75	79	54	.25	14
	3	68	.75	51	76	.25	19
	4	34	.75	26	10	.25	3

SUMMARY

SEGMENT	0-3 MILES	3-6 MILES	PUBLIC HEALTH CONSEQ FACTOR	ACCID. PROB RATE	SEGMENT HEALTH RISK
1	201	24	225	.04	9.00
2	288	106	394	.03	11.82
3	209	52	261	.01	2.61
4	284	126	410	.03	12.30
TOTAL	I-95				35.73
1	16	2	18	.09	1.62
2	79	14	93	.03	2.79
3	51	19	70	.04	2.80
4	26	3	29	.06	1.74
TOTAL	US 301				8.95

HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
 CORRIDOR COMPARISON STUDY - I-95 VS US 301
 DELAWARE STATE LINE TO VIRGINIA STATE LINE
 ECONOMIC RISK

LAND USE TYPE	SEGMENT 1			SEGMENT 2			SEGMENT 3			SEGMENT 4		
	AREA	WEIGHT	WTD TOTAL	AREA	WEIGHT	WTD TOTAL	AREA	WEIGHT	WTD TOTAL	AREA	WEIGHT	WTD TOTAL
I-95												
0 to 5 MILE BAND												
FARMLAND	300	.01	3.00	25	.01	.25	100	.01	1.00	60	.01	.60
SINGLE FAMILY RESIDENTIAL	20	.10	2.00	10	.10	1.00	10	.10	1.00	25	.10	2.50
MULTI-FAMILY RESIDENTIAL	5	2.00	10.00	15	2.00	30.00	5	2.00	10.00	45	2.00	90.00
COMMERCIAL	20	.15	3.00	175	.15	26.25	20	.15	3.00	110	.15	16.50
PARKS	25	.05	1.25	10	.05	0.50	5	.05	0.25	5	.05	0.25
PUBLIC AREAS	15	.05	0.75	5	.05	0.25	80	.05	4.00	25	.05	1.25
TOTALS			30.50			38.05			19.15			111.00
5 to 10 MILE BAND												
FARMLAND	350	.001	0.35	40	.001	.04	150	.001	.15	80	.001	.08
SINGLE FAMILY RESIDENTIAL	10	.04	0.40	20	.04	0.80	5	.04	0.20	25	.04	1.00
MULTI-FAMILY RESIDENTIAL	5	2.00	10.00	30	2.00	60.00	5	2.00	10.00	45	2.00	90.00
COMMERCIAL	40	.01	0.40	150	.01	1.50	20	.01	0.20	85	.01	0.85
PARKS	30	.04	1.20	10	.04	0.40	5	.04	0.20	5	.04	0.20
PUBLIC AREAS	25	.05	1.25	5	.05	0.25	35	.05	1.75	80	.05	4.00
TOTALS			4.00			8.34			3.40			17.53
US 301												
0 to 5 MILE BAND												
FARMLAND	300	.01	3.00	150	.01	1.50	185	.01	1.85	185	.01	1.85
SINGLE FAMILY RESIDENTIAL	50	.10	5.00	30	.10	3.00	20	.10	2.00	25	.10	2.50
MULTI-FAMILY RESIDENTIAL	20	2.00	40.00	10	2.00	20.00	15	2.00	30.00	10	2.00	20.00
COMMERCIAL	20	.15	3.00	10	.15	1.50	5	.15	0.75	15	.15	2.25
PARKS	10	.05	0.50	5	.05	0.25	5	.05	0.25	20	.05	1.00
PUBLIC AREAS	40	.05	2.00	6	.05	0.30	10	.05	0.50	15	.05	0.75
TOTALS			71.10			26.40			35.25			27.75
5 to 10 MILE BAND												
FARMLAND	400	.001	0.40	120	.001	0.12	185	.001	0.185	200	.001	0.200
SINGLE FAMILY RESIDENTIAL	15	.04	0.60	40	.04	1.60	16	.04	0.64	30	.04	1.20
MULTI-FAMILY RESIDENTIAL	5	2.00	10.00	10	2.00	20.00	10	2.00	20.00	10	2.00	20.00
COMMERCIAL	30	.01	0.30	20	.01	0.20	10	.01	0.10	10	.01	0.10
PARKS	5	.02	0.10	10	.02	0.20	5	.02	0.10	10	.02	0.20
PUBLIC AREAS	45	.05	2.25	10	.05	0.50	15	.05	0.75	5	.05	0.25
TOTAL			4.67			4.62			5.75			3.55

HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
 CORRIDOR COMPARISON STUDY - I-95 VS US 301
 DELAWARE STATE LINE TO VIRGINIA STATE LINE
 EMERGENCY RESPONSE AND EVACUATION



ROUTE	LAMP DEVELOPMENT TYPE	SEGMENT 1	SEGMENT 2	SEGMENT 3	SEGMENT 4	TOTAL	ROUTE FRACTION	WEIGHT	WEIGHT TOTAL
I-95	EMERGENCY RESPONSE								
	CITY	30	35	30	50	165	.14	7	.28
	TOWN	50	5	70	40	165	.14	10	1.40
	RURAL	200	0	100	80	480	.40	15	4.80
	INDUSTRIAL	60	200	20	100	380	.32	4	1.92
	TOTAL					1190			9.10
US 301	CITY	25	5	10	15	55	.09	7	0.28
	TOWN	25	5	30	15	75	.06	10	0.60
	RURAL	150	175	175	180	680	.79	15	2.18
	INDUSTRIAL	20	25	25	60	130	.10	5	0.60
		TOTAL					1240		
EVACUATION	RURAL	300	0	100	80	480	.40	11	4.40
	SUBURBAN	50	5	70	40	165	.14	10	1.40
	URBAN	50	35	30	50	165	.14	25	3.22
	COMMERCIAL	80	100	10	50	190	.16	15	2.40
		INDUSTRIAL	30	100	10	50	190	.16	15
	TOTAL					1190			15.82
I-95	RURAL	150	175	175	180	680	.79	11	8.69
	SUBURBAN	25	5	30	15	75	.06	10	0.78
	URBAN	25	5	10	15	55	.04	28	1.12
	COMMERCIAL	10	12	12	30	64	.05	15	0.75
		INDUSTRIAL	10	15	13	30	66	.05	15
	TOTAL					1240			12.84

HIGHWAY ROUTES FOR SHIPMENT OF RADIOACTIVE MATERIALS
CORRIDOR COMPARISON STUDY - I-95 VS US 301
DELAWARE STATE LINE TO VIRGINIA STATE LINE
TRAFFIC FATALITIES and INJURIES (100 MILLION TRUCK MILES)

ROUTE	SEGMENT	ACCIDENT RATE	SEGMENT MILEAGE	TOTAL
I 95	1	1.86	45.82	85.2
	2	0.0	24.46	0.0
	3	1.97	22.10	32.9
	4	3.23	26.59	85.9
TOTAL COMPARISON FACTOR				204.0
US 301	1	10.00	51.63	516.30
	2	5.08	21.33	108.40
	3	5.33	23.98	127.80
	4	4.75	26.57	126.20
TOTAL COMPARISON FACTOR				878.70

SPECIAL FACILITIES

ROUTE	TYPE	NO. OF FACILITIES	WEIGHTING FACTOR	TOTAL
I-95	SCHOOLS	416	9	3744
	HOSPITALS	33	12	396
TOTAL				4140
US 301	SCHOOLS	62	9	558
	HOSPITALS	6	12	72

Committee
Md. Co

October 28, 1981

Mr. C.W. Ramsey
State Office of Emergency and
Energy Services
7700 Midlothian Turnpike
Richmond, Virginia 23235

Dear Mr. Ramsey:

As a result of a regulation established by the US Department of Transportation regarding the shipment of radioactive materials, routing and driver training requirements, the Maryland Department of Transportation has initiated a study group to designate preferred routes in Maryland.

For the most part, the interstate system has been designated as the preferred route as it is the only viable route available. However, there is an alternate route available in the I-95 corridor. Utilizing the guidelines recommended by the US Department of Transportation, US Route 301, from the Delaware State Line west of Middletown to the Virginia State Line at the US Naval Ordnance Laboratory, has been so designated.

The I-95 corridor must still be designated as a route as it connects to other designated routes. However, US 301 is the preferred route as a bypass to the urban areas of Baltimore, Washington and Northern Virginia.

As we discussed at the Workshop in Columbia, South Carolina in September, we would appreciate you giving favorable consideration to the continuation of this route in your State. We would also welcome any comments or suggestions concerning this route.

Very truly yours,

Pierce E. Cody, III
Chief, Bureau of Highway Maintenance

PEC/dal

cc: Mr. F.L. Dewberry
Mr. J.H. Day



COMMONWEALTH of VIRGINIA

State Office of Emergency and Energy Services

November 23, 1981

STATE OFFICE OF EMERGENCY AND ENERGY SERVICES
RICHMOND, VIRGINIA 23219
804-788-1000

TO: Mr. Pierre E. Cody, III
FROM: Mr. [Name obscured]

Mr. Pierre E. Cody, III
Chief, Bureau of Highway Maintenance
Maryland Department of Transportation
P. O. Box 117
707 North Howard Street
Baltimore, Maryland 21203

Dear Mr. Cody:

In response to your letter to Mr. Kansey of October 28, 1981 regarding the routing of hazardous radioactive materials, I find your alternate routing suggestion to be acceptable. There appears to be no reason why the alternate route to the I-95 corridor should not be continued as presently determined and published under the Nuclear Regulatory Commission's jurisdiction.

Mr. Kansey has talked with Mr. Charles Price, Director of the Radiation Health Bureau of the State Department of Health, and both feel that it would be pointless to apply the new DOT routing guidelines to the US 301 alternate since it has been an approved alternate under the old system for some years and since, by traffic density and population statistics, it appears abundantly clear that US 301 in Virginia would be a much preferable route to the overcrowded I-95 corridor between Fredericksburg, Virginia and Washington, D.C.

At this time there is extensive road construction on I-95 in Caroline County near where the suggested alternate routing and I-95 merge. The expansion of I-95 to four lanes, each direction, in the Caroline County to Richmond corridor, as well as new bridge construction at several points is anticipated to be complete by December 1, 1982. Highway Department sources indicate that significant volume restrictions on traffic will continue through 1982 in a sixteen mile stretch of the Interstate congested beyond normally acceptable limits. While the traffic problems will be sporadic, and at times unpredictable, it appears that during construction on the I-95 corridor in that area will be minimally acceptable for any spent fuel shipments and consideration should be given to helping shippers and carriers to plan use of both primary and alternate routes at low traffic volume periods (midnight to seven a.m.) through fiscal year 1982.

RECEIVED

NOV 23 1981

Mr. Dick ...
November 10, 1980

I want to thank you for assistance in determining the appropriate route for routing further alternate routes. Please do not feel that we will be in your office at any time. Should you have particular questions concerning implementation of the new DOT guidelines, please call Chuck Karsay in our Operations Division at area code (604) 313-1300. While we do not plan to use the guidelines on any primary or alternate route as set previously under NEQ criteria, we will be happy to work with Marvland on any changes that need to be made on new primary or alternate routes. Thank you for your work on these routing designations and for the continued cooperation between our two states on the matter of these sensitive shipments of radioactive fuel waste.

Sincerely,



Bill R. Anderson

REG. ONE 117

Comment
M.S.L. 4

October 26, 1991

Mr. Stephen T. Golding
Chairman, Subcommittee on the Designation of
Alternate Routes for Radioactive Materials
Delaware Department of Transportation
Dover, Delaware 19901

Dear Mr. Golding:

As a result of a regulation established by the US Department of Transportation regarding the shipment of radioactive materials, routing and driver training requirements, the Maryland Department of Transportation has initiated a study group to designate preferred routes in Maryland.

For the most part, the interstate system has been designated as the preferred route as it is the only viable route available. However, there is an alternate route available in the I-95 corridor. Utilizing the guidelines recommended by the US Department of Transportation, US Route 301 from the Delaware State Line west of Middletown to the Virginia State Line at the US Naval Ordnance Laboratory has been so designated.

The I-95 corridor must still be designated as a route as it connects to other designated routes. However, US 301 is the preferred route as a bypass to the urban areas of Baltimore, Washington and Northern Virginia.

As we discussed at the Workshop in Columbia, South Carolina, we would appreciate you giving favorable consideration to the continuation of this route in Delaware. We would also welcome the opportunity to meet with you at your earliest convenience if you feel such a meeting would be beneficial.

Very truly yours,

Pierce E. Cody, III
Chief, Bureau of Highway Maintenance

PEC/d-1

cc: Mr. F.L. Dewberry



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
1000 MARKET STREET, DOVER, DELAWARE 19901

OFFICIAL USE
SECRETARY

December 1, 1981

Mr. Pierce E. Cody, III
Chief, Bureau of Highway Maintenance
Maryland Department of Transportation
P. O. Box 717
707 North Calvert Street
Baltimore, MD 21203

Dear Mr. Cody:

I am in receipt of your letter of October 29, 1981, designating U.S. Route 301 from the Maryland State Line, west of Middletown, to the Virginia State Line, as Maryland's alternate route for the transportation of large quantities of radioactive material. At the present time, we of the State of Delaware, are still reviewing the statistical data that has been accumulated to determine if there are feasible alternate routes that we might designate in addition to the Interstate.

Part of our consideration has been to review several possibilities for channeling such traffic from the Delaware Memorial Bridge to 301 Southbound to the Maryland Line. At this time we do know that there is a serious traffic accident situation at Money's Truck Stop, which is just east of the Maryland/Delaware Boundary which must be reviewed very carefully before any final decision can be made. Knowing that this route is designed to serve not only your state but the communities in Northern Virginia, as well as Washington, D.C., Delaware is giving your request our serious consideration.

As part of our consideration, the Delaware Subcommittee on Alternate Routing is requesting that you consider designating Maryland Route 50 from Route 301 to Salisbury as an alternate route for large quantities of radioactive material. Our request stems from a study that identifies no suitable roads within the State of Delaware that bypass the Town of Smyrna and the City of Dover that could accommodate such shipments. Additionally, if an accident were to take place along Delaware Route 13, the economic and health impacts would be tremendous upon the residents of the

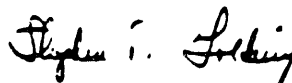
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Mr. Pierce E. Cody, III
December 1, 1981
Page 2

Delmarva Peninsula at these locations. Our feeling that Route 50 might be more suitable is based on the fact that there are alternative routes which the residents of the State of Maryland might use just as readily without the same type of impact that the closing of Route 13 would have on the State of Delaware.

I would, therefore, be interested in your reviewing this request and then contacting us about your State's feelings on this matter. To that end, I look forward to hearing from you once your people have had an opportunity to do a study on this request. I thank you for your consideration and look forward to working with you.

Sincerely,



Stephen T. Golding
Subcommittee Chairman

STG:h
cc:
Honorable W. J. O'Rourke

December 17, 1961.

Mr. Stephen T. Golding
Chairman, Subcommittee on the Designation of
Alternate Routes for Radioactive Materials
Delaware Department of Transportation
Dover, Delaware 19701

Dear Mr. Golding:

Thank you for your letter of December 1, 1961, regarding the transportation of large quantities of radioactive material.

We appreciate your giving consideration to the use of US 301 as an alternate to the interstate system. We too had some problem areas, but from an overall view, US 301 did appear more favorable.

Virginia has also selected US 301 as a preferred route and they advise that it has been an approved alternate under the old system for years.

In regard to your request to designate US 50 from Salisbury to US 301, we have the following comments:

- (1) We do not anticipate any major shipments of radioactive material from Salisbury as there are no known generators of radioactive waste, except possibly the hospital.
- (2) Virginia has indicated to us that they would not permit shipments through the Chesapeake Bridge-Tunnel complex. This would negate any interstate shipments along the coast through Delaware, Maryland and Virginia.
- (3) Any radioactive material from the Salisbury vicinity would be considered in the "guidelines" as "pick-up and delivery" and we would direct they be shipped via US 50. This would be the most direct route if the material was being shipped to a southern site and it would not result in too many additional miles of travel if a northern site were the destination.

Mr. Robert T. Goldie
December 11, 1952
P. 1

- (3) The two major towns of Lehigh and Lenoir would be involved but to a lesser extent than Dover and Sayre. The two narrow bridges at Vienna and Cambridge would have to be traveled, but hopefully we will be replacing both in the near future.

The Maryland State Highway Administration appreciates your cooperation in this venture.

Very truly yours,

Pierce F. Cody, III
Chief, Bureau of Highway Construction

P. 1

cc: Mr. F.L. DeBerry
Mr. J. J. Day

Committee
Md. Case

October 29, 1981

Mr. Eugene Sajeski
Pennsylvania Department of Transportation
Hazardous Material Division
Transportation & Safety Building
Harrisburg, Pennsylvania 17120

Dear Mr. Sajeski:

As a result of a regulation established by the US Department of Transportation regarding the shipment of radioactive materials, routing and driver training requirements, the Maryland Department of Transportation has initiated a study group to designate preferred routes in Maryland.

For the most part, the interstate system has been designated as the preferred route. Thus, the interstate routes connecting Maryland with Pennsylvania have been so designated. The following routes would connect to the Pennsylvania interstate system:

- I-78 south of York, Pennsylvania
- I-81 north of Hagerstown, Maryland
- I-70 north of Hancock, Maryland

We would appreciate you giving favorable consideration to the designation of these routes in Pennsylvania. We would welcome any comments you may have concerning these routes.

Very truly yours,

Pierce E. Cody, III
Chief, Bureau of Highway Maintenance

PEC/dal

cc: Mr. F.L. Dewberry
Mr. J.N. Day

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HAZARDOUS SUBSTANCES TRANSPORTATION BOARD
215 Transportation and Safety Building
Harrisburg PA 17120
(717) 787 7445



November 9, 1981

Mr. Pierce E. Cody, III
Chief, Bureau of Highway Maintenance
Maryland Department of Transportation
State Highway Administration
P.O. Box 717/707 North Calvert Street
Baltimore, Maryland 21203

Dear Mr. Cody:

Thank you for your letter concerning the transportation of radioactive materials over designated highways.

To-day no study of the interstate system has been made due to their federal status, but will be given every consideration as they relate to Pennsylvania and Maryland. This would be I-81, I-83 and I-70.

Sincerely,

A handwritten signature in cursive script that reads "Eugene Sajeski".

Eugene Sajeski, Chief
Hazardous Substances Division

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BUREAU OF HIGHWAY MAINTENANCE

Appendix C

Rules and Regulations Re: Control of Motor Vehicles (Tennessee)

RULEMAKING HEARING RULES
TENNESSEE PUBLIC SERVICE COMMISSION
DIVISION OF MOTOR CARRIERS
CHAPTER 1220-2-1
RULES AND REGULATIONS AS TO SUPERVISION AND CONTROL OF
MOTOR VEHICLES AND MOTOR BUSES
NEW RULE

SSRB

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1220-2-1-.46 ROUTING OF HAZARDOUS MATERIAL VEHICLES IN KNOX
COUNTY, TENNESSEE

No person shall drive or cause to be driven a motor vehicle carrying a placardable quantity of hazardous material as specified in Title 49 of the Code of Federal Regulations Parts 172.500 through 172.558 along or upon Interstate 40 or Interstate 275 in Knox County, Tennessee, between the intersection of said interstates with Interstate 640 on the west, north, or east. This prohibition shall not apply to the following:

- (1) to motor vehicles which have shipments originating at or destined to the City of Knoxville and to service points on U. S. Highway 129 in Blount County as verified by appropriate shipping papers.
- (2) to motor vehicles which have shipments to be interlined with other carriers or which have shipments transferred to other motor vehicles or aircraft of the same carrier at facilities located in the City of Knoxville or service points on U. S. Highway 129 in Blount County.

- (3) to motor vehicles which need emergency repairs or warranty work performed at authorized dealers or repair facilities as may be verified by a physical inspection of the vehicle, by warranty papers in the vehicle, or by other means of verification used by the investigating officer.

Statutory authority: T.C.A. §§ 65-2-102(2) and 65-15-113.

Signature of the agency officer directly responsible for drafting these rules:

Donald L. Scholes

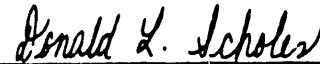
 Donald L. Scholes
 Assistant General Counsel

The roll-call vote by the TENNESSEE PUBLIC SERVICE COMMISSION on these rulemaking hearing rules was as follows:

	Aye	No	Abstain
<i>Frank D. Cochran</i> ✓ CHAIRMAN FRANK D. COCHRAN			
<i>Keith Bissell</i> ✓ COMMISSIONER KEITH BISSELL			
<i>Steve Hewlett</i> ✓ COMMISSIONER STEVE HEWLETT			

I certify that this is an accurate and complete copy of rulemaking hearing rules lawfully promulgated and adopted by the Tennessee Public Service Commission on the 25th day of February, 1987.

Further, I certify that these rules are properly presented for filing, a notice of rulemaking hearing having been filed in the Department of State on the 31st day of July, 1986, and such notice of rulemaking hearing having been published in the August, 1986 issue of the Tennessee Administrative Register, and such rulemaking hearing having been conducted pursuant thereto on the 22nd day of September, 1986.




Donald L. Scholes
Assistant General Counsel

Subscribed and sworn to before me this 25th day of February, 1987.


Notary Public

My commission expires on the 17th day of February, 1991.

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.


W. J. Michael Cody
Attorney General and Reporter

The rulemaking hearing rules set out herein were properly filed
in the Department of State and will become effective on the 15th
day of May, 1987.

Gentry Crowell
Gentry Crowell
Secretary of State

By James Davis

Signed this 31st day of March, 1987.

SECRETARY OF STATE
OFFICE OF

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Appendix D

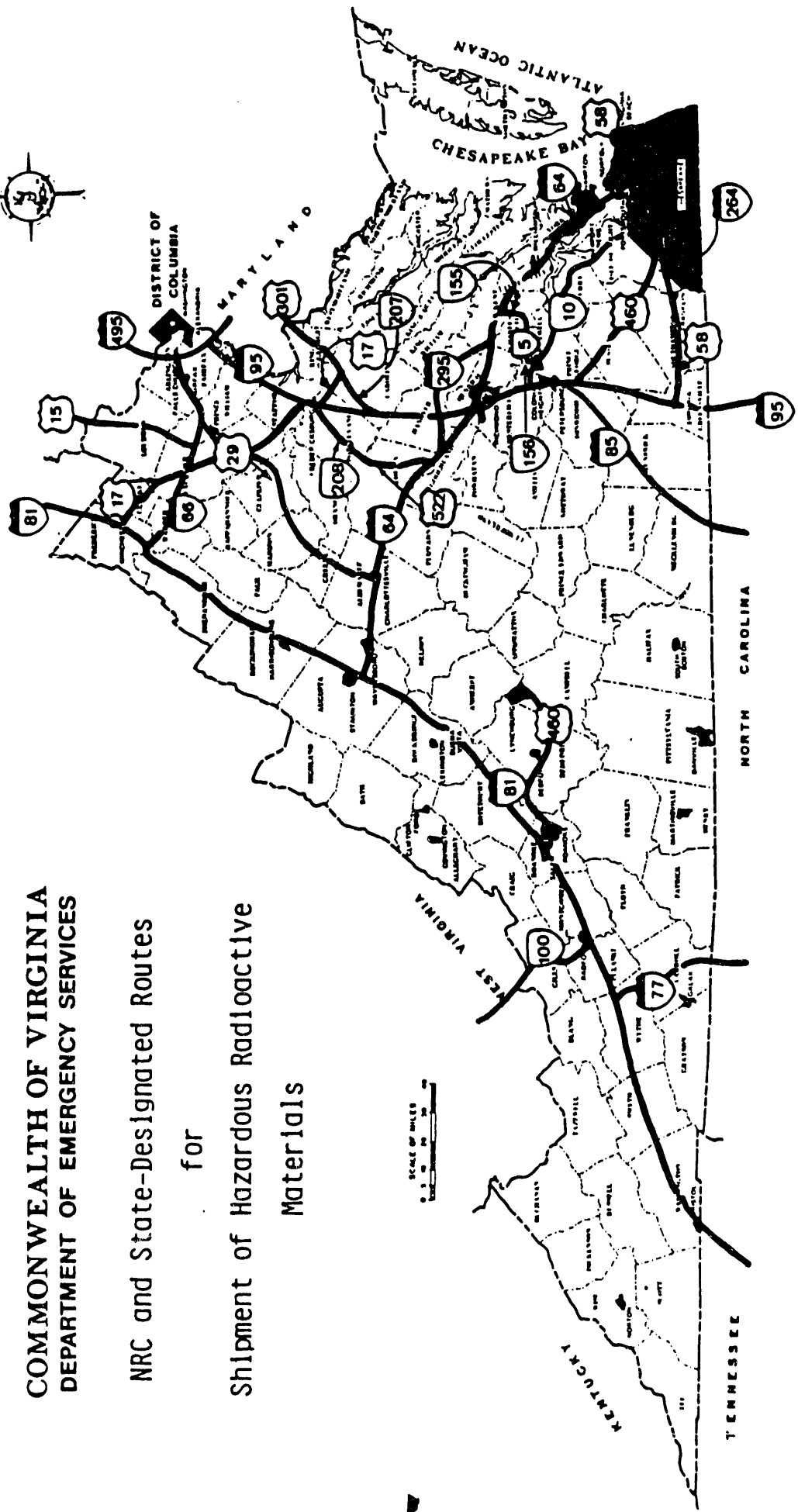
NRC and State-Designated Routes for Shipment of Hazardous Radioactive Materials (Virginia)

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF EMERGENCY SERVICES**

NRC and State-Designated Routes

for

**Shipment of Hazardous Radioactive
Materials**



**DATE
FILMED**

7 / 27 / 93

END