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NOTICE

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PRODUCTS.**

DOE/CH/10324-T4

STATE ALTERNATIVE ROUTE DESIGNATIONS

July 1989

Prepared for U.S. Department of Energy
under Cooperative Agreement
DE-FC01-87CH10324

by the

Southern States Energy Board
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MASTER

Table of Contents

Introduction

Statement of Purpose

State Alternative Route Designation Matrix

Conclusion

Appendix A Letter Re: Kentucky Route Designations

Appendix B ~~Highway Routes for Shipment of Radioactive Materials~~, Maryland
Department of Transportation

Appendix C Rules and Regulations as to Supervision and Control of Motor
Vehicles and Motor Buses, Tennessee Public Service Commission

Appendix D NRC and State Designated Routes for Shipment of Hazardous Radio-
active Materials, Virginia Department of Emergency Services

Introduction

Pursuant to the Hazardous Materials Transportation Act (HMTA), the Department of Transportation (DOT) has promulgated a comprehensive set of regulations regarding the highway transportation of high-level radioactive materials. These regulations, under docket numbers HM-164 and HM-164A, establish interstate highways as the preferred routes for the transportation of radioactive materials within and through the states.

The regulations also provide a methodology by which a state may select alternative routes. First, the state must establish 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). Once identified, 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 routing analysis. Adjoining states and localities should be consulted on the impact of proposed alternative routes as a prerequisite of final route selection. Lastly, the states must provide written notice of DOT of any alternative route designation before the routes are deemed effective.

Statement of Purpose

The purpose of this report is to highlight state action regarding the designation of alternative routes for the transportation of radioactive materials. The report identifies states in the region that have established alternative routes and describes the routes designated by each state and provides the name of the appropriate contact person for information concerning alternative routing.

The report represents an extension of the work contained in the Southern States Energy Board's Southern States' Routing Agency Report, which identified the state routing agencies and contact persons. Based on that information, telephone interviews were conducted with each contact person or his representatives to determine whether the state had designated alternative routes and which routes were in use. In order to verify and expand upon information gathered from telephone interviews, state responders were asked to provide available documentation on the process used to select alternatives. Additionally, U.S. Department of Transportation provisions under HM-164A were examined.

State Alternative Route Designations

State	Contact Person	Routing Regulation
Alabama	Aubrey Godwin, Director Radiological Health Branch State Board of Health (205) 261-5315	DOT routes only; no state designations; shippers may apply for permission to use alternative route
Arkansas	William Savage Arkansas Transportation Commission (501) 682-1341	State designated routes are: Memphis to Fort Smith I-40 to the Oklahoma state line Memphis to Texarkana I-40 to I-440 (in lieu of I-430, I-630 or that portion of I-30 connecting I-40 and I-440) I-30 to the Texas state line
Florida	Dan Thoss, Public Health Physician Florida Dept. of Health & Rehabilitative Services (407) 297-2095	DOT routes only
Georgia	Lucia Ramey, Dir. Compliance & Safety Transportation Division Georgia Public Service Commission (404) 559-6602	DOT routes only

State Alternative Route Designations (continued)

State	Contact Person	Routing Regulation
Kentucky	Milo Bryant, Secretary & Commissioner of Highways Transportation Cabinet (502) 564-4890	State designated routes 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 I-275, is required to be used instead)
Louisiana	William Spencer Louisiana State Police (504) 925-6113	DOT routes only
Maryland	George Harmon Department of the Environment (301) 631-3794	State designated routes are: Route 301 from Delaware to Virginia; Route 40 & 48 to Morgantown, West Virginia
Mississippi	Robert Hollimon Mississippi Highway Department	DOT routes only

State Alternative Route Designations (continued)

State	Contact Person	Routing Regulation
Missouri	Sgt. Bound Commerical Vehicle Enforcement Missouri State Police (314) 751-3313	DOT routes only
North Carolina	Dayne Brown Radiation Protection Section North Carolina Department of Human Resources (919) 733-4283	DOT routes only
Oklahoma	2 Lt. Garry Thomas Oklahoma Department of Public Safety (405) 425-2282	DOT routes only
South Carolina	Heyward Shealy Bureau of Radiological Health South Carolina Department of Health & Environmental Control (803) 253-4634	DOT routes only
Tennessee	Paul Melander Tennessee Public Service Commis- sion (615) 741-0484	State designated route: I-640 around Knoxville

State Alternative Route Designations (continued)

State	Contact Person	Routing Regulation
Texas	David Lacker, Director Bureau of Radiation Control Texas Department of Health (512) 835-7000	DOT routes only
Virginia	James Holloway Technological Hazards Branch Department of Emergency Services (804) 674-2400	State designated routes are: Maryland line 301 to Virginia 207 to I-95
West Virginia	James Youngblood Safety & Roadside Service Department of Highway (304) 348-3338	DOT routes only

Conclusion

A review of the documentation concerning the process used to select alternative routes shows that states are primarily concerned with avoiding risks associated with travel through population centers and highway construction areas. Concern was also expressed for the overall suitability of certain highways for the transportation of radioactive materials.

To date, five of the 16 member states of the Southern States Energy Board have designated alternative routes; they are Arkansas, Kentucky, Maryland, Tennessee and Virginia. Clearly, the vast majority of states have not selected alternative routes. However, it is unclear whether the relatively modest amount of route selection activity in the region is based on the states' satisfaction with the exclusive use of the interstate highway system or if states anticipate some rulemaking activity concerning routing issues in the near future. Given the expected increase in radioactive waste shipments on U.S. highways when disposal facilities become operational, greater attention will likely be focused on routing issues for the next several years. As part of its cooperative agreement with the U.S. Department of Energy, the Southern States Energy Board will continue to monitor the routing activities of its member states.

Appendix A

Letter Re: Kentucky Route Designations



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KENTUCKY 40622

WALLACE G. WILKINSO
GOVERNOR

MILO D. BRYANT
SECRETARY

AND

COMMISSIONER OF HIGHWAYS

October 3, 1988

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.

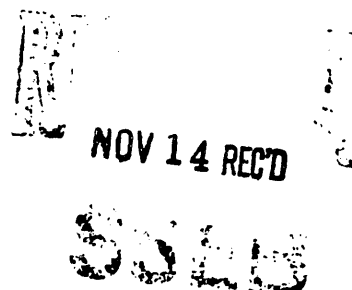
Only the Interstate Highways in Kentucky may be used to transport these larger quantities of radioactive materials. These highways are I-24, I-64, I-65, I-71, I-75, and I-275. In northern Kentucky the use of I-71/75 is further restricted in accordance with our administrative regulation 601 KAR 5:190 (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

Milo D. Bryant
Secretary and
Commissioner of Highways



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 exempted 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.

603 KAR 5:210. Extended weight coal haul road 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 to certify those public highways which meet certain criteria as the extended weight coal haul road 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 meanings:

(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

APPENDIX

CONTENTS

PRIMARY & SECONDARY RISK FACTORS.	I
ROUTE DESCRIPTION I-95.	II
US-301.	III
NORMAL TRANSPORT EXPOSURE - CHAPT C2 & C3	IV
Worksheet I-95.	V
Worksheet US 301.	VI
PUBLIC HEALTH RISK.	VII
ECONOMIC RISK	VIII
EMERGENCY RESPONSE & EVACUATION	IX
TRAFFIC FATALITIES/INJURIES	X
SPECIAL FACILITIES.	X
MAP	XI
CORRESPONDENCE.	XII

TABLE OF CONTENTS

INTRODUCTION & PURPOSE. . . . .	.1
SUMMARY . . . . .	.2
RECOMMENDATION. . . . .	.3
STUDY PROCEDURE . . . . .	.4
ROUTE COMPARISON FACTORS. . . . .	.5
PRIMARY RISK FACTORS . . . . .	.5
NORMAL RADIATION EXPOSURE . . . . .	.5
PUBLIC HEALTH RISKS FROM ACCIDENTS. . . . .	.6
ECONOMIC RISKS FROM ACCIDENTS . . . . .	.6
SECONDARY RISK FACTORS . . . . .	.6
EMERGENCY RESPONSE. . . . .	.6
EVACUATION. . . . .	.6
SPECIAL FACILITIES. . . . .	.7
TRAFFIC FATALITIES AND INJURIES . . . . .	.7
APPENDIX	

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 request to hold 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

400 State St. 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
Med. Com.

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 40 as the preferred route.

We would appreciate your 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/dml

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	
PRIMARY RISKS FACTORS					I-95	US 301
	NORMAL RADIATION EXPOSURE	2.5	2.2	4.7	0.53	0.47
	PUBLIC HEALTH RISKS	35.73	8.95	44.68	0.80	0.20
	ECONOMIC RISKS	6.906	9.691	16.597	0.42	0.58
	TOTAL FIGURE OF MERIT				1.75	1.25
SECONDARY RISKS FACTORS						
	EMERGENCY RESPONSE CAP.	9.1	10.96	20.06	0.15	0.55
	EVACUATION	15.42	12.24	27.66	0.56	0.44
	LOCATION OF SPECIAL FACILITIES	4140.0	630.0	4770.0	0.87	0.13
	TRAFFIC FATALITIES	204.0	787.7	1082.7	0.19	0.81
	TOTAL FIGURE OF MERIT				2.07	1.93

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 12 FOOT LANES	MEDIAN WIDTH (FT)	AADT % TRUCKS NUMBER	TRUCKS NO. OF TRUCKS DEATHS	ACCIDENT RATE /100 MILES	ACCIDENT RATE /100 MILES	ACCIDENT RATE /100 MILES	POPULATION 0-3 MILES	POPULATION 5-6 MILES
1	Wilmington Bridge WV Bridge to I-95	6	3	95700 11%	10	129.76	0.02	57926	50816	
2	I-95 to MD 175 MD 175 to Susquehanna State Rd Susquehanna State Rd to I-685	6	100+	10527 63600 17%	4	52.96	0.01	27728	207305	
3	I-685/I-95 to Anne Arundel Co Line AACo Line to MD 10 MD 10 to East of Curtis Creek Bridge Curtis Creek Bridge to KEY BRIDGE KEY BRIDGE to MD 20 MD 20 to I-95/I-685	6	25 50	10812	0	126.89	0.03	30435	422371	
4	I-685 to Susquehanna River Bridge Susquehanna River Bridge Susquehanna River Bridge to Delaware State Line	6	25	46100 16%	7	81.95	0.04	262815	20558	

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

SECTION	LOCATION	NO. OF 12 FOOT LANES	MEDIAN WIDTH (FT.)	AADT % TRUCKS NUMBER	TRUCKS NO. OF TRUCKS DEATHS	ACCIDENT RATE/100 MILE VEH MILES	ACCIDENT RATE/100 SHIPMENTS	POPULATION 0-5 MILES	POPULATION 3-6 MILES
1	GOV. NICE MEM. BRIDGE GOV. NICE BRIDGE to CHARLES/MR. GEO. CO. LINE	2	0	18800 15%	1	225.36	0.06	94067	10653
3	CHARLES/MR. GEO. CO. LINE to MD 5	4	50	28300	1				
	MD 5 to THOMAS MILL RD.	4	75	15%					
	THOMAS MILL RD. to MD 241	4	34						
	MD 241 to US 301	4	65	3615	5	170.07	0.09	68391	7604
2	US 301 to MD 70	4	30	32300					
	MD 70 to SEVERN RIVER BRIDGE	4	10						
	SEVERN RIVER BRIDGE	4	4						
	SEVERN RIVER BRIDGE to EAST OF MD 2	1	20	10%					
	EAST OF MD 2 to W.P.	6	20						
	LANE MEM. BRIDGE	5	300+						
	W.P. LANE MEM. BRIDGE			3290 12250	4	140.32	0.05	106633	51885
1	W.P. LANE MEM. BRIDGE to MD 8	4	70	10%					
	MD 8 to MD 18-B (WEST of KENT NARROWS)	1	50						
	MD 18-B to KENT NARROWS	4	18						
	KENT NARROWS to DELAWARE STATE LINE	4	60	1725	9	171.91	0.08	21759	9817

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 = 6.7×10^{-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:

$$D = \frac{P}{v} C_1 + \frac{L}{v} C_2 + \frac{T}{v} C_3 + \frac{L}{v}$$

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 = $\frac{v}{T}$ (ft)	C ₃
10	1.9×10^{-9}	10	1.8×10^{-5}
20	9.5×10^{-10}	50	1.6×10^{-5}
30	6.0×10^{-10}	100	1.5×10^{-5}
40	4.4×10^{-10}	200	1.3×10^{-5}
50	3.7×10^{-10}	300	1.0×10^{-5}
60	2.9×10^{-10}	400	8.6×10^{-6}
70	2.5×10^{-10}	500	7.3×10^{-6}
80	2.2×10^{-10}	600	6.0×10^{-6}
90	1.9×10^{-10}	700	5.0×10^{-6}
100	1.6×10^{-10}	800	4.0×10^{-6}
150	1.0×10^{-10}	900	3.3×10^{-6}
200	7.4×10^{-11}	1000	3.0×10^{-6}
300	4.0×10^{-11}	1200	1.3×10^{-6}

Ref: Guidelines for Selecting Preferred Highway Routes for Large Quantity Shipments of Radioactive Materials - June 1981.

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

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

$$L = 45.82 \text{ Miles}$$

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

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

$$D_1 = \underline{0.9}$$

$$\text{Avg Dist Opposing Lanes} = 67'$$

$$C_2 \text{ (Table 3.2-1)} = 2.5 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/1921)(5280) = 15'$$

$$C_3 \text{ (Table 3.2-1)} = 1.8 \times 10^{-5}$$

Segment 2

$$P = 384,085 \div 146.76 = 2617 \text{ veh/mi}$$

$$L = 24.46$$

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

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

$$D_2 = \underline{0.5}$$

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

$$\text{Avg Dist Opposing Lanes} = 57'$$

$$C_2 \text{ (Table 3.2-1)} = 2.9 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/1858)(5280) = 156'$$

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

Segment 3

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

$$L = 22.40$$

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

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

$$D_3 = \underline{0.5}$$

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

$$\text{Avg Dist Opposing Lanes} = 223'$$

$$C_2 \text{ (Table 3.2-1)} = 7.4 \times 10^{-11}$$

$$\text{Avg Veh Separation Dist} = (55/2650)(5280) = 110'$$

$$C_3 \text{ (Table 3.2-1)} = 1.5 \times 10^{-5}$$

Segment 4

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

$$L = 26.59$$

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

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

$$D_4 = \underline{0.6}$$

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

$$\text{Avg Dist Opposing Lanes} = 80'$$

$$C_2 \text{ (Table 3.2-1)} = 2.2 \times 10^{-10}$$

$$\text{Avg Veh Separation Dist} = (55/3988)(5280) = 73'$$

$$C_3 \text{ (Table 3.2-1)} = 1.6 \times 10^{-5}$$

$$\text{ROUTE TOTAL } D_1 + D_2 + D_3 + D_4 = 2.5$$

NORMAL TRANSPORT EXPOSURE

$$D = \frac{P_1}{V} C_1 + \frac{P_2}{V} C_2 + \frac{P_3}{V} C_3 + \frac{P_4}{V}$$

Segment 1

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

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

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

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

$$D_1 = \underline{0.9}$$

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

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

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

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

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

Segment 2

$$P = 105,655/43.88 = 734 / \text{sq. mi.}$$

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

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

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

$$D_2 = \underline{0.4}$$

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

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

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

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

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

Segment 3

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

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

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

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

$$D_3 = \underline{0.4}$$

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

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

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

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

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

Segment 4

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

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

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

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

$$D_4 = \underline{0.5}$$

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

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

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

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

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

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

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

		0 to 3 MILES			3 to 6 MILES		
SEGMENT		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	277	.75	209	207	.25	52
	4	277	.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	.02	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	75	.01	.75	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	90	.15	13.50	175	.15	26.25	20	.15	3.00	110	.15	16.50
PARKS	25	.03	0.75	10	.03	0.30	5	.03	0.15	8	.03	.24
PUBLIC AREAS	15	.05	0.75	5	.05	0.25	80	.05	4.00	25	.05	1.25
TOTALS			20.50			58.05			19.15			111.00
5 to 10 Mile Band												
FARMLAND	350	.01	3.50	40	.01	.40	150	.01	1.50	80	.01	.80
SINGLE FAMILY RESIDENTIAL	10	.04	.40	20	.04	.80	5	.04	.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	4.00	150	.01	1.50	20	.01	0.20	85	.01	.85
PARKS	30	.03	.90	—	—	—	5	.03	.15	5	.03	.15
PUBLIC AREAS	25	.05	1.25	—	—	—	35	.05	1.75	30	.05	1.50
TOTALS			4.00			8.34			3.40			17.53
US 301												
0 to 5 Mile Band												
FARMLAND	380	.01	3.80	150	.01	1.50	180	.01	1.80	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	.03	.30	5	.03	0.15	5	.03	0.15	20	.03	0.60
PUBLIC AREAS	40	.05	2.00	6	.05	0.30	10	.05	0.50	15	.05	0.75
TOTALS			28.10			26.40			35.25			27.35
5 to 10 Mile Band												
FARMLAND	120	.01	1.20	120	.01	1.20	185	.01	1.85	205	.01	2.05
SINGLE FAMILY RESIDENTIAL	15	.04	.60	40	.04	1.60	15	.04	0.60	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	.03	.15	10	.03	0.30	5	.03	0.15	10	.03	0.30
PUBLIC AREAS	45	.05	2.25	10	.05	0.50	15	.05	0.75	5	.05	0.25
TOTAL			4.61			4.64			5.35			3.35

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

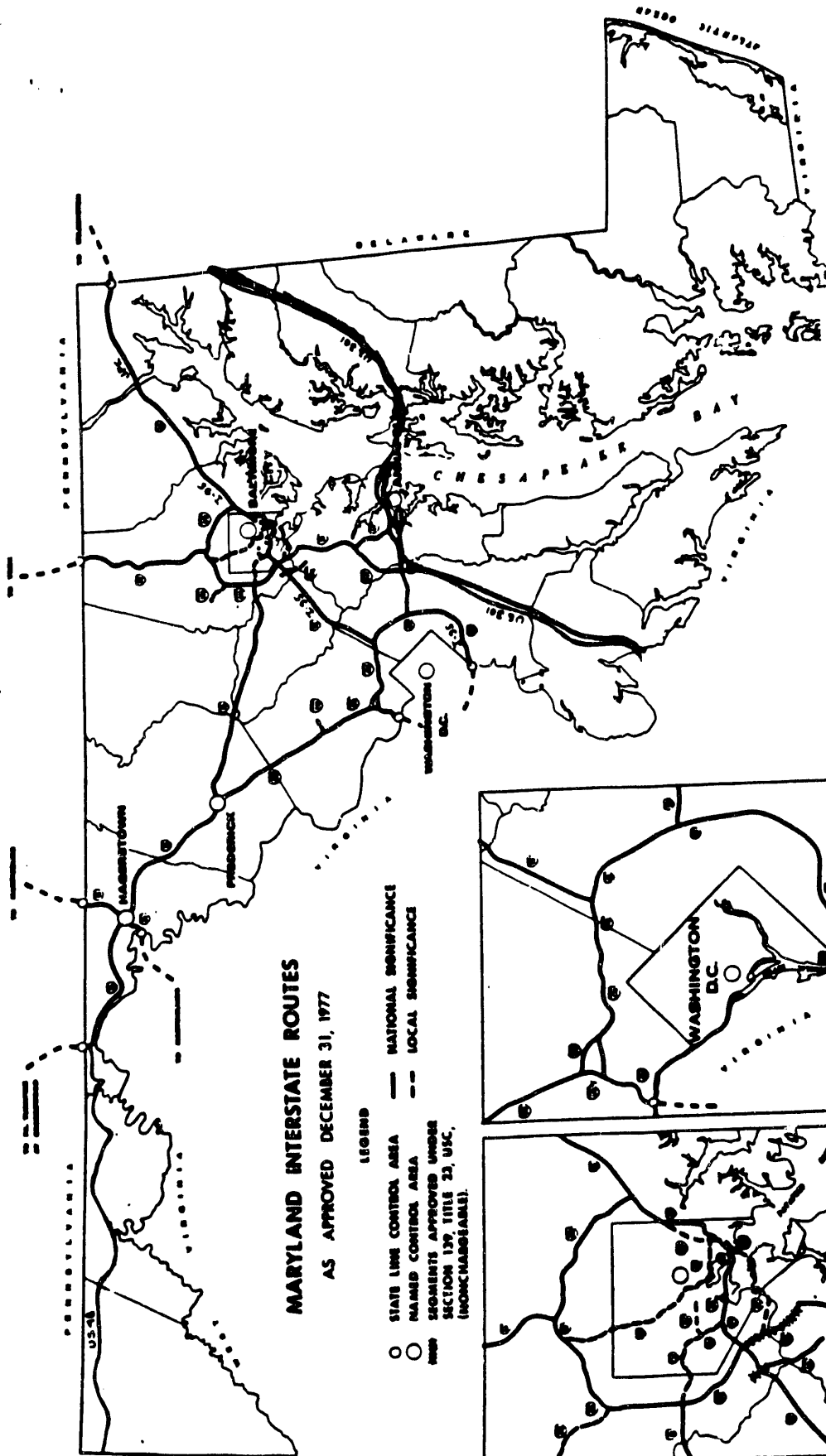
ROUTE	LAND DEVELOPMENT TYPE	SEGMENT 1	SEGMENT 2	SEGMENT 3	SEGMENT 4	TOTAL	ROUTE FRACTION	WEIGHT	WEIGHT TOTAL
I-95	EMERGENCY RESPONSE	30	35	30	30	105	.14	7	28
	CITY	50	5	70	40	165	.14	19	1.40
	TOWN	50	5	100	80	480	.40	15	4.80
	RURAL	200	200	20	100	380	.32	4	1.92
	INDUSTRIAL	60	200	20	100	1190			9.10
US 301	Total								
	CITY	25	5	10	15	55	.09	7	0.28
	TOWN	25	5	30	15	75	.05	19	0.60
	RURAL	150	175	175	180	900	.72	15	2.98
	INDUSTRIAL	20	25	25	60	130	.10	8	0.60
EVACUATION	Total					1240			10.96
	I-95 RURAL	300	0	100	80	480	.40	11	4.90
	SUBURBAN	50	5	70	40	165	.14	13	1.82
	URBAN	50	35	30	30	145	.14	28	3.22
	COMMERCIAL	80	100	10	50	190	.16	15	2.40
US 301	INDUSTRIAL	30	100	10	50	190	.16	18	2.88
	Total					1190			15.92
	RURAL	150	175	175	180	900	.72	11	8.69
	SUBURBAN	25	5	30	15	75	.06	13	0.78
	URBAN	25	5	10	15	55	.04	28	1.12
COMMERCIAL	INDUSTRIAL	10	12	12	30	64	.06	15	0.75
	Total					1240	.08	18	0.90
									12.89

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	1.47	22.40	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

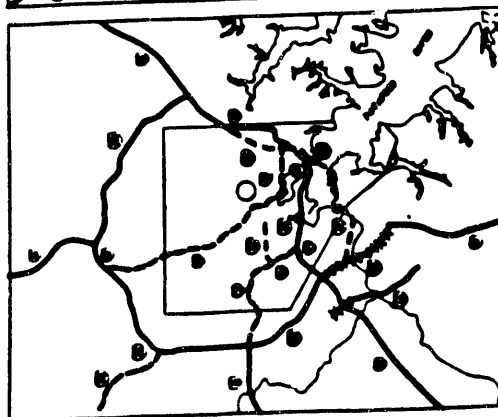
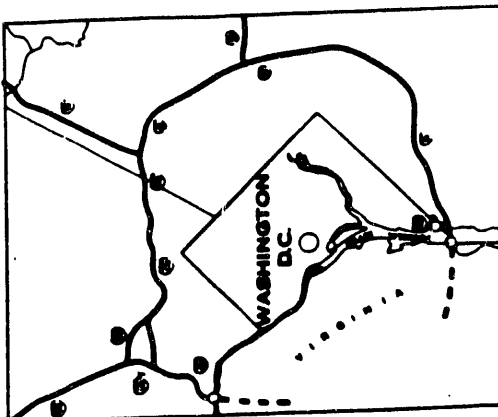


MARYLAND INTERSTATE ROUTES

AS APPROVED DECEMBER 31, 1977

LEGEND

- STATE LINE CONTROL AREA
- NAMED CONTROL AREA
- NATIONAL SIGNIFICANCE
- - - LOCAL SIGNIFICANCE
- SEGMENTS APPROVED UNDER SECTION 129, TITLE 23, USC, (NONCHANGABLE)



Committ
Md. Co

October 26, 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

101 TURNER ROAD
RICHMOND, VIRGINIA 23211
804-380-1800

Mr. Pierre E. Cody, III
Chief, Bureau of Highway Maintenance
Maryland Department of Transportation
P. O. Box 717
707 North Calvert Street
Baltimore, Maryland 21208

Dear Mr. Cody:

In response to your letter to Mr. Ransley of October 26, 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 previously determined and authorized under the Nuclear Regulatory Commission's jurisdiction.

Mr. Ransley 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 widening 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-24


Mr. Peter H. ...

Page 1

November 12, 1994

If we can be of any assistance in planning or implementing or in coordinating further alternate routing, please feel free to contact us with our office at any time. Should you have particular questions concerning implementation of the new DOT guidelines, please call Chuck Kansey in our Operations Division at area code (804) 513-1304. While we do not plan to use the guidelines on any primary or alternate route chosen previously under NEQ criteria, we will be happy to work with Maryland 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,



H. Eric Anderson

EEB: CWT: 217

Commute
Mol. 6

October 26, 1971

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/dnl

cc: Mr. F.L. Dewberry



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
DOVER, DELAWARE

OFFICE OF THE
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

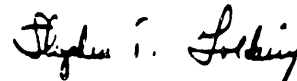
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Mr. Pierce E. Cody, III
December 1, 1981
Page 2

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 13, 1961.

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:

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 201 as an alternate to the interstate system. It too had some problem areas, but from an overall view, US 201 did appear more favorable.

Virginia has also selected US 201 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 201, 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. T. T. Goldie
December 11, 1941
P. 1

- (a) The two major towns of the bridge and master 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. 1/2 1

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

Committee
Mal Carr

October 20, 1951

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-73 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:

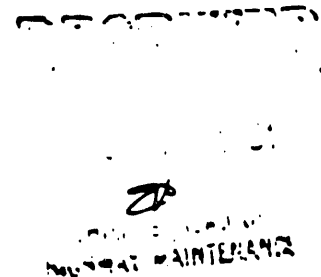
Thank you for your letter concerning the transportation of radioactive materials over designated highways.

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



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

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

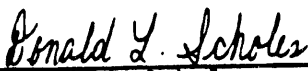
No person shall drive or cause to be driven a motor vehicle carrying a placardable quantity of hazardous material as specified in Title 49 of the Code of Federal Regulations Parts 172.500 through 172.558 along or upon Interstate 40 or Interstate 275 in Knox County, Tennessee, between the intersection 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.


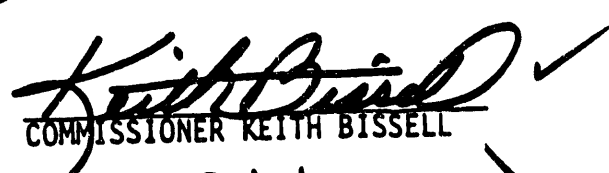

- (3) to motor vehicles which need emergency repairs or warranty work performed at authorized dealers or repair facilities as may be verified by a physical inspection of the vehicle, by warranty papers in the vehicle, or by other means of verification used by the investigating officer.

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
Assistant General Counsel

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

	Aye	No	Abstain
 CHAIRMAN FRANK D. COCHRAN	✓		
 COMMISSIONER KEITH BISSELL	✓		
 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

Donald L. Scholes
Assistant General Counsel

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

Margaret R. Heath

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 Dai

Signed this 31st day of March, 1987.

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Appendix D

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

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



**DATE
FILMED**

7 / 27 / 93

END

