

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PDR

June 24, 1980

Mr. L. D. Santman, Director  
Materials Transportation Bureau  
U.S. Department of Transportation  
Washington, D.C. 20590

Dear Mr. Santman:

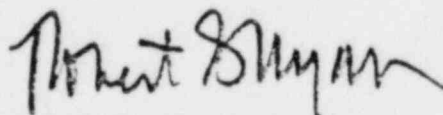
Thank you for your letter of March 25, 1980 and your draft report on the State Transportation Surveillance Program. I have enclosed a marked-up copy of the report with suggested changes, and updated versions of Appendix I and II.

The Nuclear Regulatory Commission (NRC) is prepared to join the Department of Transportation (DOT) in shifting the emphasis of the current program from monitoring and data collection to standards enforcement by the States. As a first step, we suggest drawing up a model contract, to be awarded to one or two carefully selected States. I, therefore, suggest a joint meeting between the NRC and the DOT, sometime between July 8-11 at a mutually convenient location, to discuss this approach and to develop a plan of action. If you agree, please have someone contact Marie Janinek (492 7794) to arrange the details.

In addition to our own staff, I expect NRC to be represented at the meeting by personnel from the Offices of Nuclear Material Safety and Safeguards, Inspection and Enforcement, Standards Development, Executive Legal Director, and the Division of Contracts. I am enclosing a proposed agenda. If we are all in agreement, perhaps we could even sign the report at that time.

We look forward to meeting with you and other members of the DOT in order to move on to the next phase of this important program.

Sincerely,



Robert G. Ryan, Director  
Office of State Programs

Enclosures:  
As stated

THIS DOCUMENT CONTAINS  
POOR QUALITY PAGES

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PROPOSED AGENDA FOR  
JOINT NRC/DOT MEETING CONCERNING  
STATE TRANSPORTATION SURVEILLANCE PROGRAM

1. Finalize DOT/NRC report
  - discuss, evaluate, and modify the report; or
  - sign the report
2. Discuss concept of model contract
  - determine short- and long-term goals
3. Select States to approach
  - discuss and choose criteria upon which to evaluate States
4. Determine requirements of model contract
  - basis for State authority to conduct enforcement
  - scope of work
  - duration
  - funding (amount? matching funds?)
5. Develop plan of approach to States
  - determine which State agencies or individuals should be approached
  - develop method of approach
6. Consider responsibility for future administration of program

STATE SURVEILLANCE  
OF  
RADIOACTIVE MATERIALS  
TRANSPORTATION

A Review and Prospectus

A Joint Program of the Department of Transportation  
and the Nuclear Regulatory Commission

*July*  
~~March~~ 1980

Materials Transportation Bureau  
Research & Special Programs Administration  
Department of Transportation  
Washington, D. C. 20590

Office of State Programs  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555



DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
WASHINGTON, D.C. 20590



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20655

*July*  
~~March~~ 1980

For several years, our respective <sup>agencies</sup> ~~organizations~~ have been partners in an effort to enlist State assistance in our monitoring of the transportation of radioactive materials. Because it is appropriate that we provide a public accounting of such activities and because this effort is taking on new dimensions and added significance, we have prepared this report. We believe that it provides a concise discussion of what has been accomplished, where we are today, and what can be seen ahead.

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L. D. Santman  
Director  
Materials Transportation Bureau  
Research and Special Programs  
Administration  
Department of Transportation

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~~G. Wayne Kerr~~ *Robert G. Ryan*  
Acting Director  
Office of State Programs  
Nuclear Regulatory Commission

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## I. Past and Current Efforts

In 1973, the Department of Transportation (DOT) and the Nuclear Regulatory Commission (NRC) initiated a joint effort to obtain the assistance of State and local radiological health agencies in conducting surveys and collecting information about the transportation of radioactive materials (RAM). The initial contracts, <sup>between</sup> ~~during~~ 1973 <sup>and</sup> ~~through~~ 1975, were with nine States and New York City. The contracts were of about three months' duration, and <sup>resulted in</sup> ~~the reports~~ <sup>containing</sup> ~~included~~ data which: (1) provided indications of types and numbers of radioactive materials shipments through key locations, (2) identified some violations of the regulations, and (3) indicated that, except for a very small fraction of the transportation community, the radiation exposures received by individuals appeared to be quite low. This information on RAM transportation conditions was used by both the DOT and the NRC for standards evaluation and ~~for~~ <sup>identification of</sup> identifying compliance problems. Following the initial short-term contracts, several States expressed interest in participating in studies of longer duration. Contracts have been awarded to the various State agencies that have responsibilities for radiation control. The funding provided by DOT and NRC has only partially supported the efforts, probably never more than matching State funding. Appendix 1 lists the participants and describes the funding from 1973 through <sup>July, 1980.</sup> ~~1979~~. Appendix 2 provides a brief description of the efforts of each State under contract in <sup>July, 1980.</sup> ~~December 1979.~~

Other States which have expressed interest of varied degrees in participating in this surveillance program include ~~Maryland,~~ Virginia, Texas, New York, New Jersey, Wisconsin, Connecticut, ~~and Tennessee, and Nevada.~~ ~~Their expressed interest varies from being~~ <sup>The</sup> ~~nearly ready to sign a negotiated contract to telephone~~ inquiries are <sup>frequently</sup> ~~from~~ personnel in non-radiological <sup>State</sup> agencies that have enforcement interest but lack technical or statutory capabilities. A commonly expressed deterrent to participation by some States is the modest funding <sup>provided by the Federal Government,</sup> since the investment in technical resources (personnel, training, instrumentation, etc.) <sup>necessary to participate in the program,</sup> is rather significant. Several States have suggested \$50,000 per year to be a threshold figure. Some States have associated their interest in the surveillance program with obtaining better knowledge on RAM transported through the State for purposes of emergency response planning and preparedness.

## II. <sup>1980</sup> ~~FY 80~~ Funding and Program Management

The funding <sup>available</sup> for the program for FY ~~80~~ <sup>1980</sup> is ~~expected to be~~ \$150,000 from the Materials Transportation Bureau (MTB) of DOT and \$110,000 from the Office of State Programs of NRC. The Bureau of Motor Carrier Safety of the Federal Highway Administration of DOT expressed a desire to provide some direct funding but has not yet been able to identify ~~any~~ available funds.

The matching funds ("Section 402 funds") available from DOT through the Highway Safety Act of 1966 have been utilized by some States very imaginatively. Specialized equipment and training related to hazardous materials transportation emergencies have been

acquired under this program. A State's eligibility for matching funds is dependent on having a highway safety program that meets certain criteria and formulas that involve a number of related factors. The Federal Highway Administration and the National Highway Traffic Safety Administration administer this program.

The principal ~~cognizant~~ person, <sup>associated with</sup> for the surveillance program at DOT in the past has been a health physicist in the Office of Hazardous Materials Regulation (OHMR) of MTB. This responsibility has recently shifted to a radioactive materials transportation specialist in the Office of Operations and Enforcement (OOE) of MTB, with technical support from a health physicist in OHMR. This change <sup>was</sup> ~~is~~ prompted by the desire of both DOT and NRC to shift the program emphasis towards standards enforcement by the States rather than just the collection of data for standards evaluation and compliance assessment.

<sup>at NRC, a</sup>  
~~The principal cognizant person at NRC will continue to be a~~ State relations specialist ~~located~~ in the Office of State Programs <sup>administers the program,</sup> with continued technical support from other NRC offices. <sup>As the</sup> ~~It can~~ <sup>program emphasis shifts to enforcement, it is</sup> expected that the NRC Office of Inspection and Enforcement will be involved more than it has in the past. The contract administration responsibilities will continue <sup>at present</sup> ~~to be~~ with NRC's Office of State Programs.

III. Future Program Direction

The DOT and NRC have agreed that the principal objective of the program will be shifted <sup>to include</sup> ~~towards~~ enforcement of the RAM transportation regulations by the participating States. The program



will continue to support standards evaluation and guide Federal enforcement efforts, but not as a primary objective. Since the major concerns with RAM transportation -- both qualitative and quantitative -- involve highway transport, States will be encouraged to adopt the Federal standards relative to motor carrier and RAM transportation safety. This is a first step toward State enforcement of a uniform standard. Appendix 3 identifies the degree to which the various States have already adopted the Federal hazardous materials regulations. Adoption of such Federal standards by the States provides them with legal authority to inspect and enforce with regard to both intrastate and interstate highway shipments. It also has the <sup>Advantage</sup> ~~benefit~~ of promoting nationwide uniformity.

Priority for new contracts or contract renewals will be given to those States that demonstrate statutory and technical capability for enforcement. It is recognized that States that undertake enforcement activities will make greater commitments of resources; therefore, higher levels of <sup>Federal</sup> ~~DOT/NRC~~ funding will be considered for those States that <sup>are willing to undertake enforcement responsibilities</sup> ~~make commitments for enforcement~~. New contracts without provisions for enforcement activities will <sup>generally</sup> continue to be limited to <sup>a maximum of</sup> ~~no more than~~ the \$20,000 per year. The present combined DOT and NRC funding for the program for FY <sup>1980</sup> ~~80~~ appears to be adequate to support the expected contracts if none exceeds \$50,000 per year.

In the negotiation of new contracts, the primary and supportive roles of the radiological safety agency and law enforcement agency

in a State should be considered. To enhance enforcement efforts there may be advantages to arrangements whereby the enforcement agency has the primary contractual performance responsibilities and receives technical support from the State radiological agency. *Currently, all contracts are with the State radiological agencies.*

Another priority consideration for awarding contracts will be the degree of readily identified RAM transportation in the State. Examples are States with existing or planned low level waste burial facilities or major nuclear materials processing, transfer, or storage facilities.

It is intended by DOT and NRC that this program serve to encourage States to join and share in enforcing a uniform set of highway transportation standards for RAM. This is consistent with the broader DOT objective of encouraging the same position for all hazardous materials transportation.

The DOT and NRC will provide States with guidance for adoption of the Federal standards. All pertinent training materials and other resources will be made known and available to the maximum degree possible.

#### IV. Possible Need for Formalizing the Program

The Nuclear Regulatory Commission's principal statutory ~~auth-~~<sup>authority</sup>, the Atomic Energy Act of 1954, as amended in 195<sup>9</sup>, provides for "Agreement State" arrangements as a means for States to assume many of the regulatory responsibilities related to the possession, use, and transfer of radioactive materials by licensees within the State. Before a State is granted "Agreement State" regulatory

authority it must demonstrate regulatory capabilities and standards that are <sup>compatible</sup> ~~uniform~~ with or equivalent to the Federal standards. The general practice has been for the interested State to adopt the applicable portions of Title 10, Code of Federal Regulations, thereby eliminating discrepancies between States <sup>regarding</sup> and problems with interstate commerce. At present, 26 States have become "Agreement States" as indicated in Appendix 4. *It should be noted, however,*

The Department of Transportation's principal statutory authority, the Hazardous Materials Transportation Safety Act of 1975, along with the Nuclear Regulatory Commission's statutory bases, place the responsibility for regulating the transportation of RAM with DOT and NRC. The current Memorandum of Understanding between DOT and NRC, <sup>dated June 8, 1979,</sup> shown as Appendix 5, clarifies the areas of responsibility where statutory provisions overlap.

The Hazardous Materials Transportation Safety Act does not expressly allow for a comparable "Agreement State" arrangement. Neither does it discourage cooperative Federal/State efforts in fostering the safe transportation of RAM and other hazardous materials. As this surveillance program matures and takes on the anticipated enforcement dimension, it may be appropriate to consider whether a more positive or express statement of legislative authority is needed.

→ *that when Congress established the "Agreement State" program, it specifically indicated that it did not intend that Federal funds be used for the administration of State material licensing programs.*



STATE	Year								Total
	73	74	75	76	77	78	79	80	
New York		3							3
New York City		4							4
Oregon		2							2
Pennsylvania				15					15
South Carolina		1			5	6	13		25
Texas		2							2
Washington							20	45*	65
State Totals	4	18	3	15	50.1	54.2	100.5	140	384.8
Los Alamos Scientific Laboratory***				11.8					11.3
TOTAL	4	18	3	26.8	50.1	54.2	100.5	140	396.6

\* Estimated  
 \*\* FY 1978 obligated funds carried over  
 \*\*\* Summary report of 3-month pilot program

FUNDING SOURCES  
(thousands \$)

FUNDING AGENCY	Fiscal Year							Total
	74	75	76	77	78	79	80	
NRC/OSP	7		15	35.1	24.2		110*	191.3
DOT/MTB	10	20			87	34	150*	301
DOT/FAA			15	30				45
TOTALS	17	20	30	65.1	111.2	34	260*	537.3

\*Estimated

## APPENDIX 2

### SYNOPSIS OF STATE RADIOACTIVE MATERIALS TRANSPORTATION SURVEILLANCE CONTRACTS AS OF JULY 1980

#### FLORIDA

CONTRACT: First year, October 1979 through September 1980, \$20,000.

AGENCY: Department of Health and Rehabilitation Services.

NATURE OF EFFORT: Broad area of study, with focus on terminals where RAM mode changes from air to highway, or where highway shipments are dispersed. Monitors spent fuel shipments from foreign reactors received at the State's ports of entry and transported by truck to northern destinations; uranium yellow-cake shipments from the Central Florida phosphate mining areas; as well as radiopharmaceuticals, industrial source devices, etc.

COMMENT: Being recently initiated, only two quarterly reports have been received to date. Expect contract to be renewed for second year.

#### GEORGIA

CONTRACT: Third year, October 1979 through September 1980, \$20,000.

AGENCY: Georgia Department of Human Resources, Radiological Health Unit; Subcontract to Georgia Tech Environmental Resources Center.

NATURE OF EFFORT: Investigation of RAM transportation by rail, air, and highway. Focus has been on RAM shipments by air and highway, particularly radiopharmaceuticals. Atlanta airport and a freight forwarder facility have received closest study. First year's report, August 1977 through September 1978, published in NUREG/CR-0931.

COMMENT: Technical quality and quantity has been excellent. Data has identified weaknesses in standards and compliance. Consulted with and advised State and Federal personnel not directly in contract reporting chain. Expressed intent to terminate effort at end of current contract period. Georgia Department of Transportation has new requirements related to RAM as result of recent State legislation.

ILLINOIS

CONTRACT: Fourth year, June 1980 through May 1981, loan of equipment in lieu of funding.

AGENCY: Contract with Department of Public Health; highway surveillance performed by Illinois State Police.

NATURE OF EFFORT: Investigation of RAM shipments being moved over highways. Hazardous materials specialists of Highway Patrol, with special equipment, stop and inspect trucks in most areas of the State. Contract support has involved providing some of the radiation instrumentation for the Highway Patrol. Results of first two years of monitoring contained in NUREG/CR-0756 and -1193.

COMMENT: An excellent and unique program. State police are well trained in RAM and other hazardous materials regulations. Statutory authority allows full enforcement of all hazardous materials transportation regulations. During February - November 1979, troopers issued about 2,000 Notices of Apparent Violation, of which about 5 percent involved RAM; but only a very small fraction are presently being prosecuted. Inspection reports by State troopers, which the Public Health Department used in preparing contract reports, indicate the troopers were well trained in the regulations. Regulatory standards and compliance problems have been indicated. Cooperation with Federal and other State personnel has been excellent. The program in this State could serve as a good guide for other States. Illinois is continuing in the program, for the fourth year, but may request Federal government to finance maintenance of equipment and may request regular contractual funding in the future.

KENTUCKY

CONTRACT: Extended first year, from October 1978 through December 1979, \$15,000.

AGENCY: Department of Human Resources, Bureau of Health Services.

NATURE OF EFFORT: Investigation of RAM shipments by highway, rail, air and water. Most observations were made of highway carriers. Trained Highway Department personnel at weighing stations on RAM transportation regulations.

COMMENT: Loss of personnel when program was beginning to take shape greatly impaired results and resulted in State decision not to continue into second contract year. An outline of an excellent training program planned for weigh station personnel was included in one report. Study indicated more RAM shipments than originally expected; most were by highway, with personnel radiation exposures very low. Kentucky report will be published as a NUREG document in mid-1980. State indicated possible interest in entering into another contract at some future time when resource problems (mainly personnel ceiling) are resolved.



MARYLAND

CONTRACT: First year, June 1980 through May 1981, \$20,000.

AGENCY: Department of Health and Mental Hygiene.

NATURE OF EFFORT: Broad area of study to monitor radioactive materials through various modes of transport. The State shall provide substantive documentation concerning serious or recurring violations in order to permit Federal enforcement action.

COMMENT: The NRC consultant from the Los Alamos Scientific Laboratory and a compliance specialist from the DOT Materials Transportation Bureau will visit the projected monitoring sites in July 1980 and will assist the State personnel to set up the surveillance program.

MICHIGAN

CONTRACT: Third year, September 1979 through August 1980, \$20,000.

AGENCY: Department of Public Health.

NATURE OF EFFORT: Investigation of RAM shipments by highway, rail, and vessel. Major effort has been on air and highway activities in the Detroit area.

COMMENT: After a slow start the program has provided excellent information relating to standards and compliance. The flexibility or changing patterns in modes and routing of RAM shipments have been observed. Data covered nuclear fuel cycle shipments from "yellow cake" to waste from power reactors, as well as medical and industrial applications. Some of the identified problems with RAM have been observed in other States as well; similarly, some of these conditions have resulted in occasional radiation exposures at levels that could be reduced. Excellent technical capabilities have been demonstrated along with cooperation/coordination with personnel from Federal and other State organizations. The second year report, from September 1978 through August 1979, published in NUREG/CR-1194.

NEVADA

CONTRACT: A one-year contract, with options to extend annually thereafter for an additional two years, expected to be signed in July 1980.

SOUTH CAROLINA

CONTRACT: Third year, September 1979 through September 1980, \$13,000.

AGENCY: Department of Health and Environmental Control (DHEC),  
Bureau of Radiological Health.

NATURE OF EFFORT: Previous years' efforts provided information on air and highway shipments of all types of RAM packages as a result of monitoring vehicles stopped on highways and monitoring of terminals that handled radio-pharmaceutical and industrial packages. Results obtained were similar to observations in other States. Emphasis of the past year has been on RAM waste shipments into the South Carolina licensed burial facility at Barnwell which presently takes the majority of the nation's low level waste. NUREG/CR-0266 covers report from February 1977 through January 1978, and NUREG/CR-1434, October 1978 through September 1979.

COMMENT: DHEC is the South Carolina licensing authority. They monitor and approve the activities of the burial facility licensee, Chem-Nuclear System, Inc. The data reported on shipper and carrier violations of RAM regulations pointed out a need for improved enforcement efforts by DOT and NRC. The information received identified some areas where standards need evaluation--specifically standards for contamination levels, low specific activity packaging requirements, and quality control requirements. With the burial facility and major DOE facilities in the State, the nuclear materials shipment activity in South Carolina is probably one of the highest in the country. South Carolina's present intent is not to continue beyond third year.

WASHINGTON

CONTRACT: First year, September 1979 through September 1980, \$45,000.

AGENCY: Department of Social and Health Services, Health Services  
Division.

NATURE OF EFFORT: Initial efforts involved inspection of shipments into the Washington licensed burial facility at Hanford. Plans are underway for inspection of shipments for medical, industrial, and government applications. The statutory authority allows for full enforcement actions by the State.

COMMENT: Due to the large amounts of radioactive materials being shipped to Washington for burial at Hanford, and the need for monitoring these shipments and taking necessary enforcement action, the amount of the contract was increased from \$20,000 to \$45,000. Expected to renew for second year, with funding reduced to \$20,000.

APPENDIX 3

STATUS OF FEDERAL HAZARDOUS MATERIALS REGULATIONS  
ADOPTED BY STATES AS OF MARCH 27, 1979

STATE	PART 171 General in- formation, regulations, and defini- tions	PART 172 Hazardous materials table and hazardous materials communica- tions regs.	PART 173 Shippers - Gen- eral require- ments for ship- ments and packagings	PART 177 Carriage by public highway	PART 178 Shipping container specifica- tions	PART 179 Specifica- tions for tank cars
ALABAMA	B	B	B	B	B	D
ALASKA	D	D	D	D	D	D
ARIZONA	A	A	A	A	A	A
ARKANSAS	A	A	A	A	A	A
CALIFORNIA	A	A	A	A	A	A
COLORADO	A	A	A	A	A	D
CONNECTICUT	D	D	D	D	D	D
DELAWARE	D	D	D	C	D	D
DISTRICT OF COL.	A	A	A	A	A	D
FLORIDA	B	A	A	A	A	D
GEORGIA	C	C	C	C	C	D
HAWAII	A	A	A	A	A	A
IDAHO	A	A	A	A	A	A
ILLINOIS	A	A	A	A	A	B
INDIANA	D	D	D	D	D	D
IOWA	A	A	A	A	A	A
LOUISIANA	D	D	D	D	D	D
KANSAS	A	A	A	A	A	A
KENTUCKY	B	B	B	B	B	B
MAINE	D	B	D	B	D	D
MARYLAND	B	B	B	A	B	D
MASSACHUSETTS	A	A	A	A	A	A
MICHIGAN	A	A	A	A	A	A
MINNESOTA	A	A	A	A	A	A

Code: A = Adopted completely  
 B = Adopted in part  
 C = Has similar rule  
 D = Has no rule

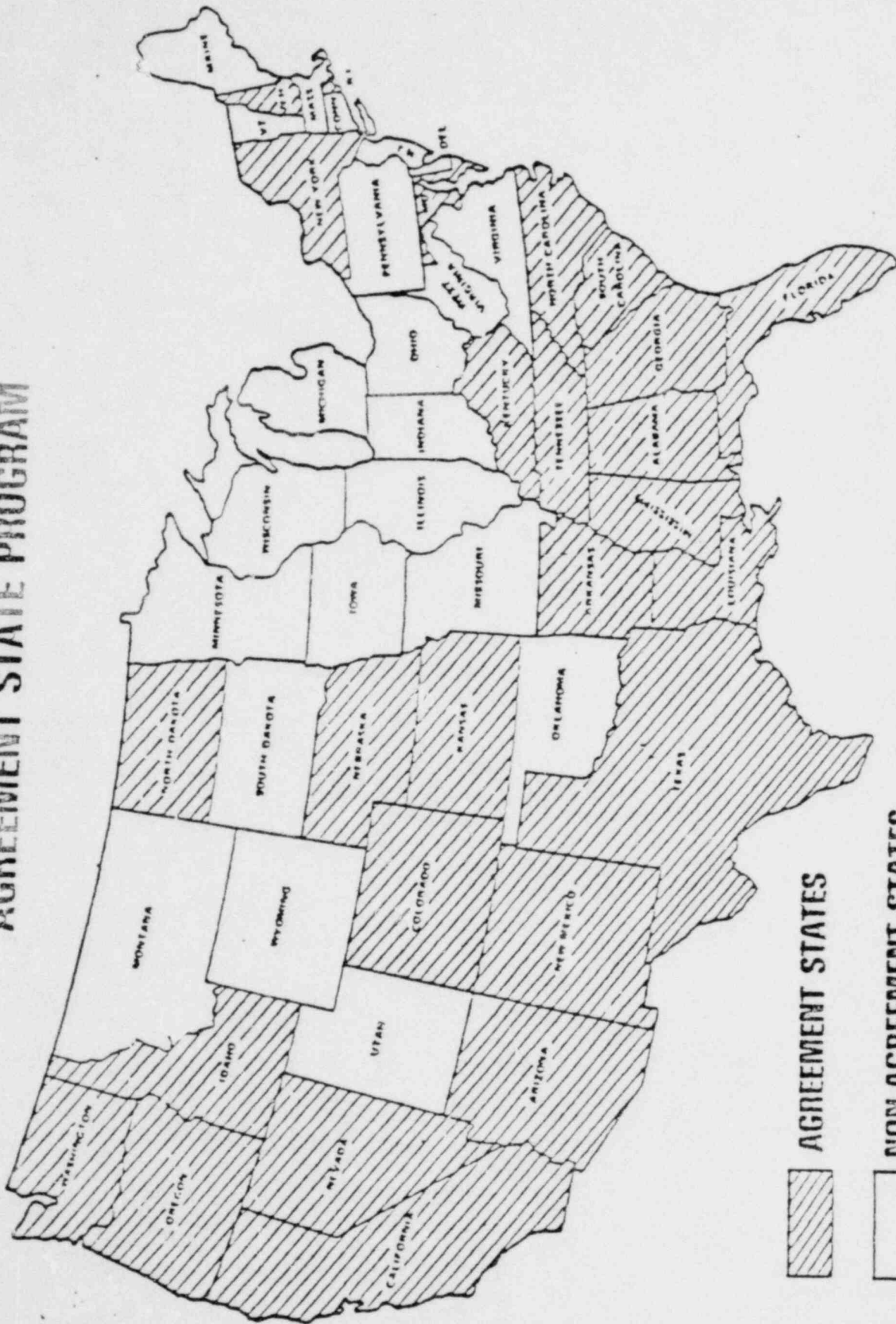
STATE	PART 171 General in- formation, and defini- tions	PART 172 Hazardous materials table and hazardous materials communica- tions regs.	PART 173 Shippers - Gen- eral require- ments for ship- ments and packagings	PART 177 Carriage by public highway	PART 178 Shipping container specifica- tions	PART 179 Specifica- tions for tank cars
MISSISSIPPI	B	B	B	B	B	D
MISSOURI	A	A	A	A	A	D
MONTANA	A	A	A	A	A	A
NEBRASKA	D	C	C	C	D	D
NEVADA	A	A	A	A	A	D
NEW HAMPSHIRE	C	C	C	C	C	D
NEW JERSEY	C	C	C	C	C	C
NEW MEXICO	A	A	A	A	A	
NEW YORK	A	A	A	A	A	A
NORTH CAROLINA	A	A	A	A	A	A
NORTH DAKOTA	D	D	D	D	D	D
OHIO	A	A	A	A	A	A
OKLAHOMA	D	D	D	C	C	D
OREGON	A	A	A	A	A	A
PENNSYLVANIA	A	A	A	A	A	D
RHODE ISLAND	A	A	A	A	A	A
SOUTH CAROLINA	A	A	A	A	A	A
SOUTH DAKOTA	A	A	A	A	A	A
TENNESSEE	A	A	A	A	A	A
TEXAS	B	A	A	A	A	D
UTAH	A	A	A	A	A	D
VERMONT	A	A	A	A	A	A
VIRGINIA	C	C	C	C	C	C
WASHINGTON	A	A	A	A	A	A
WEST VIRGINIA	D	D	D	D	D	D
WISCONSIN	A	A	A	A	A	A
WYOMING	A	A	A	A	A	A

Code: A = Adopted completely  
 B = Adopted in part  
 C = Has similar rule  
 D = Has no rule

Source: Federal Highway Administration (FHWA)

4.3.2

# AGREEMENT STATE PROGRAM



APPENDIX 5

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
DEPARTMENT OF TRANSPORTATION  
AND  
NUCLEAR REGULATORY COMMISSION

(FR 38690, July 2, 1979)

DEPARTMENT OF TRANSPORTATION

Nuclear Regulatory Commission

Transportation of Radioactive  
Materials; Memorandum of  
Understanding

The roles of the Department of Transportation and the Nuclear Regulatory Commission in the regulation of the transportation of radioactive materials were described in a memorandum of understanding signed on June 8, 1979. The present memorandum supersedes a 1973 agreement between the Atomic Energy Commission and the Department of Transportation. A text of the memorandum is set forth below.

Radioactive Materials

*Abstract.* This agreement delineates the respective responsibilities of the Department of Transportation (DOT) and the Nuclear Regulatory Commission (NRC) for the regulation of safety in transportation of radioactive materials. It supersedes the existing agreement executed on March 22, 1973, between the DOT and the Atomic Energy Commission. Generally, the DOT is responsible for regulating safety in transportation of all hazardous materials, including radioactive materials, and the NRC is responsible for regulating safety in receipt, possession, use, and transfer of byproducts, source, and special nuclear materials. The NRC reviews and approves or denies approval of package designs for fissile materials and for other radioactive materials (other than low specific activity materials) in quantities exceeding Type A limits, as defined in 10 CFR Part 71.

*Agreement between the DOT and the NRC.* The Department of Transportation (DOT), under the Transportation of Explosives Act (18 U.S.C. 831-835), the Dangerous Cargo Act (R. S. 4477, as amended, 48 U.S.C. 170), Title VI and 902(h) of the Federal Aviation Act of 1958 (49 U.S.C. 1421-1430 and 1472(h)), the Department of Transportation Act (49 U.S.C. 1555), and the Hazardous

Materials Transportation Act (49 U.S.C. 1801-1812), is required to regulate safety in the transportation of hazardous materials, including radioactive materials.

The Nuclear Regulatory Commission (NRC), under the Atomic Energy Act of 1954, as amended (42 U.S.C. Chapter 23), and Section 201 of the Energy Reorganization Act of 1974, as amended (42 U.S.C. 5841), is authorized to license and regulate the receipt, possession, use, and transfer of "by product material," "source material," and "special nuclear material" (as defined in 42 U.S.C. 2014). The NRC authority to license air shipment of plutonium is further governed by Pub. L. 94-79.

For the purpose of developing, establishing, and implementing consistent and comprehensive regulations and requirements for the safe transportation of radioactive materials, and avoiding duplication of effort, the DOT and the NRC agree, subject to their respective statutory authorities, as follows. Terms used in this agreement are defined in 49 CFR Parts 100-199 and 10 CFR part 71.

*I. Development of Safety Standards*

A. The DOT (in consultation with the NRC) will develop safety standards for the classification of radioactive materials; for the design specifications and performance requirements of packages for quantities of radioactive materials (other than fissile materials) not exceeding Type A limits and for low specific activity (LSA) radioactive materials; for the external radiation fields, labeling, and marking of all radioactive materials packages and vehicles; for the mechanical conditions, construction requirements, and tie-down requirements of carrier equipment; for the qualifications of carrier personnel; for the procedures for loading, unloading, handling, and storage in transit for any special transport controls (excluding safeguards) necessary for radiation safety during carriage; and for all other safety requirements except those specified in the next paragraph.

B. The NRC (in consultation with the DOT) will develop safety standards for design and performance of packages for fissile materials and for quantities of other radioactive materials (other than LSA materials) exceeding Type A limits in the following areas:

1. Structural materials of fabrication;
2. Closure devices;
3. Structural integrity;
4. Criticality control;
5. Containment of radioactive material;
6. Shielding;
7. Generation of internal pressure;
8. Internal contamination of packages;
9. Protection against internal overheating; and
10. Quality assurance of packaging design, fabrication, testing, maintenance, and use.

*II. Adoption of Safety Standards and Regulations*

A. The DOT will adopt regulations imposing on shippers and carriers subject to its jurisdiction those standards developed by the DOT and the NRC pursuant to Section I of this Memorandum of Understanding and any additional requirements necessary to protect the public health and safety. The DOT will require NRC approval of designs of packages for shipment of fissile materials and other radioactive materials in quantities exceeding Type A limits (except LSA materials) by all persons subject to the jurisdiction of the DOT. The DOT will issue complete and comprehensive Federal regulations for the packaging and transportation of all radioactive materials as a part of its overall body of Federal regulations (49 CFR Parts 100-199) for the packaging and transportation of all hazardous materials.

B. The NRC will adopt packaging standards for fissile materials and for quantities of other radioactive materials (other than LSA materials) exceeding Type A limits and will adopt regulations imposing on its licensees administrative,

procedural and technical requirements necessary to protect the public health and safety and to assure the common defense and security.

C. The NRC will adopt procedures, standards, and criteria for approval of package designs and for approval of special transport controls proposed by the applicant for a given package design. The NRC will require its licensees to comply with the DOT regulations when those persons are not otherwise subject to the DOT regulations.

### III. Package Review

A. The DOT will submit to the NRC for review the following package designs:

1. Specification containers. Approval by the NRC of package designs for fissile materials and for radioactive materials (other than LSA materials) in quantities exceeding Type A limits will be obtained before publication of such designs in the DOT regulations.

2. Packages with foreign certification. Approval by the NRC will be obtained before revalidation of the foreign certificates required in the DOT regulations for packages shipped between origins and destinations within the United States, except for import and the United States, except for import and export shipments. Approval by the NRC is not required if a package is used solely for export or import or if a package is authorized by the DOT regulations solely for transportation through or over the United States between origins and destinations outside the United States. The DOT has the responsibility for exercising discretion as to whether it requests NRC review of such packages.

3. Any package for which NRC evaluation is warranted in DOT opinion.

B. The NRC will evaluate package designs for fissile materials and for other radioactive materials (other than LSA materials) in quantities exceeding Type A limits and will, if satisfactory, issue approvals therefor (viz., a license, Certificate of Compliance, or other package approval) directly to the person requesting the approval.

### IV. Inspection and Enforcement

A. Each agency will conduct an inspection and enforcement program within its jurisdiction to assure compliance with its requirements. The NRC will assist the DOT, as appropriate, in inspecting shippers of fissile materials and of other radioactive materials in quantities exceeding Type A limits.

B. The DOT and the NRC will consult each other on the results of their respective inspections in the areas where the results are related to the other

agency's requirements, and each will take enforcement action as it deems appropriate within the limits of its authority.

### V. Accidents and Incidents

A. The DOT will require of all carriers subject to its jurisdiction the notification and reporting to the DOT of accidents, incidents, and instances of actual or suspected leakage involving radioactive material packages if such an event occurs in transit and the DOT will promptly notify the NRC of such events.

B. The NRC will require of its licensees the notification and reporting to the NRC of accidents, incidents, and instances of actual or suspected leakage involving radioactive material packages if such an event occurs prior to delivery to a carrier for transport or after delivery to a receiver. The NRC will encourage the Agreement States<sup>1</sup> and the DOT will encourage the non-Agreement States to impose incident reporting requirements on shippers and receivers subject to the States' jurisdiction.

C. In all accidents, incidents, and instances of actual or suspected leakage involving packages of radioactive material regulated by the NRC, the NRC will normally be the lead agency for investigating the occurrence and preparing the report of the investigation. The DOT may either participate, as appropriate, in the investigation with the NRC as the lead agency or conduct a separate investigation. Subsequent to each investigation involving radioactive material regulated by the NRC, the NRC and the DOT will jointly define the scope of the enforcement actions to be taken by each agency to assure that shippers and carriers are subject to concurrent and equivalent enforcement actions but not unduly subject to duplicate enforcement actions.

D. This section V does not affect the authority of the National Transportation Safety Board, which is independent of the DOT and the NRC, to receive accident reports and to investigate transportation accidents.

### VI. National Competent Authority

A. The DOT will be the national competent authority with respect to the administrative requirements set forth in the regulations for the Safe Transport of Radioactive Materials of the

<sup>1</sup> States which have entered into an Agreement with the Atomic Energy Commission or the NRC pursuant to Section 274 of the Atomic Energy Act of 1954, as amended, under which the NRC has relinquished to such States the majority of its regulatory authority over source, byproduct and special nuclear material in quantities or sufficient to form a critical mass.

International Atomic Energy Agency (IAEA). In issuing certificates of competent authority for the United States under those regulations, the DOT will require for certain packages other than DOT specification containers an NRC approval in accordance with Section III.A of this Memorandum of Understanding. The NRC will provide to the national competent authority (DOT) technical support and advice pertaining to the transportation of radioactive materials.

B. The DOT will act as the representative of the United States to the IAEA and other international groups on matters pertaining to the administrative and safety regulatory aspects of transportation of radioactive materials. The NRC will provide technical support and advice to the DOT in this capacity.

### VII. Exchange of Information

A. Prior to issuance of any regulations by either the DOT or the NRC involving transportation of radioactive materials, each agency will advise and consult with the other to avoid possible conflict in regulations and to assure that (1) the regulations will afford adequate protection of the health and safety of the public; (2) the effect of these regulations will not be inimical to the common defense and security of the United States; and (3) the regulations are in the public interest.

B. The DOT and the NRC will exchange information, consult and assist each other within the areas of their special competence in the development and enforcement of regulations and procedures. Each agency will make available to the other, subject to security requirements and statutory provisions affecting the release of information, summaries of inspection records, investigations of serious accidents, and other matters relating to safety in the transportation of radioactive materials.

### VIII. Working Arrangements

The NRC and the DOT will designate appropriate staff representatives and will establish joint working arrangements from time to time for the purpose of administering this Memorandum of Understanding.

### IX. Effect

A. Nothing herein is intended to affect the statutory exemption of shipments of radioactive materials made by or under the direction or supervision of the Department of Energy or the Department of Defense in accordance with the provisions of 18 U.S.C. 832(c).

B. This agreement shall take effect upon the signing by authorized representatives of the respective agencies, and shall supersede in its entirety the March 22, 1973, Memorandum of Understanding between the DOT and the Atomic Energy Commission.

C. Nothing in this Memorandum of Understanding is intended to restrict the statutory authority of either the DOT or the NRC.

Done at Washington, D.C. in triplicate, this 8th day of June 1973.

For the United States Department of Transportation.

Jama. D. Palmer,

*Administrator, Research and Special Programs Administration, Department of Transportation.*

For the United States Nuclear Regulatory Commission.

Joseph M. Hendrix,

*Chairman, Nuclear Regulatory Commission.*

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