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Survey of Current State Radiological Emergency Response Capabilities for Transportation Related Incidents

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ABSTRACT

This volume is the final report of a project to survey current state radiological emergency response capabilities for transportation related incidents. The survey was performed to provide the NRC with information useful in the development of guidelines for state organizations and planning for emergency response. The report includes the results of a mail and telephone survey of state emergency response officials; information gleaned from radiological emergency response plans and related official documents; and some general conclusions and recommendations drawn in part from interviews conducted and site visits to selected states.

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1.0 INTRODUCTION

1.1 About This Report

This volume is the final report of a project conducted by the Institute For Research In Public Safety for the U.S. Nuclear Regulatory Commission entitled "Survey of Current State Radiological Emergency Response Capabilities for Transportation Related Incidents." The contract, originally awarded at the end of September, 1978, was let by the NRC to obtain information on state emergency response systems in order to disseminate this information to all the states for their use, and to provide the NRC with information that would be useful in the design of guidelines and standards for state planning and organization for response to radiological incidents arising from transportation accidents.

To obtain the necessary information the project team used two principal sources of information:

1. state radiological Emergency Response Plans and related state emergency planning documents, and
2. a survey of state emergency response agencies.

The information obtained from these sources was checked for internal consistency, follow-up calls were made to attempt to resolve apparent conflicts, and the results were compiled in this report.

Since the principal purpose of the project was the collection and dissemination of this information, relatively little comment or interpretation is presented here. Some general conclusions and comments on the utility of the results, are, however, presented in Chapter 4.0. *Those comments are, obviously, the opinions of the authors, and should not be construed as an official position of the U.S. Nuclear Regulatory Commission.*

The rest of the report is structured as follows:

- 1.2 "Project Description," describes the objectives of the project, the data collection techniques used, and mentions qualifications on the usability and completeness of information presented;
- 2.0 presents a nationwide overview of the findings of the study, and describes the state of the art in radiological emergency response planning and operations as they relate to transportation;
- 3.0 presents state-by-state responses to specific questions sought either in the telephone survey or in the review of state plans; and
- 4.0 presents the authors' comments and interpretations of the extent to which this information might be used in the development of standards for the planning and operation of the emergency response systems designed to respond to transportation accidents involving radioactive cargos.

It is the authors' hope that readers will find this report informative and useful as it details information on the organization, structure, and operations of the individual state systems. Its principal utility probably lies in the provision of such information to state and local officials, who may then wish to explore with their colleagues and other jurisdictions just how different local systems with attractive features may work. While every attempt has been made to assure the accuracy of the information presented here, obtaining responses to every question in the terms sought was not always possible. Consequently, a great degree of interpretation was required in translating responses received from individual states into the response categories used in these tables. Further, while some states have readily available records in this area, others do not. In those states, the best estimates of the individuals responding to this survey were used. The narrative interpretation of the individual tables provides some information on the degree of precision of the results in that table, and some footnoted material is also provided to further qualify the results.

1.2 Project Description

The objective of this study was to assemble and compile available information on current state emergency response capabilities for transportation related radiological incidents, in order to assist the NRC in its designated role as lead agency* for radiological incident emergency response planning, emergency response training, and other systems of activities within the state and local governments. It is expected that the NRC will use the information obtained to accomplish the following:

- o establish guidelines for adequate protection of the health and safety of the public with regard to transportation related radiological incidents;
- o develop and promulgate guidance to state and local governments in coordination with other federal agencies for the preparation of emergency response plans as required under 40 CFR 59494.
- o determine whether additional federal participation is required to insure adequate protection of the health and safety of the public with regard to transportation related radiological incidents.

To meet the above objectives, the project staff collected information from three principal sources:

- o The published literature on emergency response assistance
- o State planning documents, and
- o Appropriate officials in each of the states.

* FEMA (Federal Emergency Management Agency) is expected to take over much of the current NRC responsibility. The NRC however will continue to provide technical assistance and expertise as needed.

1.2.1 The Literature Review

A literature review has been reported separately to the NRC, and is not repeated here. The principal purpose of conducting a review of existing literature was not to summarize the state of the art for this report, but rather to provide the project staff with an adequate understanding of the information available in the published literature to provide a starting point for the data collection activities of the project. The literature review was also used extensively in the design of the questionnaire used in the survey of state officials and in the general guide used in the review of state planning documents.

1.2.2 Review of State Documentation

It was initially anticipated that a substantial amount of the information needed for this project could be obtained from official, printed sources. The expected sources were, of course, the Radiological Emergency Response Plans (RERP), Transportation Radiation Emergency Response Plans (TRERP), and Emergency Operations Plans (EOP). These plans, on file with the NRC were reviewed for relevant material and to provide the project staff with background information on each of the states to use as preparation for the interviews. Table 1-1 shows the documentation found through NRC or through direct contact with the states, and shows how the different documents relate to each other.

Also as part of this phase of the project, directors of civil emergency preparedness personnel and radiological health personnel were contacted, and requests were made by telephone for additional documentation referenced in the state plans, or which were referenced in other materials available to the project. These requests yielded copies of internal policy documents, interagency agreements, interstate compacts, and training materials used in the field. Draft plan updates were also obtained from some states.

The official documents were reviewed by the project staff to obtain the information requested in the data collection questions (Appendices A & B). The guide in Appendix B is presented as the state plan review document, but the amount of information available in the plans varied widely, and frequently included information sought in the interview guide (Appendix A). Where information was available from printed sources, it was filled in on worksheets for the state and only confirmed in interview. The distinction between the two questionnaires is really arbitrary. The interview guide required the approval of the General Accounting Office as a survey instrument, while the plan review questionnaire did not. The information desired for the project was catalogued, and some judgments were made about the liklihood of obtaining each item of information from available documents. If, in the judgment of the project staff, it would be necessary to ask the specific questions in interviews with officials of more than nine states, the item was put on the interview guide. Otherwise it was included in the plan review questionnaire. The information obtained from the review of state plans is presented in Chapters 2.0 and 3.0.

1.2.3 Survey of State Radiological Emergency Response Officials

The information not available from official documentation was collected in interviews with appropriate state officials. A list of heads of lead agencies was compiled, and a copy of the interview guide, Appendix A, was mailed to that contact point in each state. The cover letter for the guide asked the head of the lead agency to refer the interviewer to an appropriate member or members of the lead agency staff and, in, many cases, to officials of other agencies with responsibilities in the area. Calls were made to the lead agency heads to obtain this referral, other individuals were asked to pass the review guide on to the people whose names had been provided to us, and interviews were conducted by telephone.

The telephone interviews, conducted on an appointment basis, averaged somewhat more than an hour in length. While they were focused around the interview guide, interviews were fairly open ended. The questionnaire was filled out in part during the interview, and in more detail from tape recordings of the interview. Questions on the state plan review questionnaire that had not been available from each state plan were also asked in the interviews. When interviewees could not provide the information, they were asked to refer the interviewer to other appropriate state officials. Incomplete responses and internal inconsistencies were dealt with through follow-up telephone calls. Additional documentation was also obtained as a result of these interviews, and was used in the completion of this report.

Information gained in the interview is reported here (Chapters 2.0 and 3.0) as it was provided to us by the states. Much of this information is general or approximate, and should be interpreted in that manner by the reader.

1.2.4 Site Visits

The structuring of the report and interpretation of these results really required a greater level of understanding of the different types of state systems than could be obtained from plans and interviews. This is especially true for the assembly of the comments provided in Chapter 4.0, which attempts to assess the need for additional guidelines for planning and structure of state programs, and for the handling of first-on-the-scene response to transportation related radiation incidents. To collect this in-depth information, interviews in-depth were conducted with officials of all of the state agencies sharing responsibility in this area in the following states: Arkansas, Colorado, Louisiana, New Jersey, New York, and Washington. Because it has a separate radiological health program, New York City was also visited as part of the New York site visit.

These states were selected to provide diversity on the following characteristics:

- geography;
- degree of formality of planning;
- volume of reported accidents and incidents (from telephone interviews);
- degree of centralization of emergency response structure.

Much of the commentary of sections 2.0, 3.0 and 4.0 is based on these site visits, which provided a wealth of anecdotal information and comments from state officials in a setting that encouraged them to speak openly.

TABLE 1-1

Emergency Planning Documentation

	Emergency Operations Plan (EOP)	Radiation Emergency Plan (RERP)		Transportation Radiation Emergency Response Plan (TRERP)	
	Authorship of Plan	Responsibility for RERP	Relation to EOP	Responsibility for TRERP	Relation to RERP
AL	no documentation	Dept. of Public Health	Separate Plan	no documentation	
AK	no file				
AZ	Division of Emergency Services, Disaster Preparedness Office	Arizona Atomic Energy Commission	Appendix to EOP	Same	merged with RERP
AR	Office of Emergency Services	Dept. of Health	Annex to EOP	Same	merged with RERP
CA	Office of Emergency Services	Office of Emergency Services Radiological Division; Dept. of Health, Radiological Health Section	Separate Plan	no documentation	
CO	no documentation	Dept. of Health, Div. of Occupational and Radiological Health	Separate Plan	Same	merged with RERP
CT	Office of Civil Preparedness	not known	part of EOP	not known	part of RERP
DE	Dept. of Public Safety, Div. of Civil Defense	Dept. of Public Safety, Div. of Emergency Planning and Operations	Annex to EOP	Same	part of RERP
DC	no documentation	Dept. of Environmental Services, Environmental Health Administration, Radiological Health Division	Self Contained	no documentation	
FL	not known	not known	Annex to EOP	not known	part of RERP
GA	Dept. of Defense, Civil Defense Division	Dept. of Human Resources, Division of Physical Health, Radiological Health Unit	Self Contained	no documentation	
HI	no documentation	Dept. of Defense, Civil Defense Div., Dept. of Health, Environmental Health Division	Self Contained	no documentation	
ID	no file				
IL	no documentation	Dept. of Public Health, Radiological Health Division	Self Contained	no documentation	

TABLE 1-1
(Cont.)

	Emergency Operations Plan (EOP)	Radiation Emergency Plan (RERP)		Transportation Radiation Emergency Response Plan (TRERP)	
	Authorship of Plan	Responsibility for RERP	Relation to EOP	Responsibility for TRERP	Relation to RERP
IN	Dept. of Civil Defense	Dept. of Civil Defense; State Board of Health	Self Contained	no documentation	
IA	Dept. of Public Defense, Office of Disaster Services	Office of Disaster Services	Annex to EOP	Same	part of RERP annex
KS	Division of Emergency Preparedness	Div. of Emergency Preparedness, Radiological Systems Management; Dept. of Health and Environment, Bureau of Radiation Control	Merged with EOP	Same	part of RERP
LA	no documentation	Office of Conservation, Nuclear Energy Division	Separate Plan	no documentation	
ME	no documentation	Dept. of Health and Welfare, Div. of Sanitary Engineering	Separate Plan	no documentation	
MD	no documentation	Dept. of Health and Mental Hygiene, Div. of Radiation Control	Separate Plan	Same	merged with RERP
MA	Executive Office of Public Safety, Civil Defense Agency; Office of Emergency Preparedness	Same	Separate Plan	Same	merged with RERP
MI	Dept. of State Police, Emergency Services Division	Same	Part of EOP	Same	merged with RERP
MN	no general plan, but a "hazardous materials accident response plan" Governor's Natural Disaster Plan Project	Civil Defense and Dept. of Health	Part of accident plan	Same	merged with accident plan
MS	State Board of Health, Civil Defense Council	Same	Vol. 4 of EOP	not known	Annex to EOP
MO	no documentation	Office of Adjutant General, Disaster Operations Office	Separate Plan	Same	merged with RERP
MT	no file				

TABLE 1-1
(Cont.)

	Emergency Operations Plan (EOP)	Radiation Emergency Plan (RERP)		Transportation Radiation Emergency Response Plan (TRERP)	
	Authorship of Plan	Responsibility for RERP	Relation to EOP	Responsibility for TRERP	Relation to RERP
NE	no documentation	Department of Health	Separate Plan	no documentation	
NV	no documentation	Dept. of Human Resources, Division of Health	Separate Plan	no documentation	
NH	no documentation	Civil Defense Agency; Dept. of Health and Welfare, Div. of Public Health Services, Radiation Control Agency	Separate Plan	Same	merged with RERP
NJ	no documentation	Dept. of Environmental Protection, Div. of Environmental Quality, Bureau of Radiation Protection	Separate Plan	no documentation	
NM	no file				
NY	authorship not known	Dept. of Health; Civil Defense	Annex to EOP	Same	merged with RERP
NC	no documentation	Dept. of Human Resources, Division of Facility Services, Radiation Protection Section	Separate Plan	Same	merged with RERP
ND	no documentation	no documentation		Dept. of Health	Separate Plan
OH	no documentation	Adjutant General's Department	Separate Plan	Same	merged with RERP
OK	no documentation	Occupational and Radiological Health Services, Radiation Protection Section	Separate Plan	Same	merged with RERP
OR	authorship not known	State Health Division	Separate Plan	Same	merged with RERP
PA	Civil Defense	Dept. of Environmental Resources, Bureau of Radiological Health	Annex to EOP	Same; also, "Hazardous Substance Transportation Board"	merged with RERP also separate annex
PR	no documentation	authorship not known	Separate Plan	Same	part of RERP

TABLE 1-1
(Cont.)

	Emergency Operations Plan (EOP)	Radiation Emergency Plan (RERP)		Transportation Radiation Emergency Response Plan (TRERP)	
	Authorship of Plan	Responsibility for RERP	Relation to EOP	Responsibility for TRERP	Relation to RERP
RI	no file				
SC	no documentation	Dept. of Health and Environmental Control	Separate Plan	Same	merged with RERP
SD	no file				
TN	Dept. of Public Health; Office of Civil Defense and Emergency Preparedness	Same	Appendix to EOP	Same	merged with RERP
TX	Dept. of Public Safety, Disaster Emergency Services Council	Dept. of Health, Div. of Occupational Health and Radiation Control	Part of EOP	Same	merged with RERP
UT	no file				
VT	no documentation	Dept. of Public Safety, Civil Defense Division; Dept. of Health, Industrial Hygiene Division	Separate Plan	no documentation	
VI	State Coordinator of Emergency Services	Same	Annex to EOP	Same	merged with RERP
WA	Authorship not known	Same	Part of EOP	Same	merged with RERP
WV	Dept. of Civil and Defense Mobilization	Same	Separate Plan	Same	merged with RERP
WI	Division of Emergency Government	Same	Part of EOP	no documentation	
WY	no file				

2.0 OVERVIEW OF STATE EMERGENCY RESPONSE SYSTEMS, CAPABILITIES, AND RESOURCES

This chapter provides nationwide summaries of the major topics covered in the survey. For the most part, judgemental commentary has been reserved for the final chapter of this report, but a certain amount of anecdotal information that implies some judgment of performance or needs in the emergency response area is contained here. Detailed state by state summaries of the topics covered in this chapter follow in Chapter 3.0.

The chapter is organized into the following sections:

- Organization
- Responsibility
- Communications
- First-On-Scene Respondents
- Personnel
- Equipment
- Transportation of Personnel and Equipment
- Training
- Legal Issues
- Funding For Radiological Emergency Response
- Actual Experience with the States.

As stated in the introduction, the information presented here is drawn from a variety of sources, including state documents and interviews with several different officials in each of the states. The data are accurately reported as they were provided to us, but in some cases, reporting on different bases raises questions about the cross-state comparability of reporting. These differences have been reconciled where possible, and areas in which that reconciliation was not possible are noted in the text.

2.1 Organization

In surveying the states with respect to how emergency response is organized, it was discovered that there are two types of emergency response planning and organization, the centralized and decentralized systems. In some states these system types exist as "pure" forms, but most states employ variations or mixtures.

While seventeen states report that all jurisdictions have local autonomy for radiological emergency response, only eight states employ a decentralized response mechanism wherein the local jurisdictions have a well developed capability to respond. In the decentralized system, local public safety or public health personnel make the initial assessment of the incident; local officials are well-enough trained to handle minor incidents, but are also trained to know when an event is beyond their expertise. The local officials phone in a report to the state radiological control office, and only in major events or incidents involving unfamiliar materials is the state response system activated. An important aspect of planning in the decentralized system is the identification of locally available expertise, such as radiology or

nuclear medicine specialists from local health facilities or trained personnel from local industries. The main effort in this system is to avoid deploying the state response organization, which may be several hours travel time distant, except in the case of serious incidents which require sophisticated instrumentation and highly trained technical personnel.

The centralized response system is the most widely employed method: of the 51 jurisdictions surveyed, 43 report that the technical capability resides in the state organization. Under this organization scheme, first-on-the-scene respondents are expected to perform basic public safety functions (first aid and crowd control) and to call in the state response system. Notification is almost universally channelled through the state police dispatching system. Of the 43 states which employ the centralized response structure, 29 have one central office where technical personnel are assigned, while 14 report that there are field offices around the state. In those states with field offices, personnel from the closest office respond when called by the central office, while in states with central offices only, personnel must travel--usually from the state capital--to wherever the incident has occurred.

Variations on the centralized system are efforts to avoid requiring the state response team to travel for all incidents. Several states which employ the centralized response system also report that some jurisdictions in the state, usually major cities, have a response capability. Two states employ a system of volunteer experts from the private sector, universities, hospitals, etc., who are strategically located around the state and who respond when contacted by the radiological control office. Several states have a strong informal component which utilizes the larger community of radiological workers in state, Federal, private or semi-private employment. This system relies heavily on informal professional relationships. In these states, the radiation control office contacts the individual who is closest to the event, regardless of his or her institutional housing, who then responds on behalf of the state. In both the volunteer and informal arrangements, it is individuals who first assay an incident, and any additional response, if necessary, comes through the state response structure.

A fairly new idea in organizing for response to accidents involving hazardous materials in general, including radioactive, is the training of a cadre of state police personnel as hazardous materials officers, in the manner of a SWAT team. This concept is currently being developed in two states and is under consideration in several others. In this planning scheme, a group of officers will undergo specialized training in biology, chemistry, physics and emergency management. These officers will be equipped with specially outfitted patrol cars and will be available for emergency response through the state police dispatching system. These officers will make the initial assessment and determine if the incident requires further attention from the highly trained technical personnel in departments of health, environment, or emergency services.

2.2 Responsibility

In planning for emergency response to manmade peacetime disasters and assigning responsibility for specific aspects of the response, most states have attempted to utilize existing resources already institutionalized in various state agencies. This has resulted in the dispersion of responsibility and the concomitant necessity for coordination; the extent of this dispersion is a function of the characteristics of each state's organizational scheme. However, most transportation accidents involving radioactive material do not create any threat of contamination: the emergency response is limited to surveying the incident and determining that no danger from radiation exists. The full weight of the emergency response plan is rarely invoked. In most cases, only two or three agencies and a small number of personnel are ever involved.

The central issue in responding to transportation accidents involving radioactive material is prompt notification of the correct officials and the dispatching of qualified technical personnel to the scene to assay the incident and make recommendations for handling the situation. In all the states, the state police or highway patrol dispatching system can function as the notification medium. The investigating officer at the scene radios a report to the duty officer at the dispatching desk; the duty officer has a call list and telephones the appropriate agency. In twenty-eight states, notification goes directly to the radiation control agency, while in sixteen states notice goes to the emergency services office who call out the chain of command as necessary. Four states have multiple notice requirements. In those states with decentralized emergency response structures, the state organization is not notified until after local officials have conducted their investigation, in which case the emergency notification system is by-passed. Additionally, all but six states maintain 24-hour emergency notification numbers for use by citizens or officials; these numbers ring either the state police or the emergency services office in all but a few states.

Having received notification, it is of paramount importance that technical personnel get to the scene promptly. Twenty-five states reported that the radiation control agency is responsible for providing transportation (which in some cases consists of specially equipped emergency response vehicles). In five states, transportation of technical personnel is the responsibility of the state police; eight states reported that the personnel who are dispatched use their personal cars and eight other states reported that arrangements are made on an ad hoc basis, depending on the urgency of the mission. The above enumeration of transportation arrangements is the "first choice" or most "most typical" method used by the state; all the states have memoranda of understanding or a solid basis in precedent for emergency transportation by any mode necessary for incidents of disaster proportion.

As was noted above, most transportation accidents involving radioactive material are of a non-serious nature and are handled in a very straightforward manner involving only public safety personnel and radiation control technicians. However, more serious events can require a multi-agency response, in which case on-the-scene coordination becomes an important issue. While some states have a pre-designated on-site

coordinator for all incidents, most states do not invoke this coordination function until a multi-agency response has become necessary. In 20 states, coordination is the responsibility of the radiological control agency; in 12 states, this function is carried out by emergency services or Civil Defense personnel. Three states report that coordination is the responsibility of the state police, two states leave this function entirely to local personnel, and nine states have made no provision for on-site coordination.

Legal responsibility for actions taken at the scene of an emergency is an area where considerable variation and some confusion exists. With respect to conducting emergency operations on private property, thirty-two states indicated that authority is clearly enunciated by emergency operations statutes or is included in the public health function of the radiation control agency. However, three states require an executive declaration of emergency to carry out operations on private property; three states indicate that a police escort is required; four states are operating under an unclear status; and in six states, emergency response personnel who were interviewed were not aware of the provisions in their state and could not make an answer. With respect to the power to condemn or seize private property in the course of an emergency response, thirty-three states indicated that this power was included in the emergency operations statutes or subsumed within the public health function. One state indicated that this power was not delegated to emergency response personnel, two states reported an unclear status, three states require an executive declaration of emergency, and three states require a police escort to condemn or seize property. In six states, emergency response personnel were not able to answer this question.

Another aspect of the legal environment surrounding transportation accidents involving radioactive material is the assignment of responsibilities for the cost of the accident. Eighteen states reported that the costs are clearly assigned by statute to the owner or carrier, as appropriate, of the material. However, in one state this law is applicable to fixed facilities only, and in several states cost assignment is limited to decontamination and clean up operations with the cost of emergency response being assumed by the state. Twelve states reported that no statutory provisions for cost assignment have been made, ten states indicated an unclear status and in nine states the answer was not known to emergency response personnel. Among the states with no statutory provision, one state indicated that litigation is required on case-by-case basis and another state indicated that, while there is no law, there is a policy to avoid burdening the tax payers. Among the states where the issue was unclear, one state indicated that costs associated with hazardous chemicals accidents are covered by a "spill act", but that the status of radioactive materials is unclear.

2.3 Communications

The communications systems which are available to the states for use during transportation accidents involving radioactive materials have evolved over the years as experience has demonstrated what resources are necessary and appropriate. The type and variety of resources

available varies widely from state to state. A few states reported almost total reliance on commercial telephone lines and state police radio, while other states reported redundant systems that include multi-channel microwave repeaters, dedicated phone lines, radio-telephone capability, and access to several different radio frequencies. In almost all states, access to communications resources is formalized through the state emergency planning documents; however, there is a strong informal component in some states because, as state agents, emergency response teams have access to many different state-owned radio frequencies such as those for emergency medical services, local government, departments of conservation and others.
In general, the issue of emergency communications during a transportation accident involving radioactive materials has been divided into two areas, notification of the appropriate authorities and support of response teams when they are in the field. These two aspects of the communications issue are substantively different, and two seperate systems exist, with the exception that in virtually all states the state police force performs an integrating function and is central to both systems.

2.3.1 Notification

In all the states, any citizen or official can make notification of a transportation incident involving radioactive materials by calling the advertised state police telephone number. The state police telephone operators can relay the information to the appropriate agencies or can refer the caller to the appropriate person. Twenty-eight states reported having a single state-wide telephone number for use in all emergencies; in most of these states this telephone number rings the state police switchboard operator. Two states have instituted state wide access through the 911 number.

In addition to telephone notification, any public safety officer, state or local, can report a radiation incident through the state police dispatching system over the state police radio network. In all the states, the police dispatch desk has a call list that enables the dispatcher to contact the appropriate authorities. Similarly, road maintenance personnel who may be the first on the scene can report radiation accidents through the state highway department radio network, which has close ties to the state police communications system.

Many states reported that the state radiation control agency telephone number is widely distributed and advertised as the number to call for radiation accidents. In some of these states, this number has been widely advertised. In other states, knowledge of this number is confined to public safety officers and radiation workers.

After the notice of a radiation incident has reached the notification switchboard, the information must be channeled to the appropriate state agency so that the response organization can be activated. Twenty-eight states reported that notification of a transportation accident involving radioactive materials goes directly to the radiation control office, while sixteen states reported that notification goes to the civil defense/emergency services agency who subsequently call out

the chain of command as necessary. Four states reported a multiple notice requirement, usually involving the state department of transportation and the radiation control agency. One state reported that there is no notice requirement, that if the local jurisdiction can handle the incident correctly, the state does not necessarily ever learn of the event.

One aspect of the notification process which appears to be universal among the states is a standard procedure whereby the switchboard operator who receives the telephone call of notification takes the name and the number from which the reporting individual is speaking and transfers this information along with the notice to the agency which will be responsible for the emergency response. After receiving the notice, the responding agency returns a call to the notifying individual to verify the notice and obtain whatever additional information may be available but which would be inappropriate for the switchboard operator to collect. Having verified the notice of an accident, the emergency response structure is activated as appropriate.

2.3.2 Field Support

As with the notification phase of the emergency communication systems, the state police are an important aspect of the field support phase of the emergency communications system. Forty-two states reported that they rely extensively on the state police radio for field communications. However, forty-three states reported that they have access to a communications system with provisions for a multiplicity of communication resources for the support of emergency workers in the field. Of these forty-three states, twenty-seven reported that citizens band radio is available, nineteen mentioned ham radio as a possibility, sixteen reported that they have access to radio telephones, and twelve states reported that various state agencies have dedicated radio frequencies which are available to emergency response personnel for use in the field. It should be noted, however, that among the states which reported access to citizens band or ham radio, most respondents indicated that use of these public access communications channels is a last resort.

Thirty-six states reported that they have access to a mobile emergency communications vehicle. In most of these states, this vehicle is available through the state police or civil defense/emergency services agency, and is not used except in the case of a protracted incident of major proprotion. Of these thirty-six states, only seventeen states reported that a communications vehicle is dedicated to hazardous materials response; in these cases, communications equipment has been installed in a mobile laboratory or other hazardous materials response vehicle. The remaining nineteen states who have access to communication vehicles must borrow the services of this vehicle from the state police or civil defense/emergency services. Additionally, several states reported that emergency response personnel have citizens band radios in their personal vehicles. Personal vehicles are often used for emergency response, and these personal citizens band radios are available for use if necessary. Several states reported that they have

handheld walkie-talkie radios for use by emergency response personnel at the site of an accident.

Most of the respondents who were interviewed stressed the fact that most transportation accidents involving radioactive materials are of a non-serious nature, and that communications from the scene of an accident are restricted to reporting into the central office. Commercial telephone lines are the most frequently used method for communication; indeed, several states reported that a roll of dimes for use in public telephones is included as part of the equipment in an emergency response kit. The full weight of the state emergency communications planning is rarely invoked.

In summary, the state police communications system is the single most important element of the emergency communications networks among the states. After the state police, commercial telephone lines are the most frequently used communications medium.

2.4 First-On-Scene Respondents

One of the central issues associated with transportation accidents involving radioactive materials is the training and qualifications of first-on-the-scene personnel. First arrivals at the scene of an accident are usually state or local policemen, but firemen are often early arrivals and road maintenance personnel, by virtue of their frequent travel on the highways, are also included in the group of possible first respondents. These personnel must be able to recognize a radiation hazard, be aware of what actions to take and also what to avoid, and must know how to activate the emergency response system.

Almost all the states reported that state police personnel have received at least some exposure to the handling of accidents involving radioactive material. This training is usually discussed in the larger context of environmental hazards, the hazards of radiation being a subset of this larger problem. In general, state police are expected to be aware of the hazards of radiation and to have knowledge of appropriate actions to take at the scene to avoid contamination. However, in a few states training for state police personnel is more thorough and state policemen are expected to be able to operate instruments and conduct at least a preliminary survey and report the findings when they make notification of the accident.

Training for local police, firemen, and road maintenance personnel is in general much less complete. Many states reported that none of these personnel have training or that training among these personnel is very limited, and in many other states, emergency response/radiological health personnel simply were not aware of training opportunities for these personnel. However, in a few states road maintenance personnel are particularly well trained and equipped; one state mentioned that road maintenance personnel and state police together comprise the backbone of their first response organization. The training that firemen receive is somewhat different in substance than training for other first respondents, being more concerned with the technical problems

surrounding pyrophoric metals, how to combat these fires and how to avoid the spread of contaminating fumes and smoke.

In general, first respondents are expected to carry out basic public safety functions and notify the emergency response mechanism. When asked to specify the order of actions the first respondents are expected to take at the scene, most states included "attend to the injured," "assess the immediate hazard," "notify the lead state agency," and "inspect shipping papers." With respect to how notification to the emergency response organization is accomplished, in virtually all states the state police radio network can serve as the medium through which notification is made. In many states, the highway department radio network is closely linked with the state police radio network, and notification can also be accomplished through this means. Also, nearly half of the states reported that first response personnel have a directory or other list of officials and/or technicians responsible for radiological emergencies, and first response personnel could make notification by telephoning these specified individuals. Fifteen additional states indicated that while patrol officers do not have a call list, this list is maintained at the dispatch desk.

An important aspect of emergency management at the scene of an accident is on-the-scene coordination. Many different groups of officials may be present at the scene of an accident, including local police, state police, personnel from the county sheriff's department, firemen and/or rescue squad personnel, as well as emergency services and radiological health personnel. Coordinating the work of these diverse groups, each with separate purposes and different priorities, can be an important problem. Thirty-four states reported that they employ an system of pre-designated on-the-scene coordinators for the response to a transportation accident involving radioactive materials. These coordinators are usually senior personnel from emergency services or radiological health who are clearly designated as the managers for the on-sight response. Most states indicated that the coordination function is not activated unless a multi-agency response becomes necessary. The personnel who were interviewed repeatedly stressed that most response to accidents involving radioactive materials turn out to be non-serious events, and a multi-agency response is rarely mobilized.

In summary, most states have made a serious effort to train state police in emergency management procedures so that the hazards associated with a transportation accident involving radiation materials can be quickly and properly identified, so that technically trained personnel can be dispatched to the scene to handle the radioactive hazard. A few states have expanded the definition of appropriate first response to include surveying the scene of the accident and estimating the seriousness of the radiation hazard. In these states, state police

personnel have received more thorough training and have ready access to radiation detection equipment. Training among local police, firemen, and road maintenance personnel is much less thorough. Several states mentioned that, while local police in general around the state are not well trained, larger municipalities have developed excellent capability through their local police department and fire department, and emergency services and radiological health personnel expressed confidence that these local agencies are quite competent to deal with radiation emergencies. These instances of technical competence at the local level are the exceptions, however; most states indicated that technical capability is at the state level.

2.5 Personnel

Access to technically trained personnel who are available to assist during the emergency response to a transportion accident involving radioactive materials varies widely from state to state. Thirty-eight states reported that they use a system of formally designated response teams. Twelve of these states reported that they have mulitidisciplinary teams representing all relevant specialties, including health physicists, radiation monitors, hazardous materials specialists, radio chemists and radio biologists, and health physics technicans. Thirteen states reported that personnel assigned to their teams included health physicists plus support technicians such as radiation monitors or health physics technicians. Six states indicated that while only health physicists are assigned to the response team, other specialists are available if necessary from other state agencies. Among the above enumerated thirty-one states, several states indicated that technically trained personnel who are not formally assigned to the response teams are nonetheless available for response if necessary. Three states reported that they have only health physicists available for dispatch to the scene of an accident. Two states indicated that the response team consists of radiation monitors or health physics technicians, and that health physicists are available for duty in the field only through special arrangements. Two states reported that their response teams consist of radiation monitors or health physics technicians only, and that no health physicists are available within the state government.

Ten states reported that they do not employ a response team structure as such. These states deploy experts to the scene of an accident through the use of volunteer experts who are on call, designated individuals located around the state, radiological health field staff and branch offices around the state, or a call list of specified state radiological health employees. Among these ten states which do not employ a formalized response team system, four states reported that they have health physicists plus a complete line-up of other relevant technical personnel available for dispatch, while six states reported that they have only health physicists available for emergency response in the field. One of these of ten states reported that the designation of team assignments is part of current planning.

A potentially valuable source of expertise during emergencies is radiation workers in private employment, universities, hospitals, elec-

tric utilities and others. These personnel comprise a pool of talent, a resource which many states have included in their contingency planning. All states license, register, certify, or maintain some form of file of all users of radioactive material within their jurisdiction. Twenty-eight states reported that a directory or other list of private sector radiation experts is maintained in a manner which permits ready access to these experts by radiological health or emergency operations personnel. Four states reported that a file of private sector radiation users is maintained but that no directory or other list is available. In some states, the registration of users is carried out by a state agency other than the radiological control or emergency services agencies, such as a state department of labor, a state board of licensing, or other state agency. Twelve states reported that while no directory, list or file is maintained within the emergency response organization, informal knowledge of radiation experts from the private sector exsists within the radiological health or emergency operations organization. Two states reported that no list or file of any kind is readily available to radiological health or emergency operations personnel. Two states reported that the development of such a list is in progress.

While many states make a concerted effort to identify private sector radiation workers who could provide technical expertise during an emergency, the issue of medical expertise has not received a similar effort. Only eighteen states maintain a directory of all physicians within their jurisdiction who could provide expertise on radiological issues. Fourteen states reported that a few medical consultants with expertise in radiological issues have been identified and designated, and four states indicated that they have a medical advisory panel which assists in the radiological emergency planning operations, the members of which panel are accessible to the state if their services are required on an emergency basis. Six states reported that they regard any nuclear medicine or radiology practitioner as having expert status and that access to medical expertise is through hospitals. Nine states indicated that no effort is made to identify medical expertise.

With respect to health care facilities and their capability to deal with contamination victims, six states reported that all hospitals in their state have radiation contamination training programs and drills; several of these states indicated that such preparedness is required for hospital accreditation. Four states reported that many hospitals have obtained this level of preparedness, while thirteen states reported that only a few hospitals have training programs and drills to prepare their staff to receive contamination victims. Four states indicated that no hospitals in their jurisdiction have developed any training program of this type. Two states indicated that the development of suggested hospital training programs is part of their current planning.

Twenty-nine states reported that a list of hospitals which are prepared to receive radiation contamination victims is maintained. Four states indicated that they have designated certain facilities and do not maintain a list of all hospitals with this capability. Three states reported that radiological health or emergency operations personnel have informal knowledge of which hospitals have appropriate capability

and no list is maintained. Two states reported that all hopsitals are considered to be adequately prepared to receive contamination victims, and in two other states radiological health or emergency operations personnel reported that they have no knowledge of which hospitals have this capability. One state mentioned that the identification of health care facilities with adequate capability to receive contamination victims is part of current planning efforts.

2.6 Equipment

The amount and variety of equipment available for use during an emergency response to a transportation accident involving radioactive materials varies widely from state to state. In general, each state's level of preparedness has evolved as experience has demonstrated what equipment is necessary and appropriate, and most states consider that they are adequately prepared to deal with most accidents. However, a few states felt that they had serious deficiences, especially in the area of radiation detection instruments: one state mentioned that all of their instruments are old donations from the military and expressed a desire to purchase new, modern equipment, and several states reported the need to purchase sources for calibration and testing of their instruments. In a few states, where program directors are particulary aggressive or adept at securing large appropriations, state radiation control programs are equipped to respond to any conceivable incident. A respondent in one state described a curious circumstance which enabled the radiation control program to acquire equipment which they needed but had no funds for purchasing. A new position for a health physicist was defined and a budget appropriation for this position's salary was made, but the salary was insufficient to attract any qualified applicants; during the fourth quarter of the funding cycle, the salary appropriation for the unoccupied position was diverted to capital equipment purchase for several consecutive years. In general, most states feel adequately prepared, but they do have items of equipment that they would purchase if they were able.

Very few states attempt to maintain a comprehensive inventory of all radiation detection instruments within their jurisdiction. In addition to the state radiation control program, the office of emergency services and/or civil defense program has its own inventory of radiation detection instruments, and local civil defense units also maintain inventories of detection instruments. Additionally, other state agencies, such as state departments of agriculture, labor, and pollution control, as well as state universities, maintain their own seperate inventories of radiation detection instruments. Other repositories for this type of equipment include most private sector organizations that are licensed to use radioactive materials. When asked about the availability of portable radiation detection instruments, some states enumerated the few dozen instruments which are reserved for use by the radiation control agency while other states provided information concerning as many as five or six thousand instruments distributed statewide through civil defense programs and in the private sector. In most states the number and location of civil defense instruments appear to be widely known, but the number and whereabouts of instruments that dedicated for use by individual agencies is, in general, confined to

the agency that uses these instruments. Very few states expressed any knowledge regarding instrumentation available through military bases.

Five states reported that calibrated portable radiation detection instruments are maintained at ten or fewer locations. Three states reported that instruments are maintained at more than ten but less than fifty locations. Thirty-eight states indicated that this equipment is available at more than fifty locations. All of the states reported that a large number of low range and high range beta-gamma detectors are available; almost all of these detectors were distributed to state and local civil defense organizations through Federal civil preparedness assistance programs. Other types of instrumentation, such as alpha particle detectors, neutron detectors, and others, are much less widely available. These more specialized items of equipment are confined to radiological health programs and private sector organizations, and even in the best-equipped states the number of instruments is only a few dozen. Many states reported having only one or two of some of these instruments, and several states reported not having any. Several states mentioned having cataloged the location of these more specialized instruments in the private sector so that if the need arose the state agency could borrow the instruments from the private sector organizations. Several states with major research facilities or firms that manufacture detection equipment reported having excellent relations with sources for this sort of specialized equipment and had access to virtually any type of instrumentation that could be required.

Seventeen states reported that they maintain a vehicle which is specifically dedicated to hazardous materials response. Of these seventeen states, only three indicated that a vehicle is specifically outfitted for radiological emergency response. Twenty-five states reported that there is no dedicated vehicle at the state level for hazardous materials response, although several states mentioned that some local governments do have hazardous materials response vehicles. Among states that do not have vehicles specifically dedicated to radiological emergency response, equipment that would be necessary for use in the field during the response to a transportation accident involving radioactive materials is either kept in the central office where it is conveniently available or would be in use in the field during routine inspections and other agency work. When the agency receives notification of an accident involving radioactive materials, the equipment is loaded into whatever vehicle will be used for the response; this may be a vehicle dedicated to hazardous materials response in general, a staff member's personal vehicle, a state police vehicle, or some other vehicle. In some states, a basic complement of equipment with fairly general utility is left in a vehicle, while other equipment, the need for which cannot be anticipated until an event occurs and which may be too delicate to be stored in a vehicle, is left in the agency offices and taken to the scene as necessary. Several states commented that the necessity to return to the office to obtain equipment before proceeding to the site of an accident was a cumbersome procedure, but the lack of resources prevented them from maintaining a 100% mobile capability.

All but two of the states which responded reported that emergency kits are maintained for use in emergency situations. These kits contain

materials and supplies which that be of immediate value to technical personnel as they perform the tasks of surveying an accident site and analyzing the nature of the incident. These supplies are packed in a large suitcase or footlocker and can be transported very conveniently. These kits do not, however, contain detection instruments or some of the more substantial field equipment which may be required. Twenty-eight states reported that emergency kits for use by technical personnel during emergency response are maintained at multiple locations around the state, while seventeen states reported that emergency kits are maintained in only one location. One of the states which maintains a dedicated hazardous materials response vehicle reported that its emergency kit is part of the equipment which is left in the vehicle.

To summarize, most of the states are reasonably well equipped and can get trained personnel with the basic complement of instruments and other field equipment to the site of an accident fairly promptly. However, budgetary constraints have placed limitations on some states' ability to maintain a high level of preparedness. In general, the states have evolved a response capability which is consistent with their historical experience. All the states do have items that they would purchase if they were able. Several states mentioned that since the Three Mile Island incident, their legislatures have made increased appropriations available to upgrade their response capability. The more specialized items of equipment are in scarce supply, but this is a reflection of the fact that they are not often needed under emergency situations.

2.7 Transportation of Personnel and Equipment

The problem of transporting technical personnel and appropriate instrumentation to the site of a radiation incident has received much attention by the states. The organizational apparatus differs widely from state to state, but in all states emergency response personnel have made arrangements to enable them to get to the scene of an accident as quickly as possible. In all states the general emergency transportation plan is used; there appears not to be any specific planning for the special case of transportation accidents involving radioactive materials.

Twenty-eight states reported that the radiation control agency that responds to accidents is responsible for the transportation of emergency response personnel. Depending on the specific characteristics of each state's organizational apparatus, agency vehicles, vehicles requisitioned from the state motor pool, or dedicated emergency response vehicles are used for emergency response. Nine states reported that emergency response personnel use personal vehicles. Five states indicated that the state police or the state highway patrol have primary responsibility for transportation of emergency response personnel, and three states reported that transportation is the responsibility of the office of emergency services. Three states reported that arrangements for the transportation of emergency response personnel are *ad hoc* depending on the nature of the incident.

The above enumeration represents the "first choice" or "most frequent" transportation arrangements. All the states which were interviewed have contingency planning or a solid bases in precedent for obtaining whatever transport mode is required to deal with an emergency. All states reported that emergency transportation can be arranged on a 24-hour basis.

With respect to the specific modes of transportation available for emergency response, virtually all the states reported that they have access to cars. In addition to cars, the states reported access to other modes of transport as follows: forty-seven states have access to aircraft, either fixed-wing, helicopter or both; thirty-five states have access to trucks, vans or both; thirty-four states have access to boats; and five states reported access to other modes of transport, including snowmobiles, airboats or all-terrain vehicles. With respect to the use of aircraft during an emergency response, most states indicated that it requires several hours to requisition and receive the services of the aircraft, and in most cases, the first dispatch of an emergency response team is via surface vehicles. Even in the large western states, the use of aircraft is generally confined to protracted incidents which may require supplemental personnel or instrumentation, the necessity to return samples from the site to a laboratory for analysis, or other special circumstances.

Thirty-one states reported that fuel for use during an emergency response is available on a 24-hour basis. Several of these states mentioned that state police district headquarters have 24-hour gasoline pumps available during an emergency. One state reported that all local jurisdictions are required by state law to maintain an emergency fuel supply. Seven states reported that no arrangements have been made to ensure the 24-hour availability of fuel. Three states reported that they rely on commercial outlets, and three states indicated that this issue is part of the their current planning.

Thirty-four states reported that they have forged formal linkages with local military bases through which supplemental transportation assistance can be requested. In most cases, these arrangements are with the National Guard, but several states reported that there is a department of military affairs within their state government organization. Of these thirty-four states, three states indicated that arrangements with the military are applicable to fixed facility accidents only. Four states reported that they have made informal arrangements with local military, seven states indicated that no arrangments have been made, and one state reported that arrangments with local military are part of current planning.

With respect to the availability of boats for use during an emergency response, twenty-four states reported that access was possible within state government, while nine states reported that it would be necessary to turn to Federal agencies such as the U.S. Coast Guard or the U.S. Army Corps of Engineers. Thirteen states reported that boats were not available; most of these are states with no navigable waterways. One state reported that watercraft would be obtained from local government

if necessary, and one state reported that this issue is part of current planning.

In summary, in can be seen that the states are well prepared to dispatch emergency response personnel to the site of an accident through whatever means necessary. The specific details of emergency transport planning differ widely from state to state, and are reflective of organizational and geographic idiosyncrasies.

2.8 Training

The set of questions on the training of personnel involved in the emergency response to a radiological transportation accident invokes a complex set of sub-questions and issues that are specific to each of several groups of personnel. In general, the field of training can be divided into two aspects: substantive technical instruction concerning the phenomenon of radioactivity, and procedural training on how to respond to and handle an accident involving radioactive material. Effective training requires that all personnel who may be involved in the emergency response have a mix of the two aspects, but the ratio of the mix differs depending on what role the individual will play in the response. For the most part, the states have assumed responsibility for training public safety officials (police, fire, etc) in the basic procedural aspects of radiological emergency response, while national training programs through the U.S. Nuclear Regulatory Commission, the U.S. Department of Energy, the Federal Emergency Management Agency, the U.S. Department of Transportation and the U.S. Environmental Protection Agency concentrate on the more technical aspects of procedure and the highly specific details derived from the unique characteristics of individual isotopes and the physical form in which they may be encountered.

In most states, expertise in the two aspects of radiological emergency response, technical and procedural, is found in two different state agencies. Technical expertise on the phenomenon of radioactivity and the more detailed aspects of appropriate response during an emergency resides in the state radiation control agency. Most states have one or more health physicists and additional personnel with technical training. Procedural expertise on the implementation the emergency response plan is found in the state office of emergency services. In many states, staff in the office of emergency services are former military personnel who bring with them extensive in-service training; additionally, on-the-job training and civilian training institutes provide the educational background for emergency services personnel. The division of specialties, however, is not absolute, and in most states personnel from both disciplines can be found in both agencies. The state's organizational structure also plays a role in the distribution of expert personnel. In some states, both the radiological health and emergency services functions are collapsed into one agency. One state reported that three agencies are involved in this issue: procedural and tactical expertise is in the office of emergency services, while technical expertise in radiological issues is subdivided into two additional agencies, a nuclear safety agency, which handles everything in the nuc-

lear fuel cycle, and the radiological health agency which handles all radioactive materials that are not part of the nuclear fuel cycle.

For the purposes of this survey, "health physics training" was defined to be graduate level education in health physics. In a few special cases, personnel with extensive in-service training from the military were counted as health physicists. With respect to health physics expertise available to departments of emergency services, twenty states reported that five or fewer of the personnel in civil defense or emergency services agencies have training in health physics. Four states reported that more than five of the personnel in civil defense or emergency services agencies have this health physics background. In ten states, civil defense/emergency services agencies did not have any personnel who met the definition of health physics training, but did have personnel with some exposure to issues in health physics through the U.S. Civil Defense Radiological Defense (RADEF) training programs or the U.S. Nuclear Regulatory Commission "Radiological Emergency Response Operation" (RERO) training course. Seven states reported that no personnel in the emergency services agency have had any health physics training. One state reported that no paid personnel in the emergency services agency have training in health physics, but they do have a regular schedule of volunteers from industry who work in radiological emergency planning and among these volunteers are formally trained health physicists. With respect to personnel in radiological health agencies who have training in emergency response procedures, eighteen states reported that five or fewer employees have this training. Twenty-five states reported that more than five employees in the radiological health agency have this training, and among these twenty-five states, several states reported having several dozen employees with this training.

In most states, the first technically-qualified personnel to survey the site of a transportation accident involving radioactive materials will be health physicists or health physics technicians from the radiation control office. These are the same personnel who perform routine inspections on schedule around the state and who respond to the much more frequent and less dramatic laboratory accidents involving radioactive material. In the eight states that employ the decentralized response mechanism, first arrivals at the scene will be personnel who have diverse employments in universities, hospitals, or radiological industries. In most cases, these first technical respondents do not have any formal connection with the emergency services organization nor are they expert in the tactical and procedural details of mobilizing an emergency response. However, as was noted the preceeding paragraph, some radiological health personnel have received training in emergency response procedures. Forty-three states reported that personnel with emergency response procedure training are assigned to the first wave response teams. With respect to the dispersion of trained personnel around the state, twenty-four states reported that personnel with training in radiological emergency response procedures are stationed at more than one location around the state, and twenty-two states reported that trained personnel are stationed at only one location.

There is considerable variety in training opportunities for the various groups of personnel. Among state and local police and local firemen, most training is conducted through the state civil defense/emergency services agency, the radiological health agency or through the in- service training academies. In the state public safety service academies, issues surrounding radiological emergencies are discussed in the larger context of all hazardous materials emergencies, in a block of classes that all cadets receive as part of their course work at the academy. Many states have organized refresher course programs that are available on variable schedules. Several states mentioned sending a few police and fire personnel to RERO training, and these personnel then conduct short training sessions as part of in-house training programs. One state mentioned that they have a state special training institute which offers different levels of course work at various times and places around the state. The proportion of the training which is available to state and local police and local firemen which is devoted to hands-on experience in using detection instruments is quite variable, but most states reported having relatively little actual experience as part of the training.

In contrast to state and local police and firemen, radiological health and emergency services personnel receive their training primarily through national training programs. The states mentioned taking advantage of training programs made available through the following Federal agencies: the Nuclear Regulatory Commission, the Department of Energy, the Environmental Protection Agency, the Federal Emergency Management Agency, as well as the Oak Ridge Associated Universities. In addition to these nationally organized training programs, many states make use of their trained personnel to offer in-house and on-the-job training programs. Many states also mentioned the professional and academic background of their personnel as an important source of training. Most states attempt to take advantage of training opportunities whenever they become available; several states mentioned that it is necessary to make reservations well in advance for some of the national training programs.

An additional dimension of training is the use of state-wide drills to exercise the emergency response plan. Twenty-eight states reported that a state-wide drill to test the effectiveness of the state emergency response plan had been conducted within the past year, while two states reported that it had been over a year. Seven states reported that they have had no drills, that they rely on live incident experience to assess to effectiveness of their plan. Most states that mentioned having had drills or exercise commented that these drills were conducted during site emergency drills at fixed facilities, but some states go to considerable lengths to provide realistic scenarious, such as staging several "incidents" at different locations simulatenously or having a wrecked and burning truck with radioactive cargo placarding in a remote part of the state. Several states commented that these drills are expensive, one respondent estimating the cost at $25,000 per drill.

An aspect of training among personnel who respond to radiological emergencies that is a departure from the general pattern is the development

in a few states of a special cadre of personnel who respond to all hazardous materials accidents. Two states are developing a hazardous materials officer corps within their state police department, and a few states have delegated the responsibility for hazardous materials emergency response to a state department of environmental protection or environmental engineering (the level of development among states that have adlopted this type of program is quite variable). These personnel ... neither formally attached to the emergency services agency, nor are ...ey part of the public health radiation control function; rather, they are a relatively automomous corps of highwy trained technicians pre-...ared to handle all types of hazardous materials accidents. These per-...onnel have received specialized training in biology, chemistry, physics, as well as training in emergency response planning and tactics. They are well equipped and highly mobile.

In summary, the numbers of individuals and the mix of training specializations is fairly homogenous nationwide. The more populous, industrialized states have larger programs and higher numbers of trained individuals, while the rural, less populous states have smaller programs and fewer trained individual. States adopting the decentralized response mechanism have fewer numbers of highly trained specialists, but have a larger numbers of moderately well-trained personnel well distributed around the state. With respect to the mix of training among specialists at the state level, in forty-three states radiological health personnel have emergency response procedure training while emergency response personnel have health physics training in only twenty-four states. This somewhat skewed distribution of training specialties between the two agencies appears to be appropriate because radiological health expertise is always necessary even when there is no threat of exposure, if only to verify the fact, while the capacity to mobilize an emergency response is not necessary in all incidents.

2.3 Legal Issues

The legal environment under which an emergency response is mounted varies greatly around the nation; however, over half the states report that the powers, duties, and legal protection for emergency response personnel are clearly defined in statute. Thirty-two states reported that emergency response personnel are able to conduct operations on private property, and thirty-three states reported that the power to seize or condemn private property is clearly enunciated as part of the emergency response team's powers. Very few states report legislation specific to accidents involving radioactive materials; in most states, these powers are part of the enabling legislation for the emergency services office or are subsumed under the public health mandate, which includes the operation of the radiological control office. Three states reported that the power to conduct operations on private property and the power to seize or condemn private property are contingent upon the governor's declaration of a state of emergency, and three other states reported that a police escort is necessary to accomplish both of these functions. One state reported that new legislation covering these powers is currently being drafted, and a few states reported that these issues are unclear. In a few additional states, emergency response personnel interviewed were not able to answer these questions.

On the issue of protection from personal liability for emergency response workers, twenty-seven states reported that emergency response workers are protected, five reported that they are not protected, seven indicated that this issue is unclear, and three reported that protection from liability is conditional. Among states that reported that emergency response workers are protected, very few indicated that this issue was specifically addressed for emergency response personnel. In most states protection for emergency response workers is the same protection extended to all state employees, which is part of the general notion of sovereign immunity, and which does not include protection in cases of malfeasance. Among states which reported conditional liability protection, one state indicated that emergency response workers are protected only if they are acting under orders from the office of emergency services and that the office of emergency services is the only state agency with this form of protection. Another state indicated that protection is extended only when the Governor has declared a state of emergency.

The other major area of concern in the legal environment under which emergency response is organized concerns the assignment of costs incurred during an emergency. Eighteen states reported that statute law clearly assigns the responsibility for costs to the owner of carrier, as appropriate, of the material. In one of these states this law is applicable to fixed facility incidents only, and in several states cost assignment is limited to decontamination and clean-up operations with the cost of emergency response being assumed by the state. Twelve states reported there is no statute to assign costs, and ten states reported that this issue is unclear. Two states reported that new legislation is currently being drafted. Among states that reported no statutory cost assignment provisions, one mentioned that there is a standard procedure for assigning costs, and another reported that there is a policy to avoid burdening the taxpayers. Among states that indicated the issue was unclear, one indicated that hazardous chemical accidents are covered by a "spill act" but that the status of radioactive materials is unclear.

In summary, it was learned that many states have made adequate statutory provisions defining the powers and duties of protection for emergency response workers; however, some seem not to have made provisions regarding these issues, and in a few states emergency response personnel were simply not aware of what provisions had been made. The issue of cost assignment is somewhat less well-covered among the states. Less than one-third of the states have made unequivocal cost assignment laws, while many states reported this issue to be undefined.

2.10 Funding for Radiological Emergency Response

Funding for radiological emergency response and training programs comes from several different sources. In many states, the civil defense program is closely associated with the emergency services office and funds from the national Civil Defense program find their way into emergency operations programs and training activities. An example of this is the Civil Defense Maintenance and Calibration Officer: several states re-

ported that this position's salary is funded through national Civil Defense appropriations to the state, but the Maintenance and Calibration Officer is usually quite active in the state's radiation training program. One state estimated that 40% of the Maintenance and Calibration Officer's time was spent in conducting training sessions. In some states, local civil defense personnel are part of the response mechanism, and several states mentioned that the emergency services agency budget includes a sizeable pass-through that is dispersed to local programs by the civil defense/emergency services agency. These pass-through appropriations are, in turn, composed of both state and federal monies. Very few states could offer any information regarding the amount spent in emergency response, although one state estimated the cost of the average response at $10,000.

Radiological health programs are, in general, funded by the states exclusively. No effort is made to seperate the cost of emergency response from ordinary day-to-day activities. Radiological emergency response is part of the job description and personnel in radiological health programs stated, "it's just what we do." With respect to training activities among radiological health personnel, very few states were able to offer any firm dollar amounts or personhour accounting. No states reported having any radiological health employees devoted fulltime to training; rather, various members of the radiological health staff conduct training sessions when it is necessary. Several states mentioned a desire to create a new position devoted exclusively to training.

In summary, any effort to analyse the economic aspects of emergency preparedness would require a very careful study using basic state budget and accounting documents. The role of each agency and the interface with federal programs would have to be examined very carefully to develop any accurate figures. Such work exceeded the budget available for this project.

2.11 Actual Experience of the States

Forty-nine states reported on their experience with transporation accidents involving radioactive materials. It should be noted that the states reported estimates for the average year: the numbers reported are not reflective of any specified time interval, but are rather estimates of what the respondents considered to be typical experience. The number of requests for assistance received in the average year ranged from 0 to 50, for a normal national total of 275 requests for assistance received . The mean is 5.6 requests per state per year. As would be expected, the industrialized states of the eastern corridor and midwest reported more accidents than the smaller, more rural states, with the exception of the oil producing states in the south-central region where there is a considerable amount of radiography traffic associated with the oil drilling and pipeline industry. Many of the respondents stressed the fact that in their experience, most transportation accidents involving radioactive materials are of a non-serious nature: vehicles transporting radioactive materials are involved in accidents, but the shipping casks or other containment vessels retain their integrity, and there is rarely any radiation leak

age. The principle exception is lost radiography sources, which are frequently not well-packaged.

The knowledge that most transportation accidents involving radioactive material are not serious and do not result in any hazard from radiation contamination does not detract from the need for continued vigilance and technical expertise to assess these accidents. Several states mentioned incidents in which a dramatic over-response resulted from un- informed personnel making hasty decisions at the scene of an accident. One of the eastern states mentioned an incident of several years ago in which a truck with radioactive cargo placarding was involved in an accident. The local volunteer rescue squad responded to a call to attend to an injured person at the scene of the accident. Among the volunteer workers on the rescue squad was a person who was also a local civil defense volunteer. This civil defense volunteer was carrying a pocket dosimeter which had not been serviced or calibrated in over a year. Upon seeing the radioactive cargo placarding the civil defense volunteer attempted to survey the accident site with the pocket dosimeter, and threw an entire township into panic by announcing near-leathal dose readings. Calm was not restored until the state response team had traveled from the state capital to discover that there was no radiation leakage. Several other states told similar stories.

In many states, emergency response personnel who deal with transportation accidents involving radioactive materials are closely associated with personnel who respond to hazardous chemicals accidents. Several respondents mentioned that radioactive materials accidents did not worry them nearly as much as hazardous chemicals accidents. A northeastern state mentioned an incident involving a semi-trailor which overturned in a culvert along an interstate highway. There were no injuries and it was a non-serious accident in all respects, but upon examining the cargo manifest, the investigating officer noticed that part of the cargo was listed as being radioactive. The officer notified the emergency response organization according to protocols, and within an hour a response team with sophisticated instrumentation was at the scene of the accident. The radioactive cargo turned out to be gas lantern mantels, which have a minute quantity of thorium. However, one of the response team members noticed that part of the rest of the cargo was drums of toluene, an extremely volatile industrial solvent that was leaking from the drums and dripping out of the truck into the drainage ditch along the highway. In this case, the hazard from radiation was negligible while the unnoticed threat from a hazardous chemical was of potentially disasterous proportion.

Twenty-eight states reported that the response team in their state is activated for all notices received concerning transportation accidents involving radioactive materials. Fifteen states reported that some effort is made to ascertain the seriousness of the event during the notification phase, and that the response team is not activiated for all notifications. Three states reported that they have never had any incidents and have never activated the response organization. Among response team members, there is a certain amount of frustration evident at having to travel two or three hundered miles to survey an incident

that is totally non-hazardous. Deploying the response team involves a considerable expense in terms of person hours and travel expense, and some states apparently feel constrained to avoid expending their resources for events that do not involve any serious hazard. Among the states that reported that all notifications receive a response, however, several mentioned that it is easier for them to activate for a trival incident than it is to explain publically why they did not activate. Among the eight states that employ the decentralized response structure, the decision to activate the state response team is determined by the capability of the local officials. Several states reported that many localities have a well-developed capability and are quite competent to handle most incidents. In these cases, the state monitors the local response until the incident is closed, but intervenes only on request or if their expertise if required.

Several states mentioned that they have a fairly well-developed, informal component in their emergency response organizations. In these states, the personnel in the radiation control office are aware of competent radiation workers in federal or private employment around the state, and upon receiving notification of an accident, the nearest qualified person is notified and responds on behalf of the state. If the accident is such that only a simple survey to determine that no hazard exists is all that is necessary, the state response organization is thus saved the expense of responding. If, however, the individual dispatched on behalf of the state determines the incident requires formal response, this person can call on the state to activiate the response organization.

Forty-six states reported that they have never found it necessary to call upon federal personnel for assistance in transportation accidents involving radioactive materials. Among these forty-six, however, four mentioned that federal installations within their borders (such as the Idaho National Engineering Laboratories, Brookhaven Laboratories, the U.S. DOE Nevada Operations Office, and others) are routinely notified and respond on behalf of the state if they are the nearest source of qualified personnel. Additionally, several states mentioned that there have been cases when local first-on-the-scene officials or private citizens have called federal installations because they are the nearest known source of radiological expertise. In such cases, notifying a federal installation first is strictly outside state protocols. In some of these cases federal personnel have responded, while in other cases they have passed the notification on to the state radiation control office. Only three states reported that they have ever found it necessary to call upon federal personnel for assistance during a transportation accident involving radioactive materials. One state mentioned that the reason they required this assistance involved a question as to the integrity of shipping casks that had been involved in a rail accident. No other states provided reasons.

Six states mentioned that federal officials have called upon state personnel to respond to an incident. In these cases, it was federal officials who first learned of the incident and who subsequently notified state personnel. One of the states on the Gulf of Mexico mentioned that there seems to be a conflict as to where state and federal

jurisdictions begin and end in the U.S. waters off the coast. This state mentioned that they had received notification of radiation incidents on off-shore drilling platforms from federal officials, and were asked to respond to these incidents.

Several states also mentioned another circumstance outside normal protocols involving shipments of radioactive material that were consigned to or originated from a federal installation. In these cases the drivers notified the federal installation directly and it sent personnel to respond to the accident. The states in whose jurisdictions these events occurred did not learn of these accidents until after the response was finished, the notification being more a courtesy rather than an official notification of a transportation accident.

3.0 SUMMARIES BY QUESTION AND BY STATE

This chapter contains question-by-question summaries of the survey data. Each question is paraphrased for convenience; the full text of the questions can be found in Appendix A. The information presented here is drawn from interviews, plans, and other documents, and is shown as provided by official state sources.

3.1 Organization and Responsibility

Question 1: Are there any jurisdictions within the state that may exercise their own authority to respond to radiation emergencies? If so, who might we contact them?

Twenty-seven states reported that no local jurisdictions have autonomous authority for radiological emergency response, while seventeen states reported that all jurisdictions have local autonomy for responding to radiological incidents. Five states reported that some of their local jurisdictions have authority; these are usually major cities which already have a public health organizational apparatus that can carry out this function. Two states did not respond.

Question 2: Which state agency(s) keeps a file of detailed maps which show the following for all areas of the state?

(a) Major and minor roads in all area?
(b) Railroad routes throughout the state?
(c) All navigable waterways in and around the state?
(d) Location of civilian and military hospitals?
(e) Location of police, ambulance, and fire stations?
(f) Location of experienced radiation workers and other technically trained personnel available for emergency response?

With respect to the six categories of resources ennumerated, twenty-six states reported that resource guides (maps, directories, etc.) for all resources are immediately available to radiological emergency response personnel, sixteen states reported that some of these resource guides were available and five states reported that none of the resource guides are available except ordinary state road maps. Four states did not respond.

Question 3: Does any state agency require prior notification for large shipments of radioactive materials in or through the state?

Fifteen states reported that prior notice for intrastate shipments of radioactive materials is required, while twenty states reported that there are no prior notification requirements. Six states reported that notification

requirements are in force for certain quantities or types of radioactive materials; among these qualifying requirements are included special permits or licensing made necessary by the use of over-size or over-weight vehicles, which effectively limits notice requirements to reactor fuel elements and waste. Four states reported that, although they have no prior notification requirements, they routinely receive informal courtesy notification. One state reported that, while there is no notification requirement for shippers or carriers, any state agency with knowledge of a shipment must report to the radiological health division. One state reported that this issue was unclear, and one state reported a statewide prohibition on shipments of large quantities. Two states which reported no notification requirements indicated that this issue is currently under review and that some form of notice requirements are anticipated in the near future. Three states did not respond.

Question 4: Does the state require placarding of intra-state shipments of radioactive materials? Did the state adopt the DOT regulations in this area?

Thirty-five states reported that they do require placarding for intrastate shipments and that they have formally adopted the U.S. DOT regulations for shipping radioactive materials. Six states reported that, while they do require placarding, they have not formally adopted the U.S. DOT regulations. Seven states reported that they do not require placarding nor have they adpted the U.S. DOT regulations. Of the thirteen states that have not formally adopted the U.S. DOT regulations, five states reported that this issue is currently under review and that adoption is expected; additionally, three states reported that they use the U.S. DOT regulations by reference, and one state reported that they conform to the U.S. DOT regulations informally. Three states did not respond.

Question 5: Many states use a classification-of-severity scale to define classes of incidents. Protective actions are then indicated according to the class of the incident. Does the state use a classification-of-severity scale?

Twenty-seven states reported that they do not use a classification-of-severity scale, although two of these states report that this is part of their current planning efforts. Twenty states reported that they do have a formally defined classfication-of-severity scale; of these, only four states consider their scale to be applicable to transportation accidents. Four states did not respond.

Question 6: What notification is required by the state in the event of a transportation accident involving radioactive materials on interstate and intrastate carriers?

Twenty-eight states reported that notification of a transportation accident involving radioactive materials goes directly to the radiation control office, while sixteen states reported that notification goes to the emergency services office who subsequently call out the chain of command as necessary. Four states reported a multiple notice requirement, usually the state department of transportation and the radiation control office, and one state reported that there are no notice requirements, that if the local jurisdiction can handle the event correctly the state does not necessarily learn of the event. Two states did not respond.

TABLE 3-1
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
AL	All local jurisdictions have authority	Roads: State Dept. of Highways; State Dept. of Public Health Rail Routes: State Dept. of Public Health; Public Service Commission Navigable Waterways: U.S.A. Corps of Engineers; Alabama Water Improvement Commission; Alabama Development Office Hospitals: State Dept. of Public Health Public Safety Personnel: State Dept. Public Safety; Civil Defense; each county sherriff Radiation Workers: State Dept. of Public Health--not a formal directory	Div. of Radiological Health requests notice on Yellow III waste shipments
AK	No local jurisdictions have authority	Roads: State Dept. of Transportation Rail Routes: ? Navigable Waterways: U.S. Coast Guard Hospitals: State Dept of Health and Social Services Public Safety Personnel: State Dept. of Public Safety Radiation Workers: State Dept. of Health and Social Services; State Dept. of Military Affairs	No
AZ	No local jurisdictions have authority	Roads: State Dept. of Transportation Rail Routes: State Dept. of Transportation Navigable Waterways: Hospitals: Div. of Emergency Services; State Atomic Energy Commission Public Safety Personnel: Radiation Workers: State Atomic Energy Commission	State Dept. of Transportation and State Atomic Energy Commission receive notice as a courtesy
AR	No local jurisdictions have authority	Roads: State Dept. of Highways & Transportation; State Police; Office of Emergency Services Rail Routes: Transportation Commission; Office of Emergency Services Navigable Waterways: Game and Fish Commission; Office of Emergency Services Hospitals: State Dept. of Health; Office of Emergency Services Public Safety Personnel: State Police; State Dept. of Health; State Fire Academy; Office of Emergency Services Radiation Workers: State Dept. of Health; Office of Emergency Services	Notice required for spent fuel and other wastes from power reactors only

TABLE 3-1
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes		Immediate notice to the Div. of Radiological Health
yes	yes	yes	Notification goes directly to the Environmental Health Section
yes	yes	No, this is part of current planing effort	Through state police dispatcher to State Atomic Energy Commission
yes	yes	Yes, fixed facilities only	Office of Emergency Services receives notice and brings in chain of command as necessary

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
CA	All local jurisdictions have authority	Roads: within functional areas--not amassed for use in radiological emergencies Rail Routes: Navigable Waterways: Hospitals: Public Safety Personnel: Radiation Workers: Informal--Radiologic Health Section has made contact with various laboratories, etc., public and private	No - - - - - - - - - - One county (Marin) has an ordinance that prohibits any transport of radiological materials
CO	City of Denver has limited capability; all other response is through State Dept. of Health	Roads: State Dept. of Health; Division of Disaster Emergency Services Rail Routes: Division of Disaster Emergency Services Navigable Waterways: State Dept. of Health; Division of Disaster Emergency Services Hospitals: Public Safety Personnel: Radiation Workers: State Dept. of Health	no
CT	No local jurisdictions have authority	Roads: State Dept. of Transportation Rail Routes: Navigable Waterways: Hospitals: State Dept. of Health Public Safety Personnel: State Dept. of Public Safety Radiation Workers: no agency	Yes, permit required from State Dept. of Transportation
DE	All counties have authority	Roads: State Highway Dept. Rail Routes: State Transportation Dept. Navigable Waterways: State Division of Natural Resources Hospitals: no state agency Public Safety Personnel: State Police; State Fire Academy Radiation Workers; State Division of Emergency Planning and Operations	Yes, notice required to State Division of Emergency Planning and Operations; notice is forwarded to State Dept. of Health
FL	Several "high probability" areas have developed local capability; all other response is through State Division of Health and Rehabilitative Services	Roads: Rail Routes: Bureau of Disaster Services Navigable Waterways: Hospitals: Public Safety Personnel: Radiation Workers: State Division of Health and Rehabilitative Services	Required by State Division of Health and Rehabilitative Services

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes		Notice to Radiologic Health Section required; usually comes through State Dept. of Transportation or State Dept. of Energy
yes	yes	fixed facilities only	Notice to State Dept. of Health; through whatever channels are necessary
yes	State Dept. of Environmental Protection has adopted Federal radiation control regulations; Connecticut is working to adopt U.S. DOT shipping regulations	Connecticut uses four classes which they made up "for lack of guidance"	Notice to Radiation Control Program through State Police
yes	yes	Use NRC guidelines	Notice to Division of Emergency Planning and Operations, who call out the chain of command as necessary
yes	yes	Yes--fixed facilities only	Bureau of Disaster Services receives first notice, calls in chain of command as necessary

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
GA	Each county is required to have a plan and respond on its own authority; state personnel provide support as necessary	Roads: State Dept. of Transportation; State Dept. of Natural Resources, Environmental Protection Division; State Civil Defense Rail Routes: Public Service Commission; State Civil Defense Navigable Waterways: State Port Authority; State Civil Defense Hospitals: State Dept. of Human Resources Public Safety Personnel: State Dept. of Human Resources; State Civil Defense Radiation Workers: State Dept. of Human Resources; State Dept. of Natural Resources, Environmental Protection Division	Notification is required by the State Dept. of Transportation under 1979 law
HI	No jurisdictions have authority ——— Islands other than the main island (Oahu) go to county CD and then to the State	Roads: State Dept. of Transportation Rail Routes: n/a Navigable Waterways: State Dept. of Transportation, Harbors Div. Hospitals: State Dept. of Health Public Safety Personnel: State Dept. of Health; State Civil Defense Radiation Workers: State Dept. of Health	No
ID	No local jurisdictions have authority ——— The Idaho National Engineering Lab. plays a large role in responding	Roads: State Dept. of Transportation & Highways Rail Routes: Navigable Waterways: State Dept. of Lands Hospitals: State Dept. of Health and Welfare Public Safety Personnel: State Dept. of Law Enforcement Radiation Workers: State Dept. of Health and Welfare, Division of Environmental, Radiation Control Section	No
IL	No local jurisdictions have authority	Roads: State Dept. of Transportation; Emergency Services Disaster Agency Rail Routes: Illinois Commerce Commission; Emergency Services Disaster Agency Navigable Waterways: State Dept. of Transportation; Emergency Services Disaster Agency Hospitals: State Dept. of Public Health; Health Care Facilities Division Public Safety Personnel: dispersed among functional agencies and counties Radiation Workers: State Dept. of Public Health	No

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
		yes--4 classes predicated on U.S. EPA 1979 guidelines	Notification required for all events by State Dept. of Natural Resources, Environmental Protection Divison
"difficult to answer" Georgia conforms to 49 CFR 173-389			
no	no	no	Through local dispatcher to State Dept. of Health
Placarding is required for Yellow III shipments	yes	no	Notification required direct to Radiation Control Section, usually through State police Sometimes the INEL responds independently
yes	yes	yes; NUREG 0610	Emergency Services Disaster Agency receives notice for all events, calls in chain of command as appropriate

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
IN	All county Civil Defense Directors have authority, but in practice they defer to the State Board of Health	Roads: State Highway Commission Rail Routes: Public Service Commission Navigable Waterways: Public Service Commission; State Dept. of Natural Resources Hospitals: State Board of Health Public Safety Personnel: dispersed among functional agencies Radiation Workers: State Board of Health; State Civil Defense; local Civil Defense	Not clear; some shipments are identified to State Board of Health or State Civil Defense; load limits bring attention
IA	All counties and the larger cities have authority	Roads: State Dept. of Transportation Rail Routes: Transportation Navigable Waterways: State Geological Survey Hospitals: State Dept. of Health Public Safety Personnel: dispersed among functional agencies Radiation Workers: Iowa University and Iowa State University	No
KS	All jurisdictions have authority; they take charge until the experts arrive	Roads: State Dept. of Transportation; Division of Emergency Preparedness Rail Routes: Navigable Waterways: n/a Hospitals: State Dept. of Health; Division of Emergency Preparedness Public Safety Personnel: Division of Emergency Preparedness Radiation Workers:	Not required; sometimes notice is received--any state agency with knowledge is required to notify the Division of Emergency Preparedness; no routine arrangements
KY	No local jurisdictions have authority	Roads: Rail Routes Navigable Waterways: Disaster and Emergency Services Hospitals: Public Safety Personnel: Radiation Workers: Bureau for Health Services, Radiation Control Branch	Radiation Control Section receives prior notice "as required by the U.S. NRC"
LA	No local jurisdictions have authority	Roads: State Dept. of Transportation & Development Rail Routes: Railroad Commission; State Dept. of Transportation & Development Navigable Waterways: Wildlife & Fisheries; Stream Control Hospitals: State Dept. of Health & Human Resources Public Safety Personnel: State Police; Office of Emergency Preparedness Radiation Workers: State Dept. of Resources, Nuclear Energy Division	Statewide prohibition of all shipments of high level radiation or spent fuel--cannot enter the state

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	no ——— use a "pile on" system; treat each occurrence as serious and go as far as necessary	Notice goes directly to State Board of Health and State Civil Defense, through State Police dispatcher
yes	yes	no	Notice goes directly to the Division of Environmental Quality
no	informally conform to all Federal standards	fixed facilities only: NUREG 0610 NRC Rg. Guide 1.101	Dual requirement: all incidents must be reported to both the Division of Emergency Preparedness and the Bureau of Radiation Control
yes	yes	yes; 4 classes, based on amount of exposure to individuals and/or environment	Notification goes to Radiation Control Section, through the State Police and occasionally through Disaster and Emergency Services
yes	yes	yes--fixed facilities only	Notification goes directly to the Nuclear Energy Division, often through the State Police

TABLE 5-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
ME	No local jurisdiction has authority	Roads: State Dept. of Transportation; Bureau of Civil Emergency Preparedness; Coast Guard Rail Routes: Navigable Waterways: Hospitals: State Dept. of Human Services; Bureau of Civil Emergency Preparedness Public Safety Personnel: Radiation Workers: Bureau of Civil Emergency Preparedness	Yes--State Police and State Dept. of Environmental Protection are informed of routes and check point times; Bureau of Civil Emergency Preparedness is also informed
MD	No local jurisdictions have authority	Roads: Rail Routes: Navigable Waterways: Hospitals: Public Safety Personnel: Radiation Workers: Dept. of Health & Mental Hygiene, Div. of Radiation Control has list of radiation health consultants	No
MA	Mass. is a "home rule" state--all towns have authority, many towns have developed a signficant capability	Roads: Rail Routes: Navigable Waterways: Disaster Preparedness Program, Civil Defense Agency Hospitals: Public Safety Personnel: Radiation Workers:	Yes--State Dept. of Public Health maintains a log of all shipments
MI	No local jurisdictions have authority	Roads: State Dept. of Public Health Rail Routes: Navigable Waterways: Coast Guard Hospitals: State Dept. of Public Health Public Safety Personnel: Radiation Workers: lists are available in facilities section of the Division of Radiological Health	Yes--State Dept. of Public Health, Radiological Health Section
MN	No local jurisdictions have authority	Roads: State Dept. of Transportation Rail Routes: Navigable Waterways: Hospitals: State Dept. of Health Public Safety Personnel: State Dept. of Health; State Dept. of Public Safety	No

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	follows Federal guidelines, but U.S. DOT regulations are not formally adopted; hope to get formal adoption soon	no	Dual notification requirement--State Dept. of Transportation and Bureau of Civil Emergency Preparedness--notice comes through the State Police
yes	yes	no	Notification goes directly to the Division of Radiation Control
yes	yes	for fixed facilities only	Notification goes directly to the Radiation Control Program, State Dept. of Health, through the State Police
yes	yes	for fixed facilities only	State Police operations desk calls designated individuals, at work or at home
yes	yes	no	Notification goes to the Division of Emergency Services, who call out the chain of command as necessary

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
MS	No	Roads: State Highway Dept.; State Civil Defense Rail Routes: Public Service Commission; State Civil Defense Navigable Waterways: Bureau of Water Resources; Bureau of Pollution Control; State Civil Defense; U.S. Coast Guard Hospitals: State Board of Health; State Civil Defense Public Safety Personnel: Division of Radiological Health	not required; State Civil Defense and the Division of Radiological Health request courtesy notification
MO	All local jurisdictions have authority; major cities have developed capability; most local jurisdictions rely on state capability	Roads: State Highway Dept.; Emergency Operations Rail Routes: Public Service Commission; Emergency Operations Navigable Waterways: Public Service Commission; Division of Water Safety; Emergency Operations Hospitals: State Dept. of Health; Dept. of Consumer Affairs Public Safety Personnel: functional agencies; Emergency Operations Radiation Workers: Emergency Operations	yes, Emergency Operations and Division of Radiological Health
MT	No local jurisdictions have authority	Roads: State Dept. of Highways Rail Routes: Public Service Navigable Waterways: Commission Hospitals: State Dept. of Health Public Safety Personnel: State Dept. of Health; State Fire Marshall Radiation Workers: Dept. of Health & Environmental Services has informal knowledge	No
NE	No local jurisdictions have authority		No
NV	No local jurisdictions have authority	Roads: State Dept. of Transportation; State Civil Defense Rail Routes: State Civil Defense Navigable Waterways: n/a Hospitals: Health Div., Consumer Health Protection Services Public Safety Personnel: Radiation Workers:	No Currently under review

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	fixed facilities only; NUREG 0610	Notification goes directly to the Division of Radiological Health
no	no--legislation is still in progress	fixed facilities only	Notification goes to Emergency Operations, who call out the chain of command as necessary
no	no--new radiation control regulations being promulgated	no	Notification goes to Disaster and Emergency Services, who call out the chain of command as necessary
yes	yes	yes NUREG 75/111 NUREG 0093 NUREG 0396 NRC Reg. Guide 1.101	Notification goes directly to the Division of Radiological Health, usually through the State Patrol
yes	yes	no	Three agencies involved: State Civil Defense, State Radiological Health, U.S. DOE--if any one receives notice, they inform all others. U.S. DOE is primary notification agency

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
NH	No local jurisdictions have authority	Roads: Rail Routes: Navigable Waterways: State Civil Hospitals: Defense Public Safety Personnel: Radiation Workers: Bureau of Environmental Health, Radiological Health Program; State Civil Defense	No
NJ	No local jurisdictions have authority	Roads: State Dept. of Transportation; State Dept. of Environmental Protection; State Police Rail Routes: State Dept. of Transportation; State Dept. of Environmental Protection Navigable Waterways: State Dept. of Environmental Protection Hospitals: State Police; State Dept. of Health Public Safety Personnel: State Dept. of Health & Environmental Protection; State Police; State CD; local governments Radiation Workers: State Dept of Environmental Protection; State Police	State Dept. of Environmental Protection requires 7-day notice on quantities of 20 curies or greater
NM	No local jurisdictions have authority	Roads: State Highway Department Rail Routes: Corporation Commission Navigable Waterways: n/a Hospitals: Health & Environment Dept. Public Safety Personnel: dispersed among functional agencies Radiation Workers: Emergency Preparedness; Radiation Protection Section, JNAC Headquarters	currently under review
NY	Several cities and counties have autonomous authority, plan and capability--others rely on state response capability		oversize or overweight vehicles only--limits notice de facto to spent fuel casks

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	no	Notification goes directly to the Radiological Health Program--notice comes through State Police
no, pending	no	use "condition" codes" for fixed facilities only	All hazardous materials accidents are channelled directly to the State Dept. of Environmental Protection through State Police police verify before referring
yes	yes	no	Notification goes to the Radiation Protection Section
yes	yes	fixed facilities only	Notification for state response goes to State Warning Point, Emergency Operations Center, who call out the chain of command as necessary

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
NC	Local jurisdictions are responsible within their capability; some localities have good capability	Roads: State Dept. of Transportation; Radiation Protection Section Rail Routes: on State DOT maps, not separate Navigable Waterways: Radiation Protection Section Hospitals: Public Safety Personnel: State Dept. of Human Resources Radiation Workers: Radiation Protection Section	spent fuel shipments only
ND	No local jurisdictions have authority	Roads: State Dept. of Health; Rail Routes: Disaster Emergency Services; State Highway Dept. Navigable Waterways: n/a Hospitals: State Dept. of Health; Disaster Emergency Services Public Safety Personnel: Disaster Emergency Services Radiation Workers: State Dept. of Health; Disaster Emergency Services	No
OH			
OK	No local jurisdictions have authority	Roads: Rail Routes: all available in the Navigable Waterways: Radiological Health Hospitals: Services office, plus Public Safety other agencies Personnel: Radiation Workers:	No
OR	No local jurisdictions have authority	Roads: State Dept. of Rail Routes: Transporation Navigable Waterways: Hospitals: State Health Division Public Safety Personnel: Division of Emergency Services Radiation Workers: no state agency--there is a call list of reactor personnel	notice required by State Dept. of Energy for quantities in excess of 10,000 curies

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	yes, based on dose commitment regardless of source of circumstances	Notice goes to State Warning Point, who call out the chain of command as necessary
yes	yes	no	Notice goes to Disaster Emergency Services, who call out the chain of command as necessary
yes	have not adopted U.S. DOT regulations, but use them by reference	no	Notification goes to Radiological Health Services, usually through the Highway Patrol
yes	yes	no	Notice goes to Division of Emergency Services, who call out the chain of command as necessary

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3. PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
PA	All local jurisdictions have authority--the state is working to convince local authorities to defer to the state response capability	Roads: State Dept. of Transportation Rail Routes: Public Utility Commission Navigable Waterways: State Dept. of Environmental Resources Hospitals: State Dept. of Health; IRAP, Brookhaven Public Safety Personnel: PA Emergency Management Agency Radiation Workers: no state agency maintains a directory--there is informal knowledge	Not required, but do have informal courtesy notice arrangements
PR	No local jurisdictions have authority	Roads: State Dept. of Transportation; State Civil Defense Rail Routes: n/a Navigable Waterways: State Dept. of Transportation; State Dept. of Natural Resources Hospitals: State Dept. of Health Public Service Personnel: each locality Radiation Workers: no list exists	n/a
RI	Local jurisdictions have authority but no capability; State Defense Civil Preparedness Agency is primary respondent, but no agency acts unilaterally	Roads: State Dept. of Transportation; Defense Civil Preparedness Agency Rail Routes: State Dept. of Transportation Navigable Waterways: State Dept. of Environmental Management Hospitals: Defense Civil Preparedness Agency Public Safety Personnel: Radiation Workers: State Dept. of Health; Defense Civil Preparedness Agency	yes--State Dept. of Public Utilities
SC			
SD	All local jurisdictions have authority	Roads: State Dept. of Transportation Rail Routes: Navigable Waterways: State Dept. of Water and Natural Resources Hospitals: State Dept. of Health Public Safety Personnel: State Dept. of Health; State Fire Marshall Radiation Workers: Division of Emergency Services; State Dept. of Health	yes, State Dept. of Transportation and State Dept. of Health

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	no	Notice goes to the Bureau of Radiation Protection, through any channels necessary
n/a		no	Notice goes directly to the State Civil Defense
yes--Yellow III label	have not adopted, but reference directly	no	Notice goes to the Defense Civil Preparedness Agency, who call out the chain of command as necessary
yes	yes	no	Dual notification requirement: State Dept. of Health; State Dept. of Transportation

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
TN	No local jurisdictions have authority	Roads: State Dept. of Transportation Rail Routes: State Dept. of Transportation Navigable Waterways: State Radiological Survey Hospitals: State Dept. of Public Health Public Safety Personnel: no state agency--local jurisdications Radiation Workers: State Dept. of Public Health	Not required, but the Public Utility Commission does receive routine courtesy notice of all spent fuel shipments
TX	No local jurisdictions have authority Some larger cities have capability, but they act on behalf of the state when they respond	Roads: State Dept. of Transportation Rail Routes: Texas Railroad Commission Navigable Waterways: ? Hospitals: State Dept. of Health Public Safety Personnel: dispersed among functional agencies Radiation Workers: State Dept. of Health has knowledge of all licensees	no
UT	In addition to the state response capability, Salt Lake City has authority and capability	Roads: Rail Routes: Navigable Waterways: Hospitals: Public Safety Personnel: Radiation Workers: State Division of Health, Environmental Health Services	no
VT	All local jurisdictions have authority	Roads: State Agency of Transportation; State Civil Defense Rail Routes: ? Navigable Waterways: ? Hospitals: dispersed among functional agencies Public Safety Personnel: ? Radiation Workers: State Civil Defense; Occupational Health and Safety Division	yes--Dept. of Public Safety; Occupational Health and Safety Division
VA	All local jurisdictions could exercise their own authority, but in fact they do not because they have no capability	Roads: commonly available Rail Routes: Corporation Commission Navigable Waterways: Water Control Board; local governments Hospitals: Public Safety Personnel: commonly available Radiation Workers: no list is maintained	yes--new legislation: certification by State Dept. of Health, monitoring by the Office of Emergency Services

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	no	Notification goes to the Emergency Operations Center, who call out the chain of command as necessary
yes	yes	yes	Notification goes directly to the Radiation Protection Section
yes	yes	no	Notification goes directly to the Environmental Health Services Section
yes	yes	no	Notification goes to the Dept. of Public Safety, who call out the chain of command as appropriate
yes	yes	no, but is part of current planning effort	No requirements by law; notice usually goes directly to the Bureau of Industrial Hygiene and Radiological Health

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

STATE NAME	QUESTION 1: LOCAL AUTONOMY FOR RADIOLOGICAL EMERGENCY RESPONSE	QUESTION 2: AVAILABILITY OF MAPS AND RESOURCE DIRECTORIES	QUESTION 3: PRIOR NOTICE REQUIREMENTS FOR LARGE SHIPMENTS
WA	All local jurisdictions have authority, but not necessarily the capability to respond	Roads: State Dept. of Natural Resources Rail Routes: Navigable Waterways: Hospitals: Public Safety Personnel: ? Radiation Workers: development in process	no
WV	All local jurisdictions have authority	Roads: Rail Routes: Navigable Waterways: Hospitals: Office of Emergency Services Public Safety Personnel: Radiation Workers:	no
WI	All local jurisdictions have authority --- decentralized response system	Roads: Rail Routes: Navigable Waterways: Hospitals: available as necessary Public Safety Personnel: Radiation Workers: State Dept. of Health and Social Services--maintains list of all licensees	no, except for oversize and/or overweight vehicles
WY	All local jurisdictions have authority --- decentralized response system	Roads: Disaster Control and Civil Defense Agency Rail Routes: ? Navigable Waterways: n/a Hospitals: Public Safety Personnel: County Resource Guides Radiation Workers: no state agency	yes--State Dept. of Health, Radiological Health Services --- have raw materials processing and shipping that is monitored closely

TABLE 3-1 (Cont.)
ORGANIZATION AND RESPONSIBILITY

QUESTION 4: PLACARDING FOR INTRASTATE SHIPMENTS	QUESTION 4: ADOPTION OF U.S. DOT REGULATIONS	QUESTION 5: USE OF A CLASSIFICATION-OF-SEVERITY SCALE	QUESTION 6: EMERGENCY NOTIFICATION REQUIREMENTS
yes	yes	fixed facilities only	Notification goes directly to the Health Services Division
no	no legislation is in process	no	Notification goes to the Office of Emergency Services who call out the chain of command as necessary
no	no legislation is in process	no	Notification goes to the Division of Emergency Government who call out the chain of command as necessary
yes	yes	no	depends--city or county will handle if able no notice to state if local personnel can handle

3.2 Communications

Question 7: We have reviewed your state emergency response plan dated _____. How has the state emergency response communications network changed from the description given in the plan?

Twelve states reported no substantive changes in the communications aspect of their emergency reponse plan, and thirteen states reported only minor changes. Sixteen states reported that major revisions of their plan had been recently completed or were currently in progress; three of these states indicated that there had been new legislation affecting the state's emergency response structure. Six states reported that they do not have a response plan as such for transportation accidents involving radioactive materials. Several of these states indicated that they use the state natural disaster plan, general hazardous material response plan or other provisions in statewide planning documents; a few states carry out this mission through the use of interdepartmental memoranda of understanding. Four states did not respond.

Question 8: What specific communications resources are available to support the emergency response teams?

Forty-three states reported that they have access to a communications system with provisions for a multiplicity of communications resources for the support of emergency workers in the field, six states reported access to only one communications resource other than commercial telephone (usually state police radio), and two states did not answer this question.

Among the communications resources in use for the support of emergency workers in the field, fourty-two states rely on state police radio, twenty-seven report use of Citizen's Band radio, nineteen mention Ham radio, sixteen have access to radio telephone units, seven specifically mention commercial telephone as an important portion of their system, and three states have access to closed circuit TV. Additionally, twelve states report that various state agencies have dedicated radio frequencies which are available for use in support of emergency response personnel. In addition to the above named resources, various states mention having access to dedicated phone lines, statewide hospital or EMS frequencies, local government radio links and other communications resources.

Question 9: Does the state have a single phone number for use in all types of emergencies? If so, what is the number?

Twenty-eight states reported that there is a single telephone number available for use in all emergencies. This number usually rings the state police or the emergency services office; in two of these states, statewide emergency access via the 911 number has been instituted. Four states reported that there is an emergency number for radiological emergencies only, and fourteen states reported that there is no single emergency number. Five states did not answer this question.

Question 10: Is a mobile communications center available to serve as a nucleus for an onsite emergency operations center?

Thirty-six states reported that they have access to a mobile emergency communications vehicle. Three states reported that a vehicle will be acquired soon and ten states reported that they do not have access to such a vehicle. Two states did not answer.

TABLE 3-2
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
AL	"housekeeping" changes are on-going; no major changes	have access to CB and State Police radio;		available through the State Police
AK	no plan as such: Environmental Health Section is currently drafting interdepartmental memoranda of understanding; Office of Emergency Services has internal standard operating procedures	ad hoc as necessary and available, including: Alaska National Guard Network, State Trooper Network, Fish & Game Commission, School System, Civil Air Patrol	Office of Emergency Services (formerly Alaska Disaster Office) has single number	no special vehicles available
AZ	a new plan is in process	have access to CB and State Police radio	none exist, but is part of current planning efforts	available through the Division of Emergency Services or the Arizona National Guard
AR	no changes	have access to State Police radio and Ham radio; also, Office of Emergency Services has dedicated frequency; also have access to National Guard Communications Network and State Highway Dept. Communications Network	the State Office of Emergency Services in all cases 501/374-1201	the Office of Emergency Services has a vehicle; there are 3 additional vehicles in other state agencies
CA	no changes	have access to NAWAS system, RACES network, plus dedicated frequencies in several state agencies; also, telephone, teletype, Intercity Law Network, Local Government Radio System, OES Fire Network, and others		2 units available through Office of Emergency Services; several larger counties have independent capability
CO	no major changes	have access to CB, State Police radio and radio telephone	State police	Radiation and Hazardous Wastes Control Division has own vehicle

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
CT	no changes	have access to State Police radio	during office hours, State Dept. of Environmental Protection 203/566-3668; after hours, State Police	available through State Police and/or State Civil Defense
DE	updated every year - no major changes	have access to State Police radio; have Ham radio in EOC but not in the field	no "hotline"	State Police equipment is available through the Division of Emergency Planning and Operations
FL	no major changes	have access to State Police radio; have access to CB and Ham radio, but avoid use if possible; also: NAWAS, local government radio, dedicated phone lines; Div. of Health and Rehabilitative Services has dedicated frequency in vehicles	Division of Disaster Preparedness, State Warning Point 904/488-1320 -5757	Div. of Health & Rehabilitative Services has a van with radio and a telephone drop line
GA	revised 1979	have access to CB and State Police radio; also, Ham radio and closed circuit TV if necessary; in process of acquiring radio telephone capability	404/656-4300 -5500	available through State Civil Defense; also, mobile lab. vehicle with all emergency radio frequencies
HI	major updates in plan, but no significant changes in communications	have access to CB, and State Police radio; plus use telephone pagers	on Oahu Island, State CD 808/734-2161 on other islands, call local CD who forward to State CD	have access to 2 vehicles on Oahu (main) Island
ID	changes in process	have access to police radio and radio telephone; also rely on commercial phone lines	in process of implementing state-wide 911 access	no special vehicles available

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
IL	recent update includes signficant changes	Emergency Services & Disaster Agency: dedicated frequency, CB Ham, State Police radio, radio telephone State Dept. of Public Health: two dedicated freqencies, State Dept. of Transportation radio net, Illinois Hospitals radio net, radio telephone	Emergency Services & Disaster Agency 217/782-7860	have access through Emergency Services and State Dept. of Public Health
IN	update in progress but no major changes	have access to State Police radio net, plus CD and Indiana National Guard radio nets; also use commercial telephone	State Police	in developmental stages, none currently at state level, but some county CD organizations have communications vehicles
IA		have access to CB, police radio and Ham radio	Office of Disaster Services 515/281-3231	have access through the State Highway Patrol
KS	updated annually, "housekeeping" changes only	joint response by Div. of Emergency Preparedness and the Bureau of Radiation and Control; communications resources available to one or the other or both: CB, police radio, Ham radio and radio telephone	Emergency Operations Center 913/296-3176	have access through State Police
KY	no changes	have access to Police radio, radio telephone; also use statewide Emergency Medical Services network	Div. of Disaster and Emergency Services 502/564-7815	have access through the Div. of Disaster Preparedness and Emergency Services
LA	major update in progress--will include NAWAS and new mobile communications capability	Civil Defense radio network	Louisiana Nuclear Energy Division 504/925-4518	a specially equipped vehicle is on order

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
ME	major update in progress; new legislation puts increased emphasis on local level	have access to CB, police radio, Ham radio; also have state-wide microwave repeater system	Bureau of Emergency Preparedness 207/622-6201	have vehicles in Bureau of Emergency Preparedness; also, have excellent relationship with telephone company, who can bring a "drop line" anywhere in the state very quickly
MD	major revision in progress	have access to police radio, also use commercial telephone if necessary	no "hotline" number advertised, but State Police can function in this role	no special vehicles available
MA	"housekeeping" changes only	many state agencies have dedicated frequencies tied to regional EOC's; statewide microwave repeaters; strong emphasis on local control	no "hotline" number: calls are referred to local level through area State Police dispatcher	no specialized vehicles at state level: dismantled capability several years ago
MI	there is no formal plan for response to transportation accidents	have access to State Police radio network	no "hotline" number	have access through the State Police
MN	"housekeeping" changes only	have access to CB and police radio	Div. of Emergency Services 612/778-0800	have vehicle in Div. of Emergency Services
MS	major changes in recent update; see new communications annex	have access to CB and State Police radio; also, State Board of Health has dedicated frequency plus other state agency dedicated frequencies	State Warning point (State Highway Patrol HQ) 601/982-1212	several state agencies have mobile communications vehicle if needed

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
MO	plan updated 1979, awaiting NRC concurrence	have access to CB, police radio, Ham radio, closed circuit TV, radio telephone; Emergency Operations has base station for 2 dedicated frequencies; State Highway Patrol is primary contact for communications, Conservation Commission has state-wide radio network for backup	Emergency Operations 314/751-2321 -2748	no specialized vehicles currently available, but appropriation has been made and vehicle should be on line by June, 1980.
MT	do not have emergency response plan as such; mission carried out through inter-agency memoranda of understanding	have access to CB and police radio	Disaster & Emergency Services 406/449-3034	no specialized vehicles available; use police radio equipment
NE	newly concurred plan	have access to police radio with microwave repeaters; also use commercial telephone	State Police dispatchers; also 911	have access through State Civil Defense
NV	no changes	have access to CB, police radio, Ham radio and radio telephone	State Civil Defense 702/885-5300 U.S. DOE, Nevada Operations Office 702/734-3343	no specialized vehicles at state level; U.S. DOE does have mobile communications capability
NH	no changes	have access to CB and State Police radio network	State Police 800/852-3411	have access through State Police if necessary
NJ	complete revision in progress	have access to CB, police radio, Ham radio, closed circuit TV, radio telephones; also dedicated frequency	State Police 609/882-4200	have many vehicles within Dept. of Environmental Protection
NM		have access to State Police radio and radio telephones	State Police 505/827-2551	have access through State Police

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
NY	newly concurred plan, no major changes in communication	have access to police radio, use commercial telephone	State Warning Point--rings at EOC	have access through Disaster Preparedness or State Police
NC	new legislation, revision in progress	have access to CB, police radio and radio telephone	State Warning Point--rings Highway Patrol	have access through the North Carolina National Guard and State Dept. of Crime Control & Public Safety
ND	no changes	have access to CB, police radio, Ham radio and radio telephone	Disaster Emergency Services 800/472-2121	communications vehicle is available
OH				
OK	no major changes	commercial telephone only, unless they borrow from other state agencies; current planning includes agency vehicles with radios	no "hotline" number; Occupational & Radiological Health Services has 24-hour answering service 405/271-5221	have access through State Dept. of Public Safety
OR	no response plan for transportation accidents as such; currently in purchasing phase for communications capability	have access to CB, police radio; radio telephone	Emergency Services 301/378-4124 800/452-0311	no special vehicles available
PA	changes in progress: vehicles with multi-band radios	have access to police radio; also, dedicated frequencies in other state agencies	Pennsylvania Emergency Management Agency 717/783-8150	have access through Emergency Management and State Police
PR	no change	have access to CB, police radio, Ham radio, radio telephones	no "hotline" number	communications vehicles are available

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
RI	major revision in progress	all Defense Civil Preparedness Agency Vehicles have police radio; Radiation Control Program has 2 -ay radio link to DCPA	State Police 401/647-3311 Defense Civil Preparedness Agency 401/421-7333	have access through Defense Civil Preparedness Agency
SC				
SD	new legislation, new plan in progress	have access to State Police radio, Ham radio, radio telephones	no "hotline" number, but State Police can function in this role 605/773-3536 224-4212	have access through Div. of Emergency and Disaster Services
TN	no major changes to date, but planning complete revision of communications system	have acces to CB, police radio, Ham radio and radio telephone	Office of Civil Defense and Emergency Preparedness 800/342-1328	have access through State Dept. of Public Safety and State Civil Defense
TX	no major changes	commercial telephone only within Radiation Control Division: State Dept. of Public Safety is coordinating agency in an emergency; they have substantial capabilities	no "hotline" number	have access through State Dept. of Public Safety
UT	no plan as such	have access to CB, police radio, radio telephone	Environmental Health Services 801/533-6145	a communications vehicles is available
VT	no major changes	have access to police radio and Civil Defense radio network; use of CB and/or Ham radio is possible	24-hour number for radiological emergency 802/828-3100	no special vehicles available

TABLE 3-2 (Cont.)
COMMUNICATIONS

STATE NAME	QUESTION 7: CHANGES IN COMMUNICATIONS SECTION OF RESPONSE PLAN	QUESTION 8: COMMUNICATIONS SUPPORT FOR PERSONNEL IN THE FIELD	QUESTION 9: SINGLE PHONE NUMBER FOR USE IN ALL EMERGENCIES	QUESTION 10: MOBILE COMMUNICATIONS CENTER AVAILABLE FOR USE AT SCENE
VA	"housekeeping" changes only	have access to CB, police radio, Ham radio, radio telephones	Office of Emergency Services 804/786-0000	no specially equipped vehicle available to Radiological Health Section
WA	complete revision in progress	each county has access to CB, police radio and Ham radio; hand-held radios available through Health Services Division	24-hour number for radiation emergencies 206/NUC-LEAR	communications committee has been empaneled to study needs; a communications vehicle is anticipated
WV	update in progress	have access to CB and police radio	in development	have access through State Police
WI	no major changes	have access to police radio plus dedicated frequencies in other state agencies	Emergency-Government Division 608/266-3232	have access through State Department of Transportation
WY	no plan for response to radiation emergencies as such; use natural disaster plan; strong emphasis on local control	have access to police radio	no "hotline" number	no special vehicles available

3.3 First-on-Scene Respondents

Question 11: Does the state have predesignated on-scene coordinators for emergency response?

Thirty-four states reported that they employ a system of pre-designated on-the-scene coordinators. Twelve states indicated that they do not have pre-designated coordinators. One state indicated that on-site coordination is strictly reserved for local officials, the county sheriff being the responsible individual, and one state indicated that although they do not have a pre-designated coordinator, in practice all agencies yield to radiological health. Three states did not respond.

Question 12: The initial on-the-scene respondents (policemen, firemen, other public employees) at a transportation accident involving radioactive materials are expected to take certain protective actions. Please indicate the general order in which these protective actions should be performed. Omit any actions not considered essential.

With respect to a suggested sequence of tasks for first on-the-scene respondents at a transportation accident involving radioactive materials, forty-six states offered some information on this issue while five states had no comment to make. Of the forty-six respondents, six states indicated that they consider that action sequence for first-responders to be entirely circumstantial and do not advertise or advocate an action sequence.

Among the forty states which offered a suggested action sequence, fifteen states indiciated that they do not formalize this hierarchy of actions as part of training curriculum or procedure manuals, but rather were speaking in general terms as to what is appropriate. The remaining twenty-five states do distribute this information to first-on-scene respondents. One state indicated that the list is on a wallet card which is widely distributed to all likely first-respondents, including auxilliary police and volunteer firemen.

While the actual rank order for the various tasks is different in all cases, a pattern emerged among the first five actions to be taken, as follows: 37 states included "attend to injured" among the first five actions; 28 states included "assess the immediate hazard"; 28 states included "notify lead state agency"; 31 states included "isolate the area"; and 20 states included "inspect shipping papers." Fifteen states included "make a radiation survey among the first five actions; cross checking the data for Questions 14 & 15 reveals that of these fifteen states, only five reported significantly well developed

training and access to instruments for first reponse personnel.

Question 13: Do first on-the-scene public employees usually carry a list of appropriate emergency phone numbers?

Twenty states reported that a call list of officials and/or technicians responsible for radiological emergencies is available to first-on-scene respondents, in the form of procedure manuals with a call list, directories issued either to officers or kept in the vehicles, or wallet cards. Fifteen states indicated that while patrol officers do not have a call list, this list is maintained at the dispatch desk. Thirteen states reported that no call list is maintained within the first respondent structure, but three of these states indicated that development of such a list is in progress. Three states did not answer this question.

Question 14-15: Policemen, firemen, and road maintenance personnel are the most likely initial on-the-scene respondents to a radiological transportation accident. What percent of each of these groups have received at least minimal training in handling radiological emergencies?

What percent of each of these groups knows how to operate radiation detection instruments? What percent actually carries radiation detection instruments?

The following tables and text summarize the emergency management training background and availability of radiation detection instruments for each group of personnel who are likely to be first-on-scene respondents. It should be noted that the numbers presented below are based on information gathered from radiological health/emergency operations personnel, and are not necessarily the official totals for each state. This information is summarized for all groups of personnel in Table 3-7.

TABLE 3-3
State Police Management Training and Instruments

STATE POLICE	none	very limited	<34%	34-67%	>67%	see text	no response
Emergency Management Trng.			13	5	21	1	11
Operate Instruments			12	5	16	2	16
Carry Instruments		7	6	2	5	18	13

One state reported that a hazardous materials officer corps receives special training in the handling of emergency situations while other officers receive only minimal exposure to environmental emergency management.

Two states reported that a cadre of state police officers receive training in the operation of radiation detection instruments.

Two states reported that a cadre of state police officers who received special training carry instruments. Twelve states reported that state police officers do not carry instruments, but that instruments are available at each district headquarters, and four states indicated that radiation detection instruments are issued to all state police vehicles.

TABLE 3-4
Local Police Management Training and Instruments

LOCAL POLICE	none	very limited	<34%	34-67%	>67%	see text	no response
Emergency Management Trng.	3	3	21	7	4	3	10
Operate Instruments	3	6	21	4	1		16
Carry Instruments	11	10	7	1	1	3	18

Three states reported that local police training is highly variable by locale.

Three states reported that the availability of instruments to local police is variable by locale.

TABLE 3-5
Fire Personnel Management Training and Instruments

FIREMEN	none	very limited	<34%	34-67%	>67%	see text	no response
Emergency Management Trng.	2	4	17	9	7	2	10
Operate Instruments	2	4	18	5	3	2	17
Carry Instruments	9	9	6	1	3	9	14

Two states reported that emergency training among firemen is highly variable by locale.

Two states reported that knowledge about the operation of instruments among firemen is variable by locale.

Four states reported that access to instruments by firemen is variable by locale and five states indicated that instruments are readily available but that firemen do not necessarily carry this equipment.

TABLE 3-6
Road Maintenance Personnel Training and Instruments

ROAD MAINTENANCE	none	very limited	<34%	34-67%	>67%	see text	no response
Emergency Mangement Trng.	11	5	15	6	3		11
Operate Instruments	13	4	11	4	3		16
Carry Instruments	15	9	3	1	2	7	14

Seven states reported that instruments are readily available but not routinely carried.

TABLE 3-7

Q. 14-15 Training and Availability of Instruments for First Respondents
Nationwide Enumeration by State

STATE POLICE	none	very limited	<34%	34-67%	>67%	see text	no response
Emergency Management Trng.			13	5	21	1	11
Operate Instruments			12	5	16	2	16
Carry Instruments		7	6	2	5	18	13
LOCAL POLICE							
Emergency Management Trng.	3	3	21	7	4	3	10
Operate Instruments	3	6	21	4	1		16
Carry Instruments	11	10	7	1	1	3	18
FIREMEN							
Emergency Management Trng.	2	4	17	9	7	2	10
Operate Instruments	2	4	18	5	3	2	17
Carry Instruments	9	9	6	1	3	9	14
ROAD MAINTENANCE							
Emergency Management Trng.	11	5	15	6	3		11
Operate Instruments	13	4	11	4	3		16
Carry Instruments	15	9	3	1	2	7	14

TABLE 3-8

QUESTION 12: SUGGESTED ACTION SEQUENCE FOR FIRST-ON-SCENE RESPONDENTS

Legend: number = rank order
X = non-essential or subsequent to ranked actions
* = no order suggested, action sequence depends entirely on circumstances

	ASSESS IMMEDIATE HAZARD	ATTEND INJURED	MAKE RAD. SURVEY	NOTIFY LEAD STATE AGENCY	DETAIN PERSONS INVOLVED	INSPECT SHIPPING PAPERS	NOTIFY CARRIER IF DRIVER INJURED	EVACUATE AREA	ESTABLISH ROAD BLOCKS	NOTIFY LOCAL AGENCY	ISOLATE AREA	KEEP PUBLIC INFORMED	CALL FOR HELP	NOTIFY SHIPPER
AL	X	1	X	2	3	4	X	X	X	5	6	8	7	X
AK														
AR	X	2	1	3	X	X	X	X	4	X	1	X	X	X
AZ	X	1	5	X	X	6	X	7	2	3	2	X	8	X
CA	X	1	3	6	X	7	X	X	X	5	2	X	4	X
CO	X	1	X	5	3	4	X	X	X	X	2	X	5	X
CT	3	1	3	2	1	2	2	2	1	X	1	4	2	X
DE	2	1	X	3	X	3	X	4	5	X	X	6	7	X
FL	1	2	6	5	X	3	X	X	X	X	7	X	4	X
GA	1	1	10	5	4	7	9	13	12	6	2	11	3	8
HI	2	1	7	14	3	8	12	4	10	6	9	5	11	13
ID	1	1	2	4	X	2	X	3	3	X	3	X	4	X
IL (1)														
IN	1	2	8	7	11	2	9	3	4	6	4	11	5	10
IA	X	4	7	8	3	5	10	X	X	6	1	11	2	9
KS	*	*	*	*	*	*	*	*	*	*	*	*	*	*
KY	5	1	4	7	3	6	X	X	X	8	2	X	X	X
LA	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ME	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MD	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MA	1	X	X	2	X	X	X	X	X	X	3	X	X	X
MI	X	2	X	3	4	X	X	X	X	X	1	X	X	X
MN	1	2	X	4	5	3	X	X	X	X	6	X	X	X
MS (2)		2									1			
MO	2	6	13	4	7	8	11	12	9	3	5	14	1	10
MT	2	1	X	X	1	3	X	X	5	X	3	X	6	X
NE	1	2	X	X	X	X	X	X	X	X	3	X	4	X
NV	X	3	X	1	X	4	X	X	2	X	X	X	X	X
NH	3	1	5	5	5	3	6	5	4	5	4	6	2	6
NJ	3	4	X	1	5	2	6	X	5	2	1	X	1	6
NM	1	2	3	3	4	3	5	2	4	4	2	6	3	6
NY	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NC	1	1	X	1	2	2	X	3	3	4	3	X	4	X
ND	1	2	X	4	X	X	X	X	5	X	5	X	3	X
OH														
OK	1	X	X	3	X	2	X	X	X	X	X	X	X	X
OR	1	2	4	6	6	X	X	5	5	X	3	X	X	X
PA	X	1	X	5	2	X	X	X	4	X	3	X	X	X
PR	2	5	X	1	X	X	X	7	3	X	4	X	6	X
RI	1	3	2	1	5	1	6	5	5	4	1	7	7	6
SC														
SD	1	3	4	5	9	0	12	8	7	6	2	11	5	13
TN	*	*	*	*	*	*	*	*	*	*	*	*	*	*
TX	X	2	X	4	3	X	X	X	X	X	1	X	X	X
UT	2	3	4	X	X	X	X	X	X	X	5	X	X	1

TABLE 3-8 (Cont.)

	ASSESS IMMEDIATE HAZARD	ATTEND INJURED	MAKE RAD. SURVEY	NOTIFY LEAD STATE AGENCY	DETAIN PERSONS INVOLVED	INSPECT SHIPPING PAPERS	NOTIFY CARRIER IF DRIVER INJURED	EVACUATE AREA	ESTABLISH ROAD BLOCKS	NOTIFY LOCAL AGENCY	ISOLATE AREA	KEEP PUBLIC INFORMED	CALL FOR HELP	NOTIFY SHIPPER
VT	1	2	4	5	3	4	11	6	8	9	7	12	13	10
VA	2	1	5	X	X	X	X	X	X	X	3	X	4	X
WA	1	2	X	3	X	8	9	3	X	4	7	X	6	9
WV	X	2	1	5	X	3	X	X	4	X	4	X	5	5
WI														
WY	1	2	X	3	X	4	X	5	X	7	6	X	X	X

(1) Illinois reports that there has been some controversy in the state on this issue; a forthcoming training curriculum from the Illinois Department of Transportation is expected to resolve the issue.

(2) Mississippi has its own suggested action sequence, as follows:

a. Restrict the area (isolate the area);
b. Perform life saving activities and first aid;
c. Call for help if fire problems are expected;
d. Protect yourself and your equipment from contamination;
e. Contact the State Agency responsible for Radiation Control;
f. Detain all involved persons except those requiring medical attention;
g. Prohibit smoking, drinking, and eating in the affected area; and,
h. Wait for the State Radiological Emergency Response Team.

TABLE 3-9
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
AL		call list available at dispatch desk	State Police local police firemen road maintenance	30% 10% 1% 1%	30% 10% ? ?	2% 2% 1% 1%
AK	no on-site coordinators designated	dissemination of call list is in progress	State and local police officers are sent to RERO training as often as possible, as well as some supervisors from Dept. of Highways by Emergency Services Division		instruments are available in all major communities; in rural areas, a central distribution site is designated; also available through U.S. Weather Service, F.A.A., Coast Guard and Air Force	
AZ	first contact in State Atomic Energy Commission becomes on-site coordinator	call list available at dispatch desk	State Police local police firemen road maintenance	100% 66% 66% 40-50%	100% 66% 66% 40-50%	100% 3-4% 0 0
AR	Office of Emergency Services is in charge of coordination and support; other agencies are present depending on the nature of the incident	call list available at dispatch desk	State Police local police firemen road maintenance	few few few best trained, but only a few	few few ? few	each district HQ ? ? each district HQ
CA	no on-site coordinator designated	call list available at dispatch desk	Highway Patrol local police firemen road maintenance	25% 10% 40% 75%	60% 20% 50% 80%	at division HQ ? 50% 80%
CO	on-site coordinators are designated	call list available at dispatch desk	several hundred from each group trained each year, actual numbers not known			City of Denver Police and Firemen have instruments

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
CT	no on-site coordinator designated	call list available at dispatch desk	State Police	8-10%	8-10%	at division HQ
			local police	<5%	<5%	?
			firemen	10%	10%	10%
			road maintenance	30%	30%	15%
DE	predesignated coordinator on each of two teams	police and Emergency Operations are on same radio frequency--concurrent notification; no call list for first-on-scene	State Police	35%	50%	at division HQ
			local police	5%	5%	some larger cities
			firemen	15%	15%	each county has CD equipment
			road maintenance	0	0	0
FL	on-site coordinators are designated	patrol officers and others have directory	Highway Patrol	100%	100%	few
			local police	10%	10%	1%
			firemen	20%	20%	1%
			road maintenance	0	0	0
GA	on-site coordinators are designated	distribution of one page directory of names and numbers in progress	State Police	90%	90%	?
			local police	5-10%	5-10%	?
			firemen	10-15%	10-15%	?
			road maintenance	5-10%	5-10%	?
HI	State Dept. of Transportation division duty officer is coordinator On outer islands, local CD director is coordinator until relieved if necessary	call list available at dispatch desk	State Police	n/a	n/a	n/a
			local police	60%	10%	at all fire stations
			firmen	100%	100%	
			road maintenance	0	0	

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
ID	In process of developing State Police Hazardous Materials Officer Corps--will be designated coordinators	call list not available to first respondents	State Police	25-30%	25-30%	a few will have
			local police	<10%	<10%	0
			firemen	<20%	<20%	0
			road maintenance	20%	20%	<1% (a few are licensees)
IL	for major incident with multi-agency response, coordinator designated; for single agency response, no coordinator	call list available at dispatch desk	State Police	100%	45 hazardous materials specialists	
			local police	>50%	few	SOP is to rely on State Police
			firemen	>50%	few	
			road maintenance	>50%	few	
IN	on-site coordinators are designated	call list available at dispatch desk	State Police	2%	?	?
			local police	1%	unknown--probably none	
			firemen	10-15%	?	each firehouse
			road maintenance	10%	?	2-4 sets per county at shop
IA	on-site coordinators are designated	call list available at dispatch desk	State Police	14%	14%	3%
			local police	?	?	0
			firemen	?	?	0
			road maintenance	10%	10%	0
KS	on-site coordinators are designated	directory in all emergency vehicles	State Police	100%	100%	100%
			local police	10%	10%	10%
			firmen	20%	20%	20%
			road maintenance	100%	100%	100%
			(100% of road workers; 50% of all KS DOT)			
KY	on-site coordinators are designated	call list available at dispatch desk				

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
LA	7 teams throughout state--first team member on scene is coordinator until relieved by HQ if necessary	call list issued to all emergency vehicles	State Police	60%	?	at district HQ
			local police	varies by locale	?	?
			firemen		?	?
			road maintenance	?	?	0
ME	first official on scene is coordinator until relieved; prefer State Police to be coordinators because of communications capabilities	a wallet card is issued to all state and local police	State Police	100%	80%	30%
			local police	100%	80%	100%
			firemen	100%	80%	on all vehicles
			road maintenance	all district supervisors	30%	?
MD	no on-site coordinator designated	one number for all radiological emergencies; no call list for first-on-scene				
MA	on-site coordinators are designated	call list available to patrol officers	State Police	100%	100%	all patrol vehicles
			local police	100%	5%	few
			firemen	60% (est.)	5%	few
			road maintenance	few	0	few
MI	on-site coordinators are designated	wallet card issued with some names and numbers, and instructions	State Police	have specially trained teams		at district HQ
			local police	?	?	discourage carrying instruments
			firmen	very few	?	
			road maintenance	?	?	

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
MN	on-site coordinators are designated	directory of numbers is circulated statewide	State Police	100%	100%	100%
			local police	85% (est.)	10%	?
			firemen	85% (est.)	25% (est.)	15%
			road maintenance	50% (est.)	20% (est.)	?
MS	on-site coordinators are designated	call list available at dispatch desk	State Police	80%	40%	at district HQ
			local police	<1%	<1%	<1%
			firemen	5%	<1%	<1%
			road maintenance	<1%	0	0
MO	a member of the Nuclear Emergency Team is designated	call list available at dispatch desk	State Police	police academy has hazardous materials training section	?	each district HQ and weigh stations
			local police	most local police go to police academy	?	all local police stations
			firemen	fire academy has hazardous materials training section	?	all fire stations
			road maintenance	3-4 persons in each county	?	each county maintenance barn
MT	no on-site coordinator designated; Disaster and Emergency Services Division is in charge	one number for all emergencies on sticker on dash of all state vehicles; no call list for first-on-scene	State Police, local police, firemen	some; a considerable number	some	available through county CD directors
			road maintenance	many	many	each highway maintenance district
NE	designated coordinator on field teams	call list available at dispatch desk	State Police	all graduates of police academy	100%	100%
			local police	0	0	0
			firemen	0	0	0
			road maintenance	0	0	0

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
NV	on-site coordinators are designated	a wallet card with numbers is issued	State Police local police firemen road maintenance	100% 0 0 0	100% 0 0 0	few 0 0 0
NH	no on-site coordinator is designated	statewide toll-free number for all emergencies; no call list for first-on-scene	State Police local police firemen road maintenance	90% 25% 25% <1%	90% 25% 25% <1%	50% <1% <1% <1%
NJ	on-site coordinators are designated	call list available at dispatch desk	State Police local police firemen road maintenance	20% 20% 10% 5%	10% 10% 20% 2%	3% 1% 10% 1%
NM	no on-site coordinators are designated	call list is available to patrol officers	State Police local police firemen road maintenance	15% 5% 5% 0	15% 5% 5% 0	0 0 0 0
NY	no on-site coordinator designated	all emergency vehicles, state and local, have a procedures manual	State Police local police firemen road maintenance	100% 15% 25% 0	5% 5% 5% 0	0
NC	If multi-agency response is necessary, have full response team including on-site coordinator	one number throughout the state; no call list for first-on-scene	State Police local police firemen road maintenance	100% ? ? 0	? ? varies 0	

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
ND	on-site coordinators are designated	call list available to patrol officers	State Police local police firemen road maintenance	100% 50% 50% 50%	50% 50% 25% 35%	50% 0 10% 0
OH						
OK	no coordinator designated, but all other agencies yield to Radiological Health	a wallet card with all state emergency numbers has been issued	State Police local police firemen road maintenance	all recent graduates of academy not part of training, but some have attended state police classes 50% (est.) foreman in each county, plus some staff	all trainees all trainees all trainees ?	each cruiser ? all fire vehicles each shop in each county
OR	no on-site coordinators	one statewide number for all emergencies; no call list for first-on-scene				
PA	no on-site coordinators designated	a wallet card has been issued	"very few" in all categories; too hard to train large numbers of volunteer firemen and auxilliary police; State Police get RADEF training at academy		state police have access to CD shelter kits; Bureau of Radiation Protection tries to keep technical response restricted to experts: too much casual misinformation	

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
PR	on-site coordinators are designated	call list not available to patrol officers	State Police	50%	10%	10%
			local police	0	0	0
			firemen	25%	10%	0
			road maintenance	0	0	0
RI	on-site coordinators are designated	uniform instructions statewide: call State Police; no call list for first-on-scene	State Police	>95%	>95%	25%
			local police	33%	33%	25%
			firemen	75+%	75+%	75%
			road maintenance	20%	20%	10%
SC						
SD	no on-site coordinators	call list is available to patrol officers	State Police	98%	98%	98%
			local police	?	?	0
			firmen	?	?	0
			road maintenance	100%	100%	?
TN	on-site coordinators are designated	a wallet card has been distributed	State Police	100%	100%	25%
			local police	50%	50%	10%
			firemen	90% full-time; <25% volunteer	50%	10%
			road maintenance	50%	50%	50%
TX	on-site coordinators are designated, primary and alternate	a wallet card has been distributed	State Police	100%	?	1 set in each district
			local police	100%	?	varies
			firmen	100%	?	varies
			road maintenance	?	?	1 set in each district

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
UT	on-site coordinators are designated	call list available to patrol officers	State Police local police firemen road maintenance	5% (est.) 5% (est.) 5% (est.) 0	no knowledge; probably none in all categories	
VT	on-site coordinators are designated	call list available to patrol officers				
VA	on-site coordinators are designated	widely distributed				
WA	on-site coordinators are designated	statewide distribution of pocket directory is under development	State Police local police firmen road maintenance	33% (est.) 25% (est.) 50% (est.) 10-15% (est.)	33% 25% 50% 10-15%	each district HQ ? varies 0
WV	no on-site coordinators designated; part of current planning efforts	no system, but most patrol officers have access to a list	State Police local police firemen road maintenance	100% 20% 20% 20%	100% 5-10% 5-10% 5-10%	all highway patrol cruisers some
WI	on-site coordinators are designated	call-out is handled by the Division of Emergency Government; no call list for first-on-scene	State Police local police firemen road maintenance	100% some communities are very capable, others are zero 0	100% some some 0	all cruisers through CD, varies with locality 0

TABLE 3-9 (Cont.)
FIRST-ON-SCENE

STATE NAME	QUESTION 11 PRE-DESIGNATED ON-SITE COORDINATORS FOR EMERGENCY RESPONSE	QUESTION 13 EMERGENCY CALL LIST AVAILABLE TO FIRST-ON-SCENE RESPONDENTS	QUESTION 14-15 TRAINING AND AVAILABILITY OF INSTRUMENTS FOR FIRST RESPONDENTS			
			Agents	Emergency Management Training	Operate Instruments	Carry Instruments
WY	the county sheriff is in control	strong emphasis on local control; all calls go to local law enforcement or emergency operations; no call list for first-on-scene	State Police	30%	10%	5%
			local police	10%	10%	0
			firemen	20%	20%	?
			road maintenance	0	0	0

3.4 Personnel

Question 16: What is the general makeup of emergency response teams dispatched to radiological transportation accidents? (other than police, firemen, and ambulance)

Ten states reported that they do not employ a response team structure as such. These states deploy experts to the scene of an accident through the use of volunteer experts who are on call, designated individuals who are located around the state, radiological health field staff in branch offices around the state or a call list of specified state radiological health employees. Among these ten states without formalized team assignments, six reported that they have Health Physicists only available for emergency response and four states reported that they have Health Physicists plus a complete line-up of other technical personnel available for dispatch. One of these four states reported that team assignments is part of current planning efforts.

Thirty-eight states reported that they use a formal response team organization. Twelve of these states reported that they have multi-disciplinary teams representing all relevant specialties. Thirteen states reported that their teams include Health Physicists plus support technicians such as Radiation Monitors or Health Physics Technicians. Six states indicated that, while only Health Physicists are assigned to the response team, other specialists are available if necessary from other state agencies. Three states reported that they have only Health Physicists available for dispatch to the scene of an accident. Two states indicated that a response team consists of Radiation Monitors and/or Health Physics Technicians and that Health Physicists are available only through special arrangements. Two states reported that their response teams consist of Radiation Monitors and/or Health Physics Technicians and that no Health Physicists are available. Three states did not answer this question.

Question 17: What state agency maintains a current list of names and telephone numbers of University, Industry, and Nuclear Reactor personnel qualified to assist in radiological emergencies?

Twenty-eight states reported that a directory or other list of private sector radiation experts is maintained in a manner which permits ready access to these experts by radiological health/emergency operations personnel. Four states reported that a file of private sector radiation users is maintained but that no directory or other list is available. Twelve states reported that while no

directory or list is maintained, informal knowledge of radiation experts from the private sector exists within the radiological health/emergency operations organization. Two states reported that no list or file of any kind is available to radiological health/emergency operations personnel and two states reported that development of such a list is in progress. Three states did not answer this question.

Question 18: What percent (or how many) of the currently employed ambulance personnel in the state have been trained in contamination control during treatment of radiation incident victims?

In only a very few states were radiological health/emergency operations personnel able to provide firm figures as to the extent of contamination control training among ambulance crews. Seven states reported that "many" ambulance crew workers have received this training, six states reported that "some" ambulance crew members are trained, and nine states reported that "few" ambulance crew personnel have received contamination control training. Six states reported that the extent of training in radiation contamination control is highly variable by locale: several of these states indicated that "high probability" areas have been identified, usually near reactor power stations, and that training of ambulance crews has been confined to personnel in those areas. Three states reported that no ambulance crew members have this training, and twenty states were not able to answer this question.

Question 19: What percent (or how many) of the currently practicing doctors in the state have attended the medical radiation training course at Oak Ridge Associated Universities or some similar course?

Fourteen states reported that medical consultants with expertise in radiological issues have been identified and designated. Eleven states indicated that they have informal relationships with physicians who have requisite expertise and can access these experts whenever they are needed. Six states reported that they regard any nuclear medicine or radiology practitioner as having expert status. Four states indicated that they have a medical advisory panel, the members of which are accessible. Sixteen states were not able to answer this question; two of these indicated that identifying medical expertise is part of their current planning efforts.

Question 20: Which state agency maintains an up-to-date list of names and addresses of doctors with such training?

Eighteen states reported that a directory of physicians with expertise in radiological issues is available to radiological health/emergency operations personnel; one additional state indicated that physicians are not identified separately, but appear on a list of all private sector experts. Five states indicated that access to medical expertise is based on informal knowledge among radiological health/emergency operations personnel. Four states reported that files where physicians with requisite expertise could be located are maintained, but that no list or directory as such is available. Six states reported that access to medical expertise is through hospitals, and no list is maintained. Nine states indicated that no effort is made to identify medical expertise, and one state indicated that identification of physicians is part of current planning efforts. Seven states did not answer this question.

Question 21: How many hospitals in the state provide training programs and exercises in radiation emergencies to their staff similiar to those offered by the Radiation Management Corporation of Philadelphia?

Six states reported that all hospitals in their state have radiation contamination training and drills; several of these states indicated that such preparedness is required for accredidation. Four states reported that "many" hospitals have attained this level of preparedness while thirteen states reported that only a few hospitals have training programs and drills. Four states indicated that no hospitals in their state have developed any program of this type. Two states indicated that the development of hospital training programs is part of their current planning efforts, and twenty-two states were not able to answer this question.

Question 22: Which state agency maintains a list of hospitals with adequate facilities and training for handling radiation victims?

Twenty-nine states reported that a list of hospitals that are prepared to receive radiation contamination victims is maintained. Four states indicated that they have designated certain facilities and do not maintain a list of all hospitals with this capability. Three states reported that radiological health/emergency operations personnel have informal knowledge of hospitals with appropriate capability and that no list is maintained. Three states reported that knowledge of hospitals with adequate capability is on file but that no list is maintained, and two states reported that all hospitals are considered to be adequately prepared to receive contamination victims. In two states, radiological health/emergency operations personnel reported that they have no knowledge of which hospitals are capable. One state reported that the identification of facilities is part of current planning efforts, and seven states did not answer this question.

TABLE 3-10
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
AL	depending on severity, one or two Health Physicists and maybe a site coordinator would be dispatched; no other technicians go out into the field	no legal responsibility; State Dept. of Health has active files but no directory	no training in decontamination, but 70-80% have training in contamination control
AK	State Dept. of Health has one Health Physicist who could also function as a Radiobiologist; Office of Emergency Services Maintenance and Calibration Officer is also State Radiation Safety Officer, could function as Radiation Monitor or Health Physics Technician	State Dept. of Health; Office of Emergency Services	none
AZ	the optimum response crew would include one Health Physicist, one Radiation Monitor and one Health Physics Technician	Arizona Atomic Energy Commission	
AR	depending on severity, 1 to 5 persons may be dispatched: Health Physicists always go; Radiochemists, Radiobiologists and Electronic Technicians are available; the Office of Emergency Services provides on-site coordinators; Communications Specialists and Public Relations Personnel remain at the central office	State Dept. of Health and Office of Emergency Services	50% (est.); standard part of EMT curriculum
CA	Health Physicists and Radiation Monitors respond; other technical specialists are available from other state agencies as necessary	no legal responsibility; Radiological Health Section has made contact with some laboratories in the State, including private organizations and some larger communities which have personnel	no training in decontamination; very little training in contamination control; 3 cities have held radiation accident exercises which included ambulance personnel
CO	depends greatly on the severity of the accident: usually, two Health Physicists are dispatched; other specialists are available	State Dept. of Health	ambulance personnel are trained with police and fire personnel; number not known
CT	the Radiation Control Section of the State Dept. of Environmental Protection has Health Physicists and Health Physics Technicians; the State Police provide site coordinators and public relations personnel	no list or directory; State Dept. of Environmental Protection does maintain a registry of users: qualified personnel could be found in this file	not known

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
	no legal responsibility, but State Dept. of Health does have information		State Dept. of Health has records of all licensed hospitals and their capabilities; no directory or list
4 hospitals have nuclear medicine facilities; 8-10 MD's are known nuclear medicine practitioners	State Dept. of Health	not known	no legal responsibility; one hospital on an Air Force base is designated
12 MD's have been identified as contacts for medical expertise in radiological issues	Arizona Atomic Energy Commission	none	Arizona Atomic Energy Commission maintains a list that is updated annually
Arkansas considers that all nuclear medicine specialists and radiologists have expert status	no legal responsibility; access to medical expertise is through one designated hospital	a single hospital in Little Rock is designated for all radiological emergencies	informal knowledge is maintained by the State Dept. of Health
power utilities have provided training to MD's in areas near power plants; any hospital that employs radioisotopes would have requisite expertise	no legal responsibility; access to medical expertise is through hospitals		no directory maintained; the board that licenses hospitals would have knowledge
3 MD's have been identified as contacts for medical expertise in radiological issues	State Dept. of Health		State Dept. of Health
at least 5 MD's are known to the Radiation Control Section as sources of expertise in radiation issues	no state agency	3 hospitals, all associated with a nuclear power station	3 state agencies: Radiation Control Section; State Dept. of Health; Office of Civil Preparedness

TABLE 3-10 (Cont.)
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
DE	there are 2 response teams, one from Office of Radiation Safety, State Dept. of Public Health and one from Division of Environmental Control, Dept. of Natural Resources; each team is composed of 4 Radiation Monitors; there is no Health Physicist in state government	State Dept. of Public Health; Office of Radiation Safety	not known
FL	the Division of Health and Rehabilitative Services can dispatch one or more Health Physicists and Radiation Monitors; Radiochemists are available but do not usually go out into the field	The Division of Health and Rehabilitative Services	not known, but some do have training high turnover is a problem
GA	the following personnel are available for dispatch: 2 Health Physicists, 1 Hazardous Materials Specialist, 1 Radiochemist, and 6 persons who could function as Radiation Monitors or Health Physics Technicians; other specialists are also available	the Environmental Protection Division of the State Dept. of Natural Resources and State Civil Defense	10-20% are trained statewide; in some communities all have been trained
HI	the State response team is composed of: 2 RERO trainees from the Dept. of Health, 2 persons from State Civil Defense, 1 Public Information Officer and 1 volunteer from the Pearl Harbor Naval Base; in addition, 4 Health Physicists and several radiation monitors, radiobiologists and radiochemists are on call from the Univ. of Hawaii	part of current planning efforts; presently, a list is available through the Radiation Safety Office, Facilities Management Div., Univ. of Hawaii	not known, but few
ID	there are 3 Health Physicists in the Radiation Control Section of the State Dept. of Health and Welfare; all regional and sub-regional offices have personnel with some training	the Radiation Control Section has informal knowledge	not known
IL	in a worst case scenario, 10-30 persons could be dispatched representing all requisite specialists	no state agency keeps a list; rather, Public Health or Emergency Services would call a facility who would send appropriate assistance	limited; designated individuals in high probability areas receive special training
IN	no [illegible]ucture as such; emergency response volunteer Health Physicists are located around state	Radiological Health Section	not known

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
not known	not known	3 hospitals	Division of Emergency Planning and Operations; Emergency Medical Services
10-12 MD's are known to the Div. of Health and Rehabilitative Services	the Div. of Health and Rehabilitative Services		
	Radiological Health Unit, Dept. of Human Resources; Environmental Protection Division, Dept of Natural Resources	3 hospitals	Dept. of Human Resources; Dept. of Natural Resources
estimate 10% of all MD's have basic knowledge	State Dept. of Health	not known	State Dept. of Health
informal medical advisory committee provides expertise	Radiation Control Division has informal knowledge	hospitals are designated in plan	Radiation Control Division
3 or 4 MD's plus 3 or 4 other medical specialists are identified	no state agency	3 hospitals are known; others have well developed capability	Dept. of Public Health; becoming prominent part of hospital accredidation
number not known	MD's not identified separately; a personnel resource list is maintained; see question 17		

TABLE 3-10 (Cont.)
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
IA	the following personnel are available for emergency response: 3 Health Physicists, 1 in Office of Disaster Services, 2 in Dept. of Health; 3 Radiation Monitors, 1 in Office of Disaster Services, 2 in Dept. of Health; 1 radiochemist and 1 site coordinator from Office of Disaster Services	no legal responsibility, but here is informal knowledge	less than 10%
KS	the Bureau of Radiation and Control and/or the Div. of Emergency Preparedness have available: Health Physicists, Radiation Monitors, Hazardous Materials Specialists, and other technical expertise	State Dept. of Health and Environment	very few
KY	the Radiation Control Branch has Health Physicists and Health Physics Technicians available for dispatch	Radiation Control Branch, Dept. of Human Resources has list of radiation consultants	not known
LA	7 teams of university and private sector personnel located around the state, 4-5 members each team including Health Physicists, MD's, Radiation Monitors; communications, etc., available through State Police	Louisiana Nuclear Energy Division	part of current planning efforts; whatever exists presently is through local Civil Defense programs; number not known
ME	response teams come from the Div. of Health Engineering, Dept. of Human Services: 12 persons are available for dispatch, all are Health Physicists or Health Physics Technicians	Bureau of Emergency Preparedness; Division of Health Engineering	100% of paid personnel, as required by State law; volunteer personnel are also required to receive training, but actual figures are not known
MD	2 individuals are usually dispatched to the scene of an accident: Health Physicists and/or Radiation Monitors are available	the Division of Radiological Control has informal relations with radiological health consultants	not known
MA	25-30 experts are spotted around the state; all are Health Physicists or Health Physics Technicians	State Dept. of Public Health; Mass. Civil Defense	100% have received training of some sort; level and effectiveness is uneven
MI	no teams as such; a call list is used, 5-7 individuals are available, all Health Physicists; a list of backup personnel is also available	Informal knowledge of nuclear power plant personnel within the Div. of Radiological Health, State Dept. of Public Health	

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
not known	no state agency	26 hospitals	State Dept. of Health
not known	State Dept. of Health and Environment	not known	State Dept. of Health and Environment
not known	not known	not known	not known
4 MD's are known to the Louisiana Nuclear Energy Division	Nuclear Energy Division	identification of hospitals is part of current planning	Nuclear Energy Division
not known, but several	Bureau of Emergency Preparedness; Div. of Health Engineering	all hospitals	Bureau of Emergency Preparedness; Division of Health Engineering
the Division of Radiological Control makes use of a medical advisory committee	no state agency	a survey was conducted several years ago, but is no longer considered to be up-to-date	the Division of Radiological Control; part of current planning efforts
20 MD's have been identified as primary consultants	State Dept. of Public Health; Mass. Civil Defense	accreditation requires	State Dept. of Public Health; Mass. Civil Defense
part of current planning efforts; informal knowledge of where to go for medical expertise does exist	Emergency Planning and Response Unit, Div. of Radiological Health	all hospitals have plans	no legal responsibility; informal knowledge of 6 hospitals associated with nuclear power plants; plus one hospital associated with a university

TABLE 3-10 (Cont.)
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
MN	for transportation accidents, 1 or 2 Health Physics Technicians go out to the scene	State Dept. of Health; unofficial in past, currently developing formal directory and agreements with private sector Health Physicists	85% (est.)
MS	17 individuals are available for dispatch to the scene of an accident, representing all relevant technical specialists	no state agency	none
MO	45 individuals are available for dispatch to the scene of an accident, including 13 Health Physicists and all other relevant specialties; all 45 persons can function as Radiation Monitors	Emergency Operations, Adjutant General's Office	not known, hospitals near power stations have trained personnel
MT	the Occupational Health Bureau of Dept. of Health and Environmental Sciences has available for dispatch: 2 Health Physicists, 1 Hazardous Materials Specialist and 1 Health Physics Technician	Dept. of Health and Environmental Sciences has informal knowledge	
NE	the Division of Radiological Health has available for dispatch: 4 Health Physicists and 1 Radiochemist	the Division of Radiological Health of the State Dept. of Health	5% (est.)
NV	functional division into northern and southern districts of state; in northern district, state personnel from Civil Defense and Radiation Control, plus university people, include 6 Health Physicists; in southern district, U.S. DOE Nevada Operations personnel respond, all specialists available	Radiological Control Office, Consumer Health Protection Services	not known, but probably none
NH	one team consisting of 4 persons is designated: 2 Health Physicists/ Radiation Monitors, 1 Transportation Specialist, 1 public relations officer	Radiation Control Agency	none
NJ	60 persons are available for dispatch, including all relevant specialists	State Dept. of Environmental Protection	20%
NM	usually, two persons are dispatched, a Health Physicist and a Radiation Monitor; other specialists also available	Radiation Protection Section; also, university Radiological Health Officers and license files	<5%

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
MD's are informally known to the State Dept. of Health; currently working to formalize a list	part of current planning efforts	not known	State Dept. of Health; have surveyed all hospitals in state and have identified regional centers
2 MD's are known to the Div. of Radiological Health	no state agency	all accredited hospitals must have a program	State Board of Health, Div. of Radiological Health
		not known some hospital personnel have RADEF training	
1 radiologist is known to the Occupational Health Bureau of the Dept. of Health and Environmental Services	Dept. of Health and Environmental Sciences		Dept. of Health and Environmental Sciences
	the Division of Radiological Health	8 (est.) nuclear medicine licenses	the Division of Radiological Health
several MD's have been identified for expertise if needed	all nuclear medicine licenses are considered to be expert; Consumer Health Protection Services has file	none	Radiological Control Office
4 MD's are known to the Radiation Control Agency	Radiation Control Agency	2 hospitals	Radiological Control Agency: several years ago a statewide program motivated planning; approximately half of the state's hospitals are prepared
7 MD's are known to the Dept. of Environmental Protection	Bureau of Radiation Protection; State Dept. of Health	15 hospitals	Dept. of Environmental Protection; Dept. of Health
Radiation Protection Section estimates 5% of MD's have requisite expertise	no state agency, but JNAC, Albuquerque probably does have	none	all hospitals have capability

TABLE 3-10 (Cont.)
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
NY	no response teams as such; well developed field staff in all parts of the state, all available for emergency response; a variety of specialists are represented, mostly Health Physics	the Bureau of Radiological Health has extensive informal knowledge of radiation workers in and around New York State	
NC	if Radiation Protection Section responds alone, Health Physicists, Radiation Monitors and Health Physics Technicians are available; if a multi-agency state emergency response is necessary, all specialties are available	Radiation Protection Section, part of current planning efforts	some, number not known
ND	no response team as such: 8-10 persons are available for dispatch, including 3 Health Physicists, 1 RERO trainee, and other specialists from Disaster Emergency Services	no legal responsibility, but Disaster Emergency Services and the Div. of Environmental Engineering, State Dept. of Health could locate experts if necessary	5% (est.)
OH			
OK	1 to 6 persons are available for dispatch, including 4 Health Physicists, 1 site coordinator and 1 public information officer	no legal responsibility, but, Occupational and Radiological Health Services has informal knowledge	not known
OR	the Radiation Control Section sends out 1 to 4 persons, including a Health Physicist, a Radiation Monitor and a Public Relations Officer; State DOT may be requested to supply a Hazardous Materials Specialist	Radiation Control Section	not known
PA	the Bureau of Radiation Protection will send one Health Physicist; other specialties on call as necessary from other state agencies	no legal responsibility; Bureau of Radiation Protection has informal knowledge of many radiation professionals	very few hospitals located near power stations have trained personnel

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
the Bureau of Radiological Health has informal knowledge of several MD's they can contact for expertise if necessary	no legal responsibility, Bureau of Radiological Health has informal knowledge	not known; most larger hospitals have radiology and/or nuclear medicine; hospitals near reactor sites are well equipped	no legal responsibility; Bureau of Radiological Health has knowledge of hospitals with adequate capability
the Radiation Protection Section has informal agreements with MD's around the state for medical expertise	Radiation Protection Section	many hospitals	Radiation Protection Section
5% (est.)	no legal responsibility, but the State Dept. of Health could locate MD's with requisite expertise if necessary	none	State Dept. of Health
number of physicians not known, but there are several; there is a Radiological Advisory Committee	no legal responsibility, but Occupational and Radiological Health Services knows 3 or 4 they can contact if necessary	not known	Occupational and Radiological Health Services
a Radiation Advisory Committee meets periodically, including several physicians	no legal responsibility, but several physicians known to Radiation Control Section	not known, but any fully accreditated hospital must have in-house radiation contamination plan; 2 hospitals identified as primary contacts	Radiation Control Section
not known, but there are several	no state agency	"contact Hospitals" are identified; no statewide directory maintained	no state agency

TABLE 3-10 (Cont.)
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
PR	the Office of Civil Defense will send Civil Defense Radiologist Specialists	no state agency	not known, probably none
RI	the Radiation Control Program and/or the Defense Civil Preparedness Agency have available for dispatch: 2 Health Physicists, 1 to 3 Radiation Monitors, 1 Hazardous Materials Specialist, 1 Radiochemist, 1 Health Physics Technician, plus other specialties	Defense Civil Preparedness Agency and the State Department of Health	90%
SC			
SD	the Division of Emergency Disaster Services has available for dispatch: 2 Radiation Monitors, 1 Hazardous Materials Specialist, 1 Health Physics Technician, plus other specialties	the State Health Dept. requires registration of all users; a manual file is maintained, but no list is available	some; all have limited exposure to training, some have fairly complete training
TN	all relevant specialties are available for dispatch, from either the Div. of Radiological Health or the Office of Civil Defense and Emergency Preparedness; circumstances dictate who and how many go out	Office of Civil Defense and Emergency Preparedness	very few
TX	no team assignments, use best 2 persons available; Div. of Occupational Health and Radiation Control has Health Physicists available for dispatch	State Dept. of Health uses directories for the Texas Health Physics Society and the Texas Regional Medical Physicists Society; also have list of all licenses	standard E.M.S. training includes the handling of radiation contamination victims
UT	"Joint State Radiological Emergency Response Team" includes: - State Bureau of Radiological Health - Salt Lake City personnel - Univ. of Utah Radiological Safety personnel; 10 persons altogether, including 5 Health Physicists and 4 Hazardous Materials Specialists	Bureau of Radiation and Occupational Health	not known

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
not known, probably none	no state agency	not known, probably none	no state agency
6 MD's are known to the Radiation Control Program	see Question 21	a single hospital is designated as the primary contact; State Dept. of Health has close working relationship with the staff of this hospital	see Question 21
one MD has consulted for the State Health Dept.; there are several other nuclear medicine practitioners known	all institutions and operators are required to be registered; periodic inspection leads to ongoing contact; see Question 17	not known, but several hospitals have a licensed nuclear medicine program	State Health Dept.
not known	State Dept. of Public Health; Office of Civil Defense and Emergency Preparedness	not known	State Dept. of Public Health
Div. of Occupational Health and Radiation control has file of approx. 500 medical facilities licensed for radiological; each has a physician named as a user	Div. of Occupational Health and Radiation Control	not known, except a few with minor in-service training programs	Div. of Occupational Health and Radiation Control
not known, see Question 22	no state agency, see Question 22	one hospital	no list is maintained; the Bureau of Radiation and Occupational Health has a close working relationship with the University of Utah Medical Center

TABLE 3-10 (Cont.)
PERSONNEL

STATE NAME	QUESTION 16: TRAINING SPECIALTY OF TECHNICAL RESPONDENTS	QUESTION 17: IDENTIFICATION OF PRIVATE SECTOR EXPERTS	QUESTION 18: TRAINING OF AMBULANCE CREWS IN CONTAMINATION CONTROL
VT	in process of developing team assignments; all requisiste specialties are available but not assigned	the Division of Occupational Health	capability is developed near Vermont Yankee power plan, Vernon, Vt., but not much elsewhere many volunteers, not part of training curriculum
VA	"qualified contract experts," physics professors, health physics practitioners from industry, provide consulting expertise and direction to local personnel	Bureau of Industrial Hygiene and Radiological Health	50% (est.)
WA	a response team consists of 3 to 6 persons; all are Health Physicists	Radiological and Occupational Health Section, Office of Environmental Health Programs; also IRAP	two communities have developed this capability; more are in process
WV	Radiological Health Program and/or Office of Emergency Services have available: Health Physicists, Radiation Monitors and Hazardous Materials Specialists; depending on nature of accident, State DOT or Commerce Commission will also send personnel	Office of Emergency Services	
WI	the Section of Radiation Protection has 5 Health Physicists or Radiation Monitors; other respondents from Univ. of Wisconsin Safety Div.; some local sanitarians have RERO training	counties are responsible for identifying locally available expertise; Section of Radiation Protection works with counties to develop resource inventories; hospitals are a major source	some training is included in Emergency Medical Technician curriculum; not known how widely this is available; some communities well prepared, others not so well
WY			

TABLE 3-10 (Cont.)
PERSONNEL

QUESTION 19: PHYSICIANS WITH RADIOLOGICAL EXPERTISE	QUESTION 20: IDENTIFICATION OF MEDICAL EXPERTISE	QUESTION 21: HOSPITALS WITH IN-HOUSE TRAINING AND DRILLS	QUESTION 22: IDENTIFICATION OF HOSPITALS WITH CAPABILITY TO RECEIVE CONTAMINATION VICTIMS
2 MD's have been identified for medical expertise in radiological questions	the Division of Occupational Health	required for license	the Division of Occupational Health
there are 2 MD's within the State Health Dept.; there may be others in the State	no state agency	not known	Bureau of Industrial Hygiene and Radiological Health
not known	Licensing Division has list of all practicing MD's, but not by specialty	not known	no list is maintained; state law requires capability to receive contamination victims; all hospitals are qualified
health professional are a major source of expertise for the locally-based response system; statewide number not known	see Question 17	all medium-size or larger hospitals	all nuclear medicine and radiology programs are registered
		all hospitals have some form of drills and checklist	no state agency

3.5 Equipment

Question 23: Indicate the number of locations throughout the state where serviced and calibrated portable radiation detection instruments are normally kept?

Five states reported that calibrated portable radiation detection instruments are maintained at 10 or fewer locations. Three states reported that instruments are maintained at more than 10 but less than 50 locations. Thirty-eight states indicated that this equipment is available at "many" (more than 50) locations, and five states did not answer this question.

The above enumeration refers to all types of radiation detection instruments. In most states, emergency response personnel regard Civil Defense instruments as being available for use during emergency operations, which accounts for the high number of states which report that instruments are maintained at "many" locations. Other instrument types are typically much less widely available to the state, usually only at radiological health agencies or regional offices, and laboratories. A broad variety of instrumentation is widely available through universities and the private sector; some states keep close tabs on where instruments are maintained while other states are less rigorous in their record keeping. Most states are not aware of instrumentation at military facilities.

Question 24: How many of the locations have available portable radiation detectors?

The availability of portable radiation detection instruments is summarized as follows. Some states were able to provide estimates of the actual inventory of instruments, while other states only indicated the availability without specifying numbers. In those states for which an estimate of the volume was available, the data has been stratified according to the absolute number into "many" or "few" instruments without any effort to refer to the appropriateness of the volume. Indices of instrumentation per population or square miles have not been attempted. See Tables 3-11 and 3-12.

Low range beta-gamma: Twenty-one states reported having many instruments, seven states reported having few instruments, seventeen states indicated that these instruments are available with number not specified, one state reported that low range beta-gamma detectors are not available and five states did not answer.

Medium range beta-gamma: Twelve states reported having many instruments, seven states reported having few instruments, eighteen states indicated that medium range beta-gamma detectors are available with number not specified, one state reported that it would be necessary to borrow these instruments, one state indicated that none are available and twelve states did not answer.
High range beta-gamma: Twenty states reported having many instruments, seven states reported having few instruments, fifteen states indicated that these instruments are available with number not specified, one state reported that high range beta-gamma detectors are not available and eight states did not answer.

Low energy gamma: Three states reported having many instruments, thirteen states reported having few instruments, nine states indicated that these instruments are available with number not specified, four states reported that it would be necessary to borrow these instruments, ten states indicated that low energy gamma detectors are not available and twelve states did not answer.

Alpha particle detectors: Six states reported having many instruments, seventeen states reported having few instruments, fifteen states indicated that alpha particle detectors are available with number not specified, three states reported that it would be necessary to borrow these instruments, one state indicated that none are available and nine states did not answer.

Neutron detectors: One state reported having many instruments, twenty states reported having few instruments, seven states indicated that these instruments are available with number not specified, four states reported that it would be necessary to borrow these instruments, seven states reported that neutron detectors are not available, and twelve states did not answer.

Gamma-ray spectrometer: One state reported having many instruments, seventeen states reported having few instruments, twelve states reported that gamma-ray spectrometry is available with number not specified, eight states indicated that it would be necessary to borrow these instruments, two states reported that these instruments are not available and eleven states did not answer.

(The question about gamma-ray spectrometers caused some confusion for the respondents. Only four states indicated that a multi-channel computer driven spectroscopy system is available for use in the field. Several states indicated that they have single channel analyzers and numerous states reported that spectroscopy capability is well distributed around the state at universities and industry as well as state-owned instruments. The above

enumeration refers to spectroscopy capability in general.)

Other: Nine states reported that instrumentation other than the seven types specifically mentioned are available within the radiation control agency or program; of these, two reported that additional instrumentation can also be borrowed. The additional instruments named included: tritium monitors, bioassay equipment, liquid scintillation counters, and air monitors, both portable and permanent.

Question 25: How many emergency vehicles, specially equipped for hazardous materials accident responses, are available to the state?

Twenty-five states reported that they do not have hazardous materials response vehicles, seventeen states indicated that they do maintain dedicated hazardous materials response vehicles, six states reported that a vehicle is part of current planning, and three states did not answer.

Question 26: Are these vehicles equipped for emergency response to a radiological transportation incident? Do the vehicles contain the following equipment?

The availability of radiological emergency field equipment is summarized as follows. Among states which do not maintain vehicles, some states reported having access to the equipment enumerated in the question while other states did not report whether or not they have access to this equipment. See Table 3-14.

Two-way radio: Eighteen states report that a radio is part of the equipment within a vehicle, eleven states reported that a radio is available but not necessarily in a vehicle, two states reported that it would be necessary to borrow a radio, two states reported that a radio is not available, fourteen states did not report on the accessibility of radios, and four states did not respond to the question.

Air monitor: Twelve states report that air monitoring or sampling equipment is part of the equipment packed in a vehicle, fifteen states reported that air monitoring or sampling equipment is available, one state reported that it would be necessary to borrow air monitoring or air sampling equipment, four states indicated that air sampling equipment is not available, fourteen states did not report on the availability of this equipment, and five states did not respond to the question.

Tritium sniffer: Three states report that this item of equipment is packed in a vehicle, five states reported that this equipment is available, one state indicated that it would be necessary to borrow this equipment, twenty states reported that a tritium sniffer is not available, fourteen states did not report on the availability of this equipment, and eight states did not respond to the question.

TLD badges and reader: Eight states reported that TLD equipment is packed in a vehicle, thirteen states reported that TLD equipment is available, two states indicated that it would be necessary to borrow this equipment, eight states reported that this equipment is not available, fourteen states did not report on the availability of this equipment, and six states did not answer the question.

Pocket dosimeter and reader: Thirteen states reported that this equipment is packed in the vehicle, sixteen states reported that this equipment is available, two states reported that it would be necessary to borrow dosimetry equipment, one state indicated that this equipment is not available, fourteen states did not report on the availability of dosimetry equipment, and five states did not answer the question.

Gamma-ray spectrometer: Eight states reported that this equipment is packed in a vehicle, thirteen states reported that this equipment is available, one state indicated that it would be necessary to borrow this equipment, eight states reported that gamma-ray spectrometry equipment is not available for use in the field, fourteen states did not report on the availability of this equipment, and seven states did not answer the question.

Forms for keeping exposure records: Twelve states reported that these forms are part of the vehicle equipment, eighteen states reported that these forms are available, three states indicated that these forms are not available, fourteen states did not report on the availability of this equipment, and four states did not answer the question.

Fire extinguishers: Ten states reported that this equipment is packed in the vehicle, eight states reported that this equipment is available, one state reported that it would be necessary to borrow this equipment, four states indicated that fire extinguishers are no available through normal channels, fourteen states did not report on the availability of this information, and fourteen states did not answer the question.

Other equipment: Three states reported that other types of radiological emergency field equipment are packed in the vehicle and six states indicated that other types of equipment are available. Equipment reported as being packed in an emergency response vehicle included: reference manuals, a decontamination kit, follow-up decontamination chemicals, bulk medical supplies, and tow bars and chains for clearing the accident site. Equipment reported as being available included aerial monitoring equipment and wrecker trucks.

Question 27: Are emergency kits available for use by persons responding to various emergency situations? Do these kits contain the following items?

The contents of radiological emergency kits is summarized as follows. See Table 3-15.

Scott air packs or similar: Twenty-one states reported that this equipment is part of a kit, six states reported that this equipment is available, seven states reported that it would be necessary to borrow this equipment, one state indicated that this equipment is not available, and sixteen states did not answer the question.

Filtered face masks: Thirty-four states reported that this equipment is part of a kit, four states reported that this equipment is available, five states that it would necessary to borrow this equipment, one state reported that this equipment is not available, and seven states did not answer the question.

Protective clothing and shoe covers: Thirty-nine states reported that these supplies are part of a kit, three states reported that these supplies are available, four states reported that it would be necessary to borrow these supplies, and five states did not answer the question.

Traffic and pedestrian control signs, ropes, markers, etc.: Thirty-four states reported that these supplies are part of a kit, three states reported that these supplies are available, six states indicated that it would be necessary to borrow these supplies, and eight states did not answer the question.

First aid kits: Twenty-eight states reported that this equipment is part of a kit, five states reported that this equipment is available, six states indicated that it would be necessary to borrow this equipment, and twelve states did not answer the question.

Maps: Thirty-two states reported that maps are part of a kit, eight states reported that maps are available, three

states indicated that it would be necessary to borrow maps, and eight states did not answer the question.

Camera: Twenty-five states reported that this equipment is part of a kit, eight states reported that cameras are available, seven states reported that it would be necessary to borrow a camera, one state indicated that cameras are not available, and ten states did not answer the question.

Flashlight: Thirty-two states reported that a flashlight is part of a kit, four states reported that a flashlight is available, five states indicated that it would be necessary to borrow a flashlight, and ten states did not answer the question.

Tape recorder: Twenty states reported that a tape recorder is part of a kit, eight states reported that a tape recorder is available, five states reported that it would be necessary to borrow this equipment, two states indicated that a tape recorder is not available, and sixteen states did not answer the question.

Current list of telephone numbers: Thirty-four states reported that a list of telephone numbers is part of a kit, nine states reported that a list of numbers is available, and eight states did not answer the question.

Other equipment: Eight states reported that other equipment is packed in the kit. Additional equipment reported as being part of an emergency kit included sample gathering equipment, remote handling tongs, binoculars, reference manuals, and a roll of dimes for public telephones.

Question 28: At how many locations throughout the state are the emergency kits available?

Seventeen states reported that emergency kits are maintained at one location, twenty-eight states reported that emergency kits are maintained at multiple locations, two states reported that emergency kits are not maintained, one state reported that the emergency kit is part of the emergency vehicle equipment, and three states did not answer the question.

Explanation to accompany Tables 3-11, 3-12 and the matrix of raw data for Q.24, Table 3-13.

Very few states make any concerted effort to maintain a state-wide file of all instruments. In most states, several agencies may own or will have been issued radiation detection instruments. State and local Civil Defense programs maintain their own, separate inventories of instruments. Additionally, state and private universities, medical facilities and industrial concerns in the private sector also maintain portable and laboratory instruments. When radiological emergency response personnel were queried about the location of instruments, some states enumerated the few dozen instruments dedicated for use in radiological health programs while other states enummerated several thousand instruments belonging to various state agencies and private sector organizations. Very few states were able to offer firm information concerning the number of locations where instruments are maintained; there is, however, widespreaded informal knowledge among radiological emergency response personnel concerning where they can get an instrument in the field if they need it. Any effort to develop firm data on this question would require detailed analysis of the files of registered users in each state, inquiries with at least six state agencies, including departments of labor, agriculture, pollution control and others, and another round of inquiries with local governments.

Table 3-13 displays the information which the states were able to provide; the D and L suffixes reflect the form in which the data was available, i.e. the most adequate answer the respondents were able to make based on their knowledge of the state's radiological control and emergency services programs. It will be noted that several states preferred not to answer rather than make an incorrect response.

Table 3-11 stratifies the information about instrumentation from the perspective of number of detectors. This is a straightforward reduction of the data which the states provided into a managable number of strata. In table 3-11, for low-, medium-, and high-range beta-gamma detectors, states classed as having "many" instruments reported more than 49 instruments or more than 9 locations; for the other, more specialized detectors, "many" instruments refers to more than 9 instruments or more than 4 locations.

Table 3-12 stratifies the information about instrumentation from the perspective of number of locations. The information in this table has been deduced from data gathered for Questions 28 and 38, as well as Questions 24. The information in Table 3-12 is very "soft" and is based on various comments about the dispersion of radiological health/emergency services personnel, the number of regional offices, and the extent to which the state has friendly relations with universities, hospitals and private sector users of radioactive materials, from whom instruments can be borrowed if needed.

TABLE 3-11

Q. 24: Number of Portable Radiation Detection Instruments
Nationwide Enumeration by State

	Many instruments	Few instruments	Available, number not specified	Available, must borrow	Not available	No response
Low Range Beta-Gamma	21	7	17	0	1	5
Medium Range Beta-Gamma	12	7	18	1	1	12
High Range Beta-Gamma	20	7	15	0	1	8
Low Energy Gamma	3	13	9	4	10	12
Alpha Particle	6	17	15	3	1	9
Neutron Detector	1	20	7	4	7	12
Gamma-Ray Spectrometer	1	17	12	8	2	11
Other		9	2			

TABLE 3-12

Number of Locations Where Portable Radiation Detection Instruments are Available
Nationwide Enummeration By State

	at least 1 location	>1 but <10 locations	10 or more locations	none available	not known
Low Range Beta-Gamma	5	8	32	1	5
Medium Range Beta-Gamma	6	10	23	1	11
High Range	6	8	27	1	9
Low Energy Gamma	17	11	1	11	11
Alpha Particle Detector	26	13	2	1	9
Neutron Detector	27	6	0	8	10
Gamma-Ray Spectrometer	26	12	0	2	11

Disclaimer for data in Question 24, Availability of Portable Radiation Detection Instruments, Table 3-13

The information contained in this table is fairly accurate, as of December 31, 1979. However, in no case should the information presented be confused with official inventories of equipment. The information contained in the state-by-state enumeration represents informed estimates by personnel in radiological health/environmental control/emergency services programs or agencies. Precise inventory information on Civil Defense instruments would probably be available from the Civil Defense program, now in FEMA. Precise inventory information on the other types of instruments is probably not available. Inventories change rapidly with the retirement of old equipment and acquisition of new instruments; often, several state agencies own or have been issued instruments. Very few states make any concerted effort to maintain a central file of instrumentation.

TABLE 3-13

QUESTION 24: AVAILABILITY OF PORTABLE RADIATION DETECTION INSTRUMENTS

LEGEND: numeral = number available; L = number of locations; D = number of instruments
A = available within agency, number not specified
B = available, must borrow, number not specified
N = not available through normal channels

	Low Range Beta-Gamma	Medium Range Beta-Gamma	High Range Beta-Gamma	Low Energy Gamma	Alpha Particle Detector	Neutron Detector	Gamma-ray Spectrometer	Other
AL	400+ L	400+ L	300+ L	50L	10L	5L		
AK	A	A	A	N	B	N	B	
AZ	3L	14L	14L	3L	3L	3L	3L	A
AR	75L	75L	75L	N	2L	N	2L	
CA	6,200D	6,200D	A	A	A	N	N	
CO	220L	?	220L	A	A	A		
CT	25+ L	25+ L	25+ L	2D	5D	2D	1D	
DE	54L	54L	?	?	?	?	?	
FL	8L	8L	N	N	8L	1D	3D	
GA	200+ L	?	200+ L	A, B	A, B	A, B	A, B	
HI	A	B	A	B	B	N	B	
ID	5+ L	5+ L	5+ L	A	A	B	B	A, B
IL	104+ A	8L	104+ L	<8L	<8L	1L	1L	A
IN	A	A	?	A	A	?	A	
IA	18+ L	18+ L	18+ L	4L	4L	4L	2L	A
KS	202L	2D	202L	2D	2D	1D	1D	A
KY		4D	2D	?	?	?	?	
LA	64L	64L	4L	2L	A	10D	20D	
ME	A	A	A	N	A	N	A	
MD	12D		3D	1D	5D	1D	B	
MA	350L	350L	350L	?	4D	B	B	
MI	6D	A	6D	2L	2L	2L	2L	
MN	2,000D	A	A	N	2D	1D	A	A
MS	80+ L	<80L	<80L	2L	3L	3L	3L	
MO	6,220D	A	12,125D	N	20D	B	B	A
MT	A	?	A	1D	1D	1D	1D	A, B
NE	A	A	A	N	A	N	B	
NV	4L	4L	4L	4L	4L	1L	4L	
NH	100L	5L	110L	1D	4D	2D		
NJ	A	21L	15L	4D	10L	6D		
NM	4L	4L	1L	2L	2L	1L	2L	
NY	A	A	A	1L	A	1L	1D	
NC	A	A		B	A	A, B	A, B	

TABLE 3-13 (Cont.)

QUESTION 24: AVAILABILITY OF PORTABLE RADIATION DETECTION INSTRUMENTS (continued)

LEGEND: numeral = number available; L = number of locations; D = number of instruments
A = available within agency, number not specified
B = available, must borrow, number not specified
N = not available through normal channels

	Low Range Beta-Gamma	Medium Range Beta-Gamma	High Range Beta-Gamma	Low Energy Gamma	Alpha Particle Detector	Neutron Detector	Gamma-ray Spectro-meter	Other
ND	2,000D	100L	2,000D	N	10D	2D	?	
OH								
OK	A	A	A	B	A	A, B	A	
OR	5L	5L	5L	2L	2L	3L	3L	
PA	A	A	A	N	A	A	A	
PR	N	N	480D	N	N	N	N	
RI	900D	A	2,000D	A	A, B	B	2L	
SC								
SD								
TN								
TX	7,000L	A	7,000L	A	B	A	B	
UT	6L	6L	6L	6L	6L	2D, B	6L	
VT	A	A	?	?	1L	A	A	A
VA	134L	?	134L					
WA	350L	350L	6,000D	6D	6D	3D	6D	
WV	55L	?	55L	?	?	?	?	
WI	A	A	A	N	4D	N	A	
WY	30L	?	30L	?	?	?	?	

TABLE 3-14

Q. 26: Radiological Emergency Field Equipment
Nationwide Enumeration by State

	Packed in a vehicle	Available	Available, must borrow	Not available	Availability not reported	No response
Two-way Radio	18	11	2	2	14	4
Air Monitor	12	15	1	4	14	5
Tritium Sniffer	3	5	1	20	14	8
TLD Badges and Reader	8	13	2	8	14	6
Pocket Dosimeter	13	16	2	1	14	5
Gamma-Ray Spectrometer	8	13	1	8	14	7
Exposure Record Forms	12	18	0	3	14	4
Fire Extinguisher	10	8	1	4	14	14
Other	3	6			14	

TABLE 3-15

Q. 27: Contents of Radiological Emergency Kits
Nationwide Enumeration by State

	Packed in a Kit	Available	Available, must borrow	Not available	No response
Scott Air Packs or Similar	21	6	7	1	16
Filtered Face Masks	34	4	5	1	7
Protective Clothing	39	3	4	0	5
Signs, ropes, markers	34	3	6	0	8
First Aid Kit	28	5	6	0	12
Maps	32	8	3	0	8
Camera	25	8	7	1	10
Flashlight	32	4	5	0	10
Tape Recorder	20	8	5	2	16
Current list of names and telephones	34	9	0	0	8
Other	8				

TABLE.3-16
EQUIPMENT

STATE NAME	QUESTION 23: LOCATION OF PORTABLE DETECTION INSTRUMENTS	QUESTION 25: HAZARDOUS MATERIALS EMERGENCY RESPONSE VEHICLES	QUESTION 28: LOCATION OF RADIOLOGICAL EMERGENCY RESPONSE KITS
AL	over 400 locations around the state	two vehicles	kits are located in five places; one kit is maintained by the state, four other kits are maintained by private sector and/or university organizations
AK	CD equipment in all major communities; other instruments available through several state or federal agencies	no dedicated vehicles; state troopers have basic complement	two kits are maintained by the Office of Emergency Services at one location
AZ	CD equipment in each of 14 counties; other instruments at 3 locations	no dedicated vehicles	one kit is maintained by the Arizona Atomic Energy Commission
AR	CD equipment in each of 75 counties; emergency response crews carry their own equipment	all agency vehicles have necessary equipment; State Dept. of Health has mobile command trailer; State Police/Office of Emergency Services has mobile command/communications capability	two kits at one location
CA	6,200 CD shelter kits are located around the state	no dedicated vehicles at state level; emergency transportation provided by various state agencies as necessary	kits are maintained at five locations around the state
CO	approximately 220 locations around the state	one dedicated vehicle	kits are maintained at one location
CT	25-30 locations	nine dedicated vehicles for all hazardous materials response	kits are maintained at three locations
DE	instrumentation is maintained at 54 locations around the state, including fire stations, CD locations and State Police	2 - Emergency Operations 3 - Environmental Control Div.	2 - Emergency Operations 2 - Environmental Control Div.
FL	eight locations	one dedicated vehicle	eight locations (same as #23)

TABLE 3-16 (Cont.)
EQUIPMENT

STATE NAME	QUESTION 23: LOCATION OF PORTABLE DETECTION INSTRUMENTS	QUESTION 25: HAZARDOUS MATERIALS EMERGENCY RESPONSE VEHICLES	QUESTION 28: LOCATION OF RADIOLOGICAL EMERGENCY RESPONSE KITS
GA	200+ locations including private industry and military installations	three dedicated vehicles in the Environmental Protection Division - all terrain, truck-type vehicles	four different locations, all in Atlanta
HI	all fire stations, county CD HQ, Univ. of Hawaii, State Dept. of Health, State CD HQ	no dedicated vehicles	each response team member has a kit
ID	five Radiation Control Section regional offices; plus INEL, licensees and registrants, universities and CD	five - each regional office	five - each regional office
IL	CD instrumentation in each of 104 counties, multiple locations in many counties; plus eight regional offices; State Dept. of Public Health; plus each licensee	approximately 25 vehicles issued to Hazardous Materials Officers from State Police with basic complement; one only specifically equipped for radiological emergencies	kits are available at State Dept. of Public Health HQ and each of eight regional offices
IN	CD instrumentation in each of 92 counties; plus State Dept. of Public Health, volunteer respondent kits, universities, etc.	none at state level	kits are maintained by volunteer emergency response health physicists; also kits maintained by State Board of Health at central office
IA	CD instrumentation in each of 99 counties; plus universities and other locations	three vehicles	kits are maintained at two locations
KS	not including shelter kits, instrumentation for emergency response is available at 202 locations	none at state level	kits are maintained at two locations
KY		one vehicle available to Radiation Control Branch	a kit is maintained at the Bureau for Health Services central office
LA	CD kits in each of 64 parishes; plus all licensees and other locations	a vehicle is part of current planning	each response team member maintains a kit; other availability through local resources

TABLE 3-16 (Cont.)
EQUIPMENT

STATE NAME	QUESTION 23: LOCATION OF PORTABLE DETECTION INSTRUMENTS	QUESTION 25: HAZARDOUS MATERIALS EMERGENCY RESPONSE VEHICLES	QUESTION 28: LOCATION OF RADIOLOGICAL EMERGENCY RESPONSE KITS
ME	1,000 shelter kits around state; plus Health Engineering Division	ten fire departments in larger cities; none at state level	kits are maintained at appoximately 50 locations: each county CD HQ, fire stations, hospitals
MD		none at state level	kits are maintained at one location
MA	approximately 351 locations	none at state level	response capability is organized at local level - most fire departments, plus some other have kits
MI	CD instrumentation well distributed around state; Radiolgical Health instruments at two locations	none at state level, but part of current planning	kits are maintained at two locations
MN	2,000 CD kits all around state; plus Radiological Health instruments, mobile and lab	none at state level	kits are maintained at Radiological Health HQ
MS	all hospitals, universities, licensees; plus State Board of Health and state CD - approximately 100 locations	none at state level	kits are maintained at one location
MO	each county has several locations	none at state level, some at local level; there are some hazardous materials clean-up firms with emergency vehicles	kits are maintained at each State Patrol Troop HQ
MT	CD instruments well distributed throughout state	none at state level	kits are available at one location
NE	CD instruments well distributed around state	a vehicle is available, but it is not dedicated	kits are maintained at two locations
NV	state radiological health instruments at four locations; US DOE Nevada Operations Office has many instruments	none at state level	kits are maintained at two locations
NH	CD instruments are maintained at approximately 110 locations	none at state level	kits are maintained at one location

TABLE 3-16 (Cont.)
EQUIPMENT

STATE NAME	QUESTION 23: LOCATION OF PORTABLE DETECTION INSTRUMENTS	QUESTION 25: HAZARDOUS MATERIALS EMERGENCY RESPONSE VEHICLES	QUESTION 28: LOCATION OF RADIOLOGICAL EMERGENCY RESPONSE KITS
NJ	numerous locations, including 21 county CD offices, 150 hospitals, state police, private industry, 17 universities and the Bureau of Radiological Protection	40 vehicles are available	kits are maintained at approximately 60 locations
NM	numerous locations, including Radiation Protection Section main and regional offices; also, JNAC	a vehicle is part of current planning	kits are maintained at three locations
NY	widely available through CD, plus all Bureau of Radiological Health inspectors	none at state level	kits are maintained at four locations
NC	widely available through CD; Radiation Protection Section; private industry; State Dept. of Public Safety	the Radiation Protection Section has a vehicle	kits are maintained at Radiation Protection Section HQ, plus all nuclear power stations
ND	CD instrumentation well distributed throughout state	none at state level	kits are maintained at one location
OH			
OK	CD instruments well distributed throughout state; plus all industrial concerns	none at state level	kits are maintained at one location
OR	1 state agency 3 universities 1 utility; 4 locations	none at state level some counties have limited capability	kits are maintained at one location
PA	three offices of Bureau of Radiation Protection; also, universities, commercial facilities, state and local RADEF programs	one vehicle is available from the Deep Mine Safety Unit; the Bureau of Radiation Protection plans to acquire a vehicle	kits are maintained at one location

TABLE 3-16 (Cont.)
EQUIPMENT

STATE NAME	QUESTION 23: LOCATION OF PORTABLE DETECTION INSTRUMENTS	QUESTION 25: HAZARDOUS MATERIALS EMERGENCY RESPONSE VEHICLES	QUESTION 28: LOCATION OF RADIOLOGICAL EMERGENCY RESPONSE KITS
PR	CD HQ, seven regional CD offices; plus police, fire and CD fn each of 78 municipalities	none at state level	no kits are maintained
RI	CD instrumentation is well distrubuted throughout state	three vehicles equipped for radiation emergencies are available at the state level	kits are maintained as part of emergency vehicle equipment
SC			
SD			
TN	instrumentation is maintained at 78 locations	13 vehicles are available	kits are maintained at 13 locations
TX	instrumentation is maintained at 7,000 locations, both state and private sector	none at state level	kits are maintained at five locations
UT	instrumentation is maintained at six locations	one vehicle is available	kits are maintained at two locations
VT	CD shelter kits are maintained at 138 locations; plus Div. of Occupational Health	none at state level	kits are maintained at one location
VA	instrumentation is maintained at 134 locations, including military installations, research facilities, etc.	none at state level	kits are maintained at over 100 locations; most counties, cities, plus other installations
WA	not including Federal installations, approximately 350 locations	none at state level	kits are maintained at two locations
WV	FEMA kit in each of 55 counties	a fully equipped vehicle is part of current planning	kits are maintained at one location

TABLE 3-16 (Cont.)
EQUIPMENT

STATE NAME	QUESTION 23: LOCATION OF PORTABLE DETECTION INSTRUMENTS	QUESTION 25: HAZARDOUS MATERIALS EMERGENCY RESPONSE VEHICLES	QUESTION 28: LOCATION OF RADIOLOGICAL EMERGENCY RESPONSE KITS
WI	CD instrumentation is well distrubuted throughout state; plus Radiation Control Section, universities	a vehicle is part of current planning	kits are maintained at one location
WY	CD instrumentation is maintained at 30 locations	none at state level	no kits are maintained; equipment is available but must be assembled

TABLE 3-17

QUESTION 26: RADIOLOGICAL EMERGENCY FIELD EQUIPMENT

LEGEND: V = packed in an emergency vehicle
A = available within agency
B = available, must borrow
N = not available through normal channels
n/a = no vehicle maintained, access to equipment not reported

	Two-way Radio	Air Monitor	Tritium Sniffer	TLD Badges and Reader	Pocket Dosimeter	Gamma-ray Spectrometer	Exposure Record Forms	Fire Extinguishers	Other
AL	V	A	N	A	V	V			
AK	n/a								
AZ	n/a								
AR	V	N	N	N	V	N	V	V	A
CA	n/a								
CO	V	V	N	N	V	N	N	N	
CT	V	V	N	N	V	N	V	N	
DE	V	A	A	A	A	A	A	A	
FL	V	V	N	V	V	V	V	V	
GA	V	V	V	V	V	V	V	V	
HI	A	N	N	B	B	B	A		
ID	V	N	N	N	V	N	A		A
IL	V	V	N	V	V	V	V	V	A
IN	n/a								
IA	V	N	V	V	V	N	V	N	A
KS	n/a								
KY	A	A	N	N	A	A	N		A
LA	A	A		A	A		A	A	A
ME	n/a								
MD	N	A	N	B			A		
MA	A	A	A	A	A	N	A	A	
MI	V	V	N	V	N	V	V	V	V
MN	n/a								
MS	n/a								
MO	n/a								
MT	A	A			A	A	A	A	
NE	V	A	N	N	A	N	A		
NV	N	A	A	A	A	A	A	A	
NH	n/a								
NJ	V	V	V	V	V	V	V	V	V
NM	n/a								
NY	B	A	A	A	A	A	A	N	
NC	V	V	B	V	V	V	V	V	V

TABLE 3-17 (Cont.)

QUESTION 26: RADIOLOGICAL EMERGENCY FIELD EQUIPMENT (continued)

LEGEND: V = packed in an emergency vehicle
A = available within agency
B = available, must borrow
N = not available through normal channels
n/a = no vehicle maintained, access to equipment not reported

	Two-way Radio	Air Monitor	Tritium Sniffer	TLD Badges and Reader	Pocket Dosi-meter	Gamma-ray Spectro-meter	Exposure Record Forms	Fire Extin-guishers	Other
ND	n/a								
OH									
OK	B	B	N	A	A	A	N	B	
OR	A	A	N	A	A	A	A		
PA	A	A	N	N	A	A	A	A	
PR	n/a								
RI	V	V		V	V		V	V	
SC									
SD									
TN	V	V	N	A	V	N	V	V	
TX				A	A	A	A		
UT	V	V	N		V	V	V	V	
VT	A	A	N	A	A	A	A	A	
VA	A	A	A	A	A	A	A	A	
WA	A	A	N	A	A	A	A		
WV	n/a								
WI	A	A	N	A	A	A	A		
WY	A						A		

TABLE 3-18

QUESTION 27: RADIOLOGICAL EMERGENCY KITS

LEGEND: K = packed in a kit
A = available within agency
B = available, must borrow
N = not available through normal channels

	Air Packs	Filtered Face Masks	Protective Clothing and Shoe Covers	Signs, Ropes, Markers	First Aid Kit	Maps	Camera	Flashlight	Tape Recorder	List of Telephone Numbers	Other
AL	K	K	K	K	K	K	K	K	K	K	
AK	A, B	A, B	A, B	A, B	A, B	A, B	A, B	A, B	A, B	A	
AZ	A	A	K	K	K	K	K	K	A	K	
AR	A	N	K	K	K	K	N	K	N	K	
CA			K				K				K
CO	K	K	K	K		K	K	K	K	K	K
CT	K	K	K	K	B	A	K	K		K	
DE	K	K	K	K	K	K	B	B	B	K	
FL		K	K	K	K	K	K	K	K	K	K
GA	K	K	K	K	K	K	K	K	K	K	
HI	B	K	K	B	K	K	K	K	K	K	

TABLE 3-18 (Cont.)

QUESTION 27: RADIOLOCICAL EMERGENCY KITS

LEGEND: K = packed in a kit
A = available within agency
B = available, must borrow
N = not available through normal channels

	Air Packs	Filtered Face Masks	Protective Clothing and Shoe Covers	Signs, Ropes, Markers	First Aid Kit	Maps	Camera	Flashlight	Tape Recorder	List of Telephone Numbers	Other
ID		K	K	K	A	A	K	K	K	K	
IL	A	A	A	A	A	A	A	A	A	A	
IN	A	K	K	K		K	B	K		K	
IA	K	K	K	K		K		K		K	
KS	K	K	K	K	K	K	K	K	K	K	
KY	K	K	K		K	K	K				
LA	B	K	K	K	K	K	K	K	K	K	
ME	A, B	A, B	A, B	A, B	A, B	A, B	A, B	A, B	A, B	A	
MD		K	K	B	B	A	K	A		A	
MA	B	B	B	B	B	B	B	B	B	A	
MI	K	K	K	K	K	K	K	K	K	K	

TABLE 3-18 (Cont.)

QUESTION 27: RADIOLOGICAL EMERGENCY KITS

LEGEND: K = packed in a kit
A = available within agency
B = available, must borrow
N = not available through normal channels

	Air Packs	Filtered Face Masks	Protective Clothing and Shoe Covers	Signs, Ropes, Markers	First Aid Kit	Maps	Camera	Flashlight	Tape Recorder	List of Telephone Numbers	Other
MN	K	K	K	K	K	K	A	K		A	K
MS		K	K			K		K		K	
MO	B	B	B	B	B	A	B	B	B	A	
MT		K	K	K	K	A	B	K	K	K	
NE		K	K	K	K	K	K	K	K	K	
NV		K	K	K	K	K	K	K	K	K	
NH		K	K	K	K	K				K	K
NJ	K	K	K	K	K	K	K	K	K	K	K
NM	K	K	K	K						K	
NY	N	K	K	K	K	K	K	K	N	K	
NC	B	K	K	K	K	K	A	K	A	K	

TABLE 3-18 (Cont.)

QUESTION 27: RADIOLOGICAL EMERGENCY KITS

LEGEND: K = packed in a kit
A = available within agency
B = available, must borrow
N = not available through normal channels

	Air Packs	Filtered Face Masks	Protective Clothing and Shoe Covers	Signs, Ropes, Markers	First Aid Kit	Maps	Camera	Flashlight	Tape Recorder	List of Telephone Numbers	Other
ND	K	K	K	K	K	K	A	K	A	K	
OH											
OK	K	K	K	K	A	K	K	K	K	K	
OR		K	K	K		K	K	K	K	K	
PA	K	B	K	K	K			K	A		K
PR											
RI	K	K	K	K	K	K	K	K	K	K	K
SC											
SD											
TN	K	K	K	K	K	K	K	K	K	K	
TX	K	K	K	K	K	K	K	K	K	K	

TABLE 3-18 (Cont.)

QUESTION 27: RADIOLOGICAL EMERGENCY KITS

LEGEND: K = packed in a kit
A = available within agency
B = available, must borrow
N = not available through normal channels

	Air Packs	Filtered Face Masks	Protective Clothing and Shoe Covers	Signs, Ropes, Markers	First Aid Kit	Maps	Camera	Flashlight	Tape Recorder	List of Telephone Numbers	Other
UT	K	K	K	K	K	K	K	K	K	K	
VT	K	K	K	K	K	K	A	K	A	K	
VA	B	B	B	B	B	B	B	B	B	A	
WA	K	K	K	K	K	K	K	K	K	K	
WV											
WI			K	K	K	K	A			K	
WY	B	B	B	B	B	B	B	B	B	A	

3.6 Transportation

Question 29: What state agency is responsible for the transportation of emergency response team members to the emergency site?

Twenty-eight states reported that the radiation control agency which responds to accidents is responsible for the transportation of emergency personnel, using either agency vehicles, the state motor pool or dedicated emergency response vehicles. Nine states reported that emergency response personnel use their personal vehicles. Five states indicated that the state police or highway patrol provide transportation, three states reported that transportation is the responsibility of the office of emergency services, three states reported that arrangements for transportation are ad hoc depending on the nature of the emergency and three states did not answer this question.

The above enumeration represents the "first choice" or "most frequent" transportation arrangements. Virtually all the states which responded have contingency planning or a solid basis in precedent for obtaining whatever transport mode is required to deal with an emergency.

Question 30: Is this transportation available on a 24 hour basis?

Virtually all the states reported that emergency transportation can be arranged on a 24-hour basis.

Question 31: What modes of transportation are available?

With respect to the specific modes of transportation available for emergency response, virtually all states reported that they have access to cars. In addition to cars, the states reported access to other modes of transport as follows: 47 states have access to aircraft, either fixed-wing, helicopter or both; 35 states have access to trucks, vans or both; 34 states have access to boats; and 5 states report access to other modes of transport, including snowmobiles, airboats or all-terrain vehicles.

Question 32: Is emergency fuel available on a 24 hour basis for all transport modes?

With respect to the availability of fuel for emergency response on a 24-hour basis, thirty-one states indicated that fuel is available through arrangements with the

state police, Civil Defense or other emergency services organization; of these, one state indicated that all local jurisdictions are required by state law to maintain an emergency fuel supply and one state reported that only aircraft fuel is available. Seven states reported that no arrangements have been made, three states reported that they rely on commercial outlets only, three states indicated that this issue is part of current planning and seven states did not answer this question.

Question 33: Have arrangements been made with local military establishments to request additional mode of transportation if needed?

Thirty-four states indicated that they have forged formal linkages with local military bases through which supplemental transportation assistance can be requested. In most cases, these arrangements are with the National Guard, but several states reported that there is a department of military affairs within their state government organization. Of these thirty-four states, three indicated that arrangements with the military are applicable to fixed facility accidents only. Seven states reported that no arrangements had been made, and four states reported that there were only informal arrangements. One state indicated that liaison with the military is part of current planning and five states did not answer this question.

Question 34: What water transportation is available for emergency response to radiological transportation incidents occurring on waterways?

With respect to the availability of boats for use during an emergency response, twenty-four states reported that access was possible within state government, while nine states reported that it would be necessary to turn to Federal agencies (the U.S. Coast Guard or the U.S. Army Corps of Engineers) to secure this support. Thirteen states reported that boats were not available; most of these are states with no navigable waterways. One state reported that watercraft would be obtained from local government if needed, one state reported that this issue is part of current planning and three states did not answer.

TABLE 3-19
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
AL	responding agency	yes	4 cars, 1 helicopter			have access through other state agencies
AK	responding agency	yes	car; charter aircraft if needed	no formal plans	informal	U.S. Coast Guard
AZ	Arizona Atomic Energy Commission; highway patrol and/or National Guard	yes	cars, trucks, aircraft	yes	National Guard	Game and Fish Commission
AR	State Dept. of Health	yes	cars; National Guard supplies aircraft	yes	yes	Fish and Game Commission; U.S. Army Corps of Engineers
CA	no legal responsibility; Office of Emergency Services has coordinated emergency transportation as necessary	yes	cars, vans, aircraft		no; the Office of Emergency Services has adequate capability	
CO	State Dept. of Health; assistance from State Police and Highway Patrol, as needed	yes	cars, vans, aircraft		no	none
CT	State Dept. of Environmental Protection	yes	cars, vans, helicopter; State Police boats	no	yes	State Police and Dept. of Environmental Protection

TABLE 3-19 (Cont.)
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
DE	Dept. of Health & Social Services; Dept. of Natural Resources & Environmental Control; Emergency Operations	yes	cars, trucks, vans, helicopters, boats	yes	through DOD & FEMA	Dept. of Natural Resources and Environmental Control
FL	Div. of Health & Rehabilitative Services; Highway Patrol	yes	cars, trucks, vans, aircraft, boats	yes	no	Florida Marine Patrol
GA	emergency response program has own cars and trucks	yes	cars, trucks, vans, helicopters,boats	yes	Civil Defense and National Guard	Game and Fish Commission
HI	State Civil Defense	yes	cars, vans, aircraft, boats	yes	yes	U.S. Coast Guard; City and County of Honolulu Fire Boat
ID	State Dept. of Law Enforcement	yes	car, van, fixed-wing aircraft	yes	National Guard	rent if necessary
IL	personal vehicles or State Police	yes	cars, vans, aircraft, boats	aircraft fuel only; part of current planning efforts	yes	State Dept. of Conservation
IN	personal vehicles, State Police, state motor pool, State CD, local CD, National Guard	yes	cars, trucks, vans, aircraft, boats	yes	not necessary	State Dept. of Natural Resources

TABLE 3-19 (Cont.)
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
IA	responding agency or State Highway Patrol	yes	cars, vans, aircraft, boats		National Guard	available
KS	each agency provides own transportation; State Police escort if needed	yes	cars, vans aircraft, snowmobiles, plus any military vehicles	yes	yes	n/a
KY			cars, aircraft, boats			Water Safety, State Dept. of Transportation
LA	State Police	yes	cars, aircraft, boats	yes	National Guard	Fish and Wildlife Division
ME	private vehicles	yes	cars, vans, aircraft, boats, snowmobiles	yes - State law requires all communities to have tanks of fuel available	National Guard	Sea and Shore Fisheries
MD	Div. of Radiation Control or State Police	part of current planning	part of current planning	part of current planning	part of current planning	part of current planning
MA	team member personal vehicles; or State Police	yes	cars; helicopter through State Police	yes	yes	U.S. Coast Guard; State Dept. of Environmental Management

TABLE 3-19 (Cont.)
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
MI	Div. of Radiological Health vehicles; or state motor pool	yes	cars, aircraft through State Police	yes - all State Police posts	applicable to fixed facility accidents only	State Dept. of Natural Resources; also at county level
MN	State Patrol	yes	cars, vans, trucks, aircraft, boats, snowmobiles	yes	yes	U.S. Coast Guard
MS	Div. of Radiological Health	yes	cars, trucks, aircraft	yes	applicable to fixed facility accidents only	U.S. Coast Guard, State Dept. of Wildlife Conservation
MO	Highway Patrol	yes	cars, vans, aircraft, boats, 1 airboat	yes	National Guard	State Water Patrol
MT	State Dept. of Health and Environmental Sciences	yes	car, aircraft through National Guard	commercial outlets only	not formalized	n/a Fish and Game Commision could supply
NE	Div. of Radiological Health	yes	cars; aircraft through Civil Defense	through Civil Defense	Civil Defense only	U.S. Coast Guard
NV	personal vehicles or state motor pool	yes	cars, vans, trucks, aircraft	not formalized	yes	n/a
NH	State Radiological Control Agency or State Police	yes	cars; helicopter if emergency plan is involved, through National Guard	no; State Police do have 24-hour pumps	yes	State Police; Fish & Game Commission

TABLE 3-19 (Cont.)
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
NJ	Bureau of Radiation Protection or State Police	yes	cars, vans, aircraft, boats	no	not applicable for transportation accidents	State Marine Police
NM	State Police	yes	cars, vans, aircraft	yes	yes, through JNAC Albuquerque	n/a
NY	personal vehicles	yes	State Police and/or Environmental Protection can provide any transport mode required	commercial outlets only	Disaster Preparedness Office is within State Military Dept.	no formal plans
NC	Radiation Protection Section vehicles or State Highway Patrol	yes	cars, vans, trucks, helicopters	yes	National Guard	no formal plans; estimate 10 hours to arrange
ND	responding agency	yes	car, all terrain vehicles, helicopter	no	no	n/a
OH						
OK	personal vehicles or State Patrol	yes	cars, aircraft	yes	National Guard	U.S. Army Corps of Engineers, Tulsa
OR	Radiation Control Section or personal vehicles	yes	cars, vans, trucks, aircraft	yes	yes	no formal plans

TABLE 3-19 (Cont.)
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
PA	personal vehicles or State Police	through Pennsylvania Emergency Management Agency (PEMA)	cars, vans, trucks, aircraft, boats	State Police possibly, but mostly ad hoc; part of current planning	through PEMA	State Fish Commission
PR	State Civil Defense	yes	cars, trucks, vans, aircraft, boats	yes	no	U.S. Coast Guard or State Police
RI	Defense Civil Preparedness Agency or State Police	yes	cars, trucks, vans, aircraft, boats	yes	National Guard	Div. of Environmental Management or U.S. Coast Guard
SC						
SD	responding agency	yes	cars or fixed-wing aircraft	yes	yes	n/a
TN	State Dept. of Transportation or Civil Defense	yes	cars, trucks, vans, aircraft, boats	yes	yes	U.S. Coast Guard
TX	personal vehicles or State Police	yes	cars, trucks, vans, aircraft, boats; never have used any except cars	yes never have had to use	no formal plans	State Dept. of Parks & Recreation

TABLE 3-19 (Cont.)
TRANSPORTATION

STATE NAME	QUESTION 29 RESPONSIBILITY FOR TRANSPORT OF EMERGENCY PERSONNEL	QUESTION 30 TRANSPORT AVAILABLE ON 24-HOUR BASIS	QUESTION 31 MODES OF TRANSPORT AVAILABLE	QUESTION 32 EMERGENCY FUEL AVAILABLE ON 24-HOUR BASIS	QUESTION 33 LINKAGES WITH MILITARY FOR SUPPLEMENTAL TRANSPORT	QUESTION 34 AVAILABILITY OF WATER TRANSPORT
UT	Bureau of Radiological Health	yes	cars, trucks, vans, aircraft	yes	yes	n/a
VT	responsibility not assigned; each respondent provides own: personal vehicles; agency vehicles; State Police will provide escort	yes	cars, trucks, vans, aircraft, boats, snowmobiles	yes	informal	local fire depts.; U.S. Coast Guard on Lake Champlain
VA	ad hoc "take it as it comes"	ad hoc	ad hoc	ad hoc	no	various state agencies, or U.S. Coast Guard
WA	Dept. of Social & Health Services	yes	cars trucks, vans, aircraft, boats	commercial outlets only	through IRAP	Dept. of Environmental Health
WV	use any or all transport modes available and necessary	yes	cars, trucks, vans, aircraft, boats	yes	yes	State Dept. of Natural Resources
WI	Section of Radiation Protection vehicles, personal vehicles or State Police	yes	cars, trucks, vans, aircraft, boats	yes	through the Div. of Emergency Government	State Dept. of Natural Resources
WY	responding agency	yes	cars, trucks, vans, aircraft	yes	National Guard	n/a

3.7 Training

Question 35: How many members of the State Civil Defense Agency (or Office of Emergency Services) have had training in Health Physics?

(During the interviewing, "health physics training" was defined to be graduate level education in health physics. In a few special cases, personnel with extensive in- service training from the military were counted as health physicists.)

Twenty states reported that five or fewer of the personnel in civil defense/emergency services agencies have training in health physics, while four states reported that more than five of these personnel have health physics training. Eight states reported that among civil defense/emergency services personnel, access to health physics expertise is limited to RADEF trainees, and two states reported that they have only RERO trainees. Seven states reported that no personnel in the civil defense/emergency services agency have training in health physics. One state reported that no paid personnel in the civil defense/emergency services agency have training in health physics, but that they have a regular schedule of volunteers from industry who work in radiological emergency planning and among these volunteers are formally trained health physisists. Nine states did not respond to this question.

Question 36: How many members of the State Radiological Health Department are trained in radiological emergency response emergency?

Eighteen states reported that in radiological health agencies, five or fewer employees have training in radiological emergency response procedures, while twenty-five states reported that more than five employees in the radiological health agency have this training. Among states with more than five trainees, several states reported as many as thirty, forty, or fifty employees with this training. Eight states did not respond to this question.

Question 37: How many of the trained staff of the State Radiological Health Department are assigned to serve on radiological emergency response teams?

Eighteen states reported that five or fewer personnel with radiological emergency response training are assigned to the state response teams, and twenty-five states reported that more than five of these trainees are

assigned to response teams. One state which has a completely decentralized emergency response mechanism reported that this question is not applicable to its jurisdiction. Seven states did not respond to this question.

Question 38: Are the assigned members all at one location? If not indicate how many are distributed throughout the state.

Twenty-four states reported that personnel with training in radiological emergency response are stationed at more than one location around the state, and twenty-two states reported that trained personnel are stationed at only one location. Five states did not respond to this question.

(In the following enumerations for Questions 39 and 40, most states reported that a multiplicity of agencies have responsibility for training of the various groups of personnel; thus, the numbers reported below will add up to more than the fifty-one jurisdictions surveyed.)

Question 39: Who provides training in emergency response for radioactive materials incidents?

State and Local Police

Thirty states reported that civil defense/emergency services agencies are responsible for training, sixteen states reported that radiological health agencies are responsible for training, six states reported that the police training academy is responsible, three states reported in-house training, two states reported relying on RERO training, two states reported that the state department of environmental protection is responsible for training, one state reported that there is a statewide special training institute, one state reported that there is no state organized training program for police personnel, and five states did not respond to this question.

Local Firemen

Twenty-eight states reported that civil defense/emergency services agencies are responsible for training, fourteen states reported that radiological health agencies are responsible for training, six states reported that the state fire academy is responsible, two states reported relying on in-house training, one state sends some firemen to RERO training, two states reported that the state department of Environmental Protection is responsible for training, one state has a state wide special training institute, one state makes whatever arrangements it can with no particular scheduling, three states reported that

there is no organized training for local firemen, and six states did not respond to this question.

Radiological Health Personnel

Twenty states reported that radiological health personnel receive their training from the United States Nuclear Regulatory Commission, six states reported taking advantage of training programs organized by the United States Department of Energy, two states mentioned United States Environmental Protection Agency training programs, three states mentioned the Federal Emergency Management Agency, three states specifically mentioned the RERO training program, two states reported sending personnel to the Oak Ridge Associated Universities, and one state referred to national training programs in general. In addition to the above enumerated national training programs, thirteen states report relying on in-house training for radiological health personnel, nine states reported that radiological health personnel train through the state civil defense/emergency services office, nine states reported the professional and academic background of their personnel as the source of training, one state reported that training is carried out through the state department of environmental protection, one state reported that there are no training programs for radiological health personnel, and one state reported that it takes advantage of any opportunity that becomes available. Eight states did not respond to this question.

Civil Defense/Emergency Services

Thirteen states reported that the civil defense/emergency services personnel receive their training through the United States Nuclear Regulatory Commission, seven states reported that training is through the Federal Emergency Management Agency, four states reported taking advantage of training programs through the United States Department of Energy, two states report having sent personnel to the Oak Ride Associated Universities, two states made reference to national Civil Defense programs, four states specifically mentioned RERO training, one state specifically mentioned RADEF training, and one state mentioned making use of training through the United States Environmental Protection Agency. In addition to the above enumerated national training programs, one state mentioned that training is carried out through the state department of environmental protection, thirteen states reported that training for civil defense/emergency services personnel is carried out through in-house training programs, seven states reported that civil defense/emergency services personnel are trained through the state radiological health program, three states

report that civil defense/emergency services personnel rely on their professional and academic background, and one state reported taking advantage of any training opportunity that becomes available. Ten states did not respond to this question.

Question 40: How often is training conducted?

State and Local Police

Eleven states reported that training for state and local police is carried out at least annually, ten states reported that training is carried out more than once each year, nine states reported that training is carried out on a variable schedule whenever it is possible to make arrangements, six states reported that training for state and local police is available on demand, four states reported that each graduating class from the state police training academy receives training, one state reported that no training in radiological emergency management is available for state and local police, and ten states did not respond to this question.

Local Firemen

Six states reported that training in radiological emergency management procedures is carried out at least annually for local firemen, thirteen states reported that training is available more than once each year, eleven states reported that training is available on a variable schedule as they are able to make arrangements, four states reported that training for local firemen is available on demand, three states reported that each graduating class from the state fire academy receives training, two states reported that no training in radiological emergency management is available for local firemen, and twelve states did not respond to this question.

Radiological Health Personnel

Four states reported that training programs for radiological health personnel are available on an annual basis, five states reported that training is available more than once a year, twenty states report that training is not carried out on a schedule and that classes are arranged as they are able, five states reported that training among radiological health personnel is an on-going process, one state reported that training for radiological health personnel is available on demand, one state reported that no training programs for radiological health personnel are organized in the state, and fifteen states did not respond to this question.

Civil Defense/Emergency Services

Four states reported that training in radiological emergency response procedures is available on an annual basis, five states reported that training is available more frequently than once a year, twenty-one states reported that training is not carried out on a schedule and that classes are arranged as they are able, two states reported that training among civil defense/emergency services personnel is an on-going process, two states reported that training is available on demand, one state reported that no training for civil defense/emergency services personnel is arranged by the state, and sixteen states did not respond to this question.

Question 41: The portion of training consisting of field exercises.

State and Local Police

One state reported that all training for state and local police consists of field exercises, two states reported that most of the training consists of field exercises, fifteen states reported that some of the training is field exercise, five states reported that little of the training involves field exercises, and eleven states reported that none of the training is carried on in the field. Three states reported that the amount of field exercises was not known, and one state reported that design of training curriculum is part of current planning. Thirteen states did not respond to this question.

Local Firemen

Two states reported that all training for local firemen consists of field exercises, three states reported that most of the training is exercises, twelve states report that some of the training is exercises, six states reported that little of the training involves field exercises and eight states reported that training is all classroom work. Three states reported that the contents of firemen training programs was not known, and one state reported that the design of curriculum for training programs is part of current planning. Sixteen states did not respond to this question.

Radiological Health

One state reported that all training for radiological health personnel is in the form of field exercises, two states reported that most of the training is exercises, nine states reported that some of the training is field exercises, one state reported that little of the training is field exercises, and five states reported that train-

ing for radiological health personnel is all classroom work. Three states were not able to comment on the contents of the training curriculum, and two states mentioned that radiological health personnel train through nationwide training programs and the contents were not known to state personnel. One state reported that the design of training curriculum is part of current planning. Twenty-seven states did not respond to this question.

Civil Defense/Emergency Services

One state reported that all training for civil defense/emegency service personnel is field exercises, two states reported that most training is field exercises, six states reported that some of the training involves field experience, two states reported that little of the training is field exercises, and five states reported that training for civil defense emergency services personnel is all classroom work. Four states were not able to comment on the contents of the training curriculum reported and two states reported that civil defense/emergency services personnel train through nationwide training programs and the contents of these programs were not known to state personnel. One state reported that design of training curriculum is part of current planning. Twenty-eight states did not respond to this question.

Question 42: How often are practice exercises conducted to test the effectiveness and operation of the State Radiological Emergency Response Plan?

Twenty-eight states reported that a state wide drill to test the effectiveness of the state emergency response plan had been conducted within the last year. Two states reported that it had been over a year since an exercise was carried out. Seven states reported that they have had no drills, that they rely on live incident experience to assess the effectiveness of the plan, two states reported that they have no planned exercise, and five states indicated that the institution of state-wide exercises is part of current planning. Seven states did not respond to this question.

Question 43: How many State Radiological Emergency Response personnel have attended the "Radiological Emergency Response Operation" course in Nevada sponsored by the NRC?

Twenty-seven states reported that they have ten or fewer personnel within the emergency response organization who have attended the RERO course. Sixteen states reported

that they have more than ten personnel with RERO training, and two states report that they have no personnel with RERO training. Six states did not respond to this question.

TABLE 3-20
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
AL					
AK					
AZ	RERO trainees only	Arizona Atomic Energy Commission: 5	5	one location	9 at state level, plus 12 local fire and police
AR	RADEF training only	12	12	one location	12
CA	Office of Emergency Services - 7; other state agencies and some counties - 31 additional	32	32	wide distribution in regional offices and some local offices	10
CO	11	18	18	15 at Denver 3 at Grand Junction	9
CT	3	5	5	one location; staff lives throughout state, on call 24 hours; in field through day	3
DE	0	4	4	one location	18, plus more scheduled

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:				
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:				
St & Lcl Police: Local Firemen:	Div. of Emergency Services	twice annually	33%	none
Rad Health: CD/Emrg Srvcs:	NRC, DOE, FEMA, NRC	annually as available	50% not known	
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	State Dept. of Health	twice annually	40%	twice annually January 1979
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Office of Emergency Services (OES); California Special Training Institute (CSTI); some cities and counties provide for local personnel	OES - twice annually; CSTI - regular schedules; other, as available	some, not much	no exercises; actual experience only
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	State Dept. of Health	3 times each year	mostly classroom	no exercises; actual experience only
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	in house and State Office of Civil Preparedness State Office of Civil Preparedness in-house and Civil Preparedness in house and FEMA	varies, as available and able	not known	4 times in 1979
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Div. of Emergency Planning & Operations State Fire Academy in house in house and NRC		75%	3 times in 1979

TABLE 3-20 (Cont.)
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
FL	25% (est.)	80% (est.) (all staff have some, 80% have thorough training)	all staff are assigned	24 from Central Office; plus some local personnel	80% (see #36)
GA	5	8-10	8-10; plus 5 in Environmental Protection Div.	all in Atlanta, plus 1 field office	12-15
HI	RADEF training only	2	2	one location	4
ID	RERO trainees only	6	6	5 regional offices	6
IL	2	35	35	throughout the state	30
IN	1	3	3; plus approx. 20 volunteers around state	one location; plus approx. 20 volunteers around the state	2-4

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police: Local Firemen:	Div. of Health & Rehabilitative Services; Bureau of Disaster Preparedness	varies, whenever possible	not known	exercise full plan 3 times each year
Rad Health: CD/Emrg Srvcs:	professional and/or academic background in house and DHRS			
St & Lcl Police: Local Firemen:	Human Resources; Environonmental Protection; State CD	annually varies	50% 5%	fixed facility exercises annually; transportation accident drill, one county only, December 1979
Rad Health: CD/Emrg Srvcs:	DOE, NRC EPA	annually	75%	
St & Lcl Police: Local Firemen:	local police and fire have training staff augmented by state CD personnel	annual semi-annual	0 100%	city and county of Honolulu, annually
Rad Health:	professsional and/or academic background			
CD/Emrg Srvcs:	in house	on-going		
St & Lcl Police: Local Firemen:	scheduled for RERO	annually		annually April 1979
Rad Health:	RERO; professional and/or academic background	as available		
CD/Emrg Srvcs:	RERO; RADEF			
St & Lcl Police: Local Firemen:	State Dept. of Public Health	as available	hazardous materials officers have half-day exercise local drills	not carried out; part of current planning
Rad Health: CD/Emrg Srvcs:	NRC State Dept. of Public Health		live incident experience only	
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	CD Maintenance and Calibration Shop	on demand, approx. 40 session each year	all classroom	not known

TABLE 3-20 (Cont.)
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
IA	none	6	6	one location	5
KS	1	5	4	3 at central, 1 remote	5
KY		6	6	one location	6
LA	RADEF training only	5	5, not including response teams around state and other office staff	staff at central office; response teams around state	5 staff; plus local CD, state CD, state troopers: 22 persons statewide
ME	none on paid staff, but some volunteers from industry and universities	9	9	one location unless on field duty	4 at state level; plus 8-10 county officials
MD		1 - Div. of Radiation Control; 1 - Environmental Health Administration; plus others	all trainees are assigned	one location	
MA	3 (est.)	5 (est.)	n/a decentralized response structure; capability is external to State Dept. of Public Health	distributed at localities around state	8-10 at state level; plus more local officials

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police: Local Firemen:	State RADEF officer; local CD	annually 25 classes per year	all classroom	annually; May 1979
Rad Health: CD/Emrg Srvcs:	in house; NRC	on-going	40%	
St & Lcl Police: Local Firemen:	Div. of Emergency Preparadness	annual varies	50% (est.)	annually; December 1979
Rad Health: CD/Emrg Srvcs:	in house; DOE; NRC train jointly with Radiological Health	annual		
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	some training through Radiation Control Branch, but most through NRC	varies	unknown	
St & Lcl Police: Local Firemen:	state CD; State Nuclear Energy Div.	LSU Law Institute LSU Fire Institute	part of current planning	annual
Rad Health: CD/Emrg Srvcs:	NRC, DOE, EPA DOE, NRC, FEMA	on-going as available		
St & Lcl Police:	training academy	when available		twice annually
Local Firemen:	Civil Emergency Preparadness	twice annually	entire system is exercised in the field twice annually	
Rad Health:	academic background			
CD/Emrg Srvcs:	in house	when available, plus refresher every 6 months		
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	State Civil Defense			part of current planning
St & Lcl Police: Local Firemen:	State Civil Defense; State Dept. of Public Health; Fire Fighting Academy; Criminal Justice Training Council	3-4 times annually	very low	In conjunction with power plant exercises; also, local CD areas
Rad Health: CD/Emrg Srvcs:	national training programs	on-going	national training program	

TABLE 3-20 (Cont.)
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
MI	RADEF training only	5	5	2 locations	5, plus some state police
MN	1	12	12	one location	5
MS	4 or 5	6	6	one location	10, plus more scheduled
MO	1; 3 backup from Radiological Health	7-8 (all)	7-8	one location	approx. 50 statewide
MT	none	2	3	one location unless on field duty	1
NE	2	6	6	2 locations	4
NV	4	3	3	2 locations	none
NH	1	3	3	2 locations	13, including volunteers from industry

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police:	training academy			yearly for fixed facilities
Local Firemen:	occasional			
Rad Health:	RERO, Oak Ridge,			
CD/Emrg Srvcs:	on-the-job training			
St & Lcl Police:	Div. of Emergency Services	annual	15%	annually; October 1979
Local Firemen:		not known		
Rad Health:	In house; NRC	as available		
CD/Emrg Srvcs:				
St & Lcl Police:	Civil Defense; Radiological Health	as requested	>10%	none yet, scheduled to begin in 1980
Local Firemen:	State Board of Health	not known	>1%	
Rad Health:	NRC; EPA, in-house	on-going	50%	
CD/Emrg Srvcs:	NRC; CD	infrequently		
St & Lcl Police:	Emergency Operations	once a month at different locations around state	20%	annually; December 1979
Local Firemen:				
Rad Health:				
CD/Emrg Srvcs:				
St & Lcl Police:	Div. of Emergency Services & Civil Defense have 2 courses: 4 hour and 2 day	6 4-hour sessions; 3 2-days sessions; many 4-hour "monitoring classes" each calander year	some "hands on" experience	formerly had exercises, none for several years
Local Firemen:				
Rad Health:	academic background plus NRC, FEMA	as available		
CD/Emrg Srvcs:				
St & Lcl Police:	State Civil Defense	training academy	10%	twice annually December 1979
Local Firemen:	no organized training	never		
Rad Health:	NRC	as available		
CD/Emrg Srvcs:	National CD programs			
St & Lcl Police:	training academy	each class	none	never "plenty of real experience
Local Firemen:	not known		none	
Rad Health:	academic background, NRC	as available		
CD/Emrg Srvcs:	NRC			
St & Lcl Police:	Civil Defense	twice each year	5%	twice annually December 1979
Local Firemen:				
Rad Health:	NRC, DOE	as available		
CD/Emrg Srvcs:	NRC, FEMA			

TABLE 3-20 (Cont.)
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
NJ	40+	60+	60+	one location, plus field duty	10
NM	2	6	6	3 locations	none
NY	4 or 5	5 or 6, plus more scheduled	all personnel available	decentralized response structure	20
NC	none	all technical staff: 13	all	one location	35 (est.)
ND	3 - State Dept. of Health 2 - Div. of Environmental Engineering	4 - State Dept. of Health 3 - Div. of Environmental Engineering	8-10 for all departments	several offices, all in Bismark	2
OH					
OK	RADEF training only	10	10	one location	10

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	State Dept. of Environmental Protection	each class at academy 40 classes each year semi-annual drill	100%	one annually at each facility November 1979
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Emergency Preparedness Radiation Protection Section	no schedule as needed no schedule	none	none
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	State Police Academy Fire Protection & Control Training any offerings that become available			fixed facility plan exercises unannounced communications drills
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Radiation Protection Section; Civil Preparedness; in-house NRC Radiation Protection Section, in-house			twice annually December 1979
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	not aware of any NRC Colorado Committee on Hazardous Materials	 no schedule		none; part of current planning
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:				
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Civil Defense; Radiological Health NRC plus 5-state regional training programs Radiological Health: one-on-one	one per month as available or needed	none, except RERO	none, but frequent live incidents

TABLE 3-20 (Cont.)
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
OR	1; all have FEMA training	15	15	one location	9, plus more scheduled
PA	RADEF training only	15	15; no team assignments	main office plus 3 field offices	1
PR	none	none exists	none exists	n/a	1
RI	3	4-5; plus 2 more at Emergency Medical Services	teams not fixed--all personnel are available	one location	6
SC					
SD	2		1	one location	2
TN				4 regional offices	13 (all on-scene coordinators)
TX	0	26, trained or scheduled	26	5 locations	24 by the end of 1980

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	In-house, NRC FEMA, NRC			annually October 1979
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Bureau of Radiation Protection does training on request	no schedule	all classroom	on-the-job training only; no drills
St & Lcl Police: Local Firemen:	State Civil Defense	continuously, as requested	all classroom	once every two or three years
Rad Health: CD/Emrg Srvcs:	no agency			
St & Lcl Police: Local Firemen:	Defense Civil Preparedness Agency	annual refresher	<10%	
Rad Health: CD/Emrg Srvcs:	academic background; RERO; Oak Ridge; NRC	as available		
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:				
St & Lcl Police:	Div. of Emergency & Disaster Services	annual	none	annually
Local Firemen:	local Emergency Services	as available		
Rad Health: CD/Emrg Srvcs:	Div. of Emergency & Disaster Services	annual		
St & Lcl Police: Local Firemen: Rad. Health: CD/Emrg Srvcs:	Office of Civil Defense and Emergency Preparedness; Div. of Radiological Health	initial in-service training		annually in counties; twice annually statewide twice in 1979
St & Lcl Police:	Law Enforcement Academy; also RERO	each class	none	none yet; plan calls for annual drill
Local Firemen:	Texas A&M Fire School		75%	
Rad Health: CD/Emrg Srvcs:	academic background, NRC RERO, Battle Creek	as available	depends on what course	

TABLE 3-20 (Cont.)
TRAINING

STATE NAME	QUESTION 35 CD/EMERGENCY SERVICES PERSONNEL WITH HEALTH PHYSICS TRAINING	QUESTION 36 RADIOLOGICAL HEALTH PERSONNEL WITH EMERGENCY RESPONSE TRAINING	QUESTION 37 EMERGENCY RESPONSE TRAINEES ON EMERGENCY RESPONSE TEAMS	QUESTION 38 DISTRIBUTION OF TRAINED PERSONNEL	QUESTION 43 PERSONNEL WITH RERO TRAINING
UT		4	4	one location	4 at state level; 1 Salt Lake City
VT	none with degree; on-the-job training only	5	5	3 locations	10 at state level
VA		9	9	central office plus two field officers	9
WA	RADEF training only	13	13	2 locations	13
WV	2		3	1	4
WI	RADEF training only	2	2	all state employees at central office; volunteer team members around state	
WY	1	1	2	one location	1

TABLE 3-20 (Cont.)
TRAINING

AGENTS	QUESTION 39, 40, 41 RADIOACTIVE MATERIALS EMERGENCY RESPONSE TRAINING: WHO PROVIDES TRAINING	HOW OFTEN IS TRAINING CONDUCTED	PROPORTION OF FIELD EXERCISES	QUESTION 42 PRACTICE EXERCISES FOR STATE PLAN
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	none	none	n/a	n/a no plan
St & Lcl Police: Local Firemen:	Div. of Civil Defense	on request	33%	annually
Rad Health: CD/Emrg Srvcs:	NRC NRC; FEMA	as available		
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	joint effort by Bureau of Radiological Health and Office of Emergency Services	ad hoc	combination: more practice, less theory	annually
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Radiological and Occupational Health	annually	33%	annually; frequent unannounced communications checks
St & Lcl Police: Local Firemen:	Office of Emergency Services; Radiological Health Fire Extension Service	annually	30-50%	annually February 1980
Rad Health: CD/Emrg Srvcs:	NRC; DOE; FEMA	as available		
St & Lcl Police: Local Firemen:	Radiation Protection Section; State Civil Defense Radiological Protection Section, plus fire-specific training	annually	some	annually July 1979
Rad Health: CD/Emrg Srvcs:	academic background, plus NRC; DOE; FEMA	as available		
St & Lcl Police: Local Firemen: Rad Health: CD/Emrg Srvcs:	Maintenance & Calibration Shop, Disaster Control & Civil Defense	as requested and possible	none	n/a no plan

3.8 Legal Issues

Question 44: ...g an emergency, does the state have the authority to conduct operat... s on private property? If so under what provision?

Thirty-two states reported that emergency response personnel are able to conduct operations on private property. Three states reported that permission to enter private property is contingent upon the governor's declaration of emergency, and three states reported that a police escort is required to enter private property. One state reported that new legislation is currently being sought, and four states reported that this issue is unclear. In six states, emergency response personnel were unable to answer this question, and two states did not respond.

Question 45: Does the state have the authority to seize or condemn private property during an emergency? If so, under what provision?

Thirty-three states reported that the power to seize or condemn private property is clearly enunciated in emergency operations or public health statutes. Three states reported that the governor's declaration of emergency is required to seize or condemn private property, three states reported that a police escort is required, and one state reported that the power to seize or condemn is vested the state fire marshall only and that new legislation is under consideration. Two states indicated that this issue is unclear and one state reported that new legislation is in progress. In six states, emergency response personnel were not able to answer this question and two states did not respond.

Question 46: If an incident occurs on state property, does the response team need permission from the state agency involved prior to responding to the emergency situation on their property?

With respect to the possibility that an incident may occur on state property, thirty-nine states reported that it would not be necessary to obtain persmission from the state agency involved to enter the state property. One state reported that it would be necessary to obtain permission. Two states indicated that this question is not applicable to the response teams because the response teams work through police agents. In seven states, emergency response personnel were not able to answer this question and two states did not respond.

Question 47: Are individuals, from both public and private sectors who assist in emergency response, protected from liability by an insurance program or indemnity provisions of the stte statute? Please explain.

Twenty-seven states reported that emergency response workers are protected from personal liability. Five states reported that emergency response workers are not protected. Among the five states which indicated that emergency response personnel are not protected, one state indicated that while state personnel are not protected, the Tort claims provisions do protect private individuals who assist in an emergency operation, and another state indicated that the protection for emergency response personnel has never been officially directed to cover radiation emergencies. Seven states indicated that this issue is unclear. Three states reported that protection from liability is conditional. Among these three states, one state indicated that only personnel acting under orders from the emergency services office are protected and that the emergency services office is the only state agency with this form of protection, one state indicated that this protection is extended only when a disaster has been declared by the governor, and one state indicated that emergency response personnel become deputy law enforcement officials. In seven states, emergency response personnel were not able to answer this question, and two states did not respond.

Question 48: Do state statutes or other documents assign responsibility for costs incurred during emergencies, such as loss of property or evacuation costs?

With respect to the costs which may be incurred during an emergency, eighteen states reported that statute law clearly assigns the responsibility for costs to the owner or carrier, as appropriate, of the source material. However, in one state this law is applicable to fixed facility accidents only and in several states cost assignment is limited to decontamination and clean up operations, the cost of emergency response being assumed by the state. Twelve states reported that there is no statute law to assign costs. Among these twelve states one state reported that while there is no law there is a regulated procedure for assigning costs, and another state reported that there is a policy to avoid burdening the tax payers. Ten states reported that this issue is unclear. Among those states reporting an unclear status, one state indicated that costs associated with hazardous material accidents are covered by a "spill act", but that the status of radioactive materials is unclear. Two states reported that new legislation is currently in progress. In seven states, emergency response personnel were not able to answer this question, and two states did not respond.

TABLE 3-21
LEGAL ISSUES

STATE NAME	QUESTION 44 CONDUCT OPERATIONS ON PRIVATE PROPERTY	QUESTION 45 SEIZE OR CONDEMN PRIVATE PROPERTY	QUESTION 46 PERMISSION TO ENTER STATE PROPERTY	QUESTION 47 EMERGENCY WORKERS PROTECTED FROM LIABILITY	QUESTION 48 ASSIGN RESPONSIBILITY FOR COSTS
AL	yes	yes	no	liability protection for state employees is guaranteed by the state constitution	applicable to fixed facilities only
AK					
AZ	yes	yes	no	yes	yes
AR	yes	yes	no	yes	yes
CA	for saving life and property, yes; other entry is regulated	yes	no	yes	no statute law, but there is a regulated procedure for recovering decontamination costs
CO	yes	yes	no	yes	yes
CT	yes	unclear, use police escort	no	yes	unclear
DE	unclear	State Fire Marshall is only officer with this power; seeking new legislation	no	yes	unclear
FL	yes	yes	no	unclear	unclear
GA	yes	yes	no	yes	yes
HI	yes	yes	no	yes	yes
ID	yes	yes	yes	unclear	no

TABLE 3-21 (Cont.)
LEGAL ISSUES

STATE NAME	QUESTION 44 CONDUCT OPERATIONS ON PRIVATE PROPERTY	QUESTION 45 SEIZE OR CONDEMN PRIVATE PROPERTY	QUESTION 46 PERMISSION TO ENTER STATE PROPERTY	QUESTION 47 EMERGENCY WORKERS PROTECTED FROM LIABILITY	QUESTION 48 ASSIGN RESPONSIBILITY FOR COSTS
IL	unclear; Emergency Services Disaster Act of 1975 gives Director of Public Health broad authority; not resolved	see #44	no	yes	no; litigation is required on a case-by-case basis
IN	yes	yes	no	unclear	unclear
IA	yes	yes	no	unclear	unclear
KS	yes	yes	no	if operating under orders from Div. of Emergency Preparedness - only state agency with this protection	cost of emergency response is internalized; cost of cleanup is responsibility of owner
KY					
LA	yes	yes	no	as agents of the state, the state is liable	unclear
ME	yes	yes	no	yes	state assumes cost of emergency response; cleanup is responsibility of owner
MD	yes	yes		unclear	no
MA	yes	yes	no	yes	yes
MI				yes, if a disaster is declared	

TABLE 3-21 (Cont.)
LEGAL ISSUES

STATE NAME	QUESTION 44 CONDUCT OPERATIONS ON PRIVATE PROPERTY	QUESTION 45 SEIZE OR CONDEMN PRIVATE PROPERTY	QUESTION 46 PERMISSION TO ENTER STATE PROPERTY	QUESTION 47 EMERGENCY WORKERS PROTECTED FROM LIABILITY	QUESTION 48 ASSIGN RESPONSIBILITY FOR COSTS
MN	yes	yes	no	chapter 12 of Minnesota Code outlines deputizing powers; emergency response personnel become deputies	yes; owner is responsible - there is always a hearing afterwards to determine and assign costs
MS	yes	yes	no	agency personnel not protected; Tort claims provisions do protect private individuals who assist	no
MO	yes	yes	no	yes	yes
MT	new legislation in process	new legislation in process	no	yes	new legislation in process
NE					
NV	yes	yes, if there is a threat to public health	no	yes	yes
NH	yes	yes		no; recent memo from attorney general's office says state would defend state employees in a civil suit	no
NJ	yes	yes	no	no, in process; never officially directed to cover radiation events	unclear; "hazardous substances" covered by Spill Act, radioactive not explicitly included
NM	yes	yes - seizure of sources under Radiation Protection Act	no	yes	no

TABLE 3-21 (Cont.)
LEGAL ISSUES

STATE NAME	QUESTION 44 CONDUCT OPERATIONS ON PRIVATE PROPERTY	QUESTION 45 SEIZE OR CONDEMN PRIVATE PROPERTY	QUESTION 46 PERMISSION TO ENTER STATE PROPERTY	QUESTION 47 EMERGENCY WORKERS PROTECTED FROM LIABILITY	QUESTION 48 ASSIGN RESPONSIBILITY FOR COSTS
NY	unclear	yes	no		
NC	unclear	yes	no	yes	yes
ND	yes	yes	no	unclear	yes
OH					
OK	yes	unclear - try to contact owner and obtain permission	no	yes	no statute provisions, but there is a policy to avoid burdening the taxpayers
OR					
PA	yes	yes	no	yes	no
PR	yes	yes	no	yes	no
RI					
SC					
SD	yes	yes	no	no	no
TN	yes	yes	no		unclear; carrier is required to reimburse, but not in all cases

TABLE 3-21 (Cont.)
LEGAL ISSUES

STATE NAME	QUESTION 44 CONDUCT OPERATIONS ON PRIVATE PROPERTY	QUESTION 45 SEIZE OR CONDEMN PRIVATE PROPERTY	QUESTION 46 PERMISSION TO ENTER STATE PROPERTY	QUESTION 47 EMERGENCY WORKERS PROTECTED FROM LIABILITY	QUESTION 48 ASSIGN RESPONSIBILITY FOR COSTS
TX	yes	yes	no	yes	no
UT	emergency response personnel work through state police or sheriff; not applicable to response team	see #44	see #44	unclear	unclear
VT	If governor declares emergency, power is absolute; - historically, have worked with locals to obtain consent - no blanket provision	see #44	see #44	yes	yes
VA	use police escort; same law as fire or holdup ("probable cause"): police actually go in	see #44	no	no	yes
WA	county sheriffs have authority, can declare local emergency; response personnel work through sheriff's office	authority is at local level - see #44	no	yes	unclear
WV	yes	yes	no	yes	currently requires litigation; new legislation being sought
WI	yes	yes	no	yes	yes
WY	technically, no; act informally under Natural Disaster Plan provisions	requires governor's declaration of emergency	no	yes	yes

3.9 Funding

Question 49: What is the annual budget of the State Civil Defense Agency or Office of Emergency Services?

The answers received for this question are so variable that no meaningful summarization is possible. Only twenty-eight states responded to this question. Some states included state and Federal monies appropriated to the civil defense/emergency service agency, while other states included only state funds. Additionally, several states indicated that a sizeable portion of the agency budget is pass-through appropriations which are dispersed to local jurisdictions.

Question 50: How much of this is devoted to response and training for hazardous materials spills and releases?

Only twenty-six states responded to this question; of these, only eight states were able to provide firm figures. Several states indicated that the accounting system in their state does not separate out these items. Among the other answers received were such items as: the average cost of a response; the salary of the Training Officer; estimates as to the amount of person hours devoted; and, "none". It is clear that the states do not keep account of funds or personnel time in a manner which could elucidate this question without a careful audit using basic state budget documents.

Question 51: How much of the State Radiological Health Department budget is spent for training and response to transportation related radiological incidents?

Thirty-one states responded to this question, and only six states were able to offer firm figures. Answers received included: "it's just part of what we do"; "negligible"; "estimate 250 person hours"; and, "not known".

Question 52: What additional funds (if any) do you thnk are needed to upgrade the statewide emergency response to a level deemed adequate for most situations?

Forty-two states responded to this question. Three states consider themselves adequately prepared and had no pressing requirements. Many states mentioned the desire to outfit a communications/mobile laboratory vehicle. Several states expressed a desire to send more state police and local personnel to the RERO training program, and other states mentioned that they would like to hire more personnel to expand their in-state training programs. Most of the responses were quite specific to each state's circumstances and defy summarization.

TABLE 3-22
FUNDING

STATE NAME	QUESTION 49: BUDGET FOR CIVIL DEFENSE OR EMERGENCY SERVICES	QUESTION 50: PROPORTION OF CD/EMERG SR , DEVOTED TO RE NSE AND T A ING	QUESTION 51: PROPORTION OF RAD HEALTH BUDGET DEVOTED TO RESPONSE AND TRAINING	QUESTION 52: FUNDS NEEDED TO UPGRADE EMERGENCY RESPONSE PROGRAM
AL				
AK				
AZ	Arizona Atomic Energy Commission FY 79-80: $400,000 proposed FY 80-81: $1,500,000 new communications system, new equipment	< $10,000		
AR	Office of Emergency Services: $1,500,000 includes appropriations to local CD programs; includes approx. 1/2 Federal matching funds	average cost of response per incident: $10,000	part of mandate; accounting system does itemize	consider themselves adequately prepared
CA	Office of Emergency Services, FY 78-79 State $2,243,474 Fed $2,122,724 Total $4,366,198			several studies to determine needs in process
CO				
CT	Radiation Control Office, State Dept. of Environmental Protection: (est. $200,000		none of the state appropriation	capital equipment $75,000 other $20,000 Total $95,000
DE	Div. of Emergency Planning & Operations: $370,000	$23,000	$7,000 - training only	training officer $12,000 maintenance $ 5,000 Total $17,000
FL	Division of Disaster Preparedness: $125,000		none; take people off of other jobs for training, comes off of other budgets $20,000 (est)	capital equipment $100,000 training $ 30,000 mainten. $ 15,000 other $ 15,000 Total $160,000
GA				capital equipment $20-30,000 training $3-4,000/yr maintenance $10-15,000/yr other $10-15,000/yr

TABLE 3-22 (Cont.)
FUNDING

STATE NAME	QUESTION 49: BUDGET FOR CIVIL DEFENSE OR EMERGENCY SERVICES	QUESTION 50: PROPORTION OF CD/ EMERG SRVCS DEVOTED TO RESPONSE AND TRAINING	QUESTION 51: PROPORTION OF RAD HEALTH BUDGET DEVOTED TO RESPONSE AND TRAINING	QUESTION 52: FUNDS NEEDED TO UPGRADE EMERGENCY RESPONSE PROGRAM
HI	State Deptartment of Defense: $796,000	RADEF Training Officer's Salary $16,000		capital equipment $25,000 training $ 5,000 mainten. $ 5,000 --- all their detectors are old donations--would like to get modern instruments
ID			estimate 3-4 man weeks/year ($2,000)	capital equipment $ 2,000 mainten. $ 2,000 --- would like to send 4 or more personnel to RERO
IL	Emergency Services & Disaster Agency: $1,300,000 includes appropriations dispersed to local jurisdictions			a new bill lobbied by Public Health assess the nuclear industry for emergency preparedness and response
IN	State Deptartment of Civil Defense $300,000 (est)			capital equipment $50,000 training $10-20,000 other $50-60,000 to put trainers into Police & Fire Academies
IA	State Office of Disaster Services $241,000	none	negligable	capital equipment $100,000 training $10,000/yr mainten. $ 2,000 other $25,000/yr for field exercises
KS	State Division of Emergency Preparedness $191,000			capital equipment $100,000* training $ 50,000 mainten. $ 10,000** other $ 1,000 * - vehicles **- part-time work
KY				
LA	as of 1/1/80, Nuclear Energy Div. becomes part of a new Office of Environmental Affairs; budgeting is unknown			have a proposal before the legislature for the ideal program: $323,000 start-up $ 80,000 continuation

TABLE 3-22 (Cont.)
FUNDING

STATE NAME	QUESTION 49: BUDGET FOR CIVIL DEFENSE OR EMERGENCY SERVICES	QUESTION 50: PROPORTION OF CD/ EMERG SRVCS DEVOTED TO RESPONSE AND TRAINING	QUESTION 51: PROPORTION OF RAD HEALTH BUDGET DEVOTED TO RESPONSE AND TRAINING	QUESTION 52: FUNDS NEEDED TO UPGRADE EMERGENCY RESPONSE PROGRAM
ME	Civil Emergency Preparedness $138,000	not itemized	not known "it's just part of what we do"	would like a dedicated communications vehicle and would like to expand training programs
MD				
MA	Disaster Preparedness Program $650,000	50% (est) for all training; < 10% for all hazardous materials training; < 5% for radioactive materials training	not known	capital equipment $100-200,000 for field communications & air monitoring train. $25-30,000 main. $15-20,000
MI		very small	< 1%	$300,000 being programmed
MN	Div. of Emergency Services $2,000,000	$145,000	estimate 250 person hours in 1979	capital equipment $500,000 training $ 80,000 mainten. $ 20,000 --- the above is incorporated into a proposal before the legislature
MS		$1-3,000	not known	captial equipment $100,000 training $ 50,000 other $50,000/yr
MO	Emergency Operations Program, Adjutant General's Office: $6,000,000, includes state appropriation, pass through and Federal matching funds			no projections available; new program, spending a lot now to tool up
MT		2-FTE personnel in maintenance and calibration shop; 40% of their time is spent on training		want to send more to RERO plus add 1 more FTE for training
NE			5% (est)	consider themselves to be well prepared for transportation accidents

TABLE 3-22 (Cont.)
FUNDING

STATE NAME	QUESTION 49: BUDGET FOR CIVIL DEFENSE OR EMERGENCY SERVICES	QUESTION 50: PROPORTION OF CD/ EMERG SRVCS DEVOTED TO RESPONSE AND TRAINING	QUESTION 51: PROPORTION OF RAD HEALTH BUDGET DEVOTED TO RESPONSE AND TRAINING	QUESTION 52: FUNDS NEEDED TO UPGRADE EMERGENCY RESPONSE PROGRAM
NV	Radiation Control Program, Consumer Health Protection Services: $141,452	none	1978 - none; 1979 - several thousand dollars	would like to purchase sources for calibration and new, modern equipment
NH		< 1%	< 2%; training is funded by other agencies but radiological health pays trainers' salaries	capital equipment $30,000* mainten. $10,000 other $ 1,000 * - communications
NJ	Dept. of Environmental Protection $500,000 for radiation and other hazardous substances	10%	$3,000 for personnel $25,000 per drill $55,000 per year	capital equipment $700,000 training $ 50,000 mainten. $ 50,000 other $ 21,300
NM			approximately 50%	no comment "too complex"
NY				
NC			$2,000	$500,000 for fixed monitoring program plus 7 new staff $750,000
ND	Disaster Emergency Services $500,000	$1,000	1% (est)	capital equipment $30,000* training $10,000 mainten. $10,000 * - vehicles
OH				
OK		not known	small	$65,000 - communications equipment/ mobile lab
OR			< 1%	capital equipment $50,000 training $50,000 mainten. $10,000 other $15,000
PA	Emergency Management Agency $2,000,000	not separated out, "it's just what we do"		no comment except more training resources from Federal programs would be useful--video cassettes, etc., increased availability

TABLE 3-22 (Cont.)
FUNDING

STATE NAME	QUESTION 49: BUDGET FOR CIVIL DEFENSE OR EMERGENCY SERVICES	QUESTION 50: PROPORTION OF CD/ EMERG SRVCS DEVOTED TO RESPONSE AND TRAINING	QUESTION 51: PROPORTION OF RAD HEALTH BUDGET DEVOTED TO RESPONSE AND TRAINING	QUESTION 52: FUNDS NEEDED TO UPGRADE EMERGENCY RESPONSE PROGRAM
PR	State Civil Defense FY 1980 $883,300 state funds only	not itemized	n/a; no radiological health program	capital equipment $50-100,000 training > $25,000 mainten. > $25,000 other > $10,000 for publications
RI			< 1%	capital equipment $100,000 training $ 5,000 mainten. $ 5,000 other $ 50,000* * - personnel
SC				
SD	Div. of Emergency and Disaster Services $98,000 state appropriation only	none	not known	capital equipment $100,000 training $ 60,000 mainten. $ 70,000 other $ 10,000
TN	Office of Civil Defense and Emergency Preparedness $1.636 million	2.5% hazardous materials training 5.4% incident response 7.9% total	not known	microwave communications network $1.5 million
TX	classic CD is in State Dept. of Health; Emergency Services is in	known	5% of 1 person year	capital equipment $250,000 maintenance $ 50,000
UT	Salt Lake City CD representative travels statewide; not sure if there is a state CD program	not known	total budget for Bureau of Radiological Health - $93,000; fraction for training and response not known	consider themselves adequately prepared
VT	Div. of Civil Defense approx. $160,000; 50/50 matching funds	not itemized	not known	need emergency vehicles and more personnel, plus more funds for maintenance and testing
VA			very little	capital equipment over $100,000
WA			not available	capital equipment $30,000* training $20,000 mainten. $15,000 other $ 5,000 * - communications and hazardous materials vehicle

TABLE 3-22 (Cont.)
FUNDING

STATE NAME	QUESTION 49: BUDGET FOR CIVIL DEFENSE OR EMERGENCY SERVICES	QUESTION 50: PROPORTION OF CD/ EMERG SRVCS DEVOTED TO RESPONSE AND TRAINING	QUESTION 51: PROPORTION OF RAD HEALTH BUDGET DEVOTED TO RESPONSE AND TRAINING	QUESTION 52: FUNDS NEEDED TO UPGRADE EMERGENCY RESPONSE PROGRAM
WV	Office of Emergency Services (est) $250,000	$20,000		capital equipment $75,000 training $25,000
WI			small	have submitted budget request for mobile lab. and communications $250,000
WY	Disaster Control and Civil Defense $175,000 for all contingencies	very little	none	capital equipment $120,000[a] training $200,000[b] mainten. $ 70,000[c] $ 60,000[d] a - alpha instruments, field gear b - county personnel c - sources for calibration d - personnel

3.10 Actual Experience

Question 53: In the average year, approximately how many times is the state contacted by local agencies for radiological assistance for transportation accidents?

Forty-nine states reported on their experience with respect to receiving requests for assistance in transportation accidents involving radioactive materials. The number of requests received ranged from none to fifty, for a total of 275 requsts nationwide in the average year, with the mean calculated to be 5.6 requests for assistance per state per year. It should be noted that the states reported estimates for the average: one state mentioned that recent experience is down from historical experience, while another state (one of three with an active dump site) reported that the historical average was 3 per year but that they had had 2 per week in recent months. One state reported no transportation accidents but mentioned that they receive frequent calls concerning sources lost during shipment. Several states reported "one accident in 10 years," "two accidents since 1964," or other comments indicating infrequent accidents. One state reported very few transportation accidents in the field, but frequent accidents during handling at an airport.

The question did not address the distinction between radiological "incidents" and "accidents" (see glossary), but rather was concerned only with requests for assistance received by the state radiation emergency response organizations. The numbers of reportable incidents is much smaller, and the number of events which qualify as radiation accidents is smaller still.

Question 54: Approximately how many of these requests result in the state actually sending out a response team?

Twenty-eight states reported that a response team is activated for all notices received concerning transportation accidents involving radioactive materials, while fifteen states reported that some effort is made to ascertain the seriousness of the event during the notification phase and that not all notifications receive a response. Three states reported that they have never had any incidents and have never activated the response organization, and three states did not respond to this question.

Among states which reported that all notifications receive a response, several states mentioned that it is easier for them to activate for a trivial incident than to explain why they did not activate if an inquiry is made. Several states reported that the response team is

occasionally activiated for what turn out to be false alarms; one state mentioned that this happens frequently. Among states which do not activate for all notifications, two states mentioned that the decision to activate the state response organization is determined by the capability of the local officials in the jurisdiction where the incident occured.

Question 55: In the average year, approximately how many times has the state found it necessary to ask for Federal assistance in responding to transportation accidents involving radioactive materials?

Forty-six states reported that they have never called upon Federal personnel for assistance in transportation accident involving radioactive materials, and three states reported that they have called Federal officials for assistance. Two states did not respond to this question. Several states mentioned that, although they do not call for assistance, they do file a routine notification with Federal officials.

Among the states which reported that they have not called on Federal personnel for assistnace, four states mentioned that Federal installations within their borders (such as the Idaho National Engineering Laboratories, Brookhaven Laboratories, the Argon National Laboratory, U.S. DOE Nevada Operations Office, and others) are routinely notified and respond on behalf of the state if they are the nearest source of qualififed personnel. These uses of Federal personnel are an example of the informal component in the response organiztion in many states, where the primary concern is to get qualified technical personnel and instrumentation to the scene of an accident as quickly as possible. Additionally, several states mentioned that there have been cases when local first--on-the-scene officials have called federal installations because they are closest. In some of these cases, Federal personnel have responded while in other cases they have passed the notification on to the state radiation central office.

Six states mentioned that, rather than the state calling on Federal personnel, Federal personnel have called on state personnel to respond to an incident.

TABLE 3-23
ACTUAL EXPERIENCE

STATE NAME	QUESTION 53: TRANSPORTATION ACCIDENTS IN AVERAGE YEAR	QUESTION 54: HOW OFTEN IS RESPONSE TEAM ACTIVATED	QUESTION 55: HOW OFTEN DOES STATE REQUEST FEDERAL ASSISTANCE
AL	none (one incident in three years	none	never
AK	1 transportation accident in 10 years	never have any incidents	never
AZ	3	3	never
AR	1-2 (4 incidents in past 3 years)	at least one official responds to all requests	never
CA	8	8	1 time in past 5 years
CO	6	6	never
CT	3-6 per year	all requests receive a response	never ("generally, it's the other way around")
DE	1	all requests receive a response	never
FL	3-4	1-2	never
GA	2 incidents in past 2 years, plus 3 incidents in past 6 months at Atlanta Airport		never call for help, but do inform
HI	none	none	never
ID	3	3	never, but do call I.N.E.L.
IL	very few requests from local agencies, 6 per year; all transportation accidents, 2 per month	respond to approximately half of all requests, depending on circumstances	never
IN	1 per year	most requests receive a response	never
IA	4-6	2-3	never
KS	4 per year	all requests receive a response	never
KY	6	all	never, but do file a notification

TABLE 3-23 (Cont.)
ACTUAL EXPERIENCE

STATE NAME	QUESTION 53: TRANSPORTATION ACCIDENTS IN AVERAGE YEAR	QUESTION 54: HOW OFTEN IS RESPONSE TEAM ACTIVATED	QUESTION 55: HOW OFTEN DOES STATE REQUEST FEDERAL ASSISTANCE
LA	3-5 per year	assess situation over the telephone; 2-1 responses per year	never ("they call us")
ME	none (1 false alarm)	all requests receive a response	SOP is to inform IRAP in all cases
MD	6	6	never ("they call us")
MA	less than 1 per year, but there are frequent activations for false alarms	activate response teams 6-12 times each year	never
MI	6 per year (recent experience is down from historical experience)	all requests receive a response	never
MN	15 contacts	5 dispatches	never
MS	3-5 events per year	1-2 dispatches	never
MO	1 or 2 contacts	none yet	never
MT	4 per year	all requests receive a response	never by state local officials have called INEL 2 times in 11 years; not part of state protocols
NE	4-5	all requests receive a response	never
NV	2 per week recently; 3 per year is average	all requests receive a response	always inform U.S. DOE Nevada Operations Office
NH	receive requests approx. 1 per year	have actually responded twice since 1964	never
NJ	12 per year	all requests receive a response	never ("they call us")
NM	less than 1 per year	respond to almost all requests	never; but JNAC, Albuquerque, might respond before the state
NY	3-4 each year	almost all requests receive a response	Federal personnel have responded on behalf of the state when they are closer to the incident

TABLE 3-23 (Cont.)
ACTUAL EXPERIENCE

STATE NAME	QUESTION 53: TRANSPORTATION ACCIDENTS IN AVERAGE YEAR	QUESTION 54: HOW OFTEN IS RESPONSE TEAM ACTIVATED	QUESTION 55: HOW OFTEN DOES STATE REQUEST FEDERAL ASSISTANCE
NC	5 each year	almost all requests receive a response	one time; technical assistance on integrity of fuel shipping casks involved in rail accident
ND	2 per year	all requests receive a response	never
OH			
OK	5-10 each year, including lost sources during shipment	all requests receive a response	never; have been called by Federal officials; have requested NRC investigations
OR	none; 10 calls per year for lost sources	all requests receive a response	never
PA	1 per month	all requests receive a response	never ("they call us")
PR	one	one	never
RI	one incident in 1964	all requests receive a response if necessary	never
SC			
SD	1 or 2	all requests receive a response	never
TN	25 per year	almost all requests receive a response	never needed assistance, but do notify
TX	6 times each year through locals; 30-50 each year for all transportation accidents	respond to approximately 1/3 of all requests	never
UT	3	3	none
VT	1	only individuals have ever had to respond	never
VA	1 or 2	3 or 4 responses in 13 years	never
WA	35-40	state responds to approximately 80% of requests; if it is a minor incident, locals will handle	if incident is east of Cascade Mountains, U.S. DOE responds on behalf of the state because they are closer

TABLE 3-23 (Cont.)
ACTUAL EXPERIENCE

STATE NAME	QUESTION 53: TRANSPORTATION ACCIDENTS IN AVERAGE YEAR	QUESTION 54: HOW OFTEN IS RESPONSE TEAM ACTIVATED	QUESTION 55: HOW OFTEN DOES STATE REQUEST FEDERAL ASSISTANCE
WV	3	all requests receive a response	never
WI	3 per year	state response depends on local capability	never
WY	5 per year; state does not receive notice if locals can handle	all requests receive a response	never

4.0 CONCLUSIONS AND GENERAL COMMENTS

Based on the information gathered in this project, making recommendations concerning the need for and the nature of planning standards to provide guidance to the states on how to prepare themselves for response to transportation related radiation incidents is really quite difficult. As the volume of radioactive materials in transit steadily increases, however, no one doubts the need for planning for emergency response in order to be sure that first-on-the-scene respondents know how to control a scene and know what expert response team to call.

Transportation accidents involving vehicles with radioactive cargos are rare; the incidence of radiation leakage as a result of these accidents is rarer still; and the incidence of public exposure or human contamination as a result of this radiation leakage is too rare to make an analysis of interstate patterns possible. These facts imply that the nature of the problem in actual experience - as opposed to potential - has not been particularly serious, and that, to the extent that the level of state and local preparedness affects public exposure and contamination, that effect cannot be separated from one attributable to the quality of packaging.

This conclusion is counterintuitive. The states vary greatly in the extent to which they plan for response to this kind of problem. It was reasonable to expect that states with very active programs, well trained and educated radiological emergency response teams, and extensively trained first responders, would be able to respond more reliably and quickly to transportation incidents involving radioactive cargos. In fact, this may well be true, but if it is, the quality of emergency response capability cannot be measured by the degree of formality of the planning, coordination, and communications functions. States with response systems that rely almost entirely on informal contacts between state agencies and between local agencies appear to work as well in practice as those that are highly centralized and extremely well documented. In short, while the states with the highly formal planning systems are certainly easy to study because of the level of documentation, we have been unable to find evidence that their overall control of this problem area is better than that of the states whose systems are for the most part undocumented, (i.e. informal), and rely primarily on interpersonal contacts.

With the above points in mind, we will still proceed cautiously in the identification of a few areas in which some uniform guidelines or technical assistance from the NRC would appear to be profitable.

Containers. While there are relatively few instances of containers of highly radioactive materials breaking and leaking as a result of a transportation accident, it is all too common that containers in transit leak as a result of improper packaging by shippers. Problems of this type have arisen frequently at airports and on routes leading to disposal sites. One comment received from officials of most states visited by the project team was that additional

work needs to be done to insure the proper packing and sealing of containers for reactor waste, hospital supplies, and other materials frequently shipped over the roads. They report more responses to potential incidents attributable to this problem than they do to accidents.

Training of first Responders. First responders to the scenes of accidents usually do a good job of contacting the correct officials when they correctly identify the material being shipped. There are several areas in which procedures could be improved, some of which could be affected by the NRC through the development and provision of training programs or through the promulgation of guidelines for training program content and coverage. First, there is a great need to train all potential first responders in the identification of hazardous cargos in general, not only those that are radioactive. Aside from the fact that other hazardous cargos present a clear danger in their own right, radiological emergency response personnel reported they sometimes find themselves greatly endangered by extremely hazardous chemicals shipped in the same vehicle with very low level radioactive materials. Training of team members in handling other materials would also be useful. Second, in many jursidictions the coverage of training programs in the identification of radioactive materials, scene control, and notification of specialized teams is a bit spotty. Certainly all police officers should have a minimum level of training in the field, and a certain amount of training for fire departments and ambulance personnel would also be useful. Third, related to the second point above, is the use, maintenance, and calibration of measurement instruments. While it is fashionable in many areas to provide personnel among first responding departments with certain types of radiation detection equipment, they frequently are inadequately trained in the maintenance and calibration of their equipment and in the circumstances under which its use is appropriate. The wisdom of providing these personnel with detection equipment is questionable, and many states reported incidents in which panics and even evacuations were caused by improper use of equipment by police or Civil Defense volunteers. The NRC should recommend that specialized response teams have exclusive jurisdiction in the determination of whether a hazard really exists, partly to avoid the under-detection of hazards, but more frequently to avoid local panics caused by reports of incorrect or misinterpreted readings on ill maintained or inappropriate equipment. Fourth, many state and local jurisdictions approached in the survey complained that obtaining specialized training for their team members and for their training personnel through the federally sponsored courses is very difficult because of inconvenient scheduling and long waiting times before enrollment. If the NRC hopes to improve on state and local competence in this field, it should at least ensure the ready availability of training for team members and training officers.

Communications. Establishing guidelines in this area may prove to be extremely difficult. The existing communications systems are, for the most part, relatively informal, but they work. The standard communications system is to use the communications facilities of

state police departments, occasionally linked with those of civil defense agencies, and to simply channel all communications through police dispatchers. Such a procedure makes good sense if those dispatchers are adequately trained to interview callers to determine the nature of the problem (to the extent possible), and to refer the call to the appropriate response team. The NRC could be of assistance in this area by developing and disseminating a standard list of questions and decision rules for acting, to be used by dispatchers or other communications personnel. The precise action will, obviously, depend on the local team structure, but the kinds of information required to decide where to route a call should be fairly standard, and lies within the role of the NRC to suggest.

Organization and Control. The structure for emergency response is one that could be expected to affect the quality of response and ability to deal with problems. That well may be the case, but evidence to that effect could not be developed within this project. Anyone attempting to write guidelines for program structure should, therefore, tread carefully and write those guidelines in very general terms. Ideally guidelines would be defined in terms of performance, e.g., ability to identify specific problems, response times, and ability to control and contain scenes until removal can be completed.

Equipment. We lean to the view that specialized equipment ought to remain almost exclusively in the hands of the radiological emergency response teams. Almost every state reported examples of misuse, misinterpretation, or miscalibration by first responders. In our opinion, the number of police, fire, and Civil Defense personnel in the field is simply two great to permit the effective management of original training, in-service retraining, and calibration within the budgets of most states. It is safer to concentrate first responder activities in the areas of identification, notification, and scene control.

Specialized Cargos. A very specialized aspect of the entire problem is a bad safety record on the part of commercial radiographers. A very large number of all incidents reported by the states deal with lost radiography sources that are inadvertantly handled by the radiographers themselves or by passers-by, or by radiography equipment in transit being involved in accidents. One appropriate area of regulation might be in the upgrading of standards for training and licensing of individuals legally able to deal with such materials.

QUESTIONNAIRE I

STATE AND LOCAL GOVERNMENT EMERGENCY RESPONSE CAPABILITY FOR RADIOLOGICAL TRANSPORTATION RELATED INCIDENTS

A. Organization and Responsibility

1. Are there any jurisdictions within the state that may exercise their own authority to respond to radiation emergencies? If so, how might we contact them?

2. Which state agency(s) keeps a file of detailed maps which show the following for all areas of the state?

   (a) Major and minor roads in all areas?
   (b) Railroad routes throughout the state?
   (c) All navigable waterways in and around the state?
   (d) Location of civilian and military hospitals?
   (e) Location of police, ambulance, and fire stations?
   (f) Location of experienced radiation workers and other technically trained personnel available for emergency response?

3. Does any state agency require prior notification for large shipments of radioactive materials in or through the state? If so, which state agency or agencies?

4. Does the state require placarding of intra-state shipments of radioactive materials? Did the state adopt the DOT regulations in this area?

5. Many states use a classification-of-severity scale to define classes of incidents. Protective actions are then indicated according to the class of the incident. Does the state use a classification-of-severity scale? How many classes of incidents are defined? What standards determine the class of an incident? What references were consulted in formulating the classification scheme?

6. What notification is required by the state in the event of a transportation accident involving radioactive materials on interstate and intrastate carriers? Does the notification requirement vary according to the severity of the accident? Which state agency should be notified?

B. Communications Capability

7. We have reviewed your state emergency response plan dated _____. How has the state emergency response communications network changed from the description given in the plan?

8. What specific communications resources are available to support the emergency response teams?

   (a) CB_____
   (b) Police Radio_____
   (c) Ham Radio_____
   (d) Closed Circuit TV_____
   (e) Radio Telephone_____

9. Does the state have a single phone number for use in all types of emergencies? If so, what is the number?

10. Is a mobile communications center available to serve as a nucleus for an onsite emergency operations center?

C. First on Scene Respondents

11. Does the state have predesignated on-scene coordinators for emergency response?

12. The initial on-the-scene respondents (policemen, firemen, other public employees) at a transportation accident involving radioactive materials are expected to take certain protective actions. Please indicate the general order in which these protective actions should be performed. Omit any actions not considered essential.

_____Assess the immediate hazard
_____Attend to the injured
_____Make a radiation survey
_____Notify the lead state agency
_____Detain the persons involved
_____Inspect shipping papers
_____Notify the carrier
(in event the driver is injured)
_____Evacuate the area
_____Establish road blocks
_____Notify the local agency head
_____Isolate the area
_____Keep the public informed
_____Call for help
_____Notify the shipper
_____Other

13. Do first on-the-scene public employees usually carry a list of appropriate emergency phone numbers?

14. Policemen, firemen, and road maintenance personnel are the most likely initial on-the-scene respondents to a radiological transportation accident. What percent of each of these groups have received at least minimal training in handling radiological emergencies?

(a) State police _____%
(b) Local police _____%
(c) Firemen _____%
(d) Road maintenance men _____%

15. What percent of each of these groups knows how to operate radiation detection instruments? What percent actually carries radiation detection instruments?

(a) State police ____% ____%
(b) Local police ____% ____%
(c) Firemen ____% ____%
(d) Road maintenance men ___% ___%

D. Resources

I. PERSONNEL

16. What is the general makeup of emergency response teams dispatched to radiological transportation accidents? (other than police, firemen, and ambulance)

Specify numbers:

(a) Health Physicists_____
(b) Radiation Monitors_____
(c) Hazardous Materials Specialists_____
(d) Radiochemists_____
(e) Radiobiologists_____
(f) Health-physics Technicians_____
(g) Electronic Technicians_____
(h) Communications Specialists_____
(i) Transportation Specialists_____
(j) Site Coordinators_____
(k) Public Relations/News Coordinators_____
(l) Others (please specify)_____

17. What state agency maintains a current list of names and telephone numbers of University, Industry, and Nuclear Reactor personnel qualified to assist in radiological emergencies?

18. What percent (or how many) of the currently employed ambulance personnel in the state have been trained in contamination control during treatment of radiation incident victims?

19. What percent (or how many) of the currently practicing doctors in the state have attended the medical radiation training course at Oak Ridge Associated Universities or some similar course?

20. Which state agency maintains an up-to-date list of names and addresses of doctors with such training.

21. How many hospitals in the state provide training programs and exercises in radiation emergencies to their staff similar to those offered by the Radiation Management Corporation of Philadelphia?

22. Which state agency maintains a list of hospitals with adequate facilities and training for handling radiation victims?

II. EQUIPMENT

23. Indicate the number of locations throughout the state where serviced and calibrated portable radiation detection instruments are normally kept.

24. How many of the locations have available the following portable radiation detectors:

(a) Low range beta-gamma detectors (e.g., 0-50 mR/hr)
(b) Medium range beta-gamma detectors (e.g., 0-1000 mR/hr)
(c) High range beta-gamma detectors(e.g., 0-1000 R/hr)
(d) Low energy gamma detectors (e.g., Pu-239 probe)
(e) Alpha particle detectors
(f) Neutron detectors
(g) Gamma-ray spectrometer
(h) Others (please specify)

25. How many emergency vehicles, specially equipped for hazardous materials accident responses,are available to the state?

26. Are these vehicles equipped for emergency response to a radiological transportation incident? Do the vehicles contain the following equipment?

(a) Two way radio with range and frequency compatible with state emergency network._____
(b) Air monitor_____
(c) Tritium sniffer_____
(d) TLD badges and reader_____
(e) Pocket dosimeter and reader_____
(f) Gamma-ray spectrometer_____
(g) Forms for keeping exposure records_____
(h) Fire extinguishers_____
(i) Other major equipment (please specify)_____

27. Are emergency kits available for use by persons responding to various emergency situations? Do these kits contain the following items?

(a) Scott air packs or similar item _____.
(b) Filtered face masks _____
(c) Protective clothing and shoe covers_____
(d) Traffic and pedestrian control signs, ropes, markers, etc._____
(e) First aid kit_____
(f) Maps_____
(g) Camera_____
(h) Flashlight_____
(i) Tape recorder_____
(j) Current list of telephone numbers_____
(k) Other (please specify)_____

28. At how many locations throughout the state are the emergency kits available?

E. Transportation

29. What state agency is responsible for the transportation of emergency response team members to the emergency site?

30. Is this transportation available on a 24 hour basis?

31. What modes of transportation are available? Indicate the number of each.

Car or van _____	Helicopter _____
Truck	Boat _____
Airplane _____	Other (please specify) _____

32. Is emergency fuel available on a 24 hour basis for all transport modes?

33. Have arrangements been made with local military establishments to request additional modes of transportation if needed?

34. What water transportation is available for emergency response to radiological transportation incidents occurring on waterways?

F. Training

35. How many members of the State Civil Defense Agency (or Office of Emergency Services) have had training in Health Physics?

36. How many members of the State Radiological Health Department are trained in radiological emergency response procedures?

37. How many of the trained staff of the State Radiological Health Department are assigned to serve on radiological emergency response teams?

38. Are the assigned members all at one location? If not indicate how many are distributed throughout the state.

39. Who provides training in emergency response for radioactive materials incidents to the following groups?

(a) State and local police
(b) Local firemen
(c) Radiological Health Department personnel
(d) Civil Defense Agency (or Office of Emergency Services) personnel.

40. How often is training conducted for each group.

(a) State and local police
(b) Local firemen
(c) Radiological Health Department personnel
(d) Civil Defense Agency (or Office of Emergency Services) personnel.

41. What percent of the training consists of field exercises for each group listed.

    (a) State and local police
    (b) Local firemen
    (c) Radiological Health Department personnel
    (d) Civil Defense Agency (or Office of Emergency Services) personnel.

42. How often are practice exercises conducted to test the effectiveness and operation of the State Radiological Emergency Response Plan? When was the last test carried out?

43. How many State Radiological Emergency Response personnel have attended the "Radiological Emergency Response Operation" course in Nevada sponsored by the NRC?

G. Legal Issues

44. During an emergency, does the state have the authority to conduct operations on private property? If so under what provision?

45. Does the state have the authority to seize or condemn private property during an emergency? If so, under what provision?

46. If an incident occurs on state property, does the response team need permission from the state agency involved prior to responding to the emergency situation on their property?

47. Are individuals, from both public and private sectors who assist in emergency response, protected from liability by an insurance program or indemnity provisions of the state statutes? Please explain.

48. Do state statutes or other documents assign responsibility for costs incurred during emergencies, such as loss of property or evacuation costs?

H. Funding

49. What is the annual budget of the State Civil Defense Agency or Office of Emergency Services?

50. How much of this is devoted to response and training for hazardous materials spills and releases?

51. How much of the State Radiological Health Department budget is spent for training and response to transportation related radiological incidents.

52. What additional funds (if any) do you think are needed to upgrade the statewide emergency response to a level deemed adequate for most situations?

    Additional Capital Equipment $ _____
    Additional Training $ _____
    Additional Maintenance and Testing $ _____
    Additional Other Costs $ _____

I. Actual Experience

53. In the average year, approximately how many times is the state contacted by local agencies for radiological assistance for transportation accidents?

54. Approximately how many of these requests result in the state actually sending out a response team?

55. In the average year, approximately how many times has the state found it necessary to ask for Federal assistance in re ponding to transportation accidents involving radioactive materials?

Appendix B

QUESTIONNAIRE II

ANALYSIS OF STATE EMERGENCY PLANS

A. ORGANIZATION AND RESPONSIBILITY

1. Has a statewide plan for responding to natural or man-made disasters or other emergencies been established and approved by the governor or other high level state official?

2. Which state agency is the lead or coordinating agency for responding to transportation incidents involving radioactive materials?

3. Which state agencies are support agencies, to the lead agency, in the emergency response to transportation incidents involving radioactive materials?

4. Does the State Radiological Emergency Response Plan contain:

   (a) A description of its relationship to other emergency and disaster plans of the State and Federal agencies?

   (b) A stated general purpose?

   (c) A formal organizational structure?

   (d) Notification procedures?

   (e) Assistance procedures?

   (f) Training provisions?

   (g) Names and phone numbers of key personnel?

   (h) Review and updating procedures?

   (i) A distribution scheme?

5. When was the State Radiological Emergency Response Plan prepared?

6. How often is the plan reviewed for possible changes or updating? When was it last reviewed?

7. Does the statewide emergency or disaster plan incorporate a State Radiological Emergency Response Plan?

8. Does the statewide plan incorporate an emergency response plan for transportation accidents involving radioactive materials?

9. Has the authority to execute the emergency response plan without additional approval been issued to appropriate state and local personnel?

10. Have specific individuals at the state and local levels been designated in writing as the persons responsible for activating and coordinating the state emergency response plan?

11. Are there written memoranda of understanding between the various state agencies which establish the responsibilities and authorities of each during an emergency which involves several agencies?

12. Does the state have formal memoranda of understanding and/or reciprocal agreements with adjacent states to cover emergencies occurring close to common borders?

13. Does the state have a memorandum of understanding with the United States Coast Guard relevant to radiological emergency response to accidents occurring on coastal or navigable inland waterways? With other cognizant authorities?

14. Does the state have a memorandum of understanding with the United States Corps of Engineers relevant to emergency response in areas under jurisdiction of the Corps?

15. Are there any written agreements between the state and railroads in the state which ensure the prompt notification of appropriate authorities in the event of a railroad accident involving radioactive materials?

B. COMMUNICATIONS AND NOTIFICATION

16. Is there a designated emergency or disaster response communications network in the state which is available for use in the event of a radiological transportation incident?

17. What are the principal agencies connected to this communications network?

18. Is the principal center of the network staffed on a 24 hour basis?

19. Is there a single emergency number to call throughout the state to connect with the emergency network center?

20. What back-up communications are available in the event of a breakdown in the network?

21. Has a plan been developed to coordinate communications and emergency response operations at the scene of the incident through an emergency operations center?

22. Does the state make use of any of the following hazardous materials information systems?

    (a) CHEMTREC (Manufacturing Chemists Association)
    (b) CHRIS (Coast Guard system)
    (c) OHM-TADS (EPA funded system)

23. Does the state have its own hazardous materials information system?

24. Does the state emergency response plan incorporate provisions for calling upon regionally available Federal resources when emergencies appear to exceed state capabilities?

25. What provision(s) has been made by the state to coordinate local, state, and federal press releases relating to radiological emergencies?

26. Who is responsible for the coordination of these press releases?

27. On-the-scene, who is responsible for communicating the relevant and necessary information to be included in the press release? And to whom?

C. EMERGENCY OPERATIONS CENTER (EOC)

28. Does the state have a central EOC?

29. How many EOC locations have been established in the states?

30. List the state and local agencies which have designated specific personnel to serve at the EOC when it is activated?

31. Have provisions been made for the activation of an EOC in the event of a transportation incident involving radioactive materials?

D. RESOURCES - EQUIPMENT

32. What (type of) equipment is available for use by emergency response teams dispatched to radiological incidents? List theequipment, if possible.

33. Have provisions been made to provide emergency lighting (generator, lights, etc.) and temporary shelter at emergency sites when needed?

34. Which state agency or office has this responsibility?

35. Does the state maintain a list of equipment for use in emergency response which might be available from the military on short notice?

36. Which state agency or office maintains this list?

37. Does the state maintain a list of radiation detection equipment which might be available from universities or industry on short notice?

38. Which state agency or office maintains this list?

39. Which state agency or office maintains a list which indicates the location of specialized equipment often needed during emergencies, such as special cranes, empty barrels, shovels, sheet plastic, etc.?

40. Have provisions been made by the state to provide support equipment that might be used in re-entry and recovery operations, such as bulldozers, cranes, etc.?

E. LEGAL ISSUES

41. During an emergency, does the state have the authority to conduct evacuation proceedings? If so, are there any limitations on the evacuation proceedings, such as provisions for protection of property, etc.?

Appendix C

Glossary of Terms and Abbreviations

Accident (Transportation) -

A reportable incident involving a vehicular accident involving the vehicle transporting the radioactive material.

Accident (Handling) -

A reportable incident which occurs during loading or unloading or in a warehouse etc., in which the package is involved in an accident but no transport vehicle is involved (sometimes these are included in the cateogy above).

Emergency Operations Center (EOC) -

Command and Communications headquarters of the civil defense emergency services agencies. Most states have EOC's designated for use in the event of an attack on the U.S.; some states have networks of regional EOC's in addition to the State EOC. Primarily concerned with civil emergency preparedness. In a few states, civil defense/emergency services staff offices are in the EOC, but in most states the EOC is manned by communications personnel until activated for a declared emergency. Usually situated in a subbasement near the state capitol; stocked with extensive communications equipment and survival supplies.

EMS -

Emergency Medical Services; ambulance and rescue squad programs.

First-on-Scene Respondent -

Personnel who are the first officials to arrive at the scene of an accident, usually state or local police, county sheriff, town constable, or other. Also includes firemen, ambulance personnel, road maintenance personnel and any other official who arrive at the scene in response to the traffic accident dimension of the incident. Does not include emergency operations, radiological health, pollution control or other personnel who are at the scene in response to radiation hazard dimension of the incident.

Health Physics -

Health Physics is a profession devoted to the protection of man and his environment from unwarranted radiation exposure. A health physicist is a person engaged in the study of problems and practices of providing radiation protection. He is concerned with an understanding of the mechanism of radiation damage, with the development and implementation of methods and procedures necessary to evaluate radiation hazards and with providing protection to man and his environment from unwarranted radiation exposure.

Incident (Reportable) -

Any incident (including the two categories of accidents defined above) in which there is suspected contamination by or exposure to radioactive material. [An incorrectly packaged source might results in higher than normal radiation levels and result in a reportable incident, but no accident is involved.]

Multi-agency Response -

A response to a radiation emergency which requires personnel from two or more agencies, usually radiological health and emergency services but often including the state department of transportation. Does not include as "agencies" police, sheriff, fire or other personnel who respond to the traffic accident dimension of an incident. A convenient cutting tool to distinguish between minor and serious incidents from the radiation hazard perspective.

RADEF -

Acronym derived from Radiological Defense. Refers to Civil Defense training sponsored by the Federal Emergency Management Agency (FEMA). Series of training courses which deal with the radiation hazards of nuclear attack.

Radiography Source -

A source used by radiographers to search for defects in large pipes, bridges, pressure vessels or other similar structures. The source is usally ^{192}Ir or ^{60}Co. The source is cranked out of its shield to make an x-ray type picture on photographic film.

Radiology Practioner -

One who uses radiation, particulary x-rays for scientific or medical purposes.

RERO -

Acronym derived fom Radiological Emergency Response Operation; refers to a training program sponsored by the Nuclear Regulatory Commission (NRC) at the Nevada Test Site. Also known as REECO, an acronym derived from Renyolds Electrical Engineering Co., Inc., the firm which conducts the courses under contract with the NRC.

State Warning Point -

A title used by some states to refer to the civil defense/emergency services communications headquarters, where all notification of an emergency is channelled. Often associated with the Emergency Operations Center.

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This volume is the final report of a project to survey current state radiological emergency response capabilities for transportation related incidents. The survey was performed to provide the NRC with information useful in the development of guidelines for state organizations and planning for emergency response. The report includes the results of a mail and telephone survey of state emergency response officials; information gleamed from radiological emergency response plans and related official document; and some general conclusions and recommendations drawn in part from interviews conducted and site visits to selected states.

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