United States General Accounting Office

GAO

Fact Sheet for the Honorable
Dean A. Gallo, House of Representatives

May 1989

# HAZARDOUS MATERIALS

# Federal Training for First Responders to Highway and Railroad Incidents

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GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

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May 26, 1989

The Honorable Dean A. Gallo
House of Representatives

Dear Mr. Gallo:

In response to your September 19, 1988, letter and subsequent discussions with your office, this fact sheet presents information on training the federal government provides to state and local government personnel who are the first on the scene of a highway or a railroad accident involving hazardous materials. These "first responders," as they are known, include police, fire fighters, and emergency medical personnel. Specifically, we (1) identified the federal agencies that train first responders, (2) determined the nature and estimated costs of training activities, and (3) obtained information on the sponsoring agencies' ability to accommodate training requests. On March 15, 1989, we briefed your office on the preliminary results of our work and, as requested, have prepared this fact sheet, summarizing the subject matter covered during the briefing.

In summary, there are five federal agencies engaged in first-responder training: the Federal Emergency Management Agency, the Environmental Protection Agency, the Department of Transportation, the Department of Energy, and the Department of Health and Human Services. Their training activities stem primarily from the Civil Defense Act of 1950; the Hazardous Materials Transportation Act of 1975; the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as Superfund); the Superfund Amendments and Reauthorization Act of 1986; and the Atomic Energy Act of 1954.

In fiscal years 1987 and 1988, these agencies spent an estimated $10 million on first-responder training. Their training activities were diverse, including classroom courses, simulation exercises, and the development and nationwide dissemination of videotapes on how to respond to transportation incidents involving hazardous materials. In addition, several agencies provided training grants to states and nonprofit institutions. The Department of Health and Human Services' National Institute of Environmental Health Sciences, for example, was authorized by the 1986 Superfund Amendments to make grants to nonprofit

institutions to develop health and safety-oriented training programs for workers engaged in hazardous waste removal, containment, and emergency response.

Officials at most of these agencies told us that the demand for first-responder training was generally high, and that at times agencies are not able to accommodate all requests. According to agency officials, factors making it difficult to accommodate all requests include agency budget constraints and the need to limit the enrollment size of certain courses so that participants can obtain an effective educational experience.

Section 1 of this fact sheet discusses the objectives, scope, and methodology of our review. Section 2 describes the emergency response community and provides summary information on federal first-responder training, including estimated expenditures for fiscal years 1987 and 1988. Sections 3 through 7 provide more details on the training activities of the Federal Emergency Management Agency, the Environmental Protection Agency, the Department of Transportation, the Department of Energy, and the Department of Health and Human Services, respectively.

To prepare this fact sheet, we reviewed current literature on the subject of hazardous materials transportation and obtained emergency response training documentation from the five agencies. We also interviewed agency headquarters and field office officials concerning the nature and extent of their first-responder training activities and their ability to accommodate requests for such training. We conducted our review from December 1988 to March 1989.

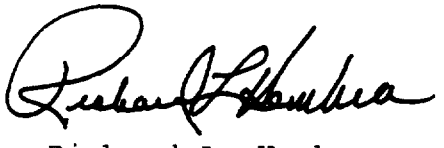
We discussed the contents of this fact sheet with officials of the five agencies and have made revisions to the draft, as appropriate. However, at your request, we did not obtain the agencies' official comments on a draft of this fact sheet.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this fact sheet until 30 days from the date of this letter. At that time, we will provide copies to the Secretaries of Energy, Health and Human Services, and Transportation; the Administrators, Environmental Protection Agency and Federal Emergency Management Agency; and other interested parties.

If you have any questions about this fact sheet, please contact me on (202) 275-5489.

Major contributors to this fact sheet are listed in appendix I.

Sincerely yours,



Richard L. Hembra
Director, Environmental
Protection Issues

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## ABBREVIATIONS

| | |
|---|---|
| ATSDR | Agency for Toxic Substances and Disease Registry |
| EPA | Environmental Protection Agency |
| FEMA | Federal Emergency Management Agency |
| GAO | General Accounting Office |
| HHS | Department of Health and Human Services |
| NHTSA | National Highway Traffic Safety Administration |
| NIEHS | National Institute of Environmental Health Sciences |
| RSPA | Research and Special Programs Administration |
| SARA | Superfund Amendments and Reauthorization Act |
| WIPP | Waste Isolation Pilot Plant |

## SECTION 1

## OBJECTIVES, SCOPE, AND METHODOLOGY

In a September 19, 1988, letter, Representative Dean A. Gallo requested that we provide information on the federal government's efforts to train those individuals who are the first to respond to highway and rail accidents involving hazardous materials.[1] On the basis of that letter and subsequent discussions with the Representative's office, we agreed to (1) identify the federal agencies that provide first-responder training to state and local personnel, (2) determine federal expenditures on such training in recent years, and (3) obtain readily available information on the nature of agency training activities and on the ability of agencies to accommodate training requests.[2]

We conducted our work at federal agency headquarters offices in Washington, D.C., where we interviewed officials responsible for emergency preparedness, response, and training at the Federal Emergency Management Agency (FEMA); Environmental Protection Agency (EPA); Department of Defense; Department of Energy; and the following units of the Department of Transportation: Federal Highway Administration, Federal Railroad Administration, National Highway Traffic Safety Administration (NHTSA), and the United States Coast Guard. We also interviewed officials at the Nuclear Regulatory Commission and the Department of Labor's Occupational Safety and Health Administration.

Our field work consisted of interviews, in person or by telephone, with agency training officials in Energy offices in Oak Ridge, Tennessee, and Carlsbad, New Mexico; EPA training facilities in Cincinnati, Ohio, and Edison, New Jersey; and the Occupational Safety and Health Administration Training Institute in Chicago, Illinois. We also contacted officials at the Department of Health and Human Services' (HHS) National Institute of Environmental Health Sciences (NIEHS) in Research Triangle Park, North Carolina, its Agency for Toxic Substances and Disease Registry (ATSDR) in Atlanta, Georgia, and its National Institute of Occupational Safety and Health training facility in Cincinnati, Ohio.

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[1]In this fact sheet, our discussion of state and local first responders includes those who are paid government employees and those who function in a voluntary capacity.

[2]The scope of our review did not include such issues as the adequacy of the training or the coordination among federal agencies.

To identify the federal agencies that provide training to first responders, we conducted a literature search and subsequently reviewed hazardous materials transportation publications from such sources as the Office of Technology Assessment, FEMA, and Transportation. For this same purpose, we also interviewed various agency officials. As a result of these efforts, we excluded the Department of Defense, the Nuclear Regulatory Commission, and the National Institute of Occupational Safety and Health from our review. Although these agencies conduct emergency response training, agency officials told us that their training activities are not targeted for, nor are they typically attended by, state and local emergency personnel who would be the first to respond to transportation incidents involving hazardous materials.

To determine federal expenditures on first-responder training, we asked agency officials to provide us expenditure data for fiscal years 1987 and 1988 covering both training development and delivery costs. The expenditures reported in this fact sheet are based on estimates developed by agency officials and our analyses of the information they provided. We did not verify the information provided by the agencies. We obtained information covering the agencies' training activities targeted, in whole or in part, towards first responders to transportation incidents. Thus, some courses covered by the data include material addressing first response to hazardous materials accidents at fixed facilities, such as chemical plants, and/or federal regulations governing the transportation of hazardous materials, such as placarding requirements. As agreed with the Representative's office, the expenditure data we collected excluded overhead costs and those costs associated with providing advanced-level training for members of specialized local hazardous materials response teams. We also excluded costs associated with technical assistance activities, such as the publication and dissemination of hazardous materials literature.

To obtain information on the nature of federal first-responder training activities, we reviewed various agency training materials including course manuals, exercise workbooks, and videotapes. These efforts were supplemented through discussions with agency emergency response training officials. In these discussions, the officials commented on the demand for first-responder training and on their ability to accommodate training requests.

Section 2 of this report describes the nature and estimated size of the state and local emergency response community and federal first-responder training efforts overall--types of federal first-responder training offered, estimated federal expenditures in fiscal years 1987 and 1988, and the demand for such training. Sections 3 through 7 provide more specific information on an agency-by-agency basis.

## SECTION 2

## OVERVIEW

The volume of hazardous materials being transported--estimated to be in excess of 1.5 billion tons annually--along with the growing numbers of incident reports, has led to increasing recognition that police, fire fighters, and other emergency response personnel require training to respond to releases of hazardous materials.[1] We found that five federal agencies currently are using diverse training approaches to reach first responders at the state and local levels. In fiscal years 1987 and 1988, their expenditures for first-responder training totaled an estimated $10 million.

### TYPE AND NUMBER OF FIRST RESPONDERS

Typically, the first response to a transportation incident on a highway or along a rail line is made by police officers, fire fighters, and emergency medical personnel. As shown in table 2.1, FEMA estimated that there are over 2 million emergency response workers at the state and local levels. Precise data were not available, however, on the proportion of the emergency response community who are first-responders and who require basic training in responding to emergencies involving the transportation of hazardous materials. Federal agency officials said that it is difficult to determine who has and has not been trained, one reason being the high turnover rate within the emergency response community--estimated to range between 25 and 30 percent annually.

Table 2.1: State and Local Response Community

| Workers | Estimated population |
|---|---|
| Fire fighters | 1,500,000 |
| Law enforcement | 500,000 |
| Emergency medical services | 225,000 |
| Total | 2,225,000 |

[1]The term hazardous materials, as used in this fact sheet, is defined in the Hazardous Materials Transportation Act (P.L. 93-633).

## NATURE AND EXTENT OF FEDERAL FIRST-RESPONDER TRAINING ACTIVITIES

Five federal agencies are involved, to varying degrees, in developing and providing first-responder training. These agencies are FEMA, EPA, Transportation, Energy, and HHS. The following discussion summarizes these agencies' estimated expenditures for first-responder training in fiscal years 1987 and 1988, and the nature of such activities.

### Expenditures in Fiscal Years 1987 and 1988

Table 2.2 summarizes estimated federal first-responder training expenditures, by agency, in fiscal years 1987 and 1988. Approximately $5.5 million, or 54 percent, of the total amount came from Superfund--an EPA-managed fund used primarily to clean up the nation's worst abandoned hazardous waste sites.[2] Data include the costs associated with training approaches such as formal classroom courses, teleconferences, videotapes, and training grants to states and nonprofit institutions to develop, deliver, and/or send personnel to training courses.

Table 2.2: Federal Expenditures on First-Responder Training

| Agency | Expenditures | | |
|---|---|---|---|
| | FY 1987 | FY 1988 | Total |
| FEMA | $2,002,000 | $ 880,000 | $ 2,882,000 |
| EPA | 280,000 | 1,203,000 | 1,483,000 |
| Transportation | 2,509,000 | 307,000[a] | 2,816,000 |
| Energy | 331,000 | 510,000 | 841,000 |
| HHS | [b] | 2,137,000 | 2,137,000 |
| Total | $5,122,000 | $5,037,000 | $10,159,000 |

[a]No data were available on a Transportation grant program that in fiscal year 1987 spent an estimated $2 million on emergency medical first-responder training.

[b]HHS officials said that there were no expenditures in fiscal year 1987.

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[2]The first-responder training activities of all agencies, except Energy, were funded at least in part, by Superfund.

Nature of Federal Training Activities

The five federal agencies use diverse delivery approaches to provide first-responder training. Resource limitations, along with a desire to reach a larger portion of the target population, have led agencies such as FEMA and Transportation to devise alternative approaches to traditional classroom training. FEMA officials said, for example, that they can only train a limited number of first responders annually at the agency's residential training facility; thus, they devised several courses for nonfederal instructors so that they can become familiar with FEMA course materials and subsequently train first responders at the state and local levels. Training approaches include the following:

-- federal courses for first responders,

-- instructor training courses,

-- teleconferences on how to respond to hazardous materials incidents,

-- development and dissemination of response awareness videotapes,

-- grants to states to attend or sponsor courses, and

-- grants to nonprofit institutions to develop and deliver first-responder training courses.

The federal agencies that provide training cover myriad topics on which officials believe first responders need information to respond effectively. Topics that are covered include:

-- federal regulations on the transportation of hazardous materials;

-- the federal, state, and local incident response management structure;

-- identification of hazardous materials;

-- chemical and physical properties of hazardous materials;

-- toxicology of hazardous materials;

-- health and safety protection of responders, victims, and the general public;

-- use of personal protective equipment;

-- use of response equipment and instruments; and

-- how to respond to radiological transportation incidents.

## Agencies' Ability to Accommodate First-Responder Training Requests

Federal agency officials indicated that, overall, there is a considerable demand for first-responder training. In commenting on the demand for training, federal officials we spoke to commented that first-responder training is a never-ending requirement because of the (1) high turnover of personnel within the emergency response community, which some officials estimated at between 25 to 30 percent annually, and (2) need to provide periodic refresher training.

Agencies' ability to accommodate training requests depends on a variety of factors. For example, officials pointed out that their ability to meet training requests for some of their courses is constrained by limited financial and personnel resources, and/or whether a limitation on course enrollment is necessary in order to provide participants with a meaningful educational experience.

## SECTION 3

## FEDERAL EMERGENCY MANAGEMENT AGENCY

### OVERVIEW OF FEMA's FIRST-RESPONDER TRAINING ACTIVITIES

FEMA is a key federal agency responsible for coordinating emergency preparedness planning for and response to releases of hazardous materials. One of FEMA's primary activities is to develop and offer training programs that will enable state and local governments to effectively react to transportation incidents involving hazardous materials. First-responder training is offered through two units located at FEMA's National Emergency Training Center in Emmitsburg, Maryland--the National Fire Academy and the Emergency Management Institute. In addition to standard training courses, FEMA sponsors teleconferences on hazardous materials. It also provides financial assistance to states so that they can avail themselves of federal first-responder training opportunities and attend or sponsor similar training at the state and local levels.[1] Table 3.1 provides estimated Academy and Institute expenditure data for first-responder training in fiscal years 1987 and 1988.

Table 3.1: Summary of FEMA's Training Activities

| | Expenditures | | |
|---|---|---|---|
| Entity | FY 1987 | FY 1988 | Total |
| Academy | $ 413,000 | $382,000 | $ 795,000 |
| Institute | 1,589,000 | 498,000[a] | 2,087,000[b] |
| Total | $2,002,000 | $880,000 | $2,882,000 |

[a]According to a FEMA official, only partial-year data were available for fiscal year 1988.

[b]Includes Institute training and grants assistance to states.

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[1]In 1986, the Superfund Amendments and Reauthorization Act authorized a training grant program which FEMA was given responsibility for administering. According to a FEMA official, while funds were allocated by FEMA to the states in fiscal years 1987 and 1988, FEMA did not receive an appropriation for the program in fiscal year 1989. FEMA does, however, still provide states other types of funding assistance.

## NATIONAL FIRE ACADEMY

### Nature of Training Activities

The Academy has developed two, 2-week first-responder training courses, taught at FEMA's Maryland training facility and in off-campus locations nationwide. The first course, Chemistry of Hazardous Materials, is designed to improve responder decision-making and to promote safe handling of materials. It provides basic chemistry information responders need to understand the factors influencing the behavior of hazardous materials.[2] The Academy has a second companion course, Hazardous Materials Tactical Considerations, which discusses safe strategy and tactics for alleviating the dangers posed by hazardous materials incidents. The subject matter covered includes hazard recognition, types and use of assessment instruments, classes of materials, and the proper use of protective clothing. The course uses case studies from actual fixed-facility and transportation accidents and provides participants with an opportunity to use various types of equipment, including protective clothing.

Further, the Academy has designed three first-responder courses that it has pilot-tested nationally in cooperation with state and local fire-training agencies. An agency official said that the tests were intended to develop courses to the point where they could be taught to a larger proportion of the first-responder community without direct FEMA involvement. The Academy has turned over the delivery of these courses to state and other agencies.

Finally, the Academy periodically sponsors teleconferences with assistance from other federal agencies. According to an Academy official, topics covered have included responding to incidents involving hazardous materials.

### Course Attendance Data

Our analysis of Academy data show that in fiscal year 1987 an estimated 52,000 first responders and instructors attended approximately 1,800 training sessions of the Academy-sponsored and designed courses. In fiscal year 1988, an estimated 5,400 first

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[2]According to an Academy official, the Academy developed and offered a 2-week course to train local instructors to teach this course.

responders attended approximately 223 sessions, according to data available.[3]

An Academy official said that they cannot accommodate all requests for training at the Maryland training facility. The primary impediments are limited financial resources and class size limitations at the facility. An official said that by allowing the states to use Academy-developed course materials, a larger proportion of the first-responder community can be reached more effectively.

## EMERGENCY MANAGEMENT INSTITUTE

### Nature of Training Activities

The Institute offers first-responder training courses at FEMA's Maryland training facility and through nonresident training conducted by state emergency management agencies under the Institute's sponsorship. The latter program is supported by funds provided to states and delivered by Institute and state-approved instructors. Specifically, the Institute has a 2-day course that covers information on radiation detection instruments, monitoring techniques, and personal protective actions. (The course includes an additional 4-hour refresher module.) The Institute has another 2-day course that imparts basic information on how to effectively manage a response to hazardous materials incidents occurring at fixed facilities and those occurring in transportation. Finally, it offers a 2-week course at FEMA's Maryland facility to train nonfederal instructors to teach Institute courses.

### Course Attendance Data

Our analysis of Institute data showed that in fiscal year 1987 there were 992 training sessions held by the Institute and state emergency management agencies under its sponsorship. The sessions were attended by approximately 17,800 responders and instructors. Through the first quarter of fiscal year 1988, the latest period for which information was available, an estimated 12,500 individuals attended 705 sessions nationwide. While precise demand data were not available, an Institute official told us that demand for the courses was generally high nationwide. He added that the Institute and the states' training agencies often find it difficult to meet all training requests they receive annually primarily because of financial and personnel resource constraints and space limitations at training facilities.

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[3]The fiscal year 1988 figures show a decline because, according to an agency official, only first quarter data were available.

## SECTION 4

## ENVIRONMENTAL PROTECTION AGENCY

### OVERVIEW OF EPA'S FIRST-RESPONDER TRAINING ACTIVITIES

EPA is another federal agency that is involved in emergency preparedness and training for response to hazardous materials incidents. According to an agency official, its responsibilities in these areas come primarily from the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (known as Superfund) and its amendments. EPA offers a first-responder course at its two national training centers and various locations in EPA regions. In addition, its Region VII office in Kansas City, Kansas, in cooperation with the Union Pacific Railroad, offers a first-responder training program that includes discussions of highway and railroad incidents involving hazardous materials. EPA also assists the U.S. Coast Guard provide training for federal emergency response personnel that is also attended by state and local first-responders.[1] Table 4.1 summarizes estimated EPA expenditures for fiscal years 1987 and 1988.

Table 4.1: Summary of EPA's Training Activities

| | Expenditures | | |
|---|---|---|---|
| Entity | FY 1987 | FY 1988 | Total |
| National Training | $280,000 | $948,000 | $1,228,000[a] |
| Region VII | a | 255,000 | 255,000 |
| Total | $280,000 | $1,203,000 | $1,483,000 |

[a]Data excludes costs of any informal first-responder training done on an ad hoc basis by EPA regional offices and EPA/Coast Guard exercises.

[b]An EPA official said no data were available for fiscal year 1987.

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[1]This activity is described in section 5.

## NATIONWIDE FIRST-RESPONDER TRAINING

### Nature of Training Activities

EPA developed and first offered a 40-hour, first-responder course in fiscal year 1987, according to agency officials. The course is offered at its two national training centers in Cincinnati, Ohio, and Edison, New Jersey, and nationally at various locations in EPA regions. The course is designed, according to agency officials, to provide participants with the basic information they need to recognize hazardous materials and to assess the potential dangers of such materials to individuals and the environment. Subject matter covered include the on-scene identification of hazardous materials, chemical and physical properties of hazardous materials, along with personnel protection and safety.

### Course Attendance Data

According to an agency official, EPA held 13 sessions of this first-responder course in fiscal year 1987 and 42 sessions in fiscal year 1988. An official at EPA's Cincinnati Training Center estimated that about 1,300 first responders attended the sessions in fiscal years 1987 and 1988. The official also said that there is a high demand for this course, and that they receive about three times as many training requests as can be accommodated annually.

## REGION VII TRAINING

### Nature of Training Activities

EPA's Region VII, in cooperation with Union Pacific Railroad, has developed a first-responder training program covering both highway and railroad incidents involving hazardous materials. Since 1987, the program has been comprised of two training components--a 2-day narrative course, along with a 2-day hands-on exercise course. The 2-day narrative course includes presentations on the chemistry of hazardous materials, toxicology, and the use of technical and personnel protective equipment. Each session of this course can accommodate up to 150 participants. In the 2-day exercise course, participants have an opportunity to practice many of the activities covered in summary in the first course. This course, generally limited to 25 participants, includes an exercise that requires attendees to respond to a simulated transportation incident involving hazardous materials.

In fiscal year 1988, EPA's Office of Solid Waste and Emergency Response provided funds to Region VII so that its 2-day narrative course can be packaged for dissemination to other EPA regions as well as states and localities. The funds are being used to rewrite the workbook, develop instructor guides, and produce the training program on videotape. According to an agency official, it is hoped

that packaging the material in this way will facilitate consistent course delivery among EPA regions and help EPA effectively reach a greater proportion of the first-responder community.

Course Attendance Data

Region VII data show that about 60 emergency response training sessions were held in fiscal year 1988 and were attended by approximately 2,600 participants. The first-responder training program is, according to a Region VII official, one of the most frequently requested courses sponsored in the region. Given current resources, the region finds it difficult to keep pace with training requests.

## SECTION 5

## DEPARTMENT OF TRANSPORTATION

### OVERVIEW OF TRANSPORTATION's FIRST-RESPONDER TRAINING ACTIVITIES

Transportation's hazardous materials regulatory, enforcement, and training activities are authorized by the Hazardous Materials Transportation Act, as amended--the primary federal legislation governing the transportation of hazardous materials--and other mode-specific statutes. The Federal Highway Administration, Federal Railroad Administration, National Highway Traffic Safety Administration (NHTSA) Research and Special Programs Administration (RSPA), and U.S. Coast Guard have responsibility for regulatory and enforcement actions related to hazardous materials transportation by rail, land, and water. All except the Federal Highway Administration are currently involved, to varying degrees, in training state and local emergency personnel to respond to transportation incidents involving hazardous materials. Table 5.1 provides estimates of their first-responder training expenditures in fiscal years 1987 and 1988.

Table 5.1: Summary of Transportation's Training Activities

| | Expenditures | | |
|---|---|---|---|
| Agency | FY 1987 | FY 1988 | Total |
| RSPA | $ 33,000 | $187,000 | $ 220,000 |
| Coast Guard | 120,000 | 120,000 | 240,000[a] |
| Federal Railroad | 6,000 | [b] | 6,000[a] |
| NHTSA | 2,350,000 | [b] | 2,350,000[a] |
| Total | $2,509,000 | $307,000 | $2,816,000 |

[a]GAO estimates based on information supplied by Coast Guard, Federal Railroad, and NHTSA officials.

[b]Agency officials said that data were not available for fiscal year 1988.

## RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION

### Nature of Training Activities

The Research and Special Programs Administration coordinates Transportation's hazardous materials activities--including those involving training and technical assistance to state and local emergency response personnel. Since FEMA's training focus is primarily the nation's fire service, RSPA officials said that the agency decided that it could make the most effective use of its limited financial and personnel resources by offering incident training and technical assistance targeted primarily to the nation's law enforcement community.

According to RSPA officials, the agency currently provides first-responder training to emergency response personnel in several ways, including an 8-hour response awareness course and a 40-hour hazardous materials compliance and enforcement course. These courses are available at the Transportation Safety Institute in Oklahoma City, Oklahoma,[1] and at various locations nationwide.[2] Officials in RSPA's Office of Hazardous Materials Transportation said that these courses cover such topics as (1) federal hazardous materials regulations governing shipping containers, shipping papers, and vehicle markings; (2) Transportation's emergency response guidebook; and (3) types, importance, and use of personnel protective equipment. To reach a greater proportion of state and local emergency responders in a cost-effective manner, RSPA has participated with FEMA and other federal agencies in holding teleconferences on hazardous materials and has also developed and disseminated videotapes to increase awareness on responding to transportation incidents involving hazardous materials.

### Course Attendance Data

According to a RSPA official, the agency's hazardous materials compliance and enforcement course was held six times in fiscal year 1987 and was attended by an estimated 300 state and local responders. In fiscal year 1988, eight sessions were attended by an estimated 780 responders. Regarding the agency's 8-hour awareness course, a RSPA official said that in fiscal year 1988 (the first year the course was offered) the course was held two times with about 100 state and local responders attending both sessions. This same official said that the hazardous materials

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[1]The Transportation Safety Institute is an entity within the Department of Transportation.

[2]A RSPA official estimated that approximately half the course deals with material of direct use to first responders.

transportation teleconference in which RSPA participated was viewed in fiscal year 1988 by an estimated 360,000 state and local emergency responders. Agency data show that about 300 response awareness videotapes were disseminated nationwide in fiscal year 1988.

RSPA officials said that while demand is high for first-responder training, the 8-hour awareness course and the use of teleconferences should enable the agency to more cost-effectively reach a greater proportion of those at the state and local level requiring first-responder training.

## U.S. COAST GUARD

### Nature of Training Activities

The Coast Guard established an incident simulation training program for federal on-scene coordinators and regional response teams in 1979.[3] The program, managed by the Coast Guard's Reserve Training Center in Yorktown, Virginia, generally holds six incident simulation exercises annually. A Coast Guard official said that while all of the exercises cover material beneficial to first responders and are attended by such individuals, one of the exercises is specifically designed for EPA to address incidents involving the transportation of hazardous materials by highway or rail.[4]

The 2-day simulations are "tabletop" exercise games held in large auditoriums or convention centers and involve federal on-scene coordinators, regional response teams, and local response personnel. According to Coast Guard officials, these games require participants to draw upon their knowledge of such topics as (1) product identification procedures; (2) personnel protection strategies; (3) environmental hazards posed by the release of various materials; and (4) federal, state, local, and industry response procedures. Six weeks prior to an exercise, the Coast Guard obtains input from other federal, state, and local agencies

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[3] The National Contingency Plan established a National Response Team comprised of 12 federal agencies and associated regional response teams to carry out national planning for and response to accidental releases of hazardous materials. Federal on-scene coordinators in EPA regional offices and Coast Guard districts across the country are responsible for directing and coordinating federal response actions.

[4] In fiscal year 1987, exercises were held in Alaska, California, Massachusetts, Oregon, Virginia, and the U.S. Virgin Islands. In fiscal year 1988, exercises were held in Alaska, Georgia, Hawaii, Louisiana, Nevada, and Pennsylvania. The Nevada and Massachusetts exercises were designed for EPA.

so that it can devise scenarios tailored to the specific concerns of exercise participants. Although local first responders are only observers at these exercises, a Transportation official told us that the exercises are valuable for such responders since they have an opportunity to observe the response management network in action.

Course Attendance Data

A Coast Guard official estimated that at least 1,900 state and local responders attended the 12 simulation exercises held in fiscal years 1987 and 1988. The official said that while budget constraints make it difficult to increase the number of sessions annually, state and local emergency responders who want to attend the simulations as observers can generally be accommodated since the exercises are held in facilities with large seating capacities.

FEDERAL RAILROAD ADMINISTRATION

Nature of Training Activities

As part of its activities to ensure the safe transportation of hazardous materials, the Federal Railroad Administration holds emergency response seminars for state and local emergency response personnel. An agency official told us that the 4-hour seminars are sponsored for first responders such as fire fighters and police officers. Scheduled on a request basis, the seminars are conducted by the agency's regional compliance inspectors. Various delivery formats are used such as lectures, videotapes, and question-and-answer sessions. According to a Federal Railroad official, topics generally covered include (1) understanding the placards displayed on the outside of railcars and motor vehicles that indicate the hazardous materials being transported; (2) determining the location, nature, and importance of shipping papers; and (3) understanding the response procedures that need to be invoked when there is a rail incident involving hazardous materials.

Course Attendance Data

A Federal Railroad official said that 88 seminars were held in fiscal year 1987, attended by an estimated 2,500 state and local responders.[5] According to this official, the agency is generally able to accommodate requests for such training.

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[5]Data were not available for fiscal year 1988.

## NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

### Nature of Training Activities

According to a NHTSA official, under the Highway Safety Act of 1966, NHTSA and the Federal Highway Administration jointly administer the State and Community Safety Grant Program (known as the 402 program).[6] Under the program, NHTSA annually develops five or six national emphasis areas for its highway safety program on which states are asked to focus their attention. According to an agency official, 402 grant funds help finance such activities as drunk driving education programs, seat belt programs, and emergency medical services response training. At the states' discretion, emergency medical training can cover pre-hospital, first-responder training which is relevant, in part, to transportation incidents involving hazardous materials. An official said that reviews of annual accomplishment reports show that states are funding emergency medical services training projects, and in terms of the content of the training, approximately 50 percent of the material covered in these emergency medical courses address first-responder training issues.

### Course Attendance Data

An agency official said that data were not available on the number of first responders that have attended emergency medical services courses funded with 402 grant funds, nor on the demand for such first-responder training. The official commented that the states are not required to report this information in their annual accomplishment reports.

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[6]According to the NHTSA official, the Federal Highway Administration receives a small portion of the 402 grant funds to administer its commercial drivers licensing program.

## SECTION 6

## DEPARTMENT OF ENERGY

### OVERVIEW OF ENERGY's FIRST-RESPONDER TRAINING ACTIVITIES

The Department of Energy, as a major shipper of radioactive materials, provides orientation training to state and local personnel that covers the basic emergency response procedures to be used when dealing with transportation incidents involving radioactive materials. There are two entities within Energy that offer this awareness training--the Transportation Management Division's Operations Unit in Oak Ridge, Tennessee, and the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.[1] Table 6.1 summarizes Energy's estimated expenditures on first-responder training for fiscal years 1987 and 1988.

Table 5.1: Summary of Energy's Training Activities

| | Expenditures | | |
|---|---|---|---|
| Entity | FY 1987 | FY 1988 | Total |
| Oak Ridge Operations | $331,000 | $331,000 | $662,000 |
| WIPP | [a] | 179,000 | 179,000 |
| Total | $331,000 | $510,000 | $841,000 |

[a]No WIPP first-responder training in fiscal year 1987.

### OAK RIDGE OPERATIONS

#### Nature of Training Activities

Energy's Transportation Management Division, through its Operations Unit in Oak Ridge, provides a 1-day orientation seminar on the transportation of hazardous materials to first responders in its regions nationwide. The seminar, which emphasizes radioactive materials and emergency response, is comprised of three sessions: (1) overview of general hazardous materials and the regulations governing their transportation; (2) types of radioactive shipments, hazards they can pose, and the specific regulations governing their

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[1]The WIPP is an underground hazardous waste demonstration disposal facility being constructed near Carlsbad. It will be a repository of transuranic radioactive waste from 10 Energy facilities. Once fully operational, WIPP will receive approximately 900 truck shipments annually, with the vehicles traveling along designated routes in 23 states.

transportation; and (3) lessons learned from previous radiological incidents and proper actions to be taken at the scene of any radiological incidents. To provide this information, Energy uses such educational devices as exercise workbooks and videotapes explaining the packaging and shipment of radioactive materials and how they apply to response techniques. According to Energy, the seminar has been adapted in response to the concerns and training needs of particular audiences.

According to the Director of the Division, Energy also participates with FEMA and other federal agencies in providing information on radiological incident response through nationwide teleconferences. The officials said that Energy contributes instructors and other personnel in lieu of direct funding for the teleconferences.

### Course Attendance Data

According to an agency official, Energy holds about 10 to 12 seminars annually. Our analysis of data provided by this official shows that about 470 state and local emergency first responders have received this training annually. An Energy official said that, for the most part, they have been able to accommodate requests for this first-responder seminar. The occasions when the agency was unable to hold additional seminars was, according to this official, due to financial constraints.

## WASTE ISOLATION PILOT PLANT

### Nature of Training Activities

In fiscal year 1988, WIPP officials developed a three-course emergency response education and training program.[2] The program is intended to provide first responders and others situated in communities along specific WIPP transportation routes, such as local fire fighters, law enforcement, and emergency medical personnel, the knowledge Energy believes is needed to properly (1) assess the potential impact of a WIPP-related hazardous materials transportation incident and (2) protect individuals and the environment. The program is being offered in those states through which Energy's defense-generated radioactive waste (known as transuranic) shipments to the WIPP will be transported. The program includes one course specifically for first responders--an 8-hour WIPP radiological response awareness seminar that includes "tabletop" practice scenarios. Topics addressed include the radioactive waste being shipped to WIPP; radiation and its proper

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[2]The three courses are (1) First Responder, (2) Command and Control, and (3) Mitigation. The First Responder and Mitigation courses are 8-hour sessions, with the Command and Control course lasting about 20 hours.

handling to protect responders, victims, the public, and the environment; and setting up an incident response command system.

Course Attendance Data

According to an Energy official, in fiscal year 1988 approximately 50 first-responder seminars were held in over 30 communities located in 5 Western states.[3] Department officials estimated that about 1,600 first responders attended the sessions. They said that they were able to accommodate all training requests in fiscal year 1988 in these states. However, these officials said that once the WIPP facility is opened (the current target date is Fall 1989), Energy will find it difficult to accommodate requests. They explained that the contract personnel doing the training are also responsible for managing the day-to-day operations of the waste facility. According to an Energy official, as of April 1989, the agency has agreed to provide first-responder refresher training in the five Western states and also initial first-responder training in six southern states.[4] This official said that these additional WIPP training efforts will reach an estimated 2,000 first responders in these 11 states.

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[3]Colorado, Idaho, New Mexico, Utah, and Wyoming.

[4]Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Texas.

## SECTION 7

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### OVERVIEW OF HHS' FIRST-RESPONDER TRAINING ACTIVITIES

HHS implements the Superfund activities related to worker protection, and is sponsoring the development of courses designed to further assist those who are likely to respond to both transportation and fixed-facility incidents involving releases of hazardous materials. These efforts are being carried out by HHS' National Institute of Environmental Health Sciences and its Agency for Toxic Substances and Disease Registry.

In 1986, the Institute was legislatively authorized to make grants to nonprofit organizations to develop education and training programs for workers engaged in hazardous waste removal, containment, and emergency response operations. ATSDR's responsibilities were expanded in 1986 to include various types of epidemiological, toxicological, and hazardous substance research. Under its broad mandate, the agency funded a demonstration project on local response to hazardous materials incidents. Table 7.1 shows HHS' estimated expenditures for first-responder training in fiscal year 1988.

Table 7.1: Summary of HHS' Training Activities

| Entity | Expenditures FY 1988 |
|---|---|
| NIEHS | $2,025,000 |
| ATSDR | 112,000 |
| Total | $2,137,000 |

Note: According to agency officials, there were no NIEHS and ATSDR grant and contract expenditures in fiscal year 1987.

### NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

#### Nature of Training Activities

The objective of the Institute's Hazardous Waste Workers Occupational Health and Safety Grant program is to develop and administer occupational health and safety education programs for workers at hazardous waste sites and emergency responders to transportation incidents involving hazardous materials. The Institute stipulated that grantees had to develop courses that

would satisfy the health and safety standards covering workers exposed to hazardous materials recently issued by the Occupational Safety and Health Administration.[1] The standards covered include protective equipment, hazardous waste exposure limits, handling procedures, and training workers for response to fixed-site and transportation incidents that involve hazardous materials.

In fiscal year 1988, 11 nonprofit organizations received Institute grants. The curricula summaries we reviewed showed that, as of February 1989, six grantees had developed and delivered a total of eight first-responder courses around the country.[2] The courses, ranging in duration from 6 to 24 hours, address topics such as the recognition and identification of hazardous materials, proper use of personal protective clothing, and response techniques for transportation emergencies.

### Course Attendance Data

Institute data show that approximately 5,300 first responders have received emergency response training. An Institute official told us that the courses are in demand but that the agency did not have detailed demand data.

## AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

### Nature of Training Activities

ATSDR's Emergency Response Branch provides technical assistance to local agencies in planning for and responding to hazardous materials incidents. In line with these activities, the agency contracted in fiscal year 1988 with Louisville, Kentucky, for a demonstration training project that would provide health professionals and emergency response workers with information on such topics as (1) hazardous materials recognition; (2) personnel protective equipment and its use; (3) on-scene treatment of victims; and the (4) emergency response network. An ATSDR official said that they hoped Louisville's pilot course can be packaged and disseminated for replication in other communities.

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[1]In 1986, this agency was required by SARA to promulgate health and safety standards for hazardous materials workers. The agency established a health and safety training standard of 24-hours for emergency response personnel who may be called upon to respond to transportation incidents involving hazardous materials.

[2]The other grantees are focusing on health and safety training for workers at fixed-facility hazardous waste sites.

## Course Attendance Data

In fiscal year 1988, six pilot training sessions were attended by 75 local emergency response workers in Kentucky. An agency official further said that an estimated 290 first responders attended pilot sessions in Alaska and Rhode Island. An agency official said that while there is demand among local entities for this type of training, no specific demand data were available.

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