DOE/CH/10343--T1

DOE/CH/10343--T1

DE92 007640

**NUCLEAR MATERIALS
TRANSPORTATION WORKSHOPS:**

**USDOE Outreach
to Local Governments**

FINAL REPORT

DE-FC02-87CH10343
Dated September 28, 1987

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

NUCLEAR MATERIALS TRANSPORTATION USDOE OUTREACH TO LOCAL GOVERNMENTS

Introduction

To provide direct outreach to local governments, the Transportation Management Division of the United States Department of Energy asked the Urban Consortium and its Energy Task Force to assemble representatives for two workshops focusing on the transport of nuclear materials. The first session, for jurisdictions east of the Mississippi River, was held in New Orleans on May 5 - 6, 1988; the second was conducted on June 6 - 7, 1988 in Denver for jurisdictions to the west. Twenty local government professionals with management or operational responsibility for hazardous materials transportation within their jurisdictions were selected to attend each workshop.

Workshop Participants

The Transportation Management Division of the USDOE is responsible for supporting DOE program in the safe, secure, efficient and economic movement of all materials, including the development of packagings and systems for transporting radioactive materials. TMD serves as the central DOE coordination program for Federal regulatory policy development applicable to hazardous materials transportation systems and operations.

The Urban Consortium is an organized coalition that brings together 45 of America's largest cities and urban counties to focus on how applied research, advanced management systems and technology can improve urban services. Addressing a wide range of topics, the Consortium works through formal task forces and special purpose research projects, with internal and external networks to spread its results.

The Energy Task Force of the Consortium has a specific focus on energy-related topics of interest to cities and counties -- a focus that provides an appropriate match to address local concerns for the transport of nuclear materials. The Urban Consortium and the UC Energy Task Force are supported by Public Technology, Inc., a nonprofit organization that serves as the research and technology arm of the National League of Cities and the International City Management Association.

Project Objectives

The primary objectives of this project have been to: 1) provide a direct exchange between professional managers and staff in local governments with executive staff from USDOE; 2) define a range of feasible alternatives for consideration by USDOE to meet needs voiced by local governments through this interchange; and 3) to communicate both results from this

interchange and actions taken as feasible alternatives to a broader audience of local government officials.

After an overview of transportation management and current procedures and plans by USDOE executive staff, workshop participants divided into smaller groups to identify key issues, discuss local problems, define alternative solutions, and suggest resources and assistance. Each participant was then asked to rank the list of issues that grew out of the small group sessions to determine the top concerns of the group and to channel the next day's discussion to areas of highest priority.

General Results

The discussions identified five major areas of concern to local government professionals: coordination; training; information resources; marking and placarding; and responder resources. Integrating federal, state, and local levels of government emerged as a priority coordination issue along with the need for expanded availability of training and training resources for first-reponders.

Next steps

Building on the foundation that was established by the interactive workshops, TMD seeks to reinforce and expand the communications network of local government officials responsible for transportation management and emergency preparedness. The exchange of information and opinions offers the opportunity both for identification of issues and for cooperative pursuit of issue resolution. Toward this end, TMD plans to continue working with the Urban Consortium and its Energy Task Force, still utilizing the workshop format, to assemble the participants for constructive dialogue and activity. Concerns previously identified will be addressed and potential solutions will be identified. It is expected that effort will begin to be more sharply focused on those issues identified to be of highest priority.

Overview of USDOE Nuclear Materials Transportation Program

Background: Nuclear Materials Shipments in Perspective

Nuclear materials are an integral part of our way of life today. They are used daily in medical diagnostic tests, medical therapy, medical and industrial research, oil well logging, fabrication and materials testing, weapons production, electric power production, and a variety of consumer products including smoke alarms.

The DOE utilizes nuclear materials in support of its national defense and research and development activities and is a major shipper of nuclear materials. DOE shipments are transported through almost all 50 states of the U.S. in both government and commercial vehicles via air, highway, rail, and water. Under DOE programs, the nuclear materials are transported from uranium ore mines to processing facilities where the uranium is enriched. The reactor fuel is shipped to nuclear reactors for research in new energy technologies and to produce special nuclear materials for defense purposes. By-products are shipped to research laboratories, industrial plants, and medical institutions. Nuclear waste is transported to interim storage sites.

With the emergence of nuclear power generation in the 1950s, the volume of nuclear materials being transported increased, and more stringent regulations regarding packaging, warning and identification, labeling, and shipping requirements were adopted. Today, approximately 500 billion shipment of all types of commodities are made each year in the United States. Of this total, about 100 million shipments are hazardous materials, and 2.8 million are nuclear materials. DOE shipments are a small percentage of annual US shipping activity or an average the DOE makes 350 thousand shipment each year; of these shipments, 30 thousand are of hazardous materials and 15,000 are of nuclear materials.

As with many substances, there is potential hazard in transporting nuclear materials, and stringent precautions are taken to minimize and eliminate risk.

USDOE Nuclear Materials Transportation Procedures

In over 40 years of shipping nuclear material, there has never been a fatality, a serious injury, or a significant threat to the environment as a result of the radioactive nature of the cargo. This excellent safety record is due to a combination of several factors: highly regulated shipments; superior packaging; labeling and placarding; qualified carriers; verified performance; and emergency preparedness.

Highly regulated shipments

DOE shipments are packaged and transported in accordance with Federal regulations contained in the Department of Transportation's (DOT) Title 49 Code of Federal Regulations (49 CFR). The Nuclear Regulatory Commission (NRC) 10 CFR, the Postal Service, 39 CFR, and the Environmental Protection Agency (EPA) 40 CFR. These regulations and standards are implemented through the issuance of DOE safety and operational directives called DOE orders.

Superior packaging

Proper packaging is a major factor in protecting the public and the environment during shipment of nuclear materials. Federal research and development is conducted by a number of national laboratories focusing on packaging research, design, and testing. When designing new packages, research focuses on containment, seals, leakage, cooling systems, thermal and structural analyses, shielding cask materials, and preventing a nuclear reaction. Rigorous regulatory tests include exposing the packaging to accident conditions, such as punctures, falls, crashes, water immersion, and fires. Packages have been designed and proven safe under the most rigorous testing conditions. Computer programs and are developed for tasks such as risk analysis models, which aid in decision making, establishing specifications and regulations, and planning system operations.

Nuclear material packaging is determined by the quantity (activity), type, and form of the nuclear material to be shipped. Basically, there are three types of packagings prescribed for radioactive materials shipments: strong tight packages, type A containers, and type B containers.

Strong, tight packages

All radioactive materials must, at a minimum, be shipped in strong, tight packages. These packages are so designed and the radioactivity content so limited that under conditions normally incident to transportation, there will be no significant release of radioactivity to the environment. Nuclear materials with very low levels of activity, such as uranium ore, are shipped in strong, tight packages.

Type A packages

Type A packages must be capable of withstanding normal, non-accident conditions such as extreme changes in temperature or pressure, drenching by water, and falls from a height of four feet when the package is wet. These packages are generally steel drums or boxes made of wood or strong fiberboard.

Nuclear materials that present a very small risk of hazard because of their quantity and form are shipped in Type A containers. Accidental spillage of the material poses no threat of death or serious injury to the public.

Type B packages

Type B packages are required when the material being shipped exceeds the radioactivity allowed in a Type A package. The exterior of a Type B package may resemble a typical steel drum or crate, but the interior construction is designed to retain the contents and maintain the integrity of the shielding following a severe accident. Each package design has been approved and Federally certified that it will retain its integrity after being subjected to the following sequence (the same package must endure the entire test series of test without failure):

1. 30-foot drop onto a flat, unyielding surface
(compares to accidental crash at high speeds).
2. 40-inch drop onto a vertical steel pin.
3. Exposure to 1475 F. degrees for 1/2 hour.
4. Total submersion in water for 8 hours.

These test procedures are outlined in the Nuclear Regulatory Commission (NRC) Title 10, Code of Federal Regulations, Part 71. Damage which has been observed in real accidents has not exceeded damage created during the specified engineering test. In addition, full-scale testing both in the United States and abroad has confirmed the validity of the standards imposed by the NRC. There have been no known releases of nuclear materials from a Type B package due to an accident during transport in approximately 40 years of shipment activity.

Labeling & Placarding

When shipping hazardous materials, Federal regulations require the use of warning placards and labels to alert workers and officials to the nature of the contents of the shipment. The use of placards and warning labels on the vehicles and the packages is, respectively, a joint responsibility of the carrier and the shipper. The labels and placards are familiar to emergency response personnel and are valuable in determining content information.

Shipments of nuclear materials must be accompanied by properly completed shipping papers such as bills of lading and cargo manifests, which contain detailed information on the material being transported. These papers must be kept in the vehicle transporting the material and be available for inspection by responsible officials at any time. Shippers must certify on the shipping paper that the hazardous material offered for transportation is properly classified, packaged, marked, labeled, and ready for transportation according to all DOT regulations.

Three different labels are used on packages containing nuclear material. The required label is usually determined by the maximum allowable external radiation level at a distance of one meter from the package. Package labels must specify the contents (type of nuclear substance) and quantity (total amount of radioactivity). In addition, Yellow II and Yellow III labels must indicate the maximum radiation level at a distance of one meter from the package or, for packages containing fissile material, the degree of nuclear safety control required.

Any vehicle carrying a nuclear package with a Yellow III label must display warning placards on all four of its sides. Highway route controlled quantity shipments (described below) require a special diamond-shaped placard having a white square background with a black border.

Qualified carriers

DOE carrier selection is another factor in transportation safety. DOE carriers must be trained, qualified, and capable. Certain quantities of nuclear materials known as Highway Route Controlled Quantities (HRCQ) -- which include spent fuel and high level waste -- are subject to specific routing controls that apply to the highway carrier. HRCQ are shipments of higher-than-average activity that are shipped in accident-resistant Type B containers. When transporting a HRCQ shipment, the carrier must follow established and approved routes such as the interstate highway system, beltways around cities, or state designated alternative routes. DOE carriers minimize radiological risks by considering potential rates of accidents, transit time, and population density.

Drivers of vehicles transporting HRCQ receive training which includes hazardous materials transport regulations, the properties and hazards of nuclear materials, and emergency procedures. Drivers must receive additional training every 2 years. HRCQ drivers must have a route plan in their immediate possession as well as a certificate with the following information: name and license number; training dates; name of trainer; hazards training; and certification by trainer. In addition, DOE checks the carrier's safety record and the vehicle is inspected before and after loading.

DOE also requires a training program for contractor employees who are responsible for shipment of nuclear materials in order to assure compliance with applicable transportation requirements and regulations.

Verified performance

To ensure compliance, an elaborate system of checks has been established. Having regulatory responsibility for safety in transport of hazardous materials by all modes and all means, the Department of Transportation oversees and enforces its regulations. States also inspect

and enforce nuclear materials transportation regulations. DOE internal oversight incorporates inspection and audits; quality assurance programs and audits; carrier equipment checks; and operations monitoring.

Emergency preparedness

If transportation emergencies happen, local jurisdictions have primary responsibility as first responders. Industry and carrier assistance is available from CHEMTREC and industry organizations. CHEMTREC stands for Chemical Transportation Emergency Center, a public service of the Chemical Manufacturers Association at its offices in Washington, D.C. Operating 24 hours a day, CHEMTREC provides immediate advice for those at the scene of emergencies, then promptly contacts the shipper of the hazardous materials involved for more detailed assistance and appropriate follow-up.

Upon request from Federal, State, and local authorities, NRC licensees, private organizations, or commercial carriers, DOE will provide radiological assistance teams to support local responders as appropriate. Assistance may also be obtained from the Nuclear Regulatory Commission, the Environmental Protection Agency, and the Federal Emergency Management Agency.

Federal Roles: Regulation, Standards, Management

A number of federal agencies regulate nuclear materials for safety in transportation. Two of these agencies have major responsibilities: the Department of Transportation, the Nuclear Regulatory Commission.

As the primary agency responsible for assuring transportation safety, DOT develops overall safety standards and regulates all nuclear materials in interstate and foreign commerce (except postal). The standards cover packaging, labeling, placarding, handling, and routing. The regulations apply to all methods of transportation--rail, highway, water, and air.

The NRC sets and approves packaging designs for materials with high levels of radioactivity. In addition, the NRC sets regulations for protection of shipments from sabotage or terrorism. These activities, regarding packaging and regulations for protection, are for NRC licensees.

DOE ships nuclear materials as part of its research and development activities and in support of national defense. In many instances DOE uses NRC-certified package. In other instances the Department certifies packaging designs for materials with high levels of radioactivity; certification is based on packaging standards equivalent to those used by the NRC. DOE's transportation activities follow the regulations of DOT.

Federal Roles: Training

Two federal agencies are required legislatively to offer hazardous materials transportation training programs: the U.S. Department of Transportation (DOT), and the Federal Emergency Management Agency (FEMA). Other agencies offering training include DOE and the Nuclear Regulatory Commission (NRC).

DOE offers several training programs for its employees and contractors. Training programs covering DOT regulations and DOE procedures are provided at various locations across the country.

State, local and tribal representatives are invited to attend on a space available basis at no cost. A four-day basic workshop is designed to cover the Federal regulations governing the shipment of nuclear materials and the additional requirements of the NRC and DOE. A one-week radioactive materials advanced workshop offered only to DOE and its contractors, provides additional in-depth training. DOE also provides training programs for first responders to a transportation emergency.

The Local Response

PURPOSE AND GENERAL CONCERNS

A primary purpose of the workshops was to provide a direct interchange between professional managers and staff in large local governments and executive staff from the United States Department of Energy. This interchange is intended to outline and address local government concerns about the transportation of nuclear materials. To aid discussion during the workshops, a preliminary listing of previously identified concerns, organized into five general categories, was distributed to the participants. This listing was offered as a starting point for the small group discussions. In addition to these broad topic areas, USDOE officials requested discussion and suggestions on other elements within their current and proposed transportation programs.

PRELIMINARY ISSUES LIST

Preliminary issues raised included in the following areas: materials, containers, and packaging; routing and frequency of shipments; local notification; emergency preparedness and response; and federal, state, and local coordination.

Materials, Containers, and Packaging

Overview -- A variety of fuels, wastes, and other radioactive materials may be shipped via highway, rail, air or water. The Federal government has stringent design requirements, extensive safety testing procedures, and standard marking and labeling protocols that are applied to meet extremely high safety criteria in the movement, handling, and assurance of package integrity for both shipping containers and vehicles.

Concerns -- Examples of concerns that may be of significant interest to local government staff within this category include:

- 1) What types of radioactive materials are shipped; do (or will) the number and tonnage of shipments vary by type of material?
- 2) What safety and integrity standards are used for container manufacture; what testing requirements assure high safety levels; are these standards assured through inspection and quality control programs?
- 3) Is there a need for better understanding by local government staff of the marking, labeling and placarding conventions for containers?

- 4) Is there a real concern with container safety and "package" integrity; can better communication of safety standards address this concern?

Routing and Frequency of Shipments

Overview -- Local government managers and staff may have a substantial interest in knowing the frequency and routing of radioactive material shipments through their jurisdictions. There may be major interest by city and county staff in an increased awareness of the frequency of shipments, and in means to provide an increased local role in routing decisions.

Concerns -- Examples of concerns that may be of significant interest to local government staff within this category include:

- 1) How can local government determine the frequency of shipments; what means are available to minimize the frequency of shipments?
- 2) Is the choice of shipment mode, carrier and route (road, rail or water) a function of the type of material, the shipment's origin and destination, or a combination of both?
- 3) Can performance standards be used to guide and enforce routing requirements (including time-of-day restrictions, escorts, and local bans)? How can such standards be defined in coordination with local governments?

Local Notification

Overview -- Notification to appropriate local government staff of the nature, timing, quantity, routing, and carrier(s) for shipments of nuclear materials may help to reduce local "anxiety" concerning a shipment and support coordination for safety in passage. Major concerns may be how such notification is given or accessed, to whom it is given, and what detail is both needed and desired in the provided information.

Concerns -- Examples of concerns that may be of significant interest to local government staff within this category include:

- 1) What notification methods and resources are available and most useful to local government staff for information concerning the general routing, content, timeframe, and carrier for shipments; what improvements are needed; e.g., printed schedules, direct contact, national or regional databases, etc.?

- 2) Who within a local government should be the primary contact for notifications; should this be one contact or should it vary by type or mode of shipment?
- 3) For advance notifications, at what level of detail should information be provided or accessible; i.e., general or shipment-by-shipment information, detailed manifests or general characterization, etc.?

Emergency Preparedness and Response

Overview -- Local governments will be the first responders and will have primary responsibility for action in the case of an accident or other emergency associated with a shipment. Major concerns may focus on means to prepare for and avoid accidents, guidance for response to an accident, and training for both accident prevention and response.

Concerns -- Examples of concerns that may be of significant interest to local government staff within this category include:

- 1) How can measures for the management of shipment frequency, routing and notification be coordinated sufficiently to provide a sound base for accident prevention; are specific prevention and preparedness plans essential?
- 2) What information and advisory resources are available to incident response teams, including access to databases and specialized "expert" personnel to highlight dangers and guide handling and clean-up actions.
- 3) What training resources are available for local preparedness and response staff; are there guidelines for essential training and staff capabilities?
- 4) Where and how does industry participation fit into the emergency preparedness and response approach; e.g., carriers and haulers, container manufacturers, materials manufacturers, etc?

Federal, State, and Local Coordination

Overview -- Effective management for the shipment of nuclear materials must combine sound policy guidance and effective functional management within multiple levels of government. With the focus of the workshop on the functional planning and management side of this equation, major concerns may include building effective management structures, dealing with public perceptions, and allocating program costs.

Concerns -- Examples of concerns that may be of significant interest to local government staff within this category include:

- 1) How can practical planning and intergovernmental coordination support an objective and professional management perspective in dealing with the transportation of nuclear materials; i.e., are political/professional conflicts a problem, and if so, can sound management techniques help to resolve those conflicts?
- 2) How do preparedness and response strategies for nuclear materials transportation fit within the general framework of SARA Title III with its requirements for Local Emergency Planning Committees and formal hazardous materials prevention and response plans?
- 3) Do public perceptions of the potential dangers associated with nuclear materials impede effective management of shipments; is public education needed; what actions can reduce unfounded fears within the community?
- 4) An increased local government role implies an increased local government cost; what are reasonable cost expectations for an effective local management program, and is financial support available?

PRIORITIES FROM WORKSHOP PARTICIPANTS

During the small group sessions, participants were asked to: (1) modify, expand, and clarify these concerns; and (2) suggest actions worthy of USDOE staff consideration. Full consensus was not anticipated on either the concerns or the solutions. The objective of the workshop was to confirm what items are important, then to define a range of "feasible alternatives" rather than "absolute solutions" for consideration by USDOE. The outcomes of the two workshops highlighted local governments priority in six broad topic areas: coordination; training; information resources; marking and placarding; and responder resources.

Coordination

With the regulation, routing, packaging certification, training, compliance, and other nuclear materials transportation issues divided among several Federal agencies, coordination emerged as a significant concern of city and county professionals. Local officials rated consistency and coordination issues high across the spectrum of issues -- consistent regulations; coordination between Federal, State, and local agencies; uniformity in marking and labeling; and intergovernmental coordination as a way to ensure more effective management, enforcement, preparedness, and response.

Coordination issues included recommendations for:

- improved measures for accident prevention including prevention preparedness plans
- increased consistency in standards and regulations
- better enforcement of current route and placarding requirements
- more uniform, non-conflicting labeling and placarding system
- integration within general framework of SARA Title III
- legislation that connects levels of government to enable local enforcement; formal requirement that the State inform a designated local official of RAM shipments
- intergovernmental coordination to support an objective management perspective.

Training

Workshop participants emphasized the importance of training for first responders, especially, but also for those charged with the general planning and prevention of incidents. Concerns included the need for increased availability of space and resources to attend Federal training seminars along with the need for training specific to nuclear materials incidents.

Training issues included suggestions for:

- increased direct access to Federal training courses and seminars
- expanded training resources for local staff to incorporate RAM shipments issues
- specialized training with uniform standards for responders and agency staff
- alternate means and media for training other than on-site classes
- effective training resources to guide immediate action by first-responders.

Responder "Resources"

Suggestions for first responder resources ranged from improved protective suits to detector equipment, support systems, hardware, and access to databases and specialized expert personnel.

Responder resources included suggestions for:

- better procedures and equipment to diagnose potential dangers and select "best" responses
- better information and advisory resources available to incident response teams

- availability of simple, inexpensive radioactivity testing devices for local governments.

Information Resources

The workshop participants outlined the need for increased information balanced by the potential overload of paper. Access to databases and advance notification of major shipments were identified as major priorities.

Information resources issues included suggestions for:

- better information and advisory resources available to incident response teams, including access to databases and specialized "expert" personnel
- requirements that the State must inform a designated local official of major nuclear shipments around or through the jurisdiction.

Marking and Placarding

Marking and placarding priorities emphasized issues of visibility, standardization, accuracy, and reliability.

Marking and placarding issues suggestions for:

- better means for responders to identify the contents of a RAM container
- placarding that is complete, accurate, and illustrative of the level of risk
- more visible, uniform, non-conflicting labeling and placarding system
- more effective enforcement of current placarding requirements
- better understanding by local government staff of placarding, marking, and labeling.

Miscellaneous Issues

Miscellaneous issues included in the lower portion of the "Top 15" included cost issues and public education.

Miscellaneous suggestions included:

- cost recovery methods
- better definition of reasonable cost expectations for an effective local program; financial support to meet those costs
- increased Federal government role in public education to support the local government's communication to citizens

- better public education to reduce unfounded fears.

NON-ISSUES

Concern for the safety and integrity standards of DOE shipments was not a concern of the local government workshop attendees. More surprisingly, concern for the costs associated with local government management of nuclear materials shipments also ranked low.

U.S. DEPARTMENT OF ENERGY ACTIONS & PLANS

The Urban Consortium workshops have been successful in establishing the framework for productive interaction between DOE/TMD and the participating urban officials. A primary outcome has been the identification of issues of concern to the officials and their suggestions for possible resolution. Acting on these suggestions, the Transportation Management Division (TMD) has initiated a number of actions including those listed below relating to the five priority concerns.

Coordination

- TMD had developed a plan for a coordinated DOE emergency response program among various Departmental elements. Included in this plan is a budget request for the position of a transportation emergency preparedness coordinator. The coordinator and an oversight steering committee would work toward greater consistency and compatibility of DOE transportation emergency preparedness.
- TMD is also proposing development of a teleconference to describe the integrated DOE transportation program (TMD current shipping as well as other programs that are planning for shipping to the Waste Isolation Pilot Plant in Carlsbad, New Mexico, and to the national civilian radioactive waste repository, when such a facility is sited and constructed - current schedule is 2003). TMD recently (August 1988) participated in a similar teleconference sponsored by the Federal Emergency Management Agency for viewing by state and local emergency response officials.
- TMD is participating in DOT-sponsored programs for a series of meetings with state and local officials (TRANSRAM and COHMED meetings). These meetings are designed for exchange of information as a basis for building consensus and consistency in planning for hazardous material transportation.

- TMD intends to continue to use the Urban Consortium as its primary forum for reinforcing transportation coordination among intergovernmental organizations.

Training

- TMD is a primary participant in an effort by FEMA to establish principles and procedures for fostering coordinated emergency preparedness training for both Federal and State officials. In support of this training, TMD is requesting a substantially larger budget allocation for enhanced emergency response training. The specific elements of the proposed training program are under development.

Information Resource

- TMD is participating in a wide range of meetings (including the Urban Consortium Workshops) with State and local governments and representative organizations in order to provide program information and materials to interested attendees. Information packets are either brought to the meetings or mailed to attendees as a follow-up interaction. In addition, several videotapes, suitable for training, have been sent to organizations that have requested them. TMD finds the interactions at these meetings to be particularly useful in identifying issues of concern. In turn, TMD has enhanced knowledge of what areas to target in its information activities and products.

Responder Resources

- The enhancement of training and other resources for transportation emergency responders will be a primary element of the proposed emergency preparedness training program described above.

Marketing and Placarding

- Since development of regulations regarding marking and placarding is a Federal responsibility assigned to the DOT, TMD will combine Urban Consortium concerns, comments, and suggestions and submit them to DOT for consideration.

TMD expects to undertake additional action initiatives -- both for the above five priority issues and for additional issues that emerge as of concern to the Urban Consortium membership. In this manner, TMD hopes to cooperatively identify, address and resolve issues confronting safe and efficient transportation of hazardous materials.

FINAL PARTICIPANT LIST
TRANSPORTATION OF NUCLEAR MATERIALS

May 5-6, 1988
(Thursday-Friday)

The Hyatt Regency
500 Poydras Plaza
New Orleans, LA 70140

City and County Staff

Jim Cook
Director
Emergency Management
Atlanta/Fulton County, GA

Robert Bauman
Special Assistant
Office of the Mayor
Boston, MA

Glenn Malmstrom
Head Engineer
Environmental Quality Bd.
Broward County, FL

David Rager
Assistant Director
Safety Department
Cincinnati, OH

James McNamee
Chief
Fire Department
Cleveland, OH

Michael Pompili
Assistant Commissioner
Department of Health
Columbus, OH

Capt. Steve Arnell
Hazmat Division
Metro Fire Department
Dade County, FL

Don Anderson
Assistant Director
Emergency Preparedness
Hennepin County, MN

Jerry Snow
Manager
Solid Waste Dept.
Hillsborough County, FL

John D. Lucas (*absent*)
Director
Emergency Services
St. Charles Parish, LA

Matt Frankel
Hazmat Operations
Public Safety Dept.
Jacksonville, FL

Capt. Doug Norman
Hazmat Unit
Police Department
Knoxville, TN

Bud Fekete
Acting Director
Hazmat Operations
Louisville, KY

Lt. Charles Teeters
Sr. Hazmat Instructor
Fire Department
Memphis, TN

Dennis Wheeler
Deputy Chief
Fire Department
Miami, FL

David Sobers
Chief
Environmental Planning
Montgomery County, MD

Al Leidner
Manager, MIS
Environmental Protection
New York, NY

John Hadalski
Sr. Analyst
Hazardous Materials
Philadelphia, PA

Robert Full
Chief, Hazmat Unit
Public Safety Dept.
Pittsburgh, PA

Steve Ehlers
Policy Planning
Public Works Dept.
Washington, DC

New Orleans Final Participant List (Cont'd)

Speakers and Guests

Kurt Steiner
CAO
City of New Orleans
New Orleans, LA

Warren McDaniels
Ass't Superintendent
New Orleans Fire Dept.
Chair, LEPC

George Ruberg
Management Systems Lab
Virginia Tech
Blacksburg, VA

Eric Howard
Staff
Environmental Services
Denver, CO

U.S. Department of Energy Staff

Lawrence H. Harmon
Director
Transportation Mngmnt.
Washington, DC

James D. McClure
Technical Staff
Sandia Nat'l Lab
Sandia, NM

John Cece
Technical Consultant
Social & Science Systems
Bethesda, MD

Joanne Passaglia
Program Analyst
Transportation Mngmnt.
Washington, DC

Host City and Support Staff

Ms. Lilian Jenkins
Coordinator
Office of Emergency Mgt.
New Orleans, LA

Steve Winters
Communications Specialist
Office of Emergency Mgt.
New Orleans, LA

Dr. Anthony Laska
Energy Manager
Law Department
New Orleans, LA

Richard Zelinski
Director of Research
Public Technology, Inc.
Washington, DC

Lisa Philp
Research Assistant
Public Technology, Inc.
Washington, DC

PARTICIPANT LIST

TRANSPORTATION OF NUCLEAR MATERIALS

JUNE 6-7, 1988
(Monday-Tuesday)

Embassy Suites Hotel
Denver - Downtown
1881 Curtis Street
Denver, CO 80202

Bruno Bernasconi
Assistant Chief
Fire Department
Albuquerque, NM
502/242-1441

David Guille
Director
Emergency Management
Cheyenne, WY
307/637-6406

Dennis Bechtel
Coordinator
Computer Planning
Clark County, NV
San Francisco, CA
702/455-4181

P. M. Freeman
Assistant Chief
Fire Department
Dallas, TX
213/670-4611

Rogers Pratt
Assistant
Emer. Prepared. Office
Denver, CO
303/575-3958

David Williams
Director
Transportation Planning
Denver, CO
303/575-3958

Joe Stapleton
Chief/Training Office
Hazardous Materials
Spokane, WA

Capt. Jerry Richards
Control Officer
Fire Department
Fort Worth, TX
817/870/6858

George Bleth
Director
Health Department
Fresno County, CA
2209/445-3204

Dr. Richard Biery
Director
Health Department
Kansas City, MO
405/235-3314

Richard C. Anderson
Battalion Chief
Fire Department
Los Angeles, CA
213/485-7191

Tom Smith
Assistant Chief
Fire Department
Oklahoma City, OK
602/256-3435

Jerry Vanzant
Deputy Chief
Fire Department
Phoenix, AZ
602/256-3435

Gay Carroway
Director
Public Safety Department
St. Louis, MO

James Halvorsen
HAZMAT Specialist
Fire Department
Salt Lake City, UT
801/596-52269

Curtis Franz
Deputy Chief
Fire Department
San Antonio, TX
512/299-8462

Gary Stephany
Deputy Director
Environmental Health
San Diego, CA
619/236-2311

Elaine Warren
Deputy City Attorney
City Attorney's Office
San Francisco, CA
415/869-1952

Gary Lee Lynch
Toxics Program Mgr.
Environmental Mgmt.
San Jose, CA
408/277-5533

Cliff Marks
Environmental Planner
Long Range Planning
Seattle, WA
206/684-2506

Richard Casanova
Manager
Emergency Services
Tucson (Pima County), AZ

Speakers and Guests

John Mrozek
Manager
Public Works
City & County of Denver

Steve Winters
Communications Specialist
Environmental Operations
New Orleans, LA

Alan Leidner
Manager, MIS
Environmental Protection
New York, NY

U.S. Department of Energy Staff

Lawrence H. Harmon
Director
Transportation Management
Washington, DC

James D. McClure
Technical Staff
Sandia National Lab
Sandia, NM

Susan Denny
Technical Consultant
Social & Science Systems
Bethesda, MD

Host City Staff and Support Staff

Dr. E. K. Demos
Director
Environmental Services
Denver, CO

Eric R. Howard
Administrative Assistant
Environmental Services
Workshop Coordinator
Denver, CO

Jack Daly
President
United Minerals and Energy
Gaithersburg, MD

Richard Zelinski
Director of Research
Public Technology, Inc.
Washington, DC

Lisa Philp
Research Assistant
Public Technology, Inc.
Washington, DC

END

**DATE
FILMED**

4 / 06 / 92