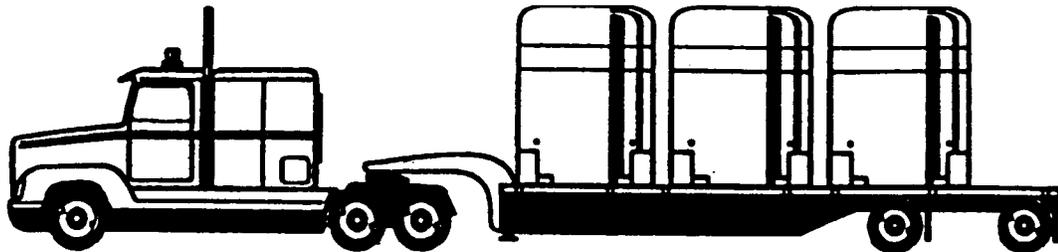


Western Governors' Association

WIPP Transportation Safety Program Implementation Guide



Prepared Cooperatively by:

Western Governors' Association
WIPP Transportation
Technical Advisory Group

and the

U.S. Department of Energy
Carlsbad Field Office

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WESTERN
GOVERNORS'
ASSOCIATION

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Statement of Purpose

The Western Governors' Association (WGA) Waste Isolation Pilot Plant Transportation Technical Advisory Group (Technical Advisory Group), in cooperation with the U.S. Department of Energy (DOE), developed this *WIPP Transportation Safety Program Implementation Guide* (Guide). It presents the overall transportation issues, objectives, approaches and procedures which were agreed to by Western corridor state Governors and DOE through a Memorandum of Agreement signed in 1996. These issues, objectives, approaches and procedures govern the conduct of the highway transportation of transuranic waste through Western states.

This Guide is based upon WGA policy resolutions, enhanced safety standards, DOE orders and guidelines, and carrier contract agreements. It includes procedures developed cooperatively by the Technical Advisory Group and the DOE Carlsbad Field Office (DOE-CBFO).

The Guide was prepared with assistance provided through the DOE–WGA Cooperative Agreement. WGA, through its Technical Advisory Group, provides a forum in which Western corridor states, DOE-CBFO, and DOE Headquarters staff cooperatively work to coordinate the implementation of program procedures and activities focused on the safe and uneventful transportation of transuranic waste.

This Guide, and supporting documents, address accident prevention, emergency response preparedness, medical preparedness, public information, and route designation. WGA, Western corridor states, DOE-CBFO, and DOE Headquarters prepared specific procedures to implement the principles and objectives. These are referenced at the end of each section and are available upon request.

WGA, Western corridor states, DOE-CBFO, and DOE Headquarters will annually evaluate the procedures and standards contained in this Guide. Procedures and standards will be revised as necessary to reflect the changing environment during the thirty year shipping campaign. The WGA will distribute updated materials to participating Western state officials, the DOE-CBFO, the DOE Headquarters, and other appropriate organizations.

List of Acronyms

Action Plan	Regional Medical Preparedness Action Plan
CH	Contact Handled
CMR	WIPP Central Monitoring Room
CVSA	Commercial Vehicle Safety Alliance
CVSA Level VI	CVSA Enhanced North American Safety Inspection Standards - Level VI
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOE–CBFO	U.S. Department of Energy - Carlsbad Field Office
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMCSA	Federal Motor Carrier Safety Administration
Guide	WIPP Transportation Safety Program Implementation Guide
HRCQ	Highway Route Controlled Quantities
MERRTT	Modular Emergency Radiological Response Transportation Training
NRC	Nuclear Regulatory Commission
OSHA	U.S. Occupational Safety and Health Administration
PPE	Personal Protective Equipment
RH	Remote Handled Transuranic Waste
RH 72-B	RH-TRU 72-B Waste Shipping Package
STEP	States and Tribal Education Program
Technical Advisory Group	Western Governors' Association Waste Isolation Pilot Plant Transportation Technical Advisory Group
TRANSCOM	Transportation Tracking and Communications System
TRU	Transuranic
TRUPACT–II	Transuranic Packaging Transporter

WGA	Western Governors' Association
WIEB	Western Interstate Energy Board
WIPP	Waste Isolation Pilot Plant
WIPP LWA	WIPP Land Withdrawal Act
WIPPTREX	WIPP Transportation Emergency Exercise
WIPPTRAX	WIPP Transportation Exercise for New Mexico

Introduction

Western Governors' Association WIPP Transportation Safety Program

The Waste Isolation Pilot Plant (WIPP) shipping campaign will include over 19,500 transuranic waste shipments to the WIPP repository in southeastern New Mexico during its 35-year operational life. These shipments, originating at five major DOE sites and various smaller sites throughout the United States, will traverse 30 states and the lands of at least 11 sovereign tribal governments. Because of the large number of shipments, the considerable mileage to be logged, and the hazardous nature of the cargo, every reasonable precaution must be taken to ensure adequate protection of public health and the environment. Moreover, public confidence in the safety of the WIPP shipping campaign requires the highest standards for incident prevention and emergency preparedness.

Recognizing that corridor states have the responsibility for ensuring the safety of their residents and for responding to any incident which might occur, Western Governors have unanimously adopted several related policy resolutions addressing the safety of the WIPP shipments. The objective of these resolutions is the safe and uneventful transportation of nuclear waste from current temporary storage facilities to more suitable interim or permanent repositories. Western Governors are committed to working with Congress and the DOE to achieve this objective.

In 1989, the WGA established its Technical Advisory Group to work toward achieving this objective. The Technical Advisory Group originally consisted of representatives from seven Western states along the initial transportation corridor to the WIPP: New Mexico, Colorado, Wyoming, Utah, Idaho, Oregon, and Washington. The Technical Advisory Group was later expanded to include Arizona, California, Nebraska, and Nevada, Western states through which intersite shipments or shipments to the WIPP will also occur.

Initial funding was provided by a 1988 Cooperative Agreement with the U.S. Department of Transportation (DOT). In 1989 the Technical Advisory Group prepared a *Report to Congress* describing the needs of the Western states to prepare for the WIPP and intersite shipments in the following areas:

Accident Prevention

- High-Quality Drivers and Carrier Compliance
- Independent Inspections
- Bad Weather and Road Conditions
- Safe Parking During Abnormal Conditions
- Advance Notice of Shipments
- Access to Information on Shipment Status

Emergency Preparedness

Mutual Aid Agreements
Emergency Response Plans and Procedures
Training and Retraining
Emergency Response Equipment

Public Involvement and Information

The Secretary of Energy agreed with the conclusions in the 1989 *Report to Congress* and directed the DOE to enter into a Cooperative Agreement with the WGA. Working with DOE, Western states developed a model program to help ensure that the transuranic waste shipments are “safe and uneventful.” The elements of this program are described in this Guide, and generally follow the outline from the *Report to Congress*. The Technical Advisory Group updated the *Report to Congress* with a 1991 *Report to the Western Governors and Secretary of Energy*. The Technical Advisory Group identified Medical Preparedness and Highway Routing as additional areas to be addressed. These are included in this Guide.

In 1995 and again in 2003, Western corridor state Governors and the Secretary of Energy signed a Memorandum of Agreement to implement the principles and standards contained within this Guide. These principles and standards are designed to help achieve the Governors’ objective of the “safe and uneventful transportation of nuclear waste” through the Western states. They were cooperatively developed by Western corridor states, DOE-CBFO, and DOE Headquarters.

Each section of the Guide contains a summary statement describing the issue, the objective, the approach, and the evaluation process used by the DOE and Western corridor states for each program element. A summary table which provides information about the key documents and associated reference materials is included at the end of each section.

Transuranic Waste

Transuranic wastes are discarded materials that have been generated from activities associated with nuclear weapons production research and development, and decontamination and decommissioning of production facilities, since the 1940s. This waste is contaminated with man-made radioactive materials with atomic numbers greater than uranium, such as plutonium, americium, and curium.

Transuranic waste is officially defined as waste contaminated with alpha-emitting radionuclides, having atomic numbers greater than 92 and with half-lives greater than 20 years and in concentrations greater than 100 nanocuries per gram of waste. The waste consists of such things as laboratory clothing, tools, glove boxes, leaded rubber gloves, glassware, air filters, ash salt metals, ceramic parts, plastics, and solidified waste contaminated with man-made radioactive materials including plutonium and americium. Some of these wastes contain hazardous chemical constituents (e.g.,

carbon tetrachloride, lead, toluene, xylene) and are classified by the U.S. Environmental Protection Agency (EPA) as “mixed” transuranic waste.

Transuranic waste shipments pose a range of potential hazards with inhalation being the primary hazard. Inhalation of certain transuranic materials, such as plutonium, even in microgram quantities, could deliver significant internal radiation doses to the body. The principal focus of the Technical Advisory Group is to reduce the chance and severity of an incident through stringent transportation safety procedures. There are two classifications of transuranic waste: contact handled (CH) and remote handled (RH).

The greatest percentage of waste planned for disposal at the WIPP site, by volume (96 percent), is CH waste, which primarily emits alpha radiation. This type of radiation cannot penetrate human skin. Therefore, external exposure to alpha radiation from contamination is usually not serious because of the protection provided by the skin. CH waste also emits gamma radiation which results in dose rates at the surface of the waste container of 200 mrem per hour or less and can be safely handled without special protection when in the proper container.

A small percentage (4 percent by volume) of the waste planned for disposal at the WIPP site is RH waste, which primarily emits gamma radiation. This results in containers with a surface radiation dose rate in excess of 200 mrem per hour. These containers are handled by remote means and when in transport they are in a specially designed transporter which has additional shielding to protect workers, drivers, and the public.

Waste Isolation Pilot Plant

The DOE constructed the WIPP, in southeastern New Mexico, 26 miles east of Carlsbad. The WIPP underground facility, which is 2,150 feet underground in a 2,000-foot thick salt formation, was constructed as a research and development facility to demonstrate the safe disposal of transuranic waste from the DOE defense facilities and private contractor sites. The waste disposed at the WIPP was generated after 1970 from defense-related plutonium reprocessing and fabrication, and defense-related research activities at the DOE facilities.

Transportation System

All waste will be transported either intersite or to the WIPP in U.S. Nuclear Regulatory Commission (NRC) certified Type-B containers under 10 CFR 71. Currently, for CH waste, the WIPP is certified to use two reusable shipping packages. They are the Transuranic



Figure 1 - Transport Vehicle with two TRUPACT-II containers and one HalfPACT container.

Packaging Transporter (TRUPACT-II) and a shorter version called the HalfPACT. A typical shipment consists of one to three TRUPACT-II containers or some combination of up to three TRUPACT-II containers and HalfPACT containers. One configuration of the transport vehicle is shown in **Figure 1**. A cut-away view of the TRUPACT-II is shown in **Figure 2**.

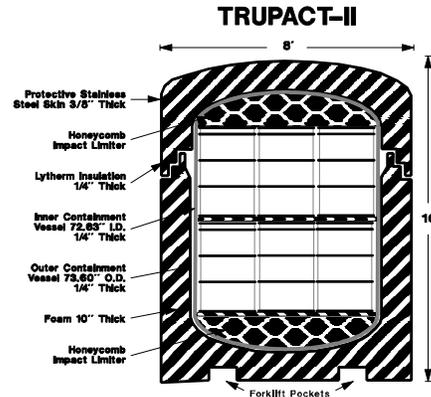


Figure 2 – Cut-Away View of TRUPACT-II

The TRUPACT-II is a cylindrical metal container with a flat bottom and a domed top and is transported in an upright position. A multi-layered wall design increases the package strength and provides the ability to withstand potential transportation incidents. Inside the TRUPACT-II, the CH waste is sealed in 55-gallon steel drums or “standard waste boxes”. Each TRUPACT-II holds up to fourteen 55-gallon drums or two “standard waste boxes”. The loaded TRUPACT-II containers are mounted on specially designed trailers and pulled by conventional diesel-powered tractors. The HalfPACT container is a shorter version of the TRUPACT-II container and is designed to carry heavy material (seven 55-gallon

steel drums or 1 “standard waste box”) without exceeding legal truck weight limits as defined by the DOT.



Figure 3 - RH-72B Container on Truck

drum. These are for use only within the TRUPACT-II or HalfPACT and cannot be used alone, as a transport container.

A special container, called a “pipe overpack”, is used to transport wastes contaminated with higher concentrations of plutonium and americium. The “pipe overpack” container has been approved by the NRC and is designed to be placed into another container such as a 55-gallon

All RH waste will be transported in a package designed for RH waste. Both the RH-72B and 10-160B have been certified by the U.S. Nuclear Regulatory Commission as a Type B Package for transportation of RH waste. A typical shipment consists of one RH-72B container (as show in **Figure 3**) or one 10-160B container per truck trailer. **Figure 4** is a cutaway view of the RH-72B transport

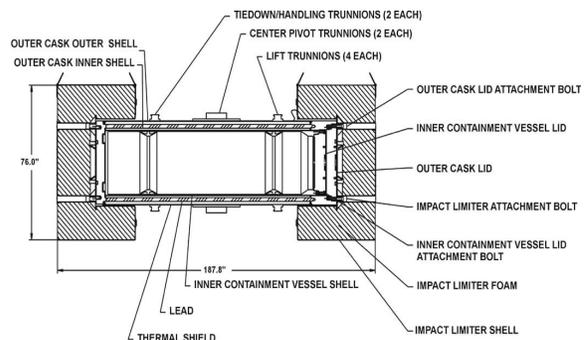


Figure 4 - Cut-away View of RH-72B

container.

In 1988, the DOE awarded a five-year contract to a commercial carrier for truck transportation of transuranic waste to the WIPP. In 1995, a new carrier was awarded the contract, then in 2000, the DOE awarded two separate transportation contracts. All trucking services are provided under a contract, which calls for the carriers to dedicate the trucks and drivers to only their contracts.

An important feature of the WIPP transportation system is the Transportation Tracking and Communications System (TRANSCOM). TRANSCOM is a combination of navigation, satellite communication and computer network technologies to monitor the movement of transuranic waste shipments either intersite or to the WIPP.

Figure 5 depicts the current and proposed routes to be used for the truck transportation of transuranic waste either intersite or to the WIPP. Alternative routes in the Western states may be designated using the safety considerations and negotiation process contained in Section XII, "Highway Routing of WIPP Shipments." In selecting these routes, the DOE voluntarily agreed to use applicable DOT regulations (49 CFR 397) normally used for high-level radioactive wastes and spent nuclear fuel shipments. The routes are predominantly Interstate system highways. Where available, shipments will use beltway's around urban areas. These routes are subject to change since some Western states may designate alternate preferred routes prior to the WIPP shipments crossing into their state.

The WIPP transportation safety planning to date has been based on the assumption that all waste shipments will be by truck. However, the WIPP is accessible by rail, and the 1992 WIPP Land Withdrawal Act (WIPP LWA) required the DOE to evaluate the feasibility and impacts of shipping transuranic wastes to the WIPP by rail.

Based on the National Academy of Science draft recommendation of 2001, DOE-CBFO is evaluating the suitability of using rail along with truck. WGA, Western states, DOE and two major

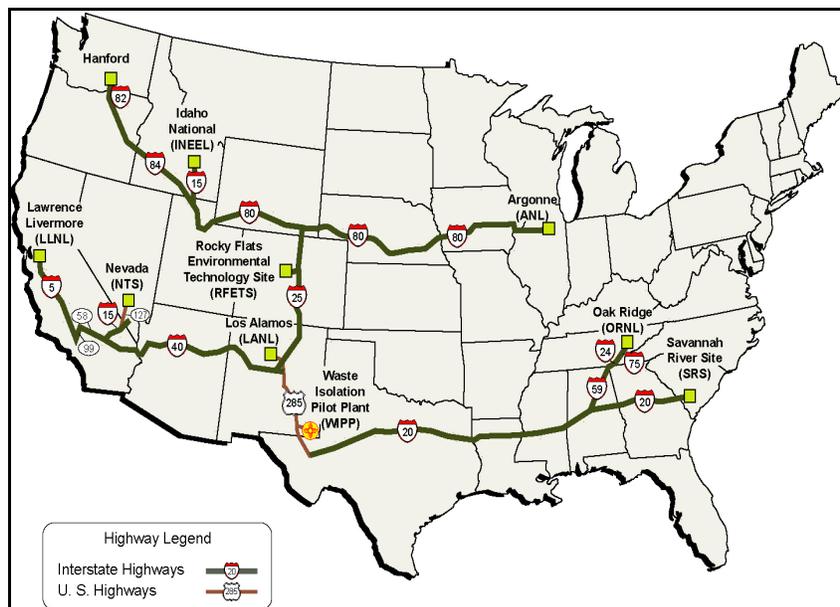


Figure 5 - U.S. DOE's Proposed Truck Routes

western railroads are preparing a separate Rail Program Implementation Guide to address the uniqueness of operating characteristics and routing of railroads.

Introductory Materials

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Western Governors' Association Resolution 03-08, WGA, 2003.</i>	WGA	Final
<i>Report to Congress—Transport of Transuranic Wastes to the Waste Isolation Pilot Plant: State Concerns and Proposed Solutions, WGA Working Group on Nuclear Wastes, June 1989.</i>	WGA	Final
<i>Report to the Western Governors and Secretary of Energy, WGA Technical Advisory Group, June 1991.</i>	WGA	Final
Documents to be prepared		
Report to the Western Governors and Secretary of Energy, 2003.		
Reference material		
<i>WGA/DOE Cooperative Agreement, No. DE-FC04-90AL65416, as amended.</i>	WGA/ DOE	Final

Section 1: High-Quality Drivers and Carrier Compliance

Lead States: Colorado, New Mexico

The Issue: Highly qualified, well-trained drivers; diligent vehicle maintenance; carrier compliance with regulations; and enhanced carrier and driver performance requirements can greatly reduce the risk and consequences of truck incidents.

The Objective: Establish, implement, and maintain an enhanced carrier contract and management plan for the dedicated WIPP carriers, focusing on high quality drivers and vehicles.

The Approach: Although the possibility of incidents cannot be eliminated, it can be significantly reduced by requiring stringent driver qualifications and training; through strict adherence to all applicable laws and regulations; and special provisions in the carriers' transportation contracts to enhance safety and performance.

In 2000, DOE-CBFO awarded two contracts to two commercial carriers for a period of five years for truck transportation of transuranic waste to WIPP. Under these contracts, these two carriers are required to dedicate designated trucks and drivers for TRU waste shipments to WIPP.

The Technical Advisory Group has been able to provide suggested requirements for the WIPP transportation contract and the carrier's management plan. The contract and management plan include above minimum regulatory requirements for driver qualifications, driver performance, driver training, carrier performance, inspection requirements, and vehicle maintenance. These and other safety requirements are described in detail in *Model Safety Elements in the WIPP Transportation Contract and Corresponding Carrier Management Plan*.

The Technical Advisory Group participates in the carrier selection process (*i.e.*, through solicitation review and the technical evaluation of responses), the development of contract requirements, and development of the carrier's transportation management plan. The Western States are committed to ensuring the DOE-contractor compliance with the letter and intent of all transportation safety requirements, governing the campaign.

The Technical Advisory Group established a *Compliance Audit Program* to verify compliance by the contract carriers with all applicable laws, regulations, and other requirements. This program involves regularly scheduled site visits to the contract carrier's facilities by a designated state authority where record keeping audits and other inspection functions are performed. Audit checklists that identify applicable statutory, regulatory, and contractual requirements, were developed for use during the audit process. These checklists have been reviewed, modified and approved by the Technical Advisory Group, DOE-CBFO, and contract carriers.

The DOE-CBFO and Western States agree that audits of companies awarded carrier contracts for shipments of transuranic waste in Western States will be performed. Where possible these audits will be performed by the host state. In the event the host state is in not part of the WGA region, WGA requests that one of the lead states be allowed to observe audits of the carrier. These audits will be completed by the company's host state on a quarterly basis for new carriers (during the first year) and twice a year for established carriers. The frequency of these audits and the check-lists used will be reassessed periodically by the Technical Advisory Group and DOE-CBFO. Consultation and coordination with the DOE, its contractors/subcontractors, DOT, and other interested and affected entities will remain an important, integral component of the *Compliance Audit Program*.

Evaluation: On an annual basis, the lead states will review whether revisions are required to the checklists to incorporate changes in the applicable transportation requirements. Proposed revisions will be presented to the Technical Advisory Group, DOE-CBFO and its contract carriers for their consideration and approval. Upon approval, the checklists will be revised accordingly and used during subsequent compliance audits.

DOE-CBFO will ensure that audits of all contract carriers are performed on an annual basis utilizing either the host state, for the carrier, or another organization as selected by DOE-CBFO (since DOE-CBFO can not mandate that host states be required to perform the audits). The Host state will analyze all WGA Motor Carrier Audit Reports. Copies of the audits from all WIPP transportation companies will be presented by DOE-CBFO to the regional coordinating organizations for dissemination to their member states. For the west, these reports will be analyzed by the lead states. Audit deficiencies, along with recommendations for correcting identified deficiencies, will be discussed at the next Technical Advisory Group meeting.

Table 1: High-Quality Drivers and Carrier Compliance

Lead States: Colorado, New Mexico

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Model Safety Elements in the WIPP Transportation Contract and Corresponding Carrier Management Plan, New Mexico, Revised January 1996.</i>	NM	Final
<i>WIPP Project Compliance Review Driver Checklist, Colorado State Patrol (CSP), July 1995.</i>	CSP	Final
<i>WIPP Project Compliance Review Vehicle Checklist, Colorado State Patrol (CSP), July 1995.</i>	CSP	Final

Section 2: Independent Inspections

Lead States: Idaho, Washington

The Issue: A quality, independent inspection program assures that drivers and vehicles perform at optimum levels and that radiation levels are within allowable limits.

The Objective: Reduce the chance of incidents from mechanical failure or human error by identifying and correcting defects, before they pose a threat to shipment safety.

The Approach: Inspection and enforcement activities for radioactive material transportation are shared by federal and state agencies. Implementation of the inspection program by state personnel will provide independent verification of regulatory compliance, enhancing public confidence in the safety of the WIPP shipping campaign. The DOE selected the Commercial Vehicle Safety Alliance (CVSA), an organization of state motor carrier officials responsible for the administration and enforcement of motor carrier safety laws, to develop an inspection and enforcement program. CVSA has since developed the uniform inspection procedures and a model agreement for inspection reciprocity for radioactive material shipments entitled the *CVSA Enhanced North American Safety Inspection Standards - Level VI* (CVSA Level VI).

These inspection procedures were developed with the assistance of the Conference of Radiation Control Program Directors. The procedures provide uniform standards for radiation surveys, inspection of drivers, shipping papers, vehicles, and packages. The standards also provide for vehicle inspections at points-of-origin and-destination, and for en route inspections. The enhanced inspection procedures also require a higher level of out-of-service criteria than the North American Inspection Standards.

A comprehensive interstate inspection program should be based on a process that is consistent from state-to-state in terms of training, procedures, and application. The CVSA Enhanced Inspection Program meets these consistency requirements. The Western Corridor States inspect the WIPP shipments using the CVSA Enhanced Inspection Criteria. The DOE has agreed that vehicles carrying waste to the WIPP will comply with the out-of-service standards of the enhanced criteria.

CVSA Level VI inspections will be performed at the point of origin. Shipments shall be defect free before dispatch. Before dispatch a CVSA Level VI decal will be affixed to the tractor certifying the shipment has met inspection criteria and is defect free. During transit, to the WIPP, each state may inspect the shipment to verify that the CVSA Level VI inspection was performed and that the sticker verifying such is attached. Individual states may choose to perform en route inspections on shipments according to law or policy. Any reinspection en route should be performed in accordance with CVSA guidelines.

A CVSA Level VI inspection should be conducted if the tractor and trailer have been separated or an accident or other off-normal event has occurred.

Evaluation: The Technical Advisory Group, DOE-CBFO, and CVSA all agree that the personnel completing the WIPP shipment inspections need to be competent and that all inspections are of the highest quality. The validity of the CVSA Enhanced North American Inspection Standards has been tested using other DOE radioactive material shipping campaigns. In October 1999, the CVSA prepared a final report with the findings from the different shipping campaigns. Additionally, the Technical Advisory Group and DOE-CBFO have used these standards and procedures to inspect over 2000 WIPP shipments. CVSA maintains a statistical data base on these shipments and reports to the Technical Advisory Group periodically.

The Technical Advisory Group will continue to review CVSA's periodic report and monitor the WIPP shipping campaign, comparing the data for variances or oddities. Findings from these comparisons will be used to improve the inspections of the WIPP shipments and recommend changes as appropriate.

Table 2: Independent Inspections

Lead States: Idaho, Washington

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>CVSA Final Report - Executive Summary, CVSA, October 1999.</i>	CVSA	Final
<i>CVSA/DOE Spent Fuel/Transuranic/High Level Radioactive Waste Pilot Study Inspection Form, CVSA.</i>	CVSA	Final
<i>Listing of State Inspection Requirements, Responsible Agencies, and Location of Inspection Stations, Washington, April 1998.</i>	WA	Final
Reference material		
<i>Washington/Oregon MOU for Inspection of Radioactive Waste.</i>	WA/OR	Final
<i>Washington/Oregon Procedures for Implementing the MOU.</i>	WA/OR	Final
<i>Recommended National Procedures for the Enhanced Safety Inspection of Commercial Highway Vehicles Transporting Transuranics, Spent Fuel, and High-Level Radioactive Wastes, CVSA, May 1993.</i>	CVSA	Final
<i>CVSA Training Course Information.</i>	CVSA	Final
<i>Cesium Transportation Campaign: Report on CVSA/DOE Pilot Study Inspection Activities, CVSA</i>	CVSA	Final

Section 3: Bad Weather and Road Conditions

Lead States: Oregon, Wyoming

The Issue: Bad weather and road conditions create hazardous travel conditions.

The Objective: Ensure that the WIPP shipments avoid bad weather and hazardous roads by carefully monitoring road and weather conditions and restricting travel when adverse conditions pose a threat to shipment safety.

The Approach: Before dispatch, the WIPP Central Monitoring Room (CMR) operator, the shipper and both vehicle drivers must agree that travel conditions are acceptable for a WIPP shipment. If not, the vehicle may not be dispatched until conditions improve. State representatives may elect to participate in the discussion about whether weather and road conditions are acceptable by providing important information to the three participating parties, including what they will support.

Current weather conditions, the weather forecast, and road conditions must be acceptable before dispatching a shipment. A shipment should not be dispatched if the forecast predicts severe weather or bad road conditions which would affect the safety of the shipment when the shipment is anticipated to be in that area.

States monitor the status of the WIPP shipments using TRANSCOM. This allows states to notify the DOE that a shipment should not be dispatched or that a shipment should be diverted to a safe parking location to avoid bad weather or road conditions. This cooperative effort between the DOE-CBFO, its contractors, and Western States provides real time information to ensure the WIPP shipments avoid bad weather and road conditions without causing undue delay to the shipments. (See Notification Section for details on TRANSCOM.)

Evaluation: The method to evaluate weather and road conditions consists of two parts: an evaluation of the process to share information and make the decision to dispatch a shipment; and an evaluation of the procedures to avoid bad weather and road conditions while a shipment is en route. A review of this method will be made during the biennial program evaluation and/or after any critical problems encountered.

All contact names and telephone numbers will be verified and updated annually, in late summer or early fall. A revised and updated contact list will then be prepared and distributed before winter shipments begin. Each bad weather or road condition event that occurs during actual shipments and results in a critical problem encountered, should be reported at the next Technical Advisory Group meeting. The lead states will prepare suggested changes or improvements to the procedures to correct any critical problems encountered.

Table 3: Bad Weather and Road Conditions

Lead States: Oregon, Wyoming

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Procedures and Protocols for Bad Weather and Road Conditions for WIPP Shipments (Revision 4), September 1999.</i>	OR, WY	Final
Reference material		
<i>Guidance for Development of State Procedures for Implementing Procedures and Protocols for Bad Weather and Road Conditions for WIPP Shipments, Richard C. Moore, Cheyenne, Wyoming, January 1992.</i>	WY	Final
<i>Model State Procedures for Implementing Procedures and Protocols for Bad Weather and Road Conditions for WIPP Shipments, Richard C. Moore, Cheyenne, Wyoming, January 1992.</i>	WY	Final
<i>Evaluation of Bad Weather and Safe Parking Procedures: Cesium Transportation Plan, Richard C. Moore, Cheyenne, Wyoming, November 1994.</i>	WY	Final

Section 4: Safe Parking During Abnormal Conditions

Lead States: Oregon, Wyoming

The Issue: Shipments may be delayed en route due to mechanical problems, bad weather or hazardous road conditions or other unanticipated problems.

The Objective: Identify and/or designate safe parking locations and criteria for selecting safe parking if a predesignated location cannot be safely reached.

The Approach: The Technical Advisory Group has approved a set of criteria for selecting safe parking areas for the WIPP shipments. The DOE-CBFO has agreed to use these criteria. A hierarchy has been developed to incorporate two factors: 1) the *desirability* of a particular type of parking area; and 2) the driver's *ability* to reach that parking area.

1st Choice: The DOE & U.S. Department of Defense (DOD) facilities are the most desirable parking areas for the WIPP shipments. However, it may not be possible for the driver to safely reach a DOE or DOD facility. The driver should then proceed down the hierarchy to select a parking area.

2nd Choice: Specific types of facilities (e.g. Ports-of-Entry) are likely to be more common than the DOE or DOD facilities. State-specific information on the types of facilities that are acceptable has been identified and provided to the DOE-CBFO and the drivers. If the driver cannot reach one of these facilities, the driver should use the *3rd Choice* criteria.

3rd Choice: If facilities listed in the first or second tier cannot be reached safely, a series of avoidance factors are applied to select a parking area. No priorities have been assigned to these factors. It may not be possible to select a parking site that meets all of the criteria listed in the third tier and the driver in consultation with the affected state and the CMR operator, will select the most suitable location.

A detailed report describing the safe parking locations, preferred routes to these locations, and criteria for selecting parking locations for each state along the route, is included in the full Guide. Each state is encouraged to develop specific procedures to implement this section.

The criteria used to select safe parking locations and the number, type, and location of predesignated safe parking locations must continually be evaluated. The TRANSCOM Communication Center, CMR, and each state must have procedures in place to carry out the safe parking process. The use of the DOE and DOD parking locations must be evaluated based on the differing levels of security in place, to ensure that the drivers can obtain permission to use the location.

Evaluation: The evaluation process for safe parking will consist of two parts: an evaluation of the criteria for selecting safe parking locations and the ability of the drivers to obtain safe parking at predesignated locations. The lead states will work with the DOE-CBFO, carriers, and Western Corridor States to identify trips where safe parking was implemented and critical problems were encountered, to describe the reason for safe parking, to review the use of the procedures, appropriateness of the pre-designated locations and/or criteria, and to provide recommendations to improve the process. These reports will then be made at the next WGA WIPP Technical Advisory Group meeting or by conference call.

Table 4: Safe Parking During Abnormal Conditions

Lead States: Oregon, Wyoming

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Safe Parking Areas for WIPP Shipments (Rev. 4), September 1999.</i>	OR, WY	Final
<i>Interagency Agreement Between DOE & DOD for Safe Parking at Military Installations, DOE/DOD, August 1989.</i>	DOE	Final
<i>Use of U.S. DOE and DOD Facilities as Safe Parking Areas Memorandum, DOE Transportation Management Program, June 1991.</i>	DOE	Final
Reference material		
<i>Guidelines for Selecting Parking Areas for WIPP Shipments, WIEB, January 1991.</i>	N/A	Final
<i>Criteria for Safe Parking Areas for WIPP Shipments, WIEB, June 1990.</i>	N/A	Final

Section 5: Advance Notice of WIPP Shipments, Shipment Tracking, and Shipment Status Information

Lead States: Idaho, Utah

The Issue: States need annual shipment schedules, advance notice of shipment dates, the status of shipments en route, and the ability to communicate directly or indirectly with the drivers.

The Objective: Provide states with advance shipment schedules, an easy, reliable method to obtain shipment information, and a means for communication with the drivers.

The Approach: Advance notice of the WIPP shipment dates, ongoing status of on-the-road shipments and other pertinent information is required for states to monitor shipments. This information is necessary for emergency response, implementing bad weather and road condition procedures, selecting safe parking when needed, scheduling inspections, conducting public information programs, and communicating with the driver.

The DOE-CBFO provides both an annual schedule and an eight week rolling schedule electronically to the states. The annual schedule will be provided twice yearly, by January 31 and July 31. The eight week rolling schedule will reflect shipment plans eight weeks in advance and will be revised on a weekly basis. Advance notification requirements, developed cooperatively by the states and DOE-CBFO, are included in this Guide.

The DOE-CBFO will provide advance notification to each state when shipments are two hours from its border. The notification will be provided by telephone to the 24 hour number for that state.

The DOE-CBFO will provide a two hour notification to the point of origin state prior to departure.

TRANSCOM will be used to track shipments. The Western Corridor States have been given computer systems to use the TRANSCOM system. The DOE has provided training for identified TRANSCOM users in each state. The DOE will provide training and TRANSCOM access to new corridor states prior to the beginning of shipments through those states.

In the event TRANSCOM is not functioning properly while shipments are en route, the DOE has agreed to follow backup tracking and notification procedures that are also contained in this Guide (Backup Procedures When TRANSCOM Is Not Working). In the event TRANSCOM is not functioning properly prior to the dispatch of a shipment,

the DOE-CBFO will hold the shipment for two hours while attempting to restart TRANSCOM through the Albuquerque Operations Center. After two hours the DOE-CBFO will contact the state-of-origin and the states the shipment will travel through, to notify them of the situation. With each state's concurrence, the DOE-CBFO will dispatch the shipment and follow tracking and notification procedures as described in this Guide.

If prior to dispatch, the TRANSCOM hardware on a tractor is found to be inoperable, the following actions will be taken:

- The drivers will troubleshoot the system.
- If the drivers cannot correct the problem, they will seek technical advice from their support staffs or a Qualcomm dealer (where available).
- If the unit is still inoperable, it will be replaced if a spare unit is available. Spare units will be kept at the RFETS and INEEL and any site shipping on a weekly basis.
- If the unit cannot be easily repaired or replaced (within 24-hours) the shipment will be dispatched with prior notification to the affected states. "Back-up procedures when TRANSCOM is not working" outlined in the PIG will be followed.

Holiday Restrictions: For reasons related to heavy traffic or limited availability of emergency personnel, shipments of transuranic waste will be restricted from traveling on the following holidays: New Year's Day, Good Friday/Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. For weekend or three-day holidays (typically Good Friday/Easter, Memorial Day, Labor Day,) shipments are to arrive at the WIPP site by 1600 hours Mountain Time (MT) on the Friday of a three-day holiday weekend (and by 1600 hours MT on Thursday for Good Friday/Easter). Shipments can resume after midnight on the day following the holiday or holiday weekend.

Thanksgiving will be treated similarly with shipments arriving at the WIPP site by 1600 hours MT on the Wednesday before Thanksgiving and not resuming until after midnight on Sunday. When a holiday falls on either a Monday or Friday (i.e. New Year's Day, Independence Day, and Christmas) the shipments are to arrive by 1600 hours MT the day before and the holiday treated as a three-day holiday weekend.

Shipments, which depart from a site in anticipation of completing the trip within these time frames, but are delayed en route prior to a holiday will either be completed (assuming weather and road conditions are acceptable) or be held in safe parking. These situations will be treated on a case-by-case basis and in consultation with states along the route.

State Holidays: States and tribes may identify specific holidays and/or events which should be avoided. In designating state, tribal and local holidays and/or events, the states will base the designation on the following criteria:

1. The holiday and/or event will generate significant vehicular and/or pedestrian traffic affecting travel and safety along the route to be used by the WIPP shipment.
2. The holiday and/or event will require the allocation of a significant amount of local law enforcement and/or emergency response resources and personnel, thereby reducing the capability to respond adequately to an incident involving a TRU Waste shipment.

By June 1, WGA will request states provide a schedule of the state specific holidays and/or events planned for the following year beginning October 1 and ending September 30. The schedule will be compiled and submitted to DOE-CBFO by June 15th.

Evaluation:

The TRANSCOM steering committee; consisting of representatives from states, tribes and DOE; was initially formed to guide the development of the new internet based TRANSCOM. Since that time the committee has continued to meet annually to review the program and to recommend changes to the system. To ensure the Western State's advanced notice needs and issues are addressed, Lead States will gather input from other member states regarding TRANSCOM issues annually by January 31. The compiled list will be presented at the annual Steering Committee meeting. This joint effort between DOE and the states has produced a reliable system that performs well. The TAG's continued participation in this committee will help ensure that the system is improved and upgraded to meet western states needs.

The TAG will also conduct a biannual program review that address specific elements of advance notification. Results from this review will provide valuable feedback to DOE and states on the program performance.

Table 5: Advance Notice of WIPP Shipments, Shipment Tracking, and Shipment Status Information

Lead States: Idaho, Utah

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Advance Notice of TRU Waste Shipments, Idaho, May 1999.</i>	ID/UT	Final
<i>Advance Notice Information Requirements, Idaho.</i>	ID/UT	Final
<i>Back-up Procedures When TRANSCOM Is Not Working, Oregon, 1998.</i>	ID/UT	Final
<i>Listing of Route Specific State and Tribal Holidays and Events.</i>	WGA	Draft
Reference material		
<i>TRANSCOM Control Center Procedures.</i>	DOE	Final
<i>Central Monitoring Room Procedures.</i>	DOE	Final
<i>TRANSCOM Requirements Specification, Prepared for Transportation Technologies Group, Engineering Coordination and Analysis Section, Chemical Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, December 12, 1994.</i>	DOE	Draft

Section 6: Medical Preparedness

Lead States: Arizona, Colorado, Idaho, New Mexico

The Issue: Effective medical response to a WIPP transportation incident requires a clear understanding of radiological response plans and procedures by emergency medical personnel in the field and at hospitals, adequate training, and the necessary supplies and equipment.

The Objective: Establish and maintain an effective emergency medical response capability along the WIPP transportation routes.

The Approach: Medical personnel along the WIPP routes are an important and integral component of the comprehensive emergency response system. The Technical Advisory Group developed a *Regional Medical Preparedness Action Plan (Action Plan)* for the WIPP shipping campaign. This plan identifies key elements and activities for emergency medical preparedness for a WIPP transportation incident. These include: assessments of hospital readiness; development and refinement of radiological response plans and procedures; training, drills and exercises; and the identification and purchase of appropriate radiological and non-radiological supplies and equipment. States may use the *Action Plan* as the basis for developing the emergency medical preparedness program that best meets their respective individual needs, and will strive for consistency among state programs wherever possible.

To initiate the *Action Plan*, the WGA coordinated an assessment of the medical facilities in the five states between the Idaho National Engineering and Environmental Laboratory and the WIPP. This assessment included recommendations for strengthening medical preparedness for the WIPP shipments. The states are now carrying out the recommendations, as appropriate. Other states are encouraged to conduct a medical preparedness assessment of their medical facilities.

Western States on the WIPP transportation corridor continue to work with potentially affected medical facilities and personnel to ensure the development of adequate, up-to-date radiological response plans and procedures. These plans and procedures must include provisions for the protection of emergency medical responders and for the treatment of incident victims who may have been exposed to or contaminated by radioactive materials. Planning and response guidance is provided by such organizations as the American Medical Association, American College of Emergency Physicians, the Joint Council on the Accreditation of Hospital Organizations and the REACTS.

Training for both pre-hospital and hospital emergency medical personnel is an important element of the WIPP Medical Preparedness Program. Emergency medical technicians, paramedics, and hospital emergency department personnel who may be

required to handle and provide treatment to a TRU Waste transportation incident victims must be prepared to do so in a safe and effective manner. Training encompasses classroom courses, in-hospital drills, and field exercises. Requisite hospital personnel training will be provided through Washington TRU Solutions, the management and operations contractor for the WIPP facility. The DOE-CBFO committed to provide this training to the Western Corridor States in its Cooperative Agreement with the WGA.

For states conducting emergency response field exercises such as a WIPP Transportation Emergency Exercise (WIPPTREX), emergency medical personnel should be involved in the exercise and should be provided medical training before the exercise. Pre-hospital and hospital emergency medical personnel are key players in any comprehensive WIPP emergency preparedness program.

States should assess current emergency medical technician and paramedic training opportunities, and include hazardous materials response in the curricula. That assessment should specifically include radioactive materials and patient care related to potential exposure or contamination from radioactive materials. The continuity of pre-hospital and hospital training response procedures should be assessed. Based on the lead states recommendations, the *Hospital Emergency Response for Radiation Injuries and the Contaminated Patient* course should include how to deal with pre-hospital and medical issues.

Finally, states are working to ensure emergency medical personnel are properly equipped to handle a TRU Waste transportation incident. The *Action Plan* lists recommended supplies and equipment for hospitals, and states should include equipment needs in their medical assessments.

Evaluation: Key elements and activities needed for an effective response are identified in the *Action Plan*. This *Action Plan* serves as the basis for assessing the adequacy of the regional emergency medical response capability for a TRU Waste incident.

Each state will be responsible for evaluating the effectiveness of the WIPP emergency medical preparedness capability within its borders. Specific evaluation criteria will be developed with the assistance of the lead states and DOE-CBFO. States should include in-hospital drills and various field exercises, such as WIPPTREX, in their evaluations. The adequacy of emergency medical response plans, procedures, and equipment; the effectiveness of training; and the performance of emergency medical personnel will be evaluated. Areas for improvement will be identified.

For each DOE sponsored WIPP exercise, a report documenting the exercise and its evaluation will be prepared and distributed to the Technical Advisory Group. Semi-Annual meetings of the Technical Advisory Group will be used as a forum to discuss relevant findings and recommendations for enhancement of the states' emergency medical response capability. Areas identified for improvement will then be addressed

and incorporated in biennial revisions of the *Action Plan*.

Table 6: Medical Preparedness

Lead States: Arizona, Colorado, Idaho, New Mexico

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Initial WIPP Transportation Corridor Regional Medical Preparedness Assessment</i> , Prince and Associates, Denver, Colorado, June 1993.	WGA	Final
<i>Regional Medical Preparedness Action Plan</i> (Revision 6), WGA Technical Advisory Group, August 1993. (Contained in Appendix Two of the Assessment).	WGA Technical Advisory Group	Final
Reference material		
<i>State of New Mexico's Emergency Medical Response to WIPP Action Plan</i> , New Mexico Department of Health/Emergency Medical Services Bureau, Santa Fe, New Mexico, 1991.	NM	Final
<i>Report of the Governor's WIPP Emergency Response Medical Training Advisory Committee</i> , New Mexico Department of Health/Emergency Medical Services Bureau, Santa Fe, New Mexico, September 1994.	NM	Final
<i>Hospital Emergency Response for Radiation Injuries and the Contaminated Patient</i> , training materials, Radiation Management Consultants, Inc	RMC	Pending
<i>WIPP Transportation Incident Emergency Medical Response Guide</i> , New Mexico Department of Health/Emergency Medical Services Bureau, Santa Fe, New Mexico, 1998.	NM	Final

Section 7: Emergency Management Assistance Compacts and Mutual Aid Agreements

Lead State: Idaho

The Issue: A WIPP transportation incident may occur near state borders or exceed state and local emergency response capabilities. Affected state and local officials must be able to access the closest, available emergency response resources, whether they are in an adjoining state or part of a federal agency.

The Objective: Ensure a swift response by capable responders, regardless of jurisdiction.

The Approach: An emergency management assistance compact or a mutual aid agreement helps ensure the availability of adequate resources and the necessary protocols to call upon those resources to accomplish an efficient and effective response. All Western states have entered into some type of emergency management assistance compact and/or mutual aid agreement.

These Emergency management assistance compact and/or interstate mutual aid agreements would most likely be used when the incident is in an area near a state border. Assistance may be requested of an adjoining Western state because the adjoining state's available resources may be closer to the incident. A request for assistance may also be made when a neighboring state's or local jurisdiction's own resources are exceeded.

Emergency management assistance compacts and/or interstate mutual aid agreements may be used to supplement existing local-to-local agreements. Many local agencies along state borders already have formal or informal agreements to assist across state lines. Since these responders are more likely to handle the initial response to an incident, a good working relationship at the local level is crucial. Western states encourage the establishment of strong local relationships across state lines.

Evaluation: Existing mutual aid agreements will be reviewed periodically. The lead states will also periodically review the model mutual aid agreement to ensure it accurately reflects current conditions and requirements.

The most effective method of evaluating existing emergency management assistance compacts and mutual aid agreements (state-to-state and state-to-DOE) is through training exercises such as a WIPPTREX. Western states planning a WIPPTREX exercises are encouraged to include joint exercises with neighboring states and/or the DOE to evaluate emergency management assistance compact and/or mutual aid agreement processes and procedures. The after action report for each exercise should include a discussion of the

effectiveness of interstate assistance process and procedures, when appropriate.

If a emergency management assistance compact and/or a mutual aid agreement is activated due to a transportation incident, a detailed after action report should be prepared. Lead states will review the after action report to determine if changes in the model agreement are required.

Table 7: Mutual Aid Agreements

Lead State: Idaho

Documents	Responsible for Updated	Status
Documents included in Guide		
<i>Model Mutual Aid Agreements, Idaho</i>	ID	Final

Section 8: Emergency Response Plans and Procedures

Lead States: Arizona, Nevada

The Issue: State emergency response plans and procedures help ensure coordinated, timely, and effective incident response.

The Objective: Develop effective emergency response plans and procedures for responding to a WIPP transportation incident along the entire shipping corridor.

The Approach: State, local and federal agencies have varied responsibilities for responding to an incident involving a WIPP or intersite shipment. Each response organization must know the other organizations which are involved and who is responsible for each task. Advance planning and exercises of those plans help ensure all key response actions and responsibilities are covered. In case of an incident involving a either an intersite or WIPP shipment, the DOE-CBFO and carriers should also be familiar with the specific plans and procedures in the state where the incident occurred.

Emergency response plans describe the organizations and their responsibilities, and include emergency response procedures which tell how the planned activities will be implemented. Each state's emergency response plan and procedures are to include a section describing a response to a WIPP incident. State plans or procedures specific to a WIPP incident are to be consistent with other state and local emergency plans, particularly those for radiological emergencies and hazardous materials incidents.

Each state along the shipping corridor takes its own individual approach to transportation emergency response planning. This is especially true regarding the division of responsibilities between various state agencies. Several states developed emergency response plans for radiological transportation incidents. These plans are available for use as a model for other states, should they wish to develop their own plans. There are many other available guidance documents that can be used to determine the key components of an emergency response plan. These documents are referenced in the attached table.

Oregon developed model field procedures for response to a radiological transportation incident. Other states have used the generic model to develop their own procedures. A copy of the generic procedures is included in this Guide.

The states also reviewed the DOE's plans and procedures for response to a WIPP incident. The review was to ensure consistency of federal actions with state and local actions. Selected procedures are included in this Guide.

Evaluation: Each state is responsible for reviewing and updating its own emergency response plans and procedures on a biennial basis. This is done to keep the plans and procedures current and to include lessons learned from exercises and shipments.

Exercises are used to test these plans and to train responders. Comments from exercise participants and evaluators who observe the exercise are used to identify ways the plan and procedures can be improved. States that conduct exercises will provide a summary report on findings and lessons learned at an appropriate meeting of the Technical Advisory Group. If a written report on the exercise has been prepared, the state that conducts the exercises will make the report available to WGA for distribution to other states.

The DOE's plans and procedures will also be tested during exercises. Lead states will prepare suggested changes or improvements to correct any problems identified in these plans and procedures. These suggested changes will be provided to the other states and DOE.

Table 8: Emergency Response Plans and Procedures

Lead States: Arizona, Nevada

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Oregon Field Procedures (Revised)</i> , Oregon, 1998.	OR	Final
<i>Emergency Planning, Response, and Recovery Roles and Responsibilities for TRU–Waste Transportation Incidents</i> (DOE/CAO–94–1039), DOE Albuquerque Operations Office and Carlsbad Area Office, January 1995.	DOE	Final
Reference material		
<i>Guidance for Developing State, Tribal, and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents</i> , FEMA–REP–5, Revision 1, June 1992.	FEMA	Final
<i>Criteria for Review of Hazardous Material Emergency Response Plans</i> , National Response Team, NFT–1A.	FEMA	Final
<i>Planning Guide and Checklist for Hazardous Materials Contingency Plans</i> , FEMA–10.	FEMA	Final
<i>Guide for the Review of State and Local Emergency Operations Plans</i> , CPG 1–8A.	FEMA	Final
<i>Recovery Guide for Packaging</i> (DOE/CAO–94–1007), Carlsbad Area Office, January 1995.	DOE	Final
<i>Incident/Accident Response Team Guide</i> (DOE/CAO–94–1008), CAO, September 1994.	DOE	Final

Section 9: Emergency Response Equipment

Lead States: Idaho, Utah

The Issue: Emergency responders need specialized equipment to respond to a WIPP transportation incident.

The Objective: Acquire and maintain adequate equipment to respond to a WIPP transportation incident.

The Approach: Responders need proper equipment for response to a WIPP transportation incident. Proper equipment includes primarily radiation detection equipment and personal protective equipment (PPE).

These equipment needs vary depending on role of the responder and the agencies requirements. For example, first responders would likely enter the immediate incident scene only to conduct lifesaving and rescue. The “bunker gear” and self-contained breathing apparatus that most fire departments have is sufficient for this task. This entry could be conducted without radiation detection equipment, if none is immediately available.

Secondary responders, such as State Response Teams are responsible for assessing the nature and extent of the incident and identifying contaminated individuals. These tasks would require PPE, such a Tyvek suits and respirators, as well as radiation detection instruments. The organizations responsible for cleanup would require more sensitive instruments to complete the area radiation and contamination surveys.

Each Western state has approached the issue of equipment acquisition, distribution, and maintenance in a different manner. Most Western states have extremely limited amounts of radiation detection equipment capable of detecting the alpha radiation emitted by transuranic waste. Some Western states have chosen to purchase alpha detection instruments and provide them to secondary responders in preparation for the WIPP shipments.

There is a wide range of equipment types and brands available to meet these needs. In selecting which equipment to purchase, Western states considered such issues as cost, compatibility, effectiveness, portability, reliability and durability under field conditions.

Evaluation: Exercises will be used to evaluate whether responders have the proper equipment for responding to a WIPP transportation incident . Each Western state will consider this as a key objective during any exercise involving a transuranic waste shipment. Western states are responsible for evaluating whether responders have adequate radiation detection that is properly calibrated, and whether the responders are

properly trained in its use. Western states are also responsible for determining whether responders have the proper PPE. Finally, Western states are responsible for evaluating and selecting specific types or brands of equipment.

If a Western state is involved in an actual response to a WIOPP transportation incident, the after-action evaluation should consider the issues of equipment performance, training and the proper use of PPE. The evaluation should also review whether any injuries occurred as a result of inadequate equipment, training on the use of equipment, or PPE.

Table 9: Emergency Response Equipment

Lead States: Idaho, Utah

Documents	Responsible for Updates	Status
Documents included in Guide		
Radiation Detection Equipment for WIPP Incidents, Utah, March 1998.	UT	Final
Reference material		
Energy compensated probes letter	NM	Final
<i>Evaluation Survey of Victoreen Model 190</i> , Oregon State University, Corvallis, Oregon, January 1994.	OR	Final

Section 10: Training and Exercises

Lead States: Colorado, New Mexico, Utah

The Issue: The WIPP program significantly increased the number and size of radiological shipments through many states. Emergency responders in affected jurisdictions need training to adequately manage the risks associated with these shipments.

The Objective: Provide affected emergency responders the knowledge and skills necessary to protect themselves and the public from the hazards associated with WIPP shipments. Use training and exercises to build public confidence in the program.

The Approach:

Training Responsibility

Employers are responsible for providing training required by OSHA 1910.120 to emergency responders. Specifically, it is the employer's responsibility to determine the appropriate level of training required, provide the required training, and certify that the employee demonstrates the competencies following initial training and annual refresher training. To help emergency response organizations meet their responsibility, The Land Withdrawal Act required WIPP to provide training for responders that might be required to respond to a WIPP transportation incident. The WGA WIPP TAG shares the responsibility with WIPP to insure training is appropriate, adequate, and effective.

STEP Program

WIPP created the States and Tribal Education Program, (STEP), in 1988 to fulfill its training responsibilities. The TAG has worked with WIPP, since the beginning, to review, update and improve the training. TAG also works with WIPP to promote and coordinate training with state and local responders. Some member states also participate in delivering training by providing state specific information to attendees. This cooperation between WIPP and WGA has created a model training program for radiological emergencies.

Training Plans

Each state has specific training needs that must be addressed. An assessment should be the first step in any training program. The assessment will determine the current versus necessary radiological response capabilities in affected areas. Elements such as personnel training, personnel experience, response equipment and available

resources should be evaluated in the assessment.

A long range training plan should be developed based on the assessment results. The planning process should begin early, at least three years in advance of shipments. Training plans should address the following:

- ' location, type, and number of classes and exercises required
- ' Suggested background or prerequisite training
- ' Duration of shipping campaign and training program
- ' Administration and funding requirements
- ' Certification requirements
- ' Quality control and review methods
- ' Instructor Qualifications

DOE's Transportation Emergency Preparedness Program (TEPP) provides some additional training resources that supplements STEP resources. Model response procedures, Needs Assessments and Exercise plans are available. Some of these resources are available on the TEPP website while others are available from DOE's regional coordinators.

Training Content

Training as a minimum should meet regulatory requirements. NRC, OSHA and EPA have specific training requirements for personnel responding to radiological accidents. State and local jurisdictions may have additional regulations that apply to training requirements. The Land Withdrawal Act requires that DOE emergency response training programs provided by WIPP be reviewed for compliance with 29 CFR 1910.120. This review does not alter the responsibility of each employer to ensure their employees are trained according to these regulations.

Many government and professional organizations have developed standards and guidelines for developing radiological emergency response training. These standards provide an excellent guide for developing and reviewing training.

Training Resources

Fortunately, there is a wealth of radiological emergency training resources available at little or no cost. The Department of Transportation provides annual grants to states, Indian tribes, and localities for emergency response planning and training for hazardous materials transportation accidents. Those grants, although not aimed specifically at shipments of highly radioactive material, would be expected to increase the general emergency response capabilities of local officials. The Federal Emergency Management Agency (FEMA) provides a variety of resident, non-resident and self study radiological emergency courses. Other DOE transportation programs also provide radiological training materials to support transportation activities. Many of the training

courses are very similar. Each has advantages and disadvantages that should be evaluated against the local responders needs.

Training Delivery

Methods and capabilities for delivering training vary widely from state to state and even from local jurisdiction to local jurisdiction. Training programs developed to support WIPP program shipments need to be flexible enough to support this diversity. Training should be tailored to each individual jurisdictions needs.

WIPP's cadre of trainers have been essential to the training program's success to date. These trainers conduct ongoing "Train the Trainer" programs to help build state and local training capabilities. This helps to ensure consistency among the different states' training programs. Additionally, WIPP supplied instructors provide an invaluable pool of qualified instructors to supplement state or local instructors.

WIPP supplied instructors are also vital to the success of the exercise program. They provide invaluable advice and assistance to local jurisdictions that may have little or no experience planning major exercises.

Many emergency responders are volunteers with limited time to meet a variety of training requirements. Training time can be used more efficiently by incorporating WIPP material into existing hazmat and radiological training curricula. State and local instructors will need Train the Trainer courses to facilitate this.

Instructional material should be supplied to instructors in a format (electronic, video, slides, overheads, etc.) that simplifies incorporation into existing courses. Financial or other incentives may be necessary for instructors, especially if they are in volunteer status.

Exercises

Exercise programs are an integral part of a training program. Exercises can enhance learning, test systems, increase awareness and evaluate training. Exercises should begin small and build to a full scale one. Exercise programs, like training programs, should be multi-year efforts.

Small tabletop or functional exercises are easy, low cost and brief. More small exercises are possible with limited resources, allowing all affected communities to participate. The majority of exercises conducted should be in this category.

Full scale exercises are useful and should be run. Because of the large expense of resources, it may not possible to conduct one for every community. A full scale exercise will be the most challenging and comprehensive exercise run.

Other Training Requirements

Preparing for potential WIPP transportation accidents is a necessity. Emergency responder training is always the first priority, but other types of training are also required to ensure safe routine transport. Inspectors need training to identify unsafe vehicles. Training should also be given to Public Information personnel that might have to respond to news media requests during an incident. Hospital staffs also need training to handle possible WIPP incidents. Citizens, public officials and emergency professionals demand the training be provided. Cooperation between DOE and states is necessary to ensure training is effectively and efficiently accomplished.

Evaluation: The truest evaluation of any training program is an evaluation of how the trainee performs following course completion. Since we hope accidents are rare, other methods of evaluation must suffice. Periodic radiological emergency assessments of affected communities can be useful in evaluating a training program. A standard assessment form would make data compilation and analysis easier.

Each state should routinely evaluate whether it is providing sufficient training and exercise opportunities to its emergency responders. States may wish to set goals to train a certain percentage of state and local emergency responders annually. Each state should also ensure that responders all along its portion of the route have been trained, and eliminate “gaps” where no or few emergency response personnel have received training. States should also continue to evaluate whether responders are receiving refresher training on a regular basis.

States should share any important lessons learned from their individual evaluations with the lead states. A summary of this information will be compiled by the lead states as appropriate and provided to the other states and DOE.

Training and exercise requirements change due to changes in regulations, procedures, policies and other factors. Changes may be needed in courses to ensure they are accurate, current and appropriate. The training and exercise programs should have provisions for regular evaluations, reviews, updates and revisions. Review and evaluation should be a joint effort between DOE, states and other relevant agencies.

Table 10: Training and Exercises

Lead States: Colorado, New Mexico, Utah

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Emergency Response</i> , A WIPP Training Fact Sheet, November 1995.	DOE-CBFO	Final
<i>STEP Planning Guidelines</i> , March 1998.	CO	Final
<i>WIPPTREX Planning Procedures</i> , April 1998.	DOE-CBFO	Final
WGA Training and Exercise Resource Sub-Group Roles and Responsibilities, May 1998.	CO	Draft
Reference material		
Command and Control, Transportation Emergencies Course, USDOE, November 1997.	DOE-CBFO	Final
Guidance for Developing State, Tribal, and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents, FEMA-REP-5, Rev.2., November 2000	FEMA	Final
Guidelines for Public Sector Hazardous Materials Training, FEMA, March 1998.	FEMA	Final
U.S. Department of Labor letter by Mary Ann Garrahan, 8/19/02; regarding OSHA review of WIPP Training.	OSHA	Update

Section 11: Public Information and Participation

Lead States: Oregon, Nevada, New Mexico

The Issue: The public and news media have a heightened concern about the transportation of radioactive materials.

Objective: Clearly communicate to the media and public the actual risk of the shipments and the safety measures in place. Encourage continued public involvement in program planning and review.

Approach: The goal of the Western Governors is the safe and uneventful transportation of transuranic waste to the WIPP. This will not be possible unless the public and media have confidence that the WIPP shipping campaign requires the highest reasonable standards for incident prevention and emergency preparedness.

A coordinated effort is needed among the Western Corridor States, WGA, and DOE to clearly communicate the safety measures in place and the actual risk that shipments present. The public must have complete, timely, accurate and unbiased information and the opportunity to judge the merits of the safety program on its own. They should be provided opportunities to participate in the development and evaluation of the program whenever possible.

The states and WGA will develop accurate information materials about the transportation safety program and about other issues of local and regional significance generated by the transportation program. These products must conform to high standards for clarity and meet the needs of the public, the news media, and others.

Communications with the public and media will vary depending on the interest of the audiences. It will likely include the following:

- C Publications/direct mail materials, including brochures, pamphlets, handbooks, newsletters, fact sheets, etc;
- C Media work, including meetings with editorial boards, guest articles, news releases, newspaper ad copy;
- C Public Service Announcements (Radio and TV);
- C An informational video;
- C Public presentations to civic groups, schools, etc.;
- C Public meetings; and
- C Public displays (the WIPP Road Show Trailer)

Because the transportation of radioactive materials generates such strong emotions,

those who speak to the media and the public about the transportation program should have training in risk communications.

Evaluation: Evaluation of the Public Information and Participation program will include reviews of the public information products and materials, the effectiveness of public meetings and other events, whether the focus of public and media activities is directed in the most effective manner, and whether states are following the *Communications and Public Involvement Plan* developed in 1999.

Public information products, such as fact sheets, brochures and informational videos, may be reviewed by focus groups of representative target audiences. The lead states would work with the WGA and DOE to conduct small focus groups to review these materials. The materials would be evaluated for accuracy and clarity of information, and to ensure that the information is presented in a fair, unbiased manner.

Evaluation forms will be provided to participants at public meetings. These forms will ask questions to help the states gauge the effectiveness of the meetings. These forms will be reviewed by the lead states as necessary. Pertinent information taken from these forms will be shared with all the Western Corridor States, WGA, and DOE.

Table 11: Public Information and Participation

Lead States: Oregon, Nevada, New Mexico

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>List of Public Information Officers (PIO)/ Contacts on the WIPP Transportation Safety Program, Oregon and WGA, Revised February 2001 .</i>	OR	Final
Communications and Public Involvement Plan, Oregon, September 1999.	OR	Final
<i>Recommendations for Public Information Activities for WIPPTREX Exercises, Wyoming, January 1997. (Contained in Section 10)</i>	WY	Final
WGA Fact Sheet, <i>Western States Committed to Transport Safety</i> , Oregon, September 2001.	OR	Final
Public Meeting Evaluation Form, Oregon, February 1998.	OR	Final
<i>Public Information Coordination for WIPP Transportation Incidents and Accidents</i> , Oregon, February 1998.	OR	Final
Reference material		
<i>Carlsbad Area Office Stakeholder Outreach Strategic Plan</i> , USDOE–CAO, March 1995.	CBFO	Final

Section 12: Highway Routing of WIPP Shipments

Lead States: California, Nevada

The Issue: There are various route options for moving transuranic waste from and between generator and storage sites, and to the WIPP facility in New Mexico.

The Objective: Identify and select the safest and most acceptable routes for transporting transuranic waste between sites and to the WIPP facility.

The Approach: The DOT regulations for the routing of Highway Route Controlled Quantities (HRCQ) of radioactive materials require the use of Interstate System highways unless states have designated alternative preferred routes (49 CFR 397.101). Although most of the WIPP shipments will not be HRCQ shipments, the DOE-CBFO has committed to follow the HRCQ guidelines. The DOE-CBFO will consult with affected states for the use of an alternative route that is not formally designated under the DOT regulations. The identification of specific routes limits the numbers of affected jurisdictions and allows states to focus preparation and training resources.

Preferred routes designated by the states may provide safer routes than the existing Interstate system. Routes for pickup at and delivery to facilities not on the Interstate system may also need to be analyzed to identify the best route. The identification, analysis, and selection of appropriate highway routes for the transportation of the WIPP shipments can reduce the radiological and non-radiological risks associated with the WIPP shipping campaign.

The DOT's designation process entails the performance of a comparative route analysis following the DOT's *Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials* (DOT/RSPA/HMS/92-02, August 1992) or an equivalent state routing analysis which adequately considers overall risk to the public (49 CFR 397.103). In assessing the primary route comparison factors under this approach, basic data are compiled on accident rates, traffic counts, highway segment lengths, vehicle speeds, population distribution, land use, timeliness and availability of emergency response capabilities, and other relevant factors for each alternative route. Upon completion of the data compilation and verification process, the information is processed and used to compare alternative routes.

In cases where states have chosen not to formally designate alternative HRCQ routes, alternative WIPP shipment routes may be determined through a negotiation process involving the DOE-CBFO and the affected state(s). Such negotiated routes will take into account specific conditions or needs of the affected states with regard to WIPP shipments. These routes would be subject to renegotiation should the DOE-CBFO or the affected state(s) determine that renegotiation is of mutual interest.

Upon completion of the preferred route designation or negotiation process, states must

either file their routing designations with the DOT's Federal Motor Carrier Safety Administration (FMCSA) or advise the DOE-CBFO of their concurrence with negotiated routes. Coordination with local government authorities along prospective routes of travel and with adjacent states is required to obtain relevant information and to ensure continuity of designated or negotiated routes, should an alternative route be selected. Preferred routes become effective when a state receives formal acknowledgment from the FMCSA or upon notifying the DOE-CBFO that a negotiated route has been agreed to by the parties. To date, California, Colorado, Nevada and New Mexico have either designated alternative routes or agreed to negotiated alternative routes.

Designated or negotiated routes must be used for all shipments of transuranic waste, whether the shipments are to the WIPP facility or to other DOE facilities. These routes will be used for all the WIPP shipments unless a route deviation is necessary for a specific shipment due to factors such as bad weather or road conditions, etc.

Evaluation: Evaluation of routing issues will include an assessment of the benefit of the DOE-CBFO's preselection of routes (e.g., states being able to concentrate their activities and resources along those identified routes), the safety of routes selected, environmental justice issues, and carriers adherence to the selected routes.

Every two years after a route is opened, beginning with the year in which the WIPP shipments commence (1999), each state will evaluate the safety of the routes within its borders. Items in this evaluation will include the number of incidents along the route involving radioactive materials shipments, the number of incidents along the route involving other large (>26,000 lbs GVWR) commercial trucks, locations with high accident rates or weather problems, and other trouble spots. This information will be used to consider use of other routes or to call attention to potential trouble spots.

Some states have already designated or negotiated specific routes. Other states may also conduct route designation studies in the future. An evaluation of the route designation processes, by states with designated or negotiated routes, could provide valuable information to states considering a route designation. As requested, states will assist in evaluating the route designation experiences of those states that have already designated or negotiated routes. This evaluation will include a description of the methodology used, information and data requirements, a description of the process followed, and lessons learned.

Executive Order 12898, signed by President Clinton on February 11, 1994, requires each federal agency to give priority to environmental justice. Its purpose is to emphasize compliance with provisions of existing environmental, health and civil rights laws and ensure a safe and healthful environment for all communities and persons. When conducting the evaluations described above, environmental justice issues should be considered.

States want to ensure that the DOE-CBFO and its transportation carriers follow the preferred routes, as that term is defined in the applicable DOT regulations. As part of

its biennial evaluation, each state will review the designated WIPP routes within its borders. Once this information is compiled and verified, it will be compared to the official listing of alternative preferred routes published annually by the DOT and with other formally agreed upon WIPP routes for accuracy and consistency. The resulting compilation of preferred routes for the WIPP shipments will then be reviewed with the DOE-CBFO and its carriers to ensure it corresponds directly with the information on the WIPP preferred routes contained in the carrier's Management Plan.

Table 12: Highway Routing of WIPP Shipments

Lead States: California, Nevada

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Summary of WIPP Highway Routes through the Western States, New Mexico, February 1998.</i>	NM	Final
Reference material		
<i>DOE/OCWRM Report on WIPP Route Designation Process.</i>	OCWRM	Final
<i>Preferred Routes Designated by States under 49 CFR 397, USDOT/FHWA, Washington, D.C.</i>	DOT/FHWA	Final
<i>Final Statement of Reasons: Designation of Routes for the Through Transportation of Highway Route Controlled Quantity Shipments of Radioactive Materials, HMS-94-1, CA Highway Patrol, August 1994, effective October 19, 1994.</i>	CA	Final
<i>Nuclear Materials Transportation Route Designation within the State of Colorado, Colorado Department of Public Safety, Division of State Patrol, Denver, Colorado; routing regulations codified in Nuclear Materials Routing Rules 1 through 4, Volume 8, Code of Colorado Regulations, Section 1507-6 (8 CCR 1507-6), effective March 10, 1989.</i>	CO	Final
<i>Report to the New Mexico Secretary of Highway and Transportation to the New Mexico State Highway Commission Recommending Action on Proposed State Highway and Transportation Department (SHTD) Rule 91-3 Designating Highway Routes for the Transport of Radioactive Materials, New Mexico SHTD, Santa Fe, New Mexico, May 1991.</i>	NM	Final
<i>Comparative Study of WIPP Transportation Alternatives, DOE/WIPP 93-058, USDOE/CAO, Carlsbad, New Mexico, February 1994.</i>	DOE-CBFO	Final

Section 13: Program Evaluation

Lead States: California, Oregon, Wyoming

The Issue: The WIPP Transportation Safety Program and its individual elements must be regularly and rigorously evaluated to determine their effectiveness.

The Objective: Measure the effectiveness of the WIPP Transportation Safety Program, identify areas needing improvement, and ensure open issues are resolved.

The Approach: Western States have worked with the DOE-CBFO to develop a comprehensive transportation safety program for the WIPP shipments. This safety program is designed to reduce the risk of a WIPP transportation incident, ensure effectiveness of emergency response capabilities, and increase the public's confidence in the safety of the shipments and nuclear waste transportation in general. The program is also intended to serve as a model for use or adaptation for use on other radiological shipments.

The evaluation process has two elements: reviews of procedures and policies specific to each section, and evaluation of the WIPP Transportation Safety Program as a whole. Criteria for the evaluation for each section are developed by the lead states for each task. Criteria to evaluate the overall program are developed by all the states. Data collection and analysis should not be unnecessarily burdensome. Quantitative, qualitative, and anecdotal information will be used.

The evaluation of each section will include both the procedures and policy decisions specific to that section. For example, evaluation of safe parking could include looking at specific procedures, such as whether directions to designated safe parking locations are easy to understand. It could also include a review of the policy issues, such as whether the avoidance criteria agreed to by the states results in the selection of appropriate safe parking locations. This evaluation will be conducted by the lead states for each task.

The overall program evaluation will occur biennially and involve all the states. The lead states for Program Evaluation will coordinate this activity and develop recommended suggestions for the program.

Program elements related to remote-handled transuranic waste shipments should be evaluated within a year after the beginning of remote-handled shipments.

Table 13: Program Evaluation

Lead States: California, Oregon, Wyoming

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>WIPP Transport Safety Program Biennial Program Review, September, 1999.</i>	OR, WY, WGA	Final