WHC-MR-0523

Rev. 0

UC-513

U.S. Department of Energy/ Westinghouse Hanford Company ARECO Cesium Transportation Plan

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Date Published

July 1996

Prepared for the U.S. Department of Energy
Office of Environmental Restoration and
Waste Management

**Westinghouse
Hanford Company**

P.O. Box 1970
Richland, Washington

Management and Operations Contractor for the
U.S. Department of Energy under Contract DE-AC06-87RL10930

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KEYWORDS: Cesium Recovery, Hazardous Waste, Transportation, Safety

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WHC-MR-0523, Rev 0

**U.S. DEPARTMENT OF ENERGY/WESTINGHOUSE
HANFORD COMPANY ARECO CESIUM
TRANSPORTATION PLAN**

OFFICE OF ENVIRONMENTAL MANAGEMENT
U.S. DEPARTMENT OF ENERGY

REVISION 0

JUNE 1996

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LIST OF TERMS

AFB	Air Force Base
APR	Air-Purifying Respirator
ARECO	Applied Radiant Energy Corporation
BUSS	Beneficial Uses Shipping System
CFR	Code of Federal Regulations
ci	curies
CoC	Certificate of Compliance
Cs	cesium
CTUIR	Confederate Tribes of the Umatilla Indian Reservations
DES	Department of Emergency Services
DOE-CH	U.S. Department of Energy-Chicago
DOE-HQ	U.S. Department of Energy-Headquarters
DOE-ID	U.S. Department of Energy-Idaho
DOE-TN	U.S. Department of Energy-Oak Ridge, Tennessee
DOT	U.S. Department of Transportation
ERG	U.S. Department of Transportation Emergency Response Guidebook
FRER	Federal Radiological Emergency Response Plan
HRCQ	highway route controlled quantity
IA	Iowa
ICS	Incident Command System
ID	Idaho
IL	Illinois
IN	Indiana
kg	kilograms
KY	Kentucky
lb	pounds
mph	miles per hour
mrem/hr	millirem per hour
NE	Nebraska
NOS	not otherwise specified
NRC	U.S. Nuclear Regulatory Commission
OR	Oregon
ORM	other regulated material
RAP	Radiological Assistance Program
RL	U.S. Department of Energy, Richland Operations Office
SARP	safety analysis report for packaging
SCBA	self-contained breathing apparatus
SEMA	State Emergency Management Agency
SF	special form
SRA	State Representative Associations
SSEB	Southern States Energy Board
TCC	TRANSCOM Control Center
TLD	Thermo Luminescence Dosimeter
TSMT	Tri-State Motor Transit Company
UHP	Utah Highway Patrol
UT	Utah
VA	Virginia
VSP	Virginia State Police

LIST OF TERMS (Continued)

WV	West Virginia
WA	Washington
WESF	Waste Encapsulation and Storage Facility
WGA	Western Governors' Association
WHC	Westinghouse Hanford Company
WSP	Washington State Patrol
WY	Wyoming

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) is committed to the safe, efficient, and cost-effective transportation of all materials that support its various programs and activities. DOE strives to ensure that hazardous materials (particularly radioactive), hazardous substances, and hazardous mixed waste are handled and transported in compliance with all applicable federal, state, tribal, and local rules and regulations. This plan outlines the activities and responsibilities of DOE and other agencies that will be followed to conclude a significant movement of radioactive cesium (Cs) chloride capsules in a safe and uneventful manner.

DOE-Headquarters (DOE-HQ) has directed that Cs capsules manufactured at the Waste Encapsulation and Storage Facility (WESF) be returned to WESF, located at DOE's Hanford Site in southeast Washington State. Currently, there are 25 Cs capsules at the Applied Radiant Energy Corporation (ARECO) facility utilized for the polymerization of wood products in Lynchburg, Virginia, that requires removal as part of the overall Cs capsule return effort.

This plan has been prepared in cooperation with member states of the Western Governors' Association (WGA) and the Southern States Energy Board (SSEB); the Council of State Governments Midwestern Office; and the Confederated Tribes of the Umatilla Indian Reservations, through whose jurisdictions these shipments will pass, and is an example of DOE-HQ's commitment to early coordination and substantive involvement in its decision-making processes.

2.0 PURPOSE

This transportation plan identifies responsibilities, requirements, and procedures to ensure the success of the capsule return program. The plan summarizes transportation activities, organizational responsibilities, emergency preparedness guidelines, and other methods for achieving safe transport.

3.0 PROGRAM PLAN

The handling, packaging, and transport of Cs capsules will be accomplished through a system of sequential steps resulting in the removal of all Cs capsules from ARECO. Source handling and capsule loading activities will be performed by the Westinghouse Hanford Company (WHC), the prime contractor at Hanford. The selected carrier for this campaign is the Tri-State Motor Transit Company (TSMT). The transportation plan details roles and responsibilities for these and the other organizations listed below.

3.1 ORGANIZATIONAL RESPONSIBILITIES

3.1.1 DOE-HQ

DOE-HQ sets overall policy for transportation, resolves policy questions, issues guidance, and provides information for use in transportation activities. DOE can also provide an emergency response team, including personnel with package operation expertise, in the event of a transportation incident. DOE will provide advance information regarding the Cs shipments to involved organizations and agencies. DOE has committed to providing corridor states with appropriate technical assistance to help prepare for these shipments.

3.1.2 TRANSCOM Control Center

The handling of transport communications, satellite shipment location/tracking, weather and road conditions/updates, state/tribal informational update exchange, transport emergency response communication/location will be handled by the TRANSCOM Control Center (TCC). This exchange of information by all parties involved is handled through the TCC and relayed to the carrier, DOE, stakeholders, states, tribal, and emergency responders (if required) designates as described further in this section.

3.1.3 DOE, Richland Operations Office/WHC

DOE, Richland Operations Office (RL) is responsible for overall program management for the transfer of Cs capsules from the ARECO facility to Hanford. RL is the shipper of record, with WHC acting as agent, and both RL and WHC are responsible for conducting shipping activities in compliance with the Beneficial Uses Shipping System Cask Safety Analysis Report for Packaging (SARP), DOE/U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC), and applicable federal, state, and local requirements and the conditions described in this transportation plan. As agent for RL, WHC has the following specific responsibilities:

- WHC WESF Engineering is responsible for determining the schedule for loading and shipping of capsules. This determination will be based upon such factors as WESF's ability to receive Cs capsules, testing of the capsules, consulting with WHC Transportation and Packaging on predicted weather conditions, and existing road conditions along the route. WHC will notify ARECO, scheduled support contractors, and TSMT of the intent to load and ship capsules.
- WHC WESF Engineering is responsible for pre-loading activities, including preparing and testing of loading equipment, radiological surveys of the empty incoming packages and associated equipment, and support personnel.

- WHC Transportation and Packaging is responsible for providing shipment schedules and updates to TCC. This information, which includes the bill of lading, will be submitted in accordance with procedures found in the TRANSCOM Shipper and Receiver Users' Manual.
- WHC Transportation and Packaging will ensure that radiological limits for the package are in compliance with the U.S. Department of Transportation (DOT) 49 Code of Federal Regulations (CFR) requirements, the package's NRC and/or DOE CoC and SARP, through surveys performed on loaded packages using qualified, trained personnel, calibrated equipment, and approved procedures.
- Special form (SF) testing of the capsules at the ARECO facility will be conducted prior to initiating capsule shipments. Testing will consist of a visual inspection, a ring-gauge test and a clunk test.
- WHC Transportation and Packaging will ensure that all shipping documentation is properly completed, signed, and certified, and that all required labeling, marking, and placarding is applied per 49 CFR requirements before release of the shipment from the ARECO facility. WHC will verify TSMT commercial drivers' licenses and state permits (as necessary) and will ensure that the load is properly secured.
- WHC Transportation and Packaging will provide TSMT drivers with a driver information packet containing copies of the bill of lading (shipping paper), the highway route controlled quantity (HRCQ) shipment route plan (map), and appropriate emergency response information, as well as driver's and exclusive use instructions required for HRCQ shipment, before a shipment is dispatched from the ARECO facility. This information packet will be provided to law enforcement personnel to complete required sign-off by the inspecting state authority if required.
- WHC WESF Engineering and Transportation and Packaging is responsible for following requirements of the SARP, CoC, and associated operating procedures during the capsule loading, examination, unloading, and storage process.
- WHC will supply an escort vehicle for shipments along the entire transportation route. This escort will have health physics/Beneficial Uses Shipping System (BUSS) cask technical expertise and will be available as a resource (upon request) for an incident commander in the event of a transportation incident. Only loaded shipments (i.e., shipments from ARECO to Hanford) will be escorted.

3.1.4 ARECO

ARECO will provide information/data, NRC nuclear materials license modifications, and facility personnel expertise necessary for WHC to safely and economically recover the Cs capsules from its Lynchburg facility. Such information and support will be used solely for the purpose of Cs capsule recovery activities. ARECO will provide facility access to WHC during capsule recovery activities.

3.1.5 State of Virginia

The Virginia DOT maintains the lease agreement (property and building) with ARECO and will be responsible for approving any facility modifications required for the return of the capsules to Hanford.

The Virginia State Police (VSP) will inspect the shipment and vehicle using the "Recommended National Procedures for the Enhanced Safety Inspection of Commercial Highway Vehicles Transporting Transuranics, Spent Fuel, and High-Level Radioactive Waste" (hereinafter referred to as the enhanced North American Standards) prior to release from the ARECO facility. This inspection to the enhanced North American Standards is for the purpose of continued testing of the standards, and will include application of the related out-of-service criteria.

Enforcement actions (citations and fines) for violations discovered during inspections will be applied based on existing state laws and regulations.

3.1.6 U.S. NRC

The NRC, Region II, has issued a Radioactive Material License to ARECO for the storage, testing, preparation, and packaging for the return of the Cs capsules to Hanford. The NRC will approve the removal of Cs capsules from the ARECO facility by amending their current NRC Nuclear Material License (3.1.4).

3.1.7 Corridor States/Tribes

The states of Virginia, West Virginia, Kentucky, Indiana, Illinois, Iowa, Nebraska, Wyoming, Utah, Idaho, Oregon, Washington, and the Confederated Tribes of the Umatilla Indian Reservation have responsibility for establishing procedures and providing personnel and equipment to take charge of emergency situations, if necessary.

- Corridor states may exercise responsibility for vehicle and equipment inspections; these inspections, if conducted, will be in accordance with the enhanced North American Standards, and will include application of the related out-of-service criteria. Enforcement actions (citations and fines) for violations discovered during inspections will be applied based on existing state laws and regulations.
- Corridor states will designate a central point of contact to provide current weather and road conditions along the route to the TCC. At this time, the ARECO Cs capsule recovery transportation is scheduled to occur between May 1 through September 30, 1996. Winter Season Bad Weather Policy is not currently addressed in this transportation plan. If, for any reason, it is necessary to transport between the months of October through April, this transportation plan will be revised to include Winter Season Bad Weather Policy prior to any winter season shipment.

- Corridor states and/or the designated carrier drivers have the authority to halt or delay a shipment if weather or road conditions are unacceptable.
- Once a vehicle has been directed into a safe-parking area, the state-and/or tribal-designated authority will provide clearance to continue travel. The corridor states are responsible for developing procedures within their state for designating authority for ordering shipments to stop or to proceed.
- States are responsible for notifying TCC of any conditions that may affect a shipment crossing their jurisdiction. States should notify TCC, TCC should notify WHC and TSMT. States will notify TCC through TRANSCOM. This notification can happen at any time a shipment is scheduled for departure. TCC should be the central point of contact for the states for all notifications.

3.1.8 TSMT

TSMT is responsible for safely transporting the Cs capsule shipments to Hanford. This responsibility includes obtaining required state permits, using the designated HRCQ route, and arranging for vehicle inspections in cooperation with WHC Transportation by VSP at origin. TSMT will work with other states and tribes to arrange inspections as required.

- TSMT is responsible for providing emergency recovery personnel, equipment (including repair/replacement of tractor or trailer if required) and procedures in the event of a highway incident as described in Section 3.4 of this document (TSMT procedures are found in Appendix B).
- TSMT will ensure that driver training requirements have been met, that vehicles meet the enhanced North American Standard inspection requirements and that the vehicles are "defect free" before and throughout the shipment.
- TSMT and/or WHC Transportation and Packaging will notify the VSP to arrange for tractor and trailer inspections and/or reinspection of the vehicle if shipment is delayed for more than 72 hours.
- TSMT drivers will inspect the vehicle and security of the load every two hours or 100 miles, whichever occurs first. TSMT will maintain communications via TRANSCOM from dispatch at ARECO to receipt at WESF. TSMT drivers will implement backup communications procedures in the event of TRANSCOM system failure as specified in TRANSCOM operating procedures. TSMT dispatchers trained on Cs transportation protocol as outlined in this transportation plan, will monitor the tractor/BUSS cask's progress on a 24-hour basis while en route to Hanford. TSMT will notify WHC Transportation and Packaging of any delays or problems that occur while in transit.
- TSMT is responsible for compliance with all applicable federal, state, tribal, and local transportation requirements and the conditions described in this transportation plan.

- TSMT will ensure effective communication with the drivers on all extraordinary events involving the shipments, including external public relations/affairs events that have potential impact upon the shipment.
- TSMT will be responsible for obtaining appropriate state permits prior to the first shipment.

3.2 SHIPMENT SCHEDULE

A "shipment" as referred to in this plan is defined as the period from notification of loading the packaging to the return of the empty packaging for reloading.

Recovery of all capsules from ARECO will require two shipments lasting approximately 22 days each.

Figure 1. Expected Typical Shipment Schedule (Working Days).

- Day 1. Notification to participants (carrier, ARECO, states and tribes) through TRANSCOM of intent to start shipping campaign. WHC personnel travels to ARECO.
- Day 2-3. WHC arrives at ARECO to start preparation activities.
- Day 4-8. Begin cask preparation, capsule loading, and cask assembly activities at ARECO.
- Day 9. Departure of vehicle with loaded package from ARECO to Hanford.
- Day 9-12. Transit of shipment from ARECO and arrival at Hanford.
- Day 13-18. Unloading, storage of capsules, and preparation of empty package for shipment at the WESF facility at Hanford.
- Day 19. Departure of vehicle with empty packaging from Hanford to ARECO. The packaging and associated equipment will be surveyed prior to departure in accordance with WHC standard operating procedures.
- Day 19-22. Transit of empty package shipment from Hanford and arrival at ARECO.

3.3 ADVANCE INFORMATION/TRACKING OF SHIPMENT

RL will provide 30-day written notification to the governors of participating states (or their designees) and designated tribal officials of the schedule for initiation of the shipping campaign from ARECO. Copies of this communication will be provided to the affected State Representative Associations (SRA) and/or designated state contacts.

TRANSCOM, by procedure, provides seven-day notification electronically on shipment schedules. Use of TRANSCOM for advance information of projected shipment schedules will be coordinated by WHC. It is noted that not all corridor states have TRANSCOM nor received either training or support equipment to effectively operate this system. Where a state does not have access to TRANSCOM, a phone call by the TCC shall be made for the seven-day notification to that state/tribal designated contact. In addition, all corridor states will receive telephone notification four hours prior to shipment dispatch from the ARECO Facility (by WHC) to their designated state Cs contact.

In addition, the TCC will call the state- or tribal-designated TRANSCOM point of contact approximately two hours before the shipment is expected to enter their jurisdiction.

State and tribal representatives tracking shipments through TRANSCOM will be able to view: (1) the bill of lading; (2) DOT Emergency Response Guidebook information; (3) the shipment's route; (4) points of contact for information; (5) message traffic; and (6) shipment movement on U.S., state, and county maps.

WHC will use telephone and TRANSCOM to notify users of the shipment schedule and associated schedule changes, if any. If any abnormality occurs, the state-designated point-of-contact will provide notification through the TCC.

The TSMT driver, through the TSMT dispatch center, will provide notification to states and tribes through TRANSCOM of any unscheduled vehicle stops en route, including stops for inclement weather. Any deviation from the preferred route will comply with applicable regulations, state, tribal, and local direction, and TSMT operating procedures.

TRANSCOM backup will be provided by cellular or roadside phones as specified by procedure in the TRANSCOM Vehicle Operator's Manual and Shipper and Receiver User's Manual.

3.4 EMERGENCY CONSIDERATIONS

States and tribes having jurisdiction over areas through which these shipments will pass have primary responsibility for protecting the public and the environment, and for establishing incident command should there be an emergency involving the shipments. DOE can provide technical advice and assistance to civil authorities and carriers of DOE cargoes, when requested.

TSMT, as the selected carrier for these shipments, is responsible for providing emergency response assistance and recovery/restoration actions, if required.

3.4.1 Emergency Preparedness

DOE has agreed to escort both ARECO shipments for the entire route from the ARECO Lynchburg, Virginia, facility to Hanford, Washington.

As agent for the shipper of record, WHC will provide shipper-related emergency information and maintain a 24-hour emergency telephone contact (509) 373-3800 and paging system. This number will allow for technical advice and detailed information to be available regarding the shipments within 15 minutes of receiving the first call.

States and tribes through whose jurisdictions these shipments will pass may, if desired, designate safe-parking areas to be used by TSMT drivers during adverse driving or road conditions, or during any other situation requiring an unscheduled delay. In the absence of such state or tribal designated safe-parking areas, TSMT will seek assistance from designated state/tribal authority for determining locations to use and/or avoid when selecting safe-parking areas.

3.4.2 Notifications

In the event of a highway incident where the shipping package is involved, the driver will notify the 911 line, the appropriate law enforcement authority and TRANSCOM of the event. If the driver is unable to respond, TCC will inform the appropriate law enforcement authority that the driver is not responding. The authority can then locate the truck and establish incident command, if necessary.

If DOE is called upon to supply assistance in the event of an incident, the actions of its Radiological Assistance Program (RAP) will be in accordance with DOE Order 5530.3 requirements. Deployment of any DOE technical assistance or package recovery capabilities not directly associated with the RAP will be reported to the DOE-HQ Operations Center by DOE-Oak Ridge, Tennessee (DOE-TN), DOE-Chicago (DOE-CH), DOE-Idaho (DOE-ID) or RL within 15 minutes of departure of such resources from home offices.

3.4.3 Emergency Response

The following are emergency-related roles and responsibilities that support this plan:

- **TSMT Driver:** The TSMT driver, if able, will make emergency notifications and undertake first aid actions, initial incident scene control, provide assistance to first responders, and other emergency actions as described in the TSMT Contingency Plan (see Appendix B).

- First Responders: Law enforcement, firefighting, and emergency medical service personnel will be guided in their approach to the incident scene and initial response actions by information contained in Guide 164 of the 1996 North American Emergency Response Guidebook (NAERG96) (DOT 1996), which applies to materials comprising of these Cs shipments, or by available emergency response information accompanying the shipping papers and normally available to responders in the vehicle or accessible via TRANSCOM. Initial response to other hazards that could be involved in the accident should be guided by ERG or other appropriate protective measures and response guidelines that apply. In all cases, the incident commander for response to the Cs shipments will be a local, state, or tribal authority. If states and local responders have additional procedures that provide more specific guidance, then responders will follow those procedures.
- TSMT Emergency Response Assistance: TSMT, as the carrier, will provide technical response assistance to state, tribal, and local responders as required by event scene conditions (see Appendix B of this document).
- State-Level Hazardous Materials or Radiological Response Teams: States maintain specialized state-level hazardous materials and/or radiological response teams that may be activated to provide technical assistance and mitigation during emergencies. State teams are activated by the incident commander or other appropriate state or local authority.
- DOE Radiological Response Assistance: DOE's RAP is administered through eight DOE regions. RAP Region 2, administered by DOE-TN, includes the states of Virginia, West Virginia, Kentucky. RAP Region 5, administered by DOE-CH, includes Indiana, Illinois, Iowa, and Nebraska. RAP Region 6, administered by DOE-ID, includes the states of Wyoming, Utah, and Idaho. RAP Region 8, administered by RL, includes the states of Washington and Oregon and the tribal lands of the Confederated Tribes of the Umatilla Indian Reservation. The regions have radiological monitoring and assessment capabilities to provide assistance in radiological emergencies.

Additional DOE technical experts (escort team) (Section 3.1.3) are available to provide advice on characteristics of the materials and their mitigation; the package and its tiedowns; and radiological monitoring and assessment requirements for severe emergencies (if requested).

3.4.4 Recovery

TSMT has primary responsibility for package and transporter recovery operations. Recovery will not begin until the emergency phase of any accident is terminated, following a decision that no radiological or other hazard is present. DOE will assist TSMT and its emergency response contractor in recovery operations, where appropriate. Specific procedures for recovery of the BUSS cask are found in Appendix B of this document. Corridor states may exercise their vehicle inspection responsibility before permitting the recovery vehicle to continue to a DOE facility or to the Hanford Site.

3.4.5 Cleanup and Site Restoration

TSMT has primary responsibility for cleanup and site restoration following an emergency. Standards for such actions will be as established by regulation and by authorities in the affected jurisdiction(s).

3.5 ABOVE-REGULATORY ACTIVITIES FOR SAFE ROUTINE TRANSPORT

No shipments will be en route during the following national holidays: New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving, and Christmas Day. This would include holidays that are part of a three- or four-day holiday which includes a weekend (e.g., Independence Day).

No transport vehicle will be dispatched from ARECO during adverse weather conditions in the immediate metropolitan area (i.e., snow, ice) that could increase transportation risk. This should not be an issue since the shipments from the ARECO facility are to be performed during May through September (summer season). Peak traffic hours in the ARECO vicinity will be evaluated by the Virginia-designated authority. This information will allow for coordination between ARECO, WHC Transportation and Packaging, and the carrier to limit exposure of the shipment to the surrounding motor traffic at time of dispatch from the ARECO facility.

DOE, WHC, and TSMT recognize the states concerns and their policies regarding weather/road conditions and safe-parking procedures. Currently, DOE/WHC has enacted that there be one season related to the dispatch of the vehicle from ARECO: Summer Season.

Summer Season, May 1 - September 30:

- Advance weather and driving condition checks will be made by the TCC staff using WSI Weather for Windows Service. It is the states' responsibility to notify the TCC if weather or road conditions are expected to be unacceptable during the projected shipment period. *NOTE: For this transportation plan, Bad Weather Policy (Winter Season) is not part of this plan since ARECO Cs transport is only scheduled to occur in the Summer Season. If such transport does not occur during the Summer Season window, this plan will be amended to include Winter Season Bad Weather Policy agreements for the entire transport corridor prior to transport occurring between October 1 - April 30.*

Advance weather information will be provided to TSMT via TRANSCOM. The driver(s) will use this information in planning travel distances and determining potential safe-parking locations while in transit (if required). If, during shipment, weather/road conditions warrant, the drivers will park the vehicle at a state-designated safe-parking area or at the first available safe-parking area as weather conditions dictate. In the absence of state/tribal safe parking protocol, TSMT will seek assistance from the designated state/tribal authority as described in Section 3.4 of this document. The vehicle will remain at the agreed-to location until the designated authority, TSMT, and escort personnel agree conditions will allow safe transport to continue.

It is recommended that weather/road conditions are evaluated between the designated authority, TSM (drivers), and escort personnel and that all parties agree the vehicle is not being dispatched too quickly into conveyance once conditions improve.

3.6 INFORMATION ASSISTANCE CONSIDERATIONS

DOE-HQ has prepared a packet that provides specific information about the capsule return program. Included in the packet are photographs and cut-away views of the capsules themselves as well as diagrams and specifications of the packaging that will be used. Information sheets about handling and loading procedures, the carrier (TSM), the general recall campaign and the shipments' points of origin and destination are included. A fact sheet containing general information also is included. These packets have been provided to corridor states and tribes, and additional sets will be provided by DOE as requested.

State and tribal authorities are contact points for information requests within their jurisdictions. DOE is working with states and tribes to coordinate information requests and has identified points of contact at RL and DOE-HQ to respond to requests for information from the public and the media.

The ARECO facility, as the point of origin for these shipments, has special public information and communications considerations. DOE can assist ARECO, if requested, to help coordinate information products (such as the information packets) and public involvement activities as appropriate. DOE, WHC, and affected agencies described in this transportation plan will prepare a communications strategy to coordinate public information along the shipping corridor.

4.0 PACKAGING DESCRIPTION

The packaging for transporting the capsules from ARECO is designed to provide confinement of its contents as required in 10 CFR 71. The packaging is composed of stainless steel shielding and is licensed by the NRC and DOE as a Type B SF packaging. The gross weight of each loaded package being shipped from ARECO could be 15,286 kg (33,700 lb) and could contain a maximum of 750,000 Ci of Cs chloride. Loading activities will meet the requirements of the current packaging's SARP and CoC as approved by NRC and/or DOE.

5.0 REFERENCES

- 10 CFR 71, "Packaging of Radioactive Material for Transport," *Code of Federal Regulations*, as amended.
- 10 CFR 73, "Physical Protection of Plants and Materials," *Code of Federal Regulations*, as amended.

49 CFR, "Hazardous Materials Regulations," *Code of Federal Regulations*, as amended.

DOE Order 460.1, *Packaging and Transportation Safety Requirements*, U.S. Department of Energy, Washington, D.C.

DOE Order 5530.3, *Radiological Assistance Program*, U.S. Department of Energy, Washington, D.C.

DOT, 1996, *North American Emergency Response Guidebook* (NAERG96), U.S. Department of Transportation, Washington, D.C.

DOE/NRC Beneficial Uses Shipping System (BUSS) Cask Certificate of Compliance, USA/9511/B(U), U.S. Department of Energy and U.S. Nuclear Regulatory Commission, Washington, D.C.

TRANSCOM Operational Procedures and User's Guide, TCOM-OPSP, current revision.

SANDB3-0698, TTC-0430, *Beneficial Uses Shipping System (BUSS) Cask Safety Analysis Report for Packaging*, Sandia National Laboratory, Albuquerque, New Mexico.

In addition to the preceding regulations covering transportation of hazardous materials, there are several transportation acts and regulations which assign responsibilities, establish requirements, and prescribe procedures for transportation in general or in other specific areas. Some of these important references are:

1. *Hazardous Materials Transportation Act*. 49 U.S.C. 1801 et seq. defines regulatory and enforcement authority of the Secretary of Transportation to protect the nation against the risk inherent in the transportation of hazardous materials.

**APPENDIX A: TSMT HAZARDOUS WASTE AND RADIOACTIVE
MATERIALS DRIVER'S TRAINING**

DRIVER'S TRAINING

The training program consists of the complete operation and functions of our company. Our program consists of the driver's function and management functions of our company. It also acquaints the student with and updates all state and federal laws, rules, and regulations pertaining to the transportation industry. These consist of dimensional requirements, whether state or federal; regulations pertaining to the transportation of hazardous materials; legal requirements for the preparation of freight bills; freight claims and prevention, accident prevention and reporting, personal injury and prevention; DOT regulations, including inspections and requirements of motor vehicles; logs and hours of service; other branches of government involved in the transportation field, such as the Environmental Protection Agency, OSHA, and DOE, and their regulations covering movement of hazardous materials. The program also consists of hands-on tying, securing, and tarping of open equipment and the movement of this type of freight.

We have devised our own program on videotape. Everything on the tape is based on written literature which is issued to each driver as reference material while in the class and to refer to once the driver is put to work. During the instruction class, the driver is given a practical problem and questionnaires to review subjects that are covered. These are: Department of Transportation Questionnaire for Review of the Federal Motor Carrier Safety Regulations Book; a Hazardous Materials Test covering Hazardous Material Regulations, and Requirements; a sample problem covering preparation of a Company Bill of Lading, completing a drivers' Daily Log Sheet, recording a movement and a pay report.

After going to work, drivers are monitored closely by their assigned Fleet Manager, and if found lax in any of these subjects, are returned to class to review the subject. In many cases, this is done on a one-on-one basis, or the driver will attend a class with a group covering this subject.

Tri-State meets or exceeds the training requirements as outlined in 49 CFR Subpart "H" 172.700. Copies of our Hazardous Waste and Radioactive Driver's Training are attached.

EMPLOYEE TRAINING RECORD SUBJECT

Introduction to Regulations - CFR 10, 29, 40, 49
Image and Professionalism (Signed Affidavit)
Vehicle Inspection Requirements
Waste Characteristics and Classifications
Material Safety Data Sheet
Hazard Communication and Right to Know
Film-A No Nonsense Look at Substance Abuse (as required)
DOT Regulations Covering:

- Uniform Hazardous Waste manifest and/or Shipping Papers
- Marking Requirements
- Labeling and Placarding Requirements
- Route Restrictions
- Package Quality (Spec and non-Spec)
- Proper Container Inspection
- Blocking, Bracing, and Cargo Tiedown (van and flatbed)
- Proper use of Protective Equipment
- Respirator Fit Test
- Drum-Overpack
- Emergency Contingency Plan and Spill Containment
- Emergency Response Guide Book
- Proper use of a Fire Extinguisher and Film
- Review F.M.C.S. 397
- Introduction to Radioactive Transport and Film (see Curriculum)
- Workshops (Manifest and Placarding and Compatibility Exercises)
- Seasonal Safety Film-Variou Driving Conditions
- Overall Safety Rules - Test - Review and Certifications (see Curriculum)

Date: _____ Hours: _____ HazMat Instructor: _____

Date: _____ Hours: _____ Annual Review: _____ Instructor: _____

Date: _____ Hours: _____ First Aid & Adult CPR Instructor: _____

Date: _____ Hours: _____ Annual Recertification CPR Instructor: _____

Date: _____ Hours: _____ Nat'l Safety Council, PID-DDC INSTRUCTOR: _____

Date: _____ Hours: _____ Spent Fuel & Hwy Route Control (HRCQ) INS. _____

Total Training Hours ( ) ( ) ( ) ( )

_____
Employee Signature

The above-named person has satisfied the training requirements pursuant to 49 Subpart "H", 172.700.

HAZARDOUS MATERIALS DRIVER TRAINING CURRICULUM

1. INTRODUCTION AND HOUSEKEEPING RULES
2. INTRODUCTION TO REGULATIONS AND PROCEDURES
  - A. CFR 10 (Radioactive)
  - B. CFR 29 (OSHA) (right-to-know)
  - C. CFR 40 (EPA)
  - D. CFR 49 (Transportation)
  - E. Customer Relations
  - F. Procedure-Nuclear Facilities
    1. Inspection
    2. Declaration of Contraband
3. CHARACTERISTICS AND CLASSIFICATIONS
  - A. Hazardous Classes
    1. Materials (Virgin Product)
    2. Substance (EPA Designate)
    3. Waste (by-product)
    4. ORM (Other Regulated Material) (diagram)
    5. NOS (not otherwise specified) - Further Description Required
4. DOT REGULATIONS PERTAINING TO
  - A. Container Markings (Cross Reference to Manifest)
  - B. Product Identifications
  - C. Labeling
  - D. Placarding-Prepare Examples-Several-also Workshop Material
  - E. Bulk Placarding
  - F. Shipping Papers (containing Hazardous Materials)
  - G. Compatibility (page 216 Tri-State manual)
  - H. Uniform Hazardous Waste Manifest
    1. Waste Manifest-that of State Receiving Product (Facility)
    2. Various State Manifest Requirements (PCB-Specific)

WORKSHOP - Have Drivers Prepare Several Manifests and Complete Several Placarding Exercises

5. PACKAGE QUALITY
  - A. Types of packages (most commonly transported by TSMT)
    1. Drums (Types)
      - a. Steel 55 Gal Drum, and Open Top w/ Band
      - b. Plastic 59 Gal
      - c. 5 gal Steel and Plastic
    2. Bags (Transport of Sludge or similar Substances)
  - B. Spec and Non-Spec
    1. How to Identify (Location)
    2. Info Needed When Discussing Packaging with Safety Dept
  - C. Inspection of Container
    1. We Have the Right to be Present to
      - a. Be Sure Containers are of Proper Quality
      - b. Check for any Type Damage (Crease, Dent, Puncture, and Tightened)
      - c. Check for Proper Identification (Compare w/ Manifest)

- d. Proper Labeling - Markings
- e. Compatibility
- f. Proper Loading (per Driver Instructions)
- g. Discuss Weak Areas of Drums
- D. Blocking, Bracing, and Cargo Tiedown
  - 1. Utilization of Pallets to Fill Cavities
    - a. Especially when Spreading a Load
    - b. Securements of Drums to Flatbeds
    - c. Floor Plan (LTL) - Helps w/ Placarding
- 6. Leaks and Spills
  - A. Personal Protective Equipment (see Checklist)
  - B. Proper Storage, Use, Fit, and Test Procedure for Respirator
  - C. Spill Kit, Contents, and Use
  - D. Spill Containment (Discuss Several Situations)
  - E. Drum Overpack (Demonstration)
  - F. Procedure to Pump Fluids (Aimed at PCB Transporters)
  - G. Emergency Response Guide Book (ERG could appear on Manifest in Several Areas or a Copy w/ Paperwork) - Impress Keep w/ Paperwork - also Material Safety Data Sheet
  - H. Emergency Contingency Plan
  - I. Exercise in Proper Use of "Drivers Pocket Guide to Hazardous Materials" (also Used when Working and Discussing Manifest in the Workshop)
  - J. Know and Understand Emergency Response Guide Book (Usage and Carriage)
- 7. Proper Use of Fire Extinguishers
  - A. Types of Extinguishers Used Depending on the Type of Fire A, B, C, and D (by Capacity)
  - B. Film
  - C. Proper Inspection and Procedure for Keeping TSMF Fire Extinguishers in a Ready State of Operation
- 8. Professionalism
  - A. Secured Transport Requirements (see Handout)
  - B. Person
  - C. Beards
  - D. Animal
  - E. Discuss Tri-State Motor Transit Attire
  - F. Contraband (Examples and Declaration)
- 9. State Certification
  - A. Various State Requirements
- 10. Discuss - HM-181 AND HM-126F.
(as Changes Occur Material to be Modified)
- 11. Instructor to show A.T.A. Film, Between each Segment will go over Test Questions, A.T.A. Workbook, Expound Where and When Needed
- 12. Introduction to Radioactive Materials Transportation
  - A. See Attached Curriculum

13. Administer Formal Respirator Fit Test
14. Administer Test
  - A. Review Test Results with Driver
15. Prepare and Distribute all Driver Certifications and State Applications

DAYS 1, 2, AND 3DAY 4

1. Standard First Aid and Adult CPR
  - A. Review Film by Segments
  - B. Administer Skills Test and Written Test
  - C. Certification Paperwork

Tri-State Transports all Facets of the Nuclear Fuel Cycle

Introduction to Radioactive Materials Transportation, Based on Tri-State's Transportation Manual

1. Introduction to Regulations
  - A. CFR 10 (Radioactive)
  - B. CFR 29 (OSHA) (Right-to-Know)
  - C. CFR 40 (EPA)
  - D. CFR 49 (Transportation)
  - E. Customer Relations
  - F. Procedure-Nuclear Facilities
    - a. Inspection
    - b. Declaration of Contraband
2. What is Radiation? (the Decaying Process of Unstable Material by Giving off Alpha, Beta, Gamma, Neutrons, and X-ray)
  - A. There are two types of Radiations
    1. Non-Ionizing (i.e., light, Radar Range, Radio and TV Waves (Frequencies)
    2. Ionizing Energy
3. Definitions and Terms

CPM - Counts per Minute

DPM - Disintegrations per Minute (Smear Test)
(Different Way of Detecting Rate of Decay) (Energy and Particles)
"How Many Atoms are Decaying"

Curie - 37 Billion Disintegrations per Second

Contamination - Material on a Surface (Surface Contaminated) (Contact)

Exposure - Radiation from "RAM" (Energy and/or Particles)
(No Contact)

Atom - Basic Building Block of All

A. Solids, Liquids, or Gases
(Configuration Determines the A. Above)

Millirem (mr/hr): Measures the Intensity of
the Energy being Released.
(Rheostat - Light-
Lightmeter)

Enriched Material: One or More Isotopes of a
Constituent (Material) has
been Increased

Dose: Quantity of Radiation (Total)

Dose Rate: Quantity of Radiation or Energy
Received in a Period of Time

Isotope: Various Species of the same Element
(i.e., Uranium - 233-234-235).

Fission: Splitting of a Heavy Atom (Large) such as
Uranium (Atomic Material) (Need Fissile Material
for this to the Place (i.e., Uranium Plutonium))

A. Nucleus-Center Part of the Atom-
Neutron/Proton Make up the Nucleus
Circle (Electrons Circle the Nucleus)

B. Nuclei-Specific Isotope (Radionuclide)

4. Energy Production Process (Reactor)

A. A Controlled Chain Reaction is a self-sustaining series of
nuclear fissions taking place in a reactor core. Neutrons
produced in one fission cause the next fission.

B. For every occurring reaction, you produce one or more
reaction. This is called a *controlled chain reaction*
(nuclear reactor process).

5. Fissile I, II, III, (rate of interaction determines the rating;
(energy being produced)).

A. The degree of control required (T.I.-50) for both
transport and storage (not to exceed a T.I. of 10 per
package (criticality control) (incident) (exception -
exclusive use). (A reading at 3.3' determines the T.I.
placed on the label).

6. During the decaying process, the following types of energy are given
off:

a. Alpha - largest particle (paper shield) (inches) (cannot
penetrate clothing or outer layer of skin).

- B. Beta - small particle (sheet metal-wood) (few feet) (has short range).
  - C. Gamma - energy (pulsating) also known as photons (heavy penetrating power) (lead-concrete-water, several inches or feet) (travels by air several feet).
  - D. Neutron - particle smaller than an alpha particle (caused by the reaction within the atom and the capturing of another particle) (shielding, hydrogen, water, or concrete).
7. What is and where do you find radon gas?
Given off during the natural decaying process of uranium within the ground.
8. Natural radioactive materials do not necessarily emit high levels of radiation.
9. Enrichment process:
The radioactive materials are first mined, then go through a chemical process, recovered in the form of a powder (yellow cake), then converted to UF₆, (used to isolate uranium 235) then to uranium dioxide (solid form), then formed into pellets assembled into fuel assemblies and shipped to the reactor site.
10. Placarding requirements
- A. Empty - if contains less than 0.5 M/R external radiation
  - B. LSA - radioactive (stenciled on container) (unless exclusive use)
  - C. UF₆ - radioactive and corrosive (1,000 p or more)
  - D. Yellow III - radioactive
  - E. HRCQ - radioactive (special)
11. Shipping Papers
- A. Basic format (see example)
    - 1. Required items on your shipping papers (see example)
    - 2. Other attached paperwork required when shipping RAM
12. Usage of survey instrument (allowable readings)
- a. Internal (exclusive use) (1000-200-10-2)
  - b. Other - 200-10-2
13. Allowable annual exposure

- A. 5 rem per year - accumulative (radioactive workers only)
(1 rem equals 1,000 millirem)
  - b. Tri-State Motor Transit Co. - Drivers (500 millirem per year) (accumulative)
14. Dosimeter - types (detects released radiation)
- a. Visual
  - b. Film
  - c. Audio
15. Tiedown responsibility
- A. Shipper may assist or perform on some casks - however still carrier responsibility.
16. What is yellow cake?
- A. Uranium concentrate
17. Highway route control: when?
- A. Energy within a single container that exceeds 3,000 times a_1 or a_2 value - or 30,000 curies, whichever is least (or any spent fuel).
18. SFRM - special form RAM - encapsulated (sealed material), (not radiation) if opened, you must destroy the packaging.
19. SNM - special nuclear material - plutonium, uranium (enriched) isotope 233-235.
20. Parking
- A. Normal occurrence parking areas
    - 1. Not at
      - A. Movie houses
      - B. Grocery stores
      - C. Malls
      - D. Small motels (unless truck parking allowed)
  - B. Truck stops and safe havens, never next to another RAM load, or explosives (especially when running convoy-fuel).
21. Trailers
- A. Never unhook from a trailer unless you obtain authorization from Tri-State supervisor
  - B. Never leave unattended for long periods of time

- C. If empty or unloaded cask you must have
  - 1. Company authorization
  - 2. Locations management authorization, name phone number of location and a w/c number for driver contact
  - 3. If labeled do not drop trailer
- 22. Film on transport and storage of spent fuel
  - A. Test crash

DRIVER/ESCORT TRAINING SYLLABUS

SYNOPSIS: The following is a syllabus for a ten-hour course of instruction for personnel in the motor transportation industry who will be hauling loads of irradiated (spent) nuclear fuels and other highway route controlled quantity radioactive materials shipments. The course will be offered at Tri-State Motor Transit Co.

0730 to

0745 **Welcome**

Introduction to Course

Registration, introductions and introductory remarks. Suggestions for note taking and an overview of topics to be presented. An important component will be the motivating of students to the need for strict attention and high level of performance during and after the course.

0745 to

0830 **Review of Regulations**

Overview of regulations, including DOT, NRC, DOE, and State as they apply to the subject matter.

0830 to

0845 **BREAK**

0845 to

1000 **Radiological Considerations**

A review of the nuclear fuel cycle and an overview of the functions of a nuclear reactor. Discuss the radiological change a nuclear fuel assembly undergoes during the fission process, and its hazardous characteristics after irradiation.

Review the general structural characteristics of a fuel shipping cask, discussing the manner in which it is loaded, decontaminated and handled during all phases of the shipping cycle.

Review the definition of highway route controlled quantity and discuss the radionuclides and the chemical and physical form of the material most likely to be shipped as highway route controlled quantity. Discuss the hazards of each radionuclide and each form.

Review the use and capability of the radiation detection device carried on board the transport vehicle. Review the emergency procedures to be followed in the event of suspected or confirmed radioactive leakage resulting from an accident or any other cause.

1000 to
1015

Driver Compensation

A review of how drivers assigned to HRCQ and Spent Nuclear Fuel Shipments are paid. Instructions on how drivers should complete their payroll documents to improve proper processing in payroll.

1015 to
1030

Reporting of Accidents & Interacting with Law Enforcement and Other Regulatory Personnel

A review of accident reporting procedures and the importance of professionalism in interacting with law enforcement and regulatory agencies.

1030 to
1100

Protection of Safeguards Information

Review of NRC regulations and NUREG-0794. Discussion of what constitutes "Safeguards Information" and methods of protecting such information. The operations of the on-board radio, telephone and satellite systems will be discussed with emphasis on the prudent utilization of this equipment for communications.

1100 to
1130

Vehicle Immobilization Device Operation

A review of the immobilization device and how its functions relate to routine and emergency type operations of the vehicle. Discussion of when, why, and how to use special equipment to immobilize the tractor.

1130 to
1200

Route Planning, Selection and Deviation

Review of the criteria utilized in developing a route, the NRC functions of route approval and providing route overviews. A review of a typical route overview and the information contained therein with emphasis on the necessity to follow these routes and utilize the listed stops to the fullest extent practical.

1200 to
1300

Lunch (catered)

1300 to
1345

Spent Fuel Operating Procedures

An overview of the written procedures which provide detailed methods to be utilized by TSMT in providing for the safe, secure transport of spent fuel.

1345 to
1400

Vehicle Maintenance and Inspections

A review of past experience with vehicle inspections. Emphasis on the need for high standards of maintenance and inspection.

1400 to
1415

Comments from Dispatch

Discussion on how drivers interface with Dispatch on these special assignments, including a review of the documentation involved.

1415 to
1500

General Review of Material Covered Informal Question & Answer Period

A general review of material presented with emphasis on information pertinent to regulatory compliance and safe operations.

Informal discussion period for any who may have questions relating to the subject matter.

1500 to
1515

BREAK

1515 to
1530

Film-Spent Fuel Transportation, Various Testing Methods

This film reflects some of the engineering and testing that goes into developing casks for transporting spent nuclear fuel.

1530 to
1615

Written Examination

1615 to
1730

Review, Evaluation, & Certification

The graded written test will be discussed with the class along with the results of other evaluations done during the course.

Certificates will be issued to all drivers who have satisfactorily completed this course.

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APPENDIX B: TSMT/OHM EMERGENCY RESPONSE/CONTINGENCY PLAN
AND Cs CASK RECOVERY GUIDE

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CONTINGENCY PLAN FOR INCIDENTS INVOLVING TRANSPORTATION OF Cs CAPSULES

Should Tri-State Motor Transit Co. (TSMT) become involved in an accident/incident while transporting DOE Cs capsules from the ARECO Facility, the following contingency plan will be enacted.

1.0 BACKGROUND

TSMT has primary responsibility for package and transporter recovery operations. TSMT has retained OHM Remediation Services Corp. (OHM), to be the emergency response recovery contractor for these two shipments. Emergency response coverage shall be provided along the entire shipment route from Lynchburg, Virginia, to the Waste Encapsulation Storage Facility (WESF) at the Hanford Site in Washington State.

2.0 DESCRIPTION OF SERVICES

OHM is providing emergency response and recovery contractor services for TSMT covering the ARECO Cs capsule shipments only. The emergency response and recovery capability will consist of trained personnel and equipment on standby in Denver, CO, and Columbia, SC. In the event of an incident/accident, the OHM Emergency Response team will be responsible to perform all the actions necessary to place the shipment safely back en route to the Hanford Site, located in southeast Washington state. These actions include, but are not limited to, clearing the accident scene, obtaining safe parking for the shipment, security for the shipment during repairs, and disposition of damaged equipment. Repair or replacement of the equipment will be coordinated with the TSMT Safety and Operations Departments. These actions will be performed with approvals from TSMT, technical guidance from Westinghouse Hanford Company (WHC), the U.S. Department of Energy (DOE), and the appropriate state and local law enforcement agencies.

3.0 SCOPE OF WORK

The level of response will depend upon the type and severity of the incident. Qualified personnel within TSMT and OHM have been trained on this Contingency Plan. Emergency response and communications equipment has been procured and activated for these shipments. The equipment list includes: (a 24-hour 1-800 number), pagers for on-call team members, and a citizen-band (CB) radio. Equipment to stock the emergency response kits will be tested, calibrated, inventoried, packed, and sealed. All emergency response equipment has been selected specifically for the ARECO shipments (see Attachment A). A vehicle will be provided during the actual time the shipment is on the road to allow transport of equipment and personnel in case of a transportation incident.

Also included in this document is the implementation of a notification system for occurrences and a coordinated, preplanned response by OHM personnel to an incident involving the transportation of Cs capsules.

The Emergency Response team provides the existing emergency management resources with trained personnel and equipment for radiological emergencies. The team works in cooperation with TSMT and the local jurisdiction.

Notification of incidents will be required to ensure that OHM Corporate Management and TSMT is aware of any problems and, if necessary, takes the appropriate action. The Emergency Response team is activated by a 24-hour 1-800 service which in turn notifies the team members by pagers or direct phone.

Response to any real or potential emergency can include any action taken to minimize the consequences of the situation. The degree of response will be determined according to the magnitude of the incident.

4.0 APPLICABILITY

Instructions set forth in this document shall apply specifically to all OHM employees involved in the Cs capsules shipment. Emergency situations may call for individuals other than OHM employees to request the activation of the Emergency Response team.

5.0 REFERENCES - OHM SPECIFIC COMPANY PROCEDURES*

SF-016, "Incident Reporting Procedure" *

SF-017, "Incident Investigation Procedure" *

OSHA 29 CFR 1910.120 "Hazardous Waste Operations and Emergency Response"

TN-002, "Training Procedure" *

6.0 DEFINITIONS

Incident - Any unplanned event resulting in death, personal injury, exposure to a significant radiological hazard, property damage, loss of assets, fire or explosion, spill, release, adverse publicity, or regulatory compliance issue.

Call Duty - The assigned duties of an Emergency Response team requiring them to be available 24 hours a day for the period the shipment is en route to Hanford.

Caller - The individual who contacts Anderberg Communications personnel with the initial notification of an incident. The caller will likely be a WHC escort individual at or near the scene or a TSMT representative.

Emergency - An emergency or potential emergency is defined as any of the following:

- The loss or theft of radioactive material.

- An over-exposure of persons from sources of ionizing radiation or potential release of radioactive material.
- A transportation accident that involves damage or delay of the shipment.
- A potential radiological risk of sufficient magnitude to involve the following:
  - 1) Evacuation or control of the movement of people to minimize exposure to radiation
  - 2) Medical evaluation of individuals.
- Unplanned release of radioactive materials which requires notification to a regulatory agency.

Class A Emergency - The lowest-ranked emergency for which response is required. A release of radioactive materials and/or increase in radiation levels are not apparent.

Class B Emergency - The middle-ranked emergency in which a response is required. Increase in radiation levels are apparent.

Class C Emergency - The highest-ranked emergency in which a response is required. Radioactive materials release and/or an increase in radiation levels are apparent.

Emergency Response Kits - Kits that contain equipment and materials necessary for the Emergency Response team to respond to the majority of emergencies involving radioactive material. There have been two kits that have been assembled: one is located at the OHM Remediation Services, 4897 Oakland Street, Denver, CO 80239. The second response kit is assembled at OHM Remediation Services, 250 Berryhill Rd., Columbia, South Carolina 29210. Team members are able to access the buildings 24 hours a day.

Package - The container surrounding the radioactive material, e.g., the Beneficial Uses Shipping System (BUSS) Cask.

7.0 REQUIREMENTS

7.1 TOOLS, MATERIALS, EQUIPMENT

The items listed in Appendix B, Attachment A shall be assembled into kits and kept ready at all times. The kits shall be kept ready at the OHM offices located in Denver, CO, and Columbia, SC. Hereafter these tools, materials, and equipment will be referred to as the Emergency Response kits.

7.2 MAINTENANCE - EMERGENCY RESPONSE KIT

The maintenance of each Emergency Response kit will be the responsibility of the OHM Project Manager or his designee. The kits will be inventoried on a monthly basis (Appendix B, Attachment A). The inventory will include: checking instruments, replacing batteries if necessary, and performing a physical and operational inspection of the kit contents.

7.3 EMERGENCY RESPONSE CAPABILITIES

The following OHM Facilities will have Emergency Response capabilities:

• OHM Remediation Services Corp. 4897 Oakland Street Denver, CO 80239 (303) 371-8252	• OHM Remediation Services Corp. 1024 Ferguson Street Columbia, SC 29201 (803) 256-1555

8.0 RESPONSIBILITIES

8.1 OHM PROJECT MANAGER OR DESIGNEE

The OHM Project Manager shall follow this established DOE/WHC Transportation Plan and the company-specific Health and Safety Plan. The OHM Project Manager shall also establish an Emergency Response team to ensure the public safety and health in the event of an incident involving the Cs capsules.

The OHM Project Manager shall also ensure that the OHM notification system is established with affected persons, e.g., customers, vendors, carriers, and government and civil agencies.

The OHM Project Manager will have the following responsibilities:

- Prepare, review, and update the OHM Emergency Response Procedure.
- Establish the team and ensure replacement of team members that can no longer fulfill the duties.
- Ensure team members are properly trained and training is documented in accordance with TN-002, *Training Procedure*.
- Ensure the kits are properly inventoried and stored.
- Perform periodic tests of the Anderberg Communications notification line and the pagers.

8.2 ANDERBERG COMMUNICATIONS (1-800-925-4959)

Anderberg Communications personnel shall be prepared to:

- Record the caller notification of incidents, accidents, and/or emergencies on the Emergency Notification check sheet (Appendix B, Attachment B).
- Call the five pager-system numbers to alert the Emergency Response team members (Appendix B, page B-38).
- In emergency situations, stay by the telephone and make or answer telephone calls as directed by the Emergency Response team.

8.3 EMERGENCY RESPONSE KIT MAINTENANCE

The OHM Project Manager shall designate a responsible individual to ensure Emergency Response kit maintenance prescribed in this section.

- Maintain a list of Emergency Response kit radiation detection instruments and their calibration due dates. Package and ship the radiation detection instruments to the Calibration Facility two weeks prior to their calibration due dates for recalibration. Ensure replacement instruments are placed into the kits during the calibration period.
- Inventory the Emergency Response kit every month or at least one week prior to a Cs shipment. All functional items in the kit will be tested, (e.g., flashlights, tape recorder, instruments, calculator). Document this inventory noting any missing/damaged items. Report any deficiencies to the OHM Project Manager and correct them.
- Ensure each team member knows where the equipment is being stored, has all of the necessary keys and security clearance to access the equipment, and can make arrangements for emergency travel and accommodations.

8.4 EMERGENCY RESPONSE TEAM ORGANIZATION

The Emergency Response team is a coordinated function of OHM to provide advanced-level radioactive materials mitigation capability. The Emergency Response team will observe the conditions and make recommendations to TSMT. Command of the emergency is under the local jurisdiction Incident Command.

A team of trained OHM personnel shall be prepared to perform one or more of the functions listed below. The team shall consist of three members. One of the team members shall be a qualified Radiation Control Supervisor. The other two team members are the Project Radiological Engineer and the OHM Project Manager. The OHM Project Manager shall be designated as the Team Leader. This team will be available for rapid mobilization should an emergency situation arise.

The Team Leader shall:

1. Assess and classify the severity of the emergency and initiate this general plan. Determine status of the emergency and send personnel to the accident site as deemed appropriate. Contact TSMT to provide information, recommendations, and relay OHM's proposed response actions.
2. Assign qualified personnel to the Emergency Response team and instruct them to proceed to a pre-response location or the emergency site and perform such actions as deemed necessary.
3. Coordinate emergency operations by maintaining communications with authorized TSMT personnel, local civil authorities on the scene, authorities in the involved States on the scene, OHM Health Physics, OHM Management, and the Emergency Response team.
4. Assume supervision and control of the Emergency Response team at the accident site, or alternate site as deemed appropriate.

5. Arrange transportation service for Emergency Response team personnel as required (e.g., air transportation, pickup at airport by State Police, etc.).
6. Support Emergency Response team at accident site by providing for additional assistance, equipment, and/or relief of personnel as required.

8.5 SKILLED SUPPORT PERSONNEL

Take actions as directed by the Team Leader or designee and other appropriate actions as required to stabilize the situation and protect individuals from injury and contamination.

9.0 TRAINING

The training program shall be administered by OHM. All training shall be documented in accordance with TN-002, *Training Procedure*.

9.1 TEAM MEMBER PREREQUISITE QUALIFICATIONS

9.1.1 Team Leader

- Shall have experience on one of the Cs recovery projects.
- Must regularly update themselves on proper procedures, available support, and effective regulations.
- Be cognizant of how the shipping package is maintained, handled, and transported.

9.1.2 The Team

- At least three years' experience in radiation/contamination monitoring controls.
- Each new team member must undergo a procedural orientation. Documentation of this orientation is a statement of completion from a Team Leader.
- Each team member that will respond to the accident scene shall participate in any WHC, Western Governors Association (WGA), Midwestern, Southern States Energy Board (SSEB), or DOE sponsored emergency response drills.
- Refresher training of procedural requirements shall be performed annually. Records of this training shall be kept by the OHM Project Manager.

10.0 NOTIFICATION

10.1 REQUEST FOR RESPONSE

Request for response of the Emergency Response team may originate from TSMT. He or she may request the response through Anderberg Communications by calling:

EMERGENCY   1-800-925-4959

PAGERS

Personnel	Digital PIN #
Jeff Stevens	105-9575
Steven McQueary	105-9573
Walter Paulson	105-9574
Wayne Gaul	105-9577

Anderberg Communications will then contact the team members using the pagers or phone lines at homes/offices.

- OHM office in Denver, CO (303) 371-8252
- OHM office in Columbia, SC (803) 256-1555

Anderberg Communications will also be given a list of the team members' home phone numbers.

Anderberg Communications will contact the team members and relay the information taken by the person reporting the emergency, and notify each member contacted of the other members that were also successfully contacted.

Additional response members listed below will be contacted on an as-needed basis:

Joe Harverson (518) 395-7582
David Higgins (518) 395-7582

10.2 EMERGENCY RESPONSE TEAM

After notification by Anderberg Communications, the Team Leader, and members will gather at the OHM office in Denver, CO or Columbia, SC. The Team Leader will call Anderberg Communications and inform them that the entire team has gathered and can be contacted at the OHM Offices.

10.3 NON-OHM SUPPORT

Other emergency support may be notified by the local jurisdiction incident commander when deemed necessary.

10.4 STATE AND FEDERAL AGENCIES

State and/or federal agencies shall be notified by TSMT or OHM Corporate Management when deemed necessary. Note: An incident report shall be initiated in accordance with SF-016, *Incident Reporting Procedure*.

11.0 IMPLEMENTATION

11.1 TEAM LEADER

The Team Leader shall provide the following basic instructions to the incident commander for prevention of radiation exposure. Instructions should be given to the incident commander by phone prior to the team traveling to the scene.

11.1.1 Instructions

1. Isolate area 1,000 ft from truck, containers, or radioactive source until a radiation survey has been taken.
2. Take care of the injured as necessary by using first aid and/or calling an ambulance service. In almost all emergency cases, risking individual exposure is acceptable when serious or life-threatening injury is involved.
3. Brief the incident commander on the nature of the Cs shipments, the type of package, and signs that would indicate package failure.
4. Ensure that the incident commander can communicate with the team as necessary for radiological advice and a communication system is available for further instructions and status reports.

11.2 TEAM LEADER ACTION

The Team Leader or designee shall take the following actions after notification of an emergency:

- Determine a specific plan of action and classification of emergency.
- If possible, collect additional information and relay further instructions by telephoning TSMT personnel or the local incident commander at the scene of the incident, and informing the incident commander of what actions to expect from the Emergency Response team.
- Gather the emergency equipment.

- Instruct and dispatch selected Emergency Response team members and equipment to the accident site or other point of assembly. Determine the most effective mode of transportation to the emergency (e.g., air travel or driving).
- Notify TSMT personnel that the emergency plan is in effect, assistance is en route, what route and mode of transportation taken, the team members and equipment en route, and the estimated time of arrival at the scene.
- Assist local authorities in emergency activities and keep Corporate Management advised of the situation.

12.0 COORDINATION WITHIN THE LOCAL INCIDENT COMMAND SYSTEM

During response, Emergency Response team members should provide data available on the hazard.

Emergency response actions are performed at the direction of the Team Leader in coordination with the TSMT representative. If Utility, State, or County emergency response plans exist and are in action, the use of this procedure will be limited to administrative actions.

The Emergency Response team will operate within the local jurisdiction incident command system (ICS) as the Emergency Response group for TSMT.

12.1 STAGING

The arriving Emergency Response team will contact the TSMT representative at 1-800-234-8768, and local jurisdiction's incident command as to the location of staging for all other Emergency Response team units. Staging locations should account for the following criteria:

- Evaluate the situation
- Stage uphill, upwind
- Be in a safe location
- Have adequate access to the scene
- Stay out of the way of other units that are operating in the area

12.2 INCIDENT COMMAND

Note: Continuous progress reports must be provided to the TSMT representative, local jurisdiction incident commander, and Emergency Response group supervisor in his/her absence from scene by the designated Team Leader during the course of the incident.

The Emergency Response team was created to provide the existing emergency management resources with trained personnel and equipment for radiological emergencies. OHM Emergency Response team will operate under local jurisdictions' ICS.

- The TSMT representative or local jurisdiction incident commander at an emergency will call for the Emergency Response team when deemed necessary.
- The Team Leader/designee will coordinate activities through the TSMT representative and incident commander. They will cooperate fully with local jurisdiction to mitigate hazards.

12.3 COMMUNICATION

General provisions during emergency response - Emergency Response team

All communications shall be in plain English. When spelling substance names, conventional phonetics shall be used.

Phonetic Alphabet

A - Alpha	J - Juliet	S - Sierra
B - Bravo	K - Kilo	T - Tango
C - Charlie	L - Lima	U - Uniform
D - Delta	M - Mike	V - Victor
E - Echo	N - November	W - Whiskey
F - Foxtrot	O - Oscar	X - X-Ray
G - Golf	P - Papa	Y - Yankee
H - Hotel	Q - Quebec	Z - Zulu
I - India	R - Romeo	

The Team Leader shall confirm the designation of a clear radio channel with the TSMT representative and incident commander or a dedicated phone line to the TSMT Office. The Emergency Response kit contains two hand-held CB radios that can be used for on-scene communications.

After the initial briefing session between the incident commander or TSMT representative and Team Leader, the Team Leader shall remain in contact with the TSMT representative. TSMT has designated the following personnel as authorized to direct OHM's actions at the scene:

	TSMT Facility	800-234-8768	
Jeff Cooney	Director of Safety and Compliance	(417) 781-7158	Hm Ph
Troy Highland	TRANSCOM Coordinator	(417) 782-1149	Hm Ph
Dave Lambert	Director of Driver Training	(417) 782-5136	Hm Ph
Bill Rucker	Radioactive Materials QA Mgr.	(417) 673-1000	Hm Ph
Ben Southwick	Vice President, Safety	(417) 781-1035	Hm Ph

In addition, the TSMT on-call corporate representative shall also be authorized to direct OHM's action at the scene.

The Team Leader or designee shall be responsible for the following communications-related duties:

1. Monitor all communications during the recovery for requests of assistance, indications of personnel distress, or any other emergency transmissions.
2. Monitor all communications with the other recovery team personnel.

12.4 ESTABLISHING THE INTERACTION WITH THE ICS

The Emergency Response team will inform the ICS that they are here as the Emergency Response team part of TSMT and are responsible for directing the cleanup of the scene and the recovery of the shipment. The Team Leader or designee shall leave the Emergency Response Staging area and report to TSMT and the local jurisdiction incident commander and shall relate any pertinent information or advice that he/she has for that stage of incident. During this briefing session, the Team Leader or designee shall review with the local jurisdiction incident commander the actions that have been taken thus far, and those tasks that need to be completed in the immediate future. A review shall include:

- The identification of material and shipping container involved. A briefing on the shipment.
- Designation of a "clear" tactical channel or channels in order to manage the incident.
- The need for additional resources/outside agencies.
- The steps being taken to close off access to the incident site (the closing of roads and intersections).
- The measures being taken to isolate the radiological materials (the establishment of zones - Fire and Hazardous).
- Establishment and location of "Access Control."
- The need for evacuation.
- The identification of key civilian personnel.
- An assessment of the location of command and other units at the scene or in staging areas. Ensure their safety from contamination, exposure, explosion, or toxic exposure.
- The proper level of protective clothing for emergency service personnel.
- A review of the tasks assigned to units at the scene.
- The need for radiation exposure management and medical treatment.

13.0 RESPONSE ACTIONS WITHIN THE LOCAL ICS

The Emergency Response team shall perform the following actions as requested by the TSMT representative and the incident commander.

13.1 EVALUATION

1. Conduct radiation surveys at the perimeter of area and work in toward the cask.
2. Perform an inspection of the truck, trailer, and cask to determine what damage has occurred and the extent of the damage.
3. The normal radiation levels on the loaded cask are as follows:

Lid Seal and Bolt Holes:	15-20	mrem/hr
Cask Body:	5-10	mrem/hr
Upper Port:	25	mrem/hr

13.2 SITE ENTRY

The incident commander will grant permission to the team to make an area entry and should specify what precautions for non-radiological hazards should be taken. General procedure for entry of area:

1. Personnel shall be equipped with personnel monitoring devices (thermal luminescence dosimeters [TLDs] and pocket dosimeters).
2. Enter accident area with radiation survey instruments in operation (any indication of radiation levels above normal background would suggest possible damage and release of internal contents of the cask).
3. Exercise judgement using all available data and information in the need to wear protective clothing and respiratory protection. Visually inspect area from a distance to determine if leakage is apparent.
4. Site entry is addressed during primary assessment because of the need for survey and reconnaissance of the emergency site. Due to the nature of the material and the package containing it, radioactive contamination is highly unlikely.
  - a. Eating, drinking, chewing gum or tobacco, smoking or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited.
  - b. Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.
  - c. Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible, do not walk through puddles, leachate, discolored surfaces, kneel on ground, lean, sit or place equipment on drums, or place containers on the ground.
  - d. Medicine and alcohol can potentiate the effects from exposure to toxic chemicals. Prescribed drugs should not be taken by personnel on response operations where potential for absorption, inhalation, or ingestion of toxic substance exists unless specifically approved by a qualified physician.

- e. Any required respiratory protective devices and clothing must be worn by all personnel going into areas designated for wearing protective equipment.
- f. Onsite personnel must use the buddy system when wearing respiratory protective equipment. As a minimum, a third person, suitably equipped as a safety backup, is required during initial entries. A two-man safety team is the goal.
- g. Radio contact must be maintained between pairs onsite and safety personnel. Entry team members shall remain close together to assist each other during emergencies.
- h. During continual operations, onsite workers act as safety backup to each other.
- i. Personnel shall practice unfamiliar operations prior to doing the actual procedure.
- j. Entrance and exit locations must be designated and emergency escape routes delineated. Warning signals for site evacuation must be established.
- k. Communications using radios, hand signals, signs, or other means must be maintained between initial entry members at all times. Emergency communications shall be prearranged in case of radio failure, necessity for evacuation of site, or other reasons.

13.2.1 Survey and Reconnaissance

The team initially entering the site is to accomplish one or more of the following objectives:

- Determine or verify the hazards that exist or that may potentially exist, affecting public health, the environment and response personnel.
- Verify existing information and/or obtain information about the incident.
- Evaluate the need for prompt mitigation.
- Collect supplemental information to determine the safety requirements for personnel initially and subsequently entering the site.

Before the team enters the site, as much information as possible shall be collected (depending on the time available) concerning the types of hazard(s), degree of hazard(s), and risks which may exist. Based upon available information (shipping manifests, transportation placards, existing records, container labels, etc.) or offsite studies, the team assesses the hazards, determines the need to go onsite and identifies initial safety requirements.

The initial onsite survey is to determine, on a preliminary basis, hazardous or potentially-hazardous conditions. The main effort is to rapidly identify the immediate hazards that may affect the public, response personnel, and the

environment. Of major concern are the real or potential dangers from fires, explosion, radiation, and oxygen-deficient atmosphere.

In general, the initial entry is considered a relatively rapid screening process for collecting preliminary data of site hazards. The time needed to conduct the initial survey depends on the urgency of the situation, type of incident, information needed, size of the site, availability of resources, and level of protection required for initial entry personnel. Consequently, initial surveys may need hours to complete and consist of more than one entry.

13.2.2 Priority for Initial Entry Monitoring

Of immediate concern to initial entry personnel are atmospheric conditions which could affect their immediate safety. These conditions are airborne toxic substances, combustible gases or vapors, lack of oxygen, and ionizing radiation. Priorities for monitoring these potential hazards shall be established after a careful evaluation of conditions.

When the type of material involved in an incident is identified and its release into the environment suspected or known, the material's chemical/physical properties and the prevailing weather conditions may help determine the order of monitoring. An unknown substance or situation presents a more difficult monitoring problem.

For open, well-ventilated areas, combustible gases, and oxygen deficiency are lesser hazards, and require lower priority. However, areas of lower elevation onsite (such as ditches and gullies) and downwind areas may have combustible gas mixtures, in addition to toxic vapors or gases, and lack sufficient oxygen to sustain life. Entry teams shall approach and monitor whenever possible from the upwind area.

13.2.3 Periodic Monitoring

The monitoring surveys made during the initial site entry phase are for a preliminary evaluation of atmospheric hazards. In some situations, the information obtained may be sufficient to preclude additional monitoring (for example, a radioactive material package determined to be releasing no radioactive material). Materials detected during the initial site survey may call for a more comprehensive evaluation of hazards and analyses for specific components. A program may be established for monitoring, sampling, and evaluating hazards for the duration of site operations. Since site activities and weather conditions change, a continuous program to monitor atmospheric changes must be implemented utilizing a combination of stationary sampling equipment, personal monitoring devices, and periodic area monitoring with direct-reading instruments.

13.2.4 Ambient Atmospheric Concentrations

Any indications of atmospheric hazards - toxic substances, combustible gases, lack of oxygen and radiation - shall be viewed as a sign to proceed with care and deliberation. Readings indicating explosive atmospheres or high concentration of toxic substances may change the associated risks and extreme caution should be exercised in continuing surveys when any atmospheric hazards are indicated.

13.2.5 Levels of Protection

Equipment to protect the body against contact with known or anticipated toxic contaminants have been divided into four categories according to the degree of protection afforded:

Level A - Shall be worn when the highest level of respiratory, skin, and eye protection is needed.

Level B - Shall be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection.

Level C - Shall be worn when the criteria for using air-purifying respirator (APR) are met.

Level D - Shall be worn only as a work uniform and not on any site with respiratory or skin hazards. It provides no protection against contaminant hazards.

The level of protection selected shall be based on:

1. Type and measured concentration of the substance in the ambient atmosphere and its toxicity.
2. Potential for exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.

The situations where the type of material, concentration and possibilities of contact are not known, the appropriate level of protection must be selected based on professional experience and judgement until the hazards can be better identified.

13.3 ENTRY TEAM REQUIREMENTS

The designation "Entry Team" means any team member who is a part of the Entry Team or who has responsibility for dressing or monitoring team personnel that enter the Exclusion Zone. Each team member that is placed in protective equipment shall be dressed-out according to the following instructions.

13.3.1 Dress-Out Instructions

1. A verification that the protective clothing is appropriate for materials that are to be controlled.
2. A check of the self-containing breathing apparatus (SCBA), air cylinder gauge and/or APR.
3. A verification that the proper boots and gloves are being worn.
4. A check for double gloving.
5. A visual check of the suit for defects.
6. A physical check that the suit closure is fully closed, secured and properly sealed.
7. A full communication check for designated "Entry Team" personnel.

13.3.2 Communications Check Between Personnel

Once Entry teams are suited up, a communications check will take place among all members who have communications responsibilities. This system check would include the Entry team, the Entry Team Leader, and the Emergency Response group supervisor or designee.

13.3.3 Communication Check Points

A communication check will occur at given location points as follows:

Note: The Entry Team Leader should maintain visual contact whenever possible.

1. Before the Entry Team enters the Exclusion Zone.
2. At the Exclusion Zone when ongoing communications are not occurring prior to entrance into the Exclusion Zone.
3. Prior to the Entry Teams entering the decontaminating area (if applicable).

13.4 WORK ZONES

At the earliest possible stage of a radioactive materials incident, work zones should be established:

- Zone 1: Exclusion Zone
- Zone 2: Contamination Reduction Zone
- Zone 3: Support Zone

13.4.1 Zone 1: Exclusion Zone

This is the area where radiation/contamination does or could occur.

All personnel entering the Exclusion Zone must wear prescribed levels of protection.

Entry and exit check points must be established at the periphery of the Exclusion Zone for control of the flow of personnel and equipment.

The outer boundary of Zone 1 is called the Hotline. The Hotline is established by visually surveying the immediate environments of the incident and determining where the hazards involved are located including drainage. Additional factors that should be considered include the distances needed to prevent fire or an explosion from affecting personnel outside the zone, the physical area necessary to conduct site operations, and the potential for contaminants to be blown from the area.

The Hotline should be physically secured with marker tape or some type of visible landmarks.

Identify and post areas in accordance with the following:

- Rope off and post "Radiation Area" signs in all areas where radiation level exceeds 2 mrem/hr.
- Post "High Radiation Area" signs in all areas which exceed 100 mrem/hr.

13.4.2 Zone 2: Contamination Reduction Zone

This zone serves as a buffer between the Exclusion Zone (Zone 1) and the support area (Zone 3). Initially, this area is non-contaminated. The decontamination areas are in this non-contaminated zone. As operations proceed, the area around the decontamination stations may become contaminated but to a much lesser degree.

The boundary of the Contamination Reduction Zone is called the Contamination Control Line. This line is also marked by tape or some other physical barriers.

13.4.3 Zone 3: Support Zone

The Support Zone, the outermost part of the site, is considered a non-contaminated or clean area. Support equipment (Command Post, equipment trailer, etc.) is located in this zone; traffic is restricted to authorized response personnel. Since normal work clothes are appropriate within this zone, potentially-contaminated personnel clothing, equipment, and samples are not permitted, but are left in the Contaminant Reduction Zone until they are decontaminated.

The location of the Command Post and other support facilities in the Support Zone depend on a number of factors, including:

Accessibility: Topography; open space availability; locations of highways, railroad tracks; or other limitations.

Wind Direction: Preferably the Support Facilities should be located upwind of the Exclusion Zone. However, shifts in wind direction and other conditions may be such that an ideal location based on wind direction alone does not exist.

Resources: Adequate roads, power lines, water, and shelter.

13.4.4 Other Considerations for Work Zones

Other skilled personnel within the ICS may have to perform functions under consideration.

Modifications - The use of a three-zone system, access control points, and exacting decontamination procedures provides a reasonable assurance against the trans-location of contamination substances. This site-control system is based on a worst-case situation.

Less stringent site control and decontamination procedures may be utilized if more definitive information is available on the types of substances involved and hazards they present. This information can be obtained through air monitoring, instrument survey and sampling, and technical data concerning the characteristics and behavior of the material present.

Area Dimensions - The distance between the Hotline, Contamination Control Zone, and Command Post and the size and shape of each zone have to be based on conditions specific to each site. Considerable judgement is needed to assure that the distances between zone boundaries are large enough to allow room for the necessary operations, provide adequate distances to prevent the spread of contaminants, and eliminate the possibility of injury due to explosion or fire. Long-term operations would involve developing reasonable methods (for example, air surveillance, swipe-testing and visible deterioration) to determine if material is being transferred between zones and to assist in modifying site boundaries.

The following criteria should be considered in establishing area dimensions and boundaries:

- Physical and topographical features of the site
- Weather conditions
- Field measurements of air contaminants and environmental samples
- Air dispersion calculations
- Potential for explosion and flying debris
- Physical, chemical, toxicological and other characteristics of the substances present
- Clean-up activities required
- Potential for fire
- Area needed to conduct operations
- Decontamination procedures
- Potential for exposure
- Proximity to residential or industrial areas
- Monitoring and sampling.

To verify that site control procedures are preventing the spread of contamination, a monitoring and sampling program should be established. Support Zone should be periodically monitored for air contaminants, using direct-reading instruments and collecting air samples for particulate, gas, or vapor analysis. Analysis of soil samples collected in the most-heavily used area would indicate contaminants being carried from the Exclusion Zone by personnel, equipment, or wind. Occasional swipe tests should be taken in trailers and other areas used by personnel.

These same types of samples should be collected and air-monitored in the Contamination Reduction Zone. Increased concentrations in air or other environmental media may indicate a breakdown in control over the Contamination Reduction Corridor, ineffective decontamination procedures, or failure to restrict site access.

Figure 1. Diagram of Site Work Zones.

13.5 PROTECTIVE ACTION

The degree of protective action depends on the severity and classification of emergency.

Visually inspect the scene at the emergency from a reasonable distance for any apparent outward signs of damage.

14.0 DECONTAMINATION

Personnel responding to Radioactive Materials Incidents may become contaminated in a number of ways, including:

- Contacting vapors, gases, mists, or particles in the air
- Being splashed by materials while sampling or opening containers
- Walking through puddles of liquids or on contaminated soil
- Using contaminated instruments or equipment.

Decontamination consists of physically removing contaminants. How extensive decontamination must be depend on a number of factors: the most important being the type of material involved. The more toxic the material, the more extensive the decontamination processes.

Only general guidance can be given on methods and techniques for decontamination.

14.1 CONTAMINATION REDUCTION CORRIDOR

An area within the Contamination Reduction Zone is designated the Contamination Reduction Corridor (CRC). The CRC controls access into and out of the Exclusion Zone and confines decontamination activities to a limited area. The size of the corridor depends on the number of stations in the decontamination procedure, overall dimensions of work control zones, and amount of space available at the site. A corridor of 75 feet by 15 feet should be adequate for full decontamination. Whenever possible, it should be a straight path.

The CRC boundaries should be conspicuously marked, with entry and exit restricted. The far end is the Hotline - the boundary between the Exclusion Zone and the Contamination Reduction Zone. Personnel exiting the Exclusion Zone must go through the CRC. Anyone in the CRC should be wearing the level of protection designated for the decontamination crew. Another corridor may be required for heavy equipment needing decontamination. Within the CRC, distinct areas are set aside for decontamination of personnel, portable field equipment, removed clothing, etc. These areas should be marked and personnel restricted to those wearing the appropriate level of protection. All activities within the corridor are confined to decontamination.

15.0 RECORDS AND REPORTS

An incident report shall be submitted by the Team Leader in accordance with SF-016, *Incident Reporting Procedure*.

OHM shall make any formal report of their actions and submit the report to TSMT.

The Team Leader will provide information to state and local officials on the scene only as needed. All additional information to the local or state on-the-scene officials shall be provided by TSMT. Information to the press and public shall only be made by TSMT or OHM Corporate Officials or their designee(s) (SF-017, *Incident Investigation Procedure*).

Emergency Response team members shall make themselves available to TSMT and/or their agents and representatives to describe their actions and the incident response if necessary.

All tape-recorded logs of the incident and response shall be transcribed. The tapes and transcriptions shall be retained.

15.1 FOLLOW-UP

The Team Leader shall report the radiological status to OHM Corporate Management and advise of protective action placed in effect or required.

The Team Leader shall report to OHM Corporate Management any physical damage and specify handling instructions if required.

If radiation and/or contamination is involved:

1. Contact and monitor all persons who may have been exposed and/or contaminated (record names and addresses).
2. Keep records of all actions, survey results, exposures, names of personnel involved, and contacts for formal report preparation.

An Emergency Response team member shall remain in attendance until the incident is either removed from its emergency status, restored to normal condition, and/or as instructed by TSMT.

The Emergency Response group supervisor shall prepare a final report containing all the appropriate records and reports and shall submit the report to the OHM Document Control for lifetime retention.

16.0 EMERGENCY INSTRUCTIONS TO TSMT DRIVERS

In order to determine the proper response to an accident or incident involving the Cs shipments, it is imperative that such response be based upon detailed, factual information. The gathering and dissemination of such information shall be the primary function of the TSMT drivers. These instructions are also applicable to the Emergency Response team when they arrive at the scene:

1. Safeguard yourself and others - keep everyone but law enforcement officials and regulatory personnel clear of the area.
2. Protect the scene by setting up warning signals to prevent further incidents.
3. Render first aid or medical assistance to yourself or others as necessary.
4. As soon as possible, the driver shall make all emergency notifications, including local police and fire departments. Notifications must include:

- TCC - Oak Ridge, TN (423) 576-9115
- WHC - Richland, WA (509) 373-3800
- DOE
  - Oak Ridge Operations, for the states of VA, WV, KY (423) 576-1005 or (423) 525-7885
  - Chicago Operations, for the states of IN, IL, IA, NE
  - Duty Hrs, (312)-972-4800/Off Hrs, (312) 972-5731
  - Idaho Operations, for the states of WY, UT, ID (208) 526-1515
  - RL, for the states of OR, WA (509) 373-3800
- TSMT Safety Department - Joplin, MO (800) 723-8768
- OHM - Denver, CO (303) 371-8252 Columbia, SC (803) 214-2160
- Appropriate State/Tribal Authority:

VA	(804) 674-2400	IL	(217) 785-9868	UT	(801) 965-4505
WV	(304) 746-2111	IA	(515) 281-3231	ID	(208) 736-3060
KY	(502) 564-7815	NE	(402) 471-4545	OR	(503) 378-2575
IN	(800) 669-7362	WY	(307) 777-4321	WA	(509) 575-2323
Confederated Tribes of the Umatilla Indian Reservation					(503) 278-0550

Note: The VSP Duty Sergeant should be notified [(804) 674-2026] during emergency situations if the situation is security related and the Department of Emergency Services [(804) 674-2400] for life threatening situations.

5. Make yourself readily available to fire and law enforcement personnel when they arrive at the scene.
6. Continue to update at reasonable intervals all companies and governmental agencies whenever practical.

CB radios will monitor channel 19 for routine communications between the truck and escort vehicle. Channel 9 will be utilized in emergency situations to communicate with state and local authorities.

In the event of an incident/accident, your cooperation with the TSMT Safety Department, OHM, WHC, DOE, DOT, state and local authorities is critical for recovery operations. Requests for information by anyone other than those identified in this statement must be referred to:

Terry Brown - RL - (509) 376-8189
Karen Randolph - RL - (509) 376-8230
Guy Schein - RL - (509) 376-0413
Judy Graybeal - WHC - (509) 376-2472   (Home) (509) 582-0647
TSMT Safety Department - (800) 723-8768

7. Do not allow any person to pick up or otherwise handle any material involved with the scene until authorized to do so by the appropriate OHM and/or governmental official.
8. Allow only those persons absolutely necessary to deal with the emergency to remain in the area. Keep all bystanders at a minimum of 1000 ft away and upwind.
9. Stay out of smoke, mist, dust, or other visible airborne substances.
10. Fight fire from upwind where possible and treat it as involving toxic fumes.
11. Do not eat, drink, smoke, or allow open flames in the immediate area.
12. Follow the instructions of the Emergency Response Guide #64 - 1993 Edition. Regulatory personnel will determine the next appropriate actions at the scene.

13. Any clothing or equipment that becomes damaged or contaminated must be segregated and saved for later decontamination or disposal.
14. Remain at the scene and available until the emergency is declared over and you are released by both law enforcement officials and regulatory agency personnel.
15. Do not touch anything that will be eaten or otherwise ingested before thoroughly washing hands.
16. A written report as required by 49 CFR 171.16 will be sent to DOT by the TSMT Safety Department in Joplin, MO.

17.0 TSMT EMERGENCY RESPONSE ORGANIZATION

TSMT personnel will be on duty in the Safety Department during normal business hours and Safety personnel will be on duty (other than normal working hours) at the gate in Joplin, MO. To report any incident call (800) 723-8768.

18.0 OHM EMERGENCY RESPONSE ORGANIZATION

- OHM has set up a 24-hour notification service. The service can be contacted at (800) 925-4959. The answering agent will collect the necessary information and notify the OHM standby Emergency Response team members. The team members are notified by a pager service (800) 796-7363.
- During business hours, the OHM Office in Columbia, SC, can be contacted at (803) 256-1555.
- During business hours, the OHM Office in Denver, CO, can be contacted at the OHM office at (303) 371-8252.
- After-hours contacts:
  - Jeff Stevens ARECO/Escort Project Manager
Home: (303) 644-3350
Pager Identification Pin Numbers: 555-1387 (alpha)/105-9575 (Digital)
  - Steven McQueary Project Supervisor
Home: (303) 644-3621
Pager Identification Pin Numbers: 555-5131 (Alpha)/105-9573 (Digital)

19.0 Cs CASK RECOVERY GUIDE

19.1 INTRODUCTION

- a. This guide addresses proposed steps to be taken for recovery operations resulting from a highway accident or incident involving the BUSS cask.
- b. State, tribal, and local governments have statutory responsibility for command and control of an incident/accident scene. Should the state desire, DOE assistance may be provided by calling the appropriate DOE office identified in Section 16.0, Item 4 (Notifications).

19.2 SCOPE

- a. To ensure availability of this guide for the duration of the Cs shipments, a copy will be carried in the cab of each TSMT tractor, provided to each state/tribe-designated location, each DOE Emergency Response Center, and the TCC.
- b. This guide provides general recommendations for cask recovery operations. Specific actions will need to be tailored to fit actual incident/accident conditions encountered.
- c. This guide is intended to address the cask recovery operation aspect and assumes that any actions to save lives have been initiated and completed.
- d. Cask recovery and the subsequent Environmental Remediation will take place only after the accident/incident scene has been secured and stabilized.
  - i. For the purpose of this guide, "stabilized" means the following:
    - (1) Appropriate emergency response plans have been implemented, based on severity of accident/incident.
    - (2) Any injured persons have been treated.
    - (3) Fire, or the threat of fire, has been eliminated.
    - (4) Radiation surveys have been conducted and sources, locations, and strengths of direct radiation and/or radioactive contamination, if any, have been identified.
    - (5) Exclusion areas have been established and emergency response personnel have control of the accident scene.
    - (6) The incident commander and emergency response authorities have given permission to proceed with the cask recovery operation.

ii. General:

- (1) At the direction of the incident commander, or the state-designated representative, a radiation survey will be made prior to implementation of recommendations within this guide.
  - (2) Once the area is determined to be radiologically controlled, recovery operations may begin.
  - (3) If contamination is encountered which could preclude initiation of recovery activities, the incident commander or state-designated representative should be advised to contact the DOE for assistance.
  - (4) Any cleanup required is the responsibility of TSMT through their subcontractor, OHM, and should be performed in consultation with WHC and DOE in cooperation with the state/tribal authority to ensure proper cleanup levels. Payment of costs for recovery and cleanup is provided by TSMT and is evidenced by a certificate of insurance and MCS-90 on file with WHC.
- e. Recovery activities must be performed with an accompanying health physics technician, calibrated radiation monitoring instruments, and appropriate protective clothing and breathing devices.
- f. With permission from the incident commander, cask recovery activities may begin. These activities consist of the following:
- (1) Cask access
  - (2) Cask damage inspection and assessment
  - (3) Recovery resource determination
  - (4) Recovery operations
  - (5) Post-recovery cleanup

19.3 INSPECTION AND RECOVERY PROCEDURES

a. General:

- i. Recovery of a damaged tractor and/or trailer is a carrier responsibility and must be accomplished using a commercial wrecking/crane service. (See list in Appendix B, Attachments C and D)
- ii. The recovered cask will be sent to a location identified by the incident commander or state/tribal-designated representative.
- iii. In all cases an evaluation will be made by the TSMT Safety Department, OHM, WHC, and DOE, to determine whether the package involved in an accident/incident still meets the certification criteria for future use. *Note: Extreme cask damage resulting in loss of containment is highly unlikely. Recovery operations for this improbable circumstance are beyond the scope of this document*

and would involve other plans such as the Federal Radiological Emergency Response Plan (FRER).

- iv. If the cask is an obstacle to the orderly, safe flow of traffic, and if radiation levels do not exceed DOT limits, the package may be moved to the side of the road to allow traffic to pass.
- b. Approaching the Cask: In a severe accident condition it will be necessary to inspect the cask.
- c. Gaining Access to the Cask: If the cask is obscured by wreckage, buried or partially buried in soil, or submerged in water, then it may take special means to gain access. If a radiation survey determines that there is no gross loss of shielding or containment then "hands-on" methods can be employed.
  - i. Wreckage obscuring the cask can be removed using conventional cutting methods with tow trucks or cranes for lifting or dragging operations.
  - ii. Care must be taken to avoid disturbing the cask or any structures that support the cask. This removal is only for access.
  - iii. If the cask is buried, earth removal equipment (e.g., backhoe) can be used to uncover as much as the cask surface as is reasonable without resulting in cask movement. The uncovering of the cask surface will improve the heat displacement. As wreckage is removed, radiation/contamination surveys will be taken to determine if there has been a breach in the cask.
  - iv. All removed material should be treated as being contaminated until surveyed and released by a health physics technician.
  - v. If the cask is submerged, it may require diving operations for inspection and recovery. Underwater access could also involve wreckage removal and displacement.
- d. Cask Damage Inspection:
  - i. The shipping papers that accompany the cask identify the transport index and radiation survey data at dispatch and will be available at time of damage inspection.
  - ii. Once approach to the cask is possible, inspect it to determine the extent of damage and to assess the methods of recovery.
  - iii. The inspection must be performed and documented by WHC and DOE.
  - iv. If the accident scene radiation survey indicates normal or near-normal direct radiation readings and no apparent radioactive contamination, then inspection should proceed and will include the following:

(1) BUSS Cask Impact Limiters

- (a) The large impact limiters on either of the horizontally/vertically shipped casks are intended to protect the cask from mechanical assault and can be expected to sustain damage in a severe accident. The limiters cover the cask lid and the two vent/drain ports which are prime areas of concern regarding containment integrity.
- (b) If the limiters are undamaged, or, if the limiters are in place and any damage appears minimal, there can be assurance that the cask lid ports are intact. It is not recommended that the limiters be removed. Rather, the removal should be performed when the cask is relocated to a more secure and properly-equipped facility.
- (c) If one or both of the limiters are severely damaged or missing, the inspection must proceed to the examination of those components that are exposed. It is recommended not to attempt removal of the limiter.
- (d) There are conditions where it may be necessary to remove the limiter. Three of these are:
  - (i) Indications that the source of radiation leakage is concealed by the limiter. This situation is beyond the scope of this document and removal of the limiter is not recommended without assessment of the situation by a health physicist.
  - (ii) The limiter is impeding recovery operations.
  - (iii) A puncture through a limiter in the vicinity of a port.
- (e) If the limiter needs to be removed; the BUSS Cask Operating Manual should be consulted.
- (f) The limiters were designed to be removed with the cask in the vertical position. Special rigging is needed for removal in any other orientation, particularly if the limiter is severely damaged. Each limiter weighs approximately 3,000 lb.

(2) BUSS Cask Body and Tiedown Components

- (a) The cask is secured to a shipping skid which is bolted to a special single-drop, low-boy trailer. In most cases the skid and cask will remain attached to the trailer. However, in the event of a severe accident the cask will separate from the trailer.

- (b) The personnel barrier over the center section of the cask body is mounted on the trailer and may become dislodged under severe accident conditions. Remnants of the personnel barrier must be removed to gain access for inspection. Barrier removal may be accomplished by cutting the mounting bolts.
- (3) Cask Body
  - (a) The BUSS cask is a monolithic stainless steel forging, and only superficial damage is expected under accident conditions. Portions of the body that can be seen between the limiters should be inspected for damage.
  - (b) When loaded, the cask body will be thermally hot. If the stainless steel fins are blocked by material, earth for example, the fins should be cleaned to permit improved heat displacement. The extent of fin damage should be noted by OHM personnel recording the data. Puncture indications should be radiation surveyed for reduction in shielding effectiveness. Other gross distortions should also be noted.
- (4) Lifting/Attachment Components
  - (a) The cask is secured to the skid through two cask tiedown/lifting trunnions. Each trunnion is connected to the skid by two turnbuckles and a tiedown yoke. These components should be thoroughly examined.
  - (b) The skid weighs about 3,400 lb and the cask weighs approximately 30,300 lb and may have to be lifted as an assembly. The assembly may need to be lifted by either component, thus the connection must be intact. Inspection must include the attachment welds to the skid.
  - (c) Examine turnbuckles carefully. A loose turnbuckle is an indication that some permanent deformation has occurred in the tiedown system. Check the quick release pins between the turnbuckles and skid for deformation.
  - (d) During the inspection, particular attention should be paid to the bolts that attach the trunnions to the cask body. These trunnions are likely to be the components used for recovery. Note the condition of the two horizontal lifting lugs that are bolted to the cask upper centerline when it is in the normal transportation orientation since these components may also serve as recovery attachment points.

(5) Trailer Attachments

- (a) In some cases the trailer may be the only component accessible for initial recovery purposes. If possible, the bolts attaching the skid to the trailer should be inspected for damage. All bolts should be visible, in place, and tight. Any loose or missing bolts suggest that permanent deformation has occurred and the attachment may be in question.

(6) Cask Lid and Penetrations

- (a) If there is damage to the impact limiters to the extent that they are missing or severely deformed, as described above, then the cask lid and penetrations should be inspected by qualified personnel other than the TSMT/OHM recovery team. This inspection shall be the responsibility of WHC and DOE.

e. Damage Assessment

- i. After inspection, the damage must be assessed to ensure that the recovery operation can be successfully completed. The concern is whether the recovery can be completed without further damaging the cask or contents and causing an increase in direct radiation exposure or a release of contents to the environment.
- ii. Certain emergency conditions may require cask transport without being in full compliance with the CoC. Such transport will only be done with approval by the appropriate state/tribal authority. Special implemented precautions (i.e., escorts, speed limits, routes, or time of travel) will assure a safe movement.
- iii. The damage inspection process outlined above will help determine what safeguards are necessary for the safe cask retrieval and loading onto another transport vehicle provided by Tri-State.

f. Structural Assessment

- i. Under severe accident conditions it is possible that the cask, cask and skid, or even the trailer with cask/skid attached will not be in normal orientation, and will require relocation to a preferable orientation for further work.
- ii. A structural assessment may be requested by WHC and DOE to identify components, and the connection of components, that are sufficiently intact to accommodate the forces imposed during initial relocation operations.
- iii. Their assessment will include examination of the structural capacity of wreckage constituents that must be removed prior to movement of the cask. Failure of these components during handling could have a negative influence on the cask and contents.

- iv. Another part of a possible structural assessment is the identification of possible remedies that might improve the load-bearing capacity of components that are necessary for recovery purposes. For instance, rewelding a broken skid member, replacing a damaged trunnion, or installing a reinforcing brace on the trailer may provide the strength necessary for safe handling.

g. Recovery Operations

Specific recovery actions must be formulated for the conditions that prevail at the accident scene. For the BUSS cask and transportation system there are some general guidelines and recommendations that may be useful in the formulation of specific recovery actions.

General Guidelines:

- i. If the connections between the trailer and skid and between the skid and cask are secure, the trailer may be grappled and used to pull the other components if relocation is required. Neither the cask nor the skid should be grappled and used to pull the trailer since the size and weight of the trailer could exert excessive force on the cask or skid.
- ii. If the cask and trailer are significantly disrupted, it is recommended that the trailer be separated from the cask/skid. Separation shall occur by removing the connecting bolts or by component cutting. Other wreckage should be removed prior to working on the cask and transporter.
- iii. If separated from the trailer, the skid may be grappled to move the skid/cask assembly for relocation. Acceptable grapping points on the skid are the structural steel base components. Do not grapple the turnbuckle assemblies that connect the cask to the skid. Grapple point connections (e.g., brackets) may be welded on to the carbon steel base components if necessary.
- iv. The cask may be grappled and moved with the skid attached as long as the grapping points are appropriate. Acceptable grapping points on the cask are: one or both of the trunnions and one or both of the horizontal lifting points on the upper centerline. Cables or slings may be passed around the cask body to form a noose or choker. Cables may nest in between cooling fins. Do not attach any grapple to the lid or vent/drain penetrations or to the turnbuckles or impact limiter hardware. As a last resort, welding attachment brackets on the stainless steel cask body is acceptable provided there is not significant disruption of heat displacement capability. Weld and welder qualification is required as is weld inspection prior to use.
- v. The conventional lifting devices should be used in the recovery effort if the cask orientation and conditions permit and the attachment points have been viewed as acceptable. Replacement brackets/trunnions and fasteners are recommended if damage has been observed.

- vi. Lid and penetration bolt tightening should be attempted if the damage is such that they are accessible. Judgment must be exercised regarding the replacement of damaged bolts. If lid bolt damage seems extensive and replacement is difficult, consideration should be given to welding retaining straps across the lid or welding clips around the lid periphery to act as mechanical stops. These measures can provide lid retention but cannot assure lid sealing.
  - vii. If the cask body is generally undamaged, it may be possible to equip it with replacement limiters and ship it on another skid and trailer.
  - viii. If the impact limiters and skid are significantly damaged, consideration should be given to removing them prior to transport. This can only be sanctioned by DOE. The cask body may be placed on a suitable trailer and blocked and secured appropriately. The previously-identified cask body attachment points may be used as part of the transport tiedown arrangement. Horizontal orientation is preferred for heat transfer purposes.
  - ix. If the skid is unusable, but the impact limiters are reasonably functional, the limiters should be retained for transport protection and the body blocked or shored in the horizontal position on a trailer deck. The limiters must not bear any of the weight of the cask. Cask tiedown can be by cables, chains, etc.
  - x. Wrapping the cask for transport should be considered only after determining that the heat displacement will be unaffected. The BUSS cask has a design basis heat load of 4 kW.
- h. Recovery Resource Determination
- i. After assessing the cask damage and the condition of the accident scene, the specific recovery resources can be identified (see Attachment B).
  - ii. Experienced rigging companies are identified in Attachment B. These companies have equipment for welding, cutting, etc., in support of recovery operations.

ATTACHMENT A: EMERGENCY RESPONSE KIT INVENTORIES AND INSPECTION CHECK SHEET

QUANTITY/ITEM	SAT/UNSAT	INITIALS/DATE
(1) High Range Rad Inst.		
(1) Low Range Rad Inst.		
(1) Contamination Inst.		
(2) Spare Cords/(1) Portable Radio Charger		
(1) Check Source		
(100) Smear Papers/(20) High Volume Air Sample Filters		
(2) Sets Spare Batteries		
(50 ft) Barrier Rope		
(4) Warning Signs/Inserts		
(2) Flashlights/(1) High Volume Air Sampler		
(20) Survey Forms		
(10) Blank Rad. Tags		
Box of Pens		
(10) Pairs of Tyveks		
(1) Box Surgeons Gloves		
Large Plastic Bags		
(1) Micro-Cassette Recorder		
(4) Blank Tapes		
(1) Calculator		
(1) 200 Page Logbook		
(5) Rolls Duct Tape		
(2) Pair Safety Glasses		
(2) Orange Vests		
(4) Pair Leather Gloves		
(1) Box Gallon zip lock bags		
(1) Box Blank Stickers		
(3) Black Markers		
(3) Cans Orange Spray Paint		
(1) Camera (2) rolls of Film		
(10) TLD Badges		
(10) Pocket Dosimeters		
(50) Briefing Sheets		
(2) CB Radios/(3) Hand-Held Radios		
(2) Clipboards		
Copy of Transportation Plan		
Copy of OHM Health & Safety Manual		
Copy of H&S Plan/29 CFR/49 CFR		

Supplementary Instructions for Inventory

1. Radiation detection instruments must be operationally checked, including, a physical check, a battery check, and a source check. The radiation source contained in the kit is suitable to perform these checks. Both spare cords shall be installed and checked.
2. The cassette recorder shall be checked by recording and replaying a voice message.
3. The calculator shall be checked by powering up and performing several calculations.
4. The spare batteries shall be checked for the expiration date.
5. The CB radios shall be powered up and checked by communicating between the two radios.
6. The camera battery shall be checked. The expiration date for the film shall be checked.
7. The flashlights shall be checked.

ATTACHMENT B:
ANDERBERG COMMUNICATIONS
EMERGENCY NOTIFICATION CHECK SHEET

ANDERBERG COMMUNICATIONS
EMERGENCY NOTIFICATION CHECK SHEET
for
OHM REMEDIATION SERVICES CORP. EMERGENCY RESPONSE NOTIFICATIONS

1. Name of the person reporting the incident: _____
DATE _____ TIME _____

2. Nature or type of incident: _____
_____
_____

3. Location of the scene, highway number, north or southbound lane, mile marker, nearest town or city: _____
_____
_____

4. Description of the Scene: _____
_____
_____
_____
_____

Is there?

A fire: _____

A fuel spill: _____

Injuries: _____

Number of vehicles Involved: _____

Have local authorities arrived at the scene: _____
_____

Other notifications made: _____
_____

5. Cellular Phone or Fixed Phone Number for person reporting the incident: _____
_____

Advise the person that the Emergency team members will be calling back for more details and to remain available.

After this information is obtained, terminate the call and make notifications to the OHM Emergency Response Team as follows:

1. Dial 1-800-796-7363. This number activates the pagers carried by team members.
2. Perform a global activation of Response Team Member Pagers by dialing the following PIN #:

Alpha Numeric PIN # 555-5861

Digital PIN # 106-3586

If Emergency Response is requested send the following Alpha Numeric message:

"Emergency Response requested at date/time. Contact Anderberg Communications at 1-800-925-4959."

3. In addition to global PIN numbers, each individual pager has separate alpha numeric and digital PIN numbers. The following is a list of the national wide individual PIN numbers:

Personnel	Alpha Numeric PIN #	Digital PIN #
Jeff Stevens	555-1387	105-9575
Steven McQueary	555-5131	105-9573
Walter Paulson	555-1533	105-9574
Wayne Gaul	555-2085	105-9577

2. If after 15 minutes none of the team members have called in, call the following home phone numbers:

Jeff Stevens	(303) 644-3350
Steven McQueary	(303) 644-3621
Walter Paulson	(803) 779-1696
Wayne Gaul	(803) 732-8522

3. If no contact can be made, call the OHM Denver Office at: (303) 371-8252. If a response is not received at the Denver, CO office, call the Columbia, SC office at: (803) 256-1555.

When the team members call in, provide all the emergency information collected from the person at the scene. Inform each team member of the other members that have checked in and where they are en route to.

Be prepared to act as an information collection and distribution station in the event that other types of communications fail between Emergency Team members and persons at the scene.

ATTACHMENT C

QUALIFIED VENDORS LIST

SHOP	HOURS OF SERVICE	TYPE OF SERVICE
Richmond, VA		
Peterbilt of Richmond, Inc. 2800 Deep Water Terminal Rd. (804) 231-9800	24 Hours	Shop
Charleston, WV		
Goodyear Tires 2907 W. 4th (304) 744-9474	24 Hours	Tires
Copley CC Spike, Inc. 1009 Central Ave. (304) 346-0338	24 Hours	Wrecker
Mountain International Crosslanes I-64 Exit 42 (304) 776-5600	24 Hours	Shop
Louisville, KY		
ABC Tire 4134 Reservoir Ave. (502) 452-1998	24 Hours	Tires
Coffey's Wrecker Service 4594 Poplar Level Rd. (502) 968-3377	24 Hours	Wrecker
Indianapolis, IN		
Utility/Peterbilt 4255 S. Harding St. (317) 788-0299	24 Hours	Shop
Goodyear Truck Tire Center 6315 Brookville Rd. (317) 353-0696	24 Hours	Tires
Hix Wrecker Service 3200 Bluff Dr. (317) 783-3111	24 Hours	Wrecker
Bloomington, IL		
McLean County Truck Veterans Parkway & Mercer Ave. (309) 662-1331	24 Hours	Shop

SHOP	HOURS OF SERVICE	TYPE OF SERVICE
Peoria, IL		
Rocket Tire Service 300 Edmond (309) 676-0124	24 Hours	Tires
Tazwell Towing 727 N. Main (309) 699-9728	24 Hours	Wrecker
Des Moines, IA		
Hanien Company 5328 2nd Ave. (515) 243-3205	24 Hours	Wrecker
Goodyear Commercial Tire and Service 1976 N.E. Broadway (515) 265-2509	24 Hours	Shop
Grand Island, NE		
Nebraska Peterbilt 8225 S. U.S. 281 (308) 382-1044	24 Hours	Shop
Garrett G&S Tire Center 3004 Old Pothah Hwy. (308) 382-0809	24 Hours	Tires and Wrecker
Cheyenne, WY		
Western IH 701 E. 1st St. (307) 635-4221	7:30-Midnight M-F 8:00-4:00 Sat On Call 24 Hours	Shop
Able Al Towing 2813 S. Greeley Hwy. (307) 638-8883	24 Hours	Wrecker
Laramie, WY		
A to Z Tire (307) 742-8241	7:30-5:30 M-F	Shop Tires
Clay's Towing and Service Curtis and I-80 (307) 745-8316	24 Hour Tow	Wrecker
Rawlins, WY		
Wyoming Diesel Service 2305 Daley (307) 324-5144	8-6 M-F	Shop

SHOP	HOURS OF SERVICE	TYPE OF SERVICE
Rip Griffins Truck Service 201 E. Spruce (307) 324-4113	24 Hours	Shop and Tires
Roadrunner Emergency Repair 201 E. Spruce (307) 324-4113	24 Hours	Shop
Terry's Towing 1924 W. Spruce (307) 324-9331	24 Hour Tow	Wrecker
Wamsutter, WY		
McDowell Enterprises Exit 175 I-80 (307) 324-7818	No Nat'l Accts	Tires and Shop
Rock Spring, WY		
The Tire Den 212 Industrial Dr. (307) 382-4700	B/S 24 Hour Road Service	Tires
Smith DDA 20 Bowler Rd. (307) 382-4330	24 Hour Road Service Shop Hours 8:00-5:00 M-F	Shop
LJD Towing 250 Summit (307) 382-4553	24 Hour Road Service Shop Repair	Wrecker
Cummins Intermountain 2000 Foothill Blvd (307) 362-5168	24 Hour Road Service Shop Repair	Shop
Little America I-80 Exit 68 (307) 875-2400	24 Hour B/S Tires 24 Hour Shop	Tires Shop
Lyman, WY		
Kross Kountry Truck Towing and Repair 215 E. Clark (307) 787-6743		Wrecker and Shop
Evanston, WY		
Wyoming Transport Tire 80 Allegiance Rd. (307) 789-5040	B/S 24 Hour Road Service	Tires
Jim's Diesel Towing 1443 U.S. Hwy 30 E. I-80 (307) 789-3825	24 Hour Towing	Wrecker

SHOP	HOURS OF SERVICE	TYPE OF SERVICE
Frenchie's Diesel Truck Rep 53 Enterprise Lane (307) 789-7247	8:00-4:30 M-F	Shop
HMH 402 Duncumb Hollow Dr. (307) 789-1356 Mobile # (307) 789-1193 or 1111	24 Hour Road Service and Shop	Shop
Ogden, UT		
Stauffer's Skyhook Towing & Repair 370 7th St. (801) 399-5893	24 Hour Towing	Wrecker
Flying J 2096 S 1100 West (801) 621-7575	B/S Tires 7:00-11:00 PM	Tires
JW Brewer Tire Company 1690 Wall Ave. (801) 393-8641	B/S Yokohama 24 Hour Road Service	Tires
Ogden Diesel 1212 W. Wilson (801) 394-7130 (801) 295-7005	8:00-4:30 PM Mike Warr	Shop
Tremonton, UT		
Archibald & Sons Husky Service 979 W. Main (801) 257-3327	24 Hour Road Service Goodyear National Minor Truck Repairs	Tires
Hathaway's Towing 148 S. 1600 East (801) 257-5084	24 Hour Towing	Wrecker
Rupert, ID		
Jack's Towing Service (208) 436-4034	24 Hour Towing	Wrecker
Burley, ID		
Gem International 1106 Hansen Ave (208) 678-9057 Call out # Ross (208) 678-3004 Wayne (208) 678-8506 Larry (208) 678-0987 Steve (208) 522-4105 National Navistar	24 Hour Towing Road Service & Repairs	Wrecker Shop

SHOP	HOURS OF SERVICE	TYPE OF SERVICE
Commercial Tire 2030 Kimberly Rd. (208) 733-8761 After Hours (208) 733-8761	24 Hour Road Service B/S GN Tires	Tires
Magic Valley Towing Kimberly Road & 3200 East (208) 734-6138	24 Hour Tow Minor Repairs	Wrecker
Magic Valley IH 259 4th Ave. West (208) 733-4266	8:00-5:00 M-Sat 24 Hour Call Out	Shop
Jerome, ID		
Trebar Kenworth 300 Road South (208) 324-8886	7:30-1:00 AM M-F 8:00-5:00 Sat & Sun Road Service	Shop
Gooding, ID		
Commercial Tire 621 S. Main (208) 934-5614 After Hours (208) 934-8580	B/S General 24 Hour Road Service	Tires
Jim's Repair 280 E. Roosevelt (208) 934-4341 After Hours (208) 934-4016	24 Hour Road Service	Shop
Mountain Home, ID		
Leo's Towing Service (208) 587-4690	24 Hour Towing	Wrecker
Ray's Mobile Service (208) 587-6313 Pager #(208) 587-1125 EXT 1575-1574	24 Hour Road Service	Shop
Boise, ID		
Commercial Tire 1950 S. Cole Rd. (208) 322-4177 After Hours Answering Service (208) 377-3400	24 Hour Road Service	Tires
B & W Towing 20 S. Garden (208) 342-2541	24 Hour Towing	Wrecker
Lake City IH 770 W. Amity Rd. (208) 345-6410	24 Hours M-F 7:30-5:30 Sat & Sun 24 hour Road Service	Shop

SHOP	HOURS OF SERVICE	TYPE OF SERVICE
Ontario, OR		
Ontario Diesel 588 S. E. 1st Ave (541) 889-8681	8:00-5:00 M-F 8:00-4:30 Sat	Shop
Commercial Tire 273 E. Idaho Ave. (503) 889-6714 After Hours (503) 889-6714	24 Hour Road Service	Tires
Baker, OR		
Baker Valley Towing 85 David Eccles Rd. (503) 523-2154	24 Hour Towing	Wrecker
Roy & Owen's Tire Service 2122 10th Place (503) 523-6401 Nights (503) 523-6668	24 hour Road Service	Tires
La Grande, OR		
Commercial Tire 911 Jefferson (541) 963-2887 After Hours (541) 963-3540 or (541) 963-3291	24 Hour Road Service	Tires
Eagle Truck & Machine 26th and Hwy 82 (541) 963-8551	24 Hour Road Service 8:00-11:00 PM M-F	Shop
Fenn's Wrecker Service 60376 Bushnell Rd. (503) 963-6050	24 Hour Towing	Wrecker
Pendleton, OR		
Woodpecker Truck & Equip. 1-84 Exit 202 (503) 276-5515	7:00-9:00 PM M-F Wrecker-Road Service	Wrecker Shop
Umatilla, OR		
2 Brothers Truck Repair Behind Crossroads Truck Stop (503) 922-3439 Or Call (503) 567-1451	24 Hour Road Service	Shop

ATTACHMENT D: QUALIFIED CRANE AND LIFTING RESOURCES

Ashland, VA

Reebals, Inc.
114 Qual Rd.
24 hour phone (804) 798-8616

Louisville, KY

AMCO Bramer
4314 Can Run Rd.
24 hour phone (502) 447-2472

Lincoln, NE

Davis Crane and Erection
100 P
24 hour phone (402) 438-7949

Omaha, NE

Davis Crane and Erection
5910 S. 27th
(402) 731-7484

Salt Lake City, UT

Acme Crane Rental
P. O. Box 65374
Salt Lake City, UT 84165
24 hour phone (801) 466-7902

Kennewick, WA

Neil F. Lampson
P. O. Box 6510
Kennewick, WA 99336
24 hour phone (509) 586-0411
40-140 ton truck cranes available

St. Albans, WV

All Crane
6540 MacCorkle
24 hour phone (304) 766-0300

St. Louis, MO

Budrovich Contracting Co.
2529 Lemay Rd.
24 hour phone (800) 886-8923

North Platte, NE

Simon Construction
800 Lake Dr.
As Available phone (308) 532-8600

Cheyenne, WY

Certified Welding Corporation
P. O. Box 954
Cheyenne, WY 82001
(307) 632-4350
24 hour phone (307) 634-2371
40-140 ton truck cranes available

Boise, ID

Record Steel and Construction
Company
250 North Locuse Grove Road
Meridian, ID 83642
24 hour phone (208) 887-1401
40-140 ton truck cranes available

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APPENDIX C: GUIDE 164 1996 EMERGENCY RESPONSE GUIDEBOOK

GUIDE 164	RADIOACTIVE MATERIALS (SPECIAL FORM/ LOW TO HIGH LEVEL RADIATION)	NAERG96
POTENTIAL HAZARDS		
HEALTH • Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents. Packaging durability is related to potential hazards of material. Undamaged packages are safe; contents of damaged packages may cause external radiation hazard. • Contamination and internal radiation hazards are not expected, but not impossible. • Type A packages (cartons, boxes, drums, articles, etc.) identified as "Type A" by marking on packages or by shipping papers contain non-life endangering amounts. Radioactive sources may be released if "Type A" packages are damaged in moderately severe accidents. • Type B packages (large and small, usually metal) identified as "Type B" by marking on packages or by shipping papers contain potentially life endangering amounts. Because of design, evaluation, and testing of packages, life endangering releases are not expected in accidents involving "Type B" packages except those of utmost severity. • Radioactive White-I labels indicate radiation levels outside undamaged packages are very low (less than 0.005 mSv/h (0.5 mrem/h)). • Radioactive Yellow-II and Yellow-III labeled packages have higher radiation levels. The transport index (TI) on the label identifies the maximum radiation level in mrem/h one meter from the package. • Commonly available instruments can detect most of these materials. • Water from cargo fire control is not expected to cause pollution.		
FIRE OR EXPLOSION • Packagings can burn completely without risk of content loss from sealed source capsule. • Radioactivity does not change flammability or other properties of materials. • Radioactive source capsules and Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800 °C (1475 °F).		
PUBLIC SAFETY		
• CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover. • Priorities for rescue, life-saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation levels. • Radiation Authority must be notified of accident conditions, and is usually responsible for radiological decisions. • Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions. • Stay upwind. • Keep unauthorized personnel away. • Delay final cleanup until instructions or advice is received from Radiation Authority.		
PROTECTIVE CLOTHING • Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.		
EVACUATION <u>Large Spill</u> • Consider initial downwind evacuation for at least 100 meters (330 feet). <u>Fire</u> • When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.		

GUIDE 164	RADIOACTIVE MATERIALS (SPECIAL FORM/ LOW TO HIGH LEVEL RADIATION)	NAERG96
EMERGENCY RESPONSE		
FIRE • Presence of radioactive material will not change effectiveness of fire control techniques. • Move containers from fire area if you can do it without risk. • Do not move damaged packages; move undamaged packages out of fire zone. <u>Small Fires</u> • Dry chemical, CO₂, water spray or regular foam. <u>Large Fires</u> • Water spray, fog (flooding amounts).		
SPILL OR LEAK • Do not touch damaged packages or spilled material. • Slightly damaged or damp outer surfaces seldom indicate failure of packaging since most have an inner container. • If source is identified as being out of package; stay away and await advice from Radiation Authority.		
FIRST AID • Medical problems take priority over radiological concerns. • Use first aid treatment according to the nature of the injury. • Do not delay care and transport of a seriously injured person. • Persons exposed to special form sources are not likely to be contaminated with radioactive material. • Apply artificial respiration if victim is not breathing. • Administer oxygen if breathing is difficult. • Injured persons who contacted released material may be a minor contamination problem to contacted persons, equipment and facilities.		

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APPENDIX D: LYNCHBURG, VA-HANFORD, WA HRCQ ROUTE MAP

**Preferred Route for DOE Cesium Capsules
from Lynchburg, (Forrest) Virginia
to Hanford, Washington**

**APPENDIX E: STATE/CONFEDERATE TRIBES OF THE UMATILLA INDIAN RESERVATIONS
(CTUIR) CONTACTS FOR EMERGENCY CONDITIONS**

State/Tribe	Contact	Phone
Virginia	Virginia State Police Duty Sergeant	(804) 674-2026
West Virginia	West Virginia State Police	(304) 746-2158
Kentucky	Department of Emergency Services (DES)-Operations State Police Ashland Post	(502) 564-7815 (606) 928-6421
Indiana	Indiana State Emergency Management Agency (SEMA)	(800) 669-7362
Illinois	IDNS REAC 24-hour Communications Center (24 hr) Illinois State Police Communications Center Illinois Emergency Mgmt	(217) 785-0600 (217) 786-6677 (217) 782-7860
Iowa	Emergency Management Division	(515) 281-3231
Nebraska	Nebraska State Patrol (24 hr)	(402) 471-4545
Wyoming	Wyoming Highway Patrol Dispatch Center	(307) 777-4321
Utah	Utah Highway Patrol Dispatch Center	(801) 965-4505
Idaho	Idaho State Police Boise Dispatch Center	(208) 334-2900
Oregon	Oregon State Patrol	(503) 378-2575
Washington	Washington State Patrol	(509) 575-2323
Confederated Tribes of the Umatilla Indian Reservation	Tribal Police and Fire Dispatch	(503) 278-0550

APPENDIX F: STATE/CTUIR SUMMER SEASON/ROAD CONDITIONS POLICY

1.0 INTRODUCTION

Summer season inclement weather and bad road conditions can create hazardous travel. The safety of the public and the need to ensure public confidence in this shipping program require that reasonable measures be taken to prevent traffic accidents that can be avoided through common sense precautions. The purpose of this document is to establish the policy for the safe parking criteria for the ^{137}Cs shipments. TRANSCOM will be used to track the ^{137}Cs shipments. Vehicles will be equipped with communication systems that will allow consultation between the driver and TCC at all times. States and the CTUIR along the route can use TRANSCOM to track the location of shipments as they pass through each jurisdiction. These capabilities provide a unique opportunity for the states, CTUIR, and DOE to work together to reduce the risk that these two shipments may be involved in a transportation incident. DOE/WHC has established that current Cs transport from the ARECO facility will occur during the summer season (May 1 - September 30) as specified in Section 3.5 of this document.

2.0 CRITERIA FOR DISPATCHING SHIPMENTS

Before dispatch, DOE, through WHC, will have advanced weather and driving conditions checked by the TCC staff using the WSI Weather for Windows Service. It is the states'/tribes' responsibility to notify the TCC if weather or road conditions are expected to be unacceptable during the projected shipment period through that state/tribal corridor.

2.1 EVALUATION CRITERIA

- Monitoring The Weather Channel in the TCC
- Output from weather information software (WSI)
- Carrier
- State Contacts (e.g., State Highway Patrol or Police)

If additional information is needed, State Highway Patrol, State Police, or other state-designated agencies should be contacted. Contacts for each state are listed in Table 1. For CTUIR, Oregon will serve as the contact.

2.2 DISPATCH PROCEDURES

As a minimum standard, the local weather conditions, the weather forecast, and current road conditions as determined by the state/tribal designate must be acceptable before a shipment enters its corridor. If WHC, the carrier, a state, or CTUIR determines that weather or road conditions are not acceptable prior to leaving or entering its jurisdiction under the above criteria, WHC will not dispatch a shipment into that state/tribal corridor until weather/road conditions improve and the designated state/tribal authority has granted permission to enter and proceed through its controlled corridor. Before the decision to dispatch a shipment from the ARECO facility, the TCC will evaluate the weather and road conditions by monitoring the sources listed in Appendix F, Section 2.0. It is the states'/tribes' responsibility to notify the TCC if weather/road conditions are expected to be unacceptable during the projected shipment period through the state/tribal corridor. TCC will provide WHC with current weather, road conditions, and state/tribal information if safe parking is required. TCC will provide the same information for dispatching and holding a shipment in a designated safe-parking area until conditions improve in that particular stretch of affected transportation corridor.

Table 2. State and CTUIR Contacts.¹

State	Contact	Phone
Virginia	Virginia State Police Duty Sergeant	(804) 674-2026
West Virginia	West Virginia State Police	(304) 746-2158
Kentucky	DES-Operations State Police Ashland Post	(502) 564-7815 (606) 928-6421
Indiana	State Emergency Management Agency (SEMA) Dispatch Center	(800) 669-7362
Illinois	Illinois DOT Weather and Road Hazards Illinois DOT Construction Information	(800) 452-4368 (217) 782-2937
Iowa	State Road and Travel Information Service (taped message) Iowa DOT/Motor Vehicle Division	(515) 288-1047 (515) 237-3106
Nebraska	Nebraska State Police	(402) 471-4545
Wyoming	Wyoming Highway Patrol Dispatch Center	(307) 777-4321
Utah	Utah Highway Patrol Dispatch Center	(801) 965-4505
Idaho	Idaho State Police Boise Dispatch Center	(208) 334-2900
Oregon ²	Oregon Emergency Response System	(503) 378-6377
Washington	Washington State Patrol Yakima District Headquarters	(509) 575-2323

¹When calling the contacts listed in this table, the ICC Operator should immediately state that the call is from TCC to obtain current road condition information for a DOE Cs shipment from the ARECO facility.

²In case of emergency on the CTUIR, contact the Tribal Police Dispatch at (503) 278-0550.

2.3 STATE AND CTUIR PROCEDURES

State and tribal authority should monitor the status of Cs shipments using the TRANSCOM system when adverse weather and road conditions are being experienced. If a Cs shipment is listed on TRANSCOM with a departure time that would cause the shipment to encounter adverse conditions when entering the effected state or tribal corridor, the state or tribal designate should notify the TCC at (423) 576-9115 of the need to delay entry into that particular effected transportation corridor due to adverse conditions. Additional points of contact include WHC and the carrier. Contact telephone numbers are listed in Table 3.

Table 2. Contacts for Cs Shipments.

Contact	Phone
TCC	(423) 576-9115
WHC	(509) 373-3800
TSMT (Safety Department)	(800) 723-8768

¹TCC is the primary contact. Other contacts are listed in order of priority.

3.0 ADVERSE CONDITIONS EN ROUTE

"Extreme caution in the operation of a motor vehicle shall be exercised when hazardous conditions such as those caused by snow, ice, sleet, fog, mist, rain, dust, or smoke, adversely affect visibility or traction. Speed shall be reduced when such conditions exist. If conditions become sufficiently dangerous, the operation of the vehicle shall be discontinued and shall not be resumed until the vehicle can be safely operated." Standard procedures should be followed to hold shipments at safe-parking locations when severe weather conditions or adverse road conditions are encountered en route.

3.1 STANDARD PROCEDURES

Cs shipments will not travel when severe weather conditions along the route or adverse road conditions make travel hazardous. Upon encountering severe weather or adverse road conditions, the carrier should immediately contact the TCC.

Inclement weather conditions may not have forced a road closure, but create hazardous travel conditions or the possibility of an imminent road closure. Traffic accidents or other conditions may also create hazardous travel conditions that should be avoided by Cs shipments. In these cases, the State Highway Patrol, State Police, or CTUIR Tribal Police may notify the TCC that hazardous travel conditions exist and advise that the carrier should locate a safe parking area based upon the attached Safe Parking Criteria for ¹³⁷Cs Shipments (Appendix G) until permission to proceed is granted.

Upon indication of severe weather or adverse road conditions from the carrier or from any of the sources listed in Appendix F, Section 2.0, the TCC Operator shall notify the appropriate state contact listed in Table 2. If the indication of severe weather or adverse road conditions was not obtained from the carrier, the TCC Operator should also notify the carrier as soon as possible. The state contact will specify a safe-parking location and/or will provide guidance on the criteria to follow to select a safe-parking location. The TCC Operator will notify the carrier to proceed to a safe-parking location based upon the direction and/or guidance received from the state/tribal contact.

The safe-parking area should be selected based upon the criteria specified in Appendix F, Section 4.0. If the safe-parking location was not selected by the state, the state or CTUIR contact listed in Table 1 for the affected state or CTUIR should be notified of the parking location selected. TCC should enter the safe-parking location in the Note Field of the Shipment Information Screen on TRANSCOM. The layover should continue until conditions clear, the route is passable, or proper mechanical repairs completed. In the event safe parking is requested by the state/tribal and/or carrier designate due to weather and/or road conditions, TCC should monitor the weather and road conditions using the sources listed in Appendix F, Section 2.0. When it appears that conditions are acceptable, the TCC Operator should contact the state/tribal contact listed in Table 1 to request permission to release the shipment from the safe-parking location. Shipments will not be released until permission is received from the state- or CTUIR-designated contact.

Details of the conversations and decisions will be entered into the TCC Operator's log.

3.2 STATE AND CTUIR PROCEDURES

The State Highway Patrol, State Police, or CTUIR Tribal Police for each jurisdiction will adopt appropriate procedures to implement the Procedures and Protocols for Safe Parking Criteria for Cesium Shipments. State and CTUIR procedures should include:

- Procedures to provide TCC that weather and road conditions are unacceptable for a shipment prior to entering and/or delayed in that entities jurisdiction.
- Procedures to notify the TCC of adverse weather and/or road conditions that a shipment may encounter en route to or through its corridor.
- Procedures to evaluate the current and projected weather/road conditions and to respond to requests from TCC to allow a shipment to enter or leave a safe-parking location.
- Procedures to allow the shipment to proceed safely as soon as possible.
- State procedures shall include criteria for selecting safe parking.

Designated points of contact for these procedures for each jurisdiction are identified in Appendix G.

4.0 SAFE PARKING

Shipments of Cs capsules to Hanford, Washington may be delayed en route due to mechanical problems, adverse weather conditions, bad road conditions, or other unanticipated problems. When a shipment is delayed en route, a safe-parking location must be identified. The safe-parking location either will be specified by the state or CTUIR or will be selected by the carrier and/or DOE/WHC depending upon where the shipment is located. For jurisdictions where the carrier and/or DOE/WHC selects the parking location, a hierarchy has been developed to incorporate two factors: 1) the desirability of a particular

type of parking area; and 2) the carrier's ability to reach that parking area under different types of emergencies.

Table 3. Criteria for Selection of Parking Areas.

First Choice	DOE and DOD facilities
Second Choice	Specific types of places possibly, but not necessarily, predesignated by states (e.g., truck stops, state highway department sheds, ports of entry, National Guard units)
Third Choice	Factors to avoid: • Highly populated areas • Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools) • Industrial areas (e.g., refineries) • Areas with difficult access • Crowded parking areas • Parked trucks carrying flammables or explosives • Poorly lighted areas • Highway shoulders • Residential areas • Areas with numerous pedestrians • Areas without driver services (e.g., food)

First Choice: DOE/DOD facilities are the most desirable parking areas for Cs shipments. However, it may not be possible for the carrier to safely reach a DOE/DOD facility. Decision makers should then proceed down the hierarchy in selecting a parking area.

Second Choice: Specific types of facilities are likely to be more common than DOE/DOD facilities. State-specific information on the types of facilities that are acceptable is listed below. If the carrier cannot reach one of these types of facilities, then the decision maker should use the Third Choice criteria.

Third Choice: If no DOD/DOE facilities or facilities listed in the second tier can be reached safely, a series of avoidance factors should be 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. Compromises may be necessary based upon local conditions.

The vehicle "must not be parked on or within five feet of the traveled portion of public street or highway except for brief periods when the necessities of operation require the vehicle to be parked and make it impracticable to park the vehicle in any other place" (49 CFR 397.7(b)).

Some jurisdictions have elected to develop procedures to specify the safe-parking location whenever a Cs shipment is delayed. Other jurisdictions have elected to have the carrier use the safe-parking criteria to select a parking location and notify the state of the location selected. Specific procedures for each jurisdiction are shown in Safe Parking Criteria for ¹³⁷Cs Shipments (Appendix G).

National Weather Service Terms Used in Advisories

Summer Conditions

- *Warning.* Issued for tornadoes, severe thunderstorms, flash floods, river floods. A warning is issued when severe weather has already developed and has been reported by spotters or indicated by radar. Warnings are statements of imminent danger and are issued for relatively small areas and downstream from the severe storm or flood.
- *Watch.* Issued for tornadoes, severe thunderstorms, flash floods. A watch identifies a relatively large area in which flash floods or severe storms might occur. Watches are quite often issued before any severe weather has developed. Severe thunderstorm and tornado watches usually include an area 140 miles wide by about 200 miles long. The watch is only an indication of where and when the severe weather probabilities are highest, and should not be confused with a warning.
- *Thunderstorm.* A local storm (accompanied by lighting and thunder) produced by a cumulonimbus cloud, usually with gusty winds, heavy rain, and sometimes hail. Non-severe thunderstorms rarely have lifetimes over two hours.
- *Severe Thunderstorm.* A thunderstorm which may last for hours beyond the lifetime of a normal thunderstorm while producing large hail, high winds, torrential rain, and possible tornadoes. Officially, a thunderstorm is classified as severe if 58 mph winds are measured, 0.75-inch or larger hail occurs, or funnel clouds or tornadoes develop.

Winds

- *High Wind Warning.* Winds of at least 40 mph are expected to last for at least one hour. (In some areas, this means strong gusty winds occurring in shorter time periods.)

Terms Related to Winds¹

Windy . . . . . 20-30 mph, gusts to 40 mph
 Quite windy or very windy . . . . . 30-40 mph, gusts to 50 mph
 Dangerous winds . . . . . 40-50 mph, gusts to 58 mph

Table 4. Wind Speeds.

Wind speed (mph)	Indications
25-31	Large branches in motion; whistling heard in telephone wires
32-38	Whole trees in motion; inconvenience felt walking against wind
39-54	Twigs break off trees; wind generally impedes progress
55-72	Damage to chimneys and TV antenna; pushes over shallow rooted trees
73-112	Peels surface off roofs; windows broken; light trailer houses pushed or overturned; moving automobiles pushed off roads
113-157	Roofs torn off houses; weak buildings and trailer houses destroyed; large trees snapped and uprooted
158 & up	Severe damage; cars lifted off ground

Adapted from the Beaufort and Fujita Wind Scales

¹National Weather Service Spotter's Guide for Identifying and Reporting Severe Local Storms, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, NOAA/PA 81011 (Rev. April 1982).

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APPENDIX G: SAFE-PARKING CRITERIA FOR ^{137}Cs SHIPMENTS

VIRGINIA

Carrier and TCC should select safe-parking location based upon the following procedures:

State predesignated parking areas	None
First choice for safe parking areas	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	None
Second choice for safe-parking area	NA
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should call the VSP/DES
Contact telephone number	Virginia State Police, Duty Sergeant (804) 674-2026 Department of Emergency Services (804) 674-2400
Additional considerations	Public rest areas are not appropriate parking for Cs shipments
Circumstances when route change would be preferable to parking	None

WEST VIRGINIA

State pre-designated parking areas	None
First choice for safe-parking areas	DOE and DOD facilities
DOE and DOD facilities designated as safe-parking areas	"None Designated"
First choice for safe-parking area	The West Virginia State Police will coordinate with appropriate state and local officials to determine those locations
Second choice for safe-parking area	Carrier selects safe-parking locations based on areas to avoid
Contact action	The carrier should contact the West Virginia State Police at (304) 746-2158
Contact telephone numbers	West Virginia State Police (304) 746-2158
Additional considerations	None
Circumstances when a route change would be preferable to parking	None

KENTUCKY

State pre-designated parking areas	None
First choice for safe-parking areas	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	None
Second choice for safe-parking area	None
Third choice for safe-parking area	Carrier selects safe-parking areas based upon areas to avoid
Contact action	Carrier should call the Kentucky State Police and DES-Operations
Contact telephone numbers	DES-Operations (502) 564-7815 Division of Motor Vehicle Enforcement (502) 564-3276
Additional considerations	Parking at public rest areas shall only be in areas designated for trucks
Circumstances when route change would be preferable to parking	None

INDIANA

The state of Indiana prefers the following locations for safe-parking areas:

- Indiana State Police District Headquarters
- Weigh Scales and Inspection Stations
- Highway Department Sheds
- National Guard Armories

Refer back to page E2 (Contacts for Emergency Conditions) if a condition warrants Indiana to be contacted.

ILLINOIS

The Illinois Department of Transportation does not have a safe-parking criterion or list of safe-haven locations for radioactive shipments.

Refer back to page E2 (Contacts for Emergency Conditions) if a condition warrants Illinois to be contacted.

IOWA

Carrier and TCC should select safe-parking location based upon the following procedures:

State predesignated parking areas	None
First choice for safe parking areas	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	None
Second choice for safe-parking area	NA
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should call the Iowa Department of Transportation/Motor Vehicle Division/Captain T. Sever
Contact telephone number	Iowa Department of Transportation/Motor Vehicle Division/Captain T. Sever (515) 237-3160 (24 hr)
Additional considerations	Public rest areas are not appropriate parking for Cs shipments
Circumstances when route change would be preferable to parking	None

NEBRASKA

Carrier and TCC should select a safe-parking location based upon the following procedures:

State pre-designated parking areas	None
First choice for safe-parking areas	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	None
Second choice for safe-parking area	NA
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should call the Nebraska State Police
Contact telephone number	State Police HQ (402) 471-4545
Additional considerations	Public rest areas are not appropriate parking areas for Cs shipments
Circumstances when route change would be preferable to parking	None

WYOMING

NOTE: During road closures, truck stops become very congested. The potential for parking lot accident situations is increased. The carrier should check with Highway Patrol for possible better parking areas during road closure. Carrier and TCC should select a safe-parking location based upon the following procedures:

State pre-designated parking area	None
First choice for safe-parking area	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	F. E. Warren AFB
Second choice for safe-parking area	Truck stops, ports of entry
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should notify TCC of selected safe-parking area. Carrier should call the Wyoming Highway Patrol for concurrence and/or additional guidance during road closures if a problem selecting a safe-parking location arises, or if TRANSCOM is not working
Contact telephone number	(307) 777-4321
Additional considerations	Public rest areas are not appropriate parking areas for Cs shipments. DOT yards will not be available for parking Cs shipments
Circumstances when route change would be preferable to parking	None

UTAH

Carrier and/or the TCC will notify the UHP. The parking site for all unscheduled stops will be selected using the list of pre-designated temporary safe-parking areas. Due to exigent circumstances, the carrier may be forced to temporarily use parking areas not listed in the safe-parking plan. In that event, the UHP shall be notified of the location and conditions warranting the deviation from the designated safe-parking areas.

State pre-designated parking areas	None
First choice for safe-parking area	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	Hill AFB, Utah Depot
Second choice for safe-parking area	Perry and Echo ports of entry, Snowville, Bothwell, Riverside, and Echo Junction state maintenance facilities
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should call the Utah Department of Safety for concurrence and/or additional guidance
Contact telephone number	(801) 965-4505
Additional considerations	None
Circumstances when route change would be preferable to parking	In the event of a long-term road closure, an alternate route would be considered only after consultation with the Utah Highway Patrol and the Utah DOT

IDAHO

The Idaho State Police will provide specific directions whenever a safe-parking location is required.

State pre-designated parking areas	None
DOE/DOD facilities designated as safe-parking areas	Mountain Home AFB
First choice for safe-parking areas	DOE/DOD facilities
Second choice for safe-parking areas	Transportation Department Maintenance Yards, Ports of Entry, and National Guard Facilities
Third choice for safe-parking areas	Driver select safe-parking area based upon areas to avoid.
Contact telephone number	Idaho State Police, Boise (208) 334-2900
Additional considerations	None
Circumstances when route change would be preferable to parking	There are times when a route change with Idaho State Police escort would be preferable to parking

OREGON

Carrier and TCC should select a safe parking location based upon the following:

State pre-designated parking areas	Farewell/Bend port of entry, Umatilla port of entry
First choice for safe-parking area	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	Umatilla Army Depot
Second choice for safe-parking area	Umatilla port of entry, Farewell/Bend port of entry (near Ontario)
Contact action	Carrier should notify the Oregon Emergency Management Duty Officer for concurrence and/or additional guidance
Contact telephone number	(503) 378-6377
Additional considerations	None
Circumstances when route change would be preferable to parking	If an accident is blocking the interstate and the police are re-routing other traffic, the Cs shipments should follow the rest of the traffic. The Oregon Emergency Management Duty Officer should be notified of the deviation in the route

CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

Carrier and TCC should select a safe-parking location upon the following procedures:

CTUIR pre-designated safe-parking areas	None
First choice for safe-parking areas	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	Umatilla Army Depot
Second choice for safe-parking area	None
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should notify the CTUIR Tribal Police for concurrence and/or additional guidance
Contact telephone number	(503) 278-0550
Additional considerations	Arrowhead Truck Plaza and Wild Horse Gaming Resort are not acceptable safe-parking locations
Circumstances when route change would be preferable to parking	None

WASHINGTON

The WSP will provide specific directions whenever a safe-parking location is required.

State pre-designated parking areas	None
First choice for safe-parking areas	DOE/DOD facilities
DOE/DOD facilities designated as safe-parking areas	RL
Second choice for safe-parking area	Plymouth port of entry
Third choice for safe-parking area	Carrier selects safe-parking area based upon areas to avoid
Contact action	Carrier should contact WSP Communications Center
Contact telephone number	(509) 575-2323
Additional considerations	
Circumstances when route change would be preferable to parking	New routes may be acceptable for long-term emergencies. During short-term incidents/accidents, parking or limited detours may be utilized, depending upon the incident/accident