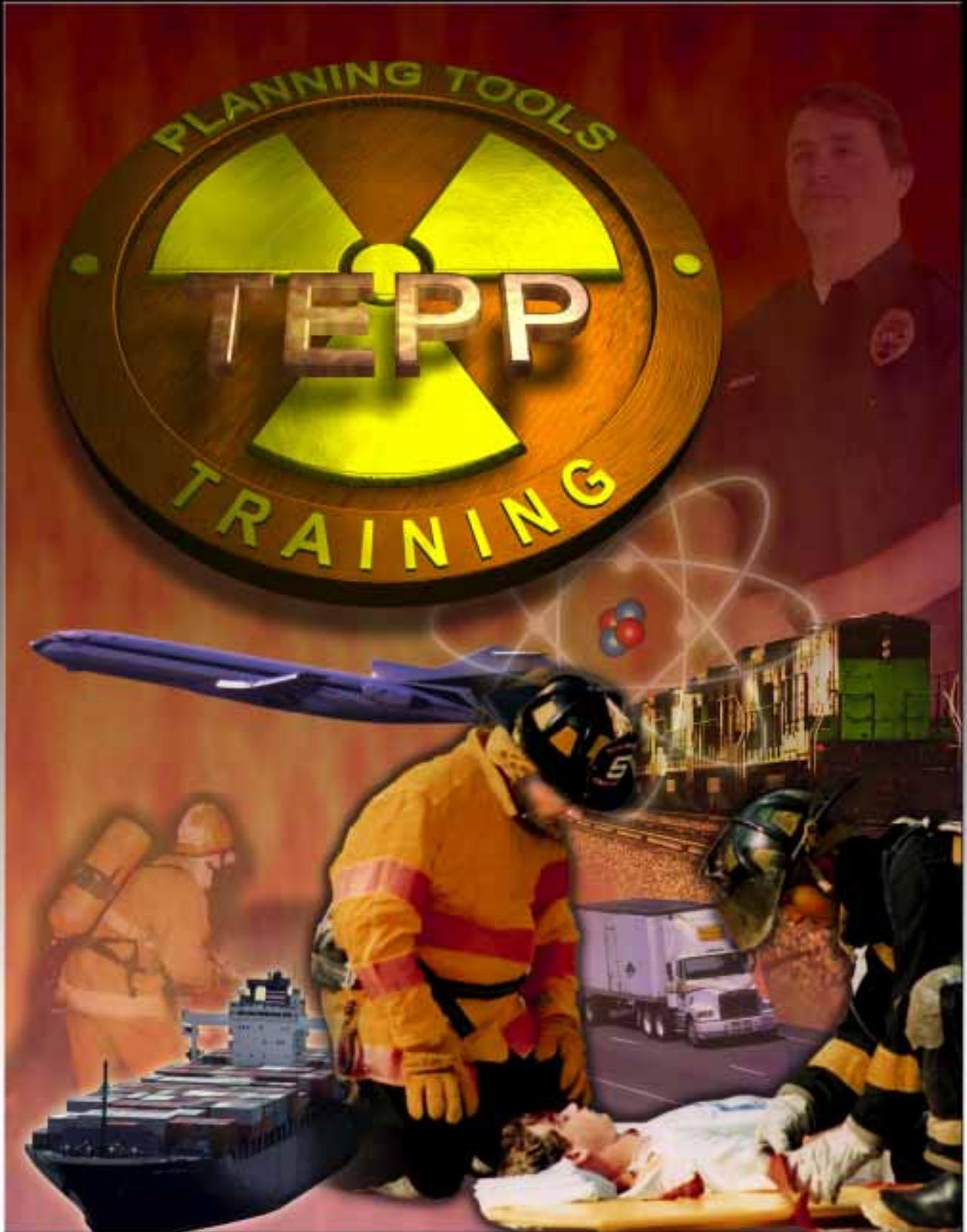




DEPARTMENT OF ENERGY



**Transuranic (TRU) Waste
(Hazard Class 7 Radioactive)
Moderator's Version of Tabletop**

Prepared For The Department of Energy Office of Transportation and Emergency Management

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table of contents



Transportation Emergency Preparedness Program (TEPP)

**Transuranic (TRU) Waste
(Hazard Class 7 Radioactive)
Moderator's Version of Tabletop**



MODERATOR NOTES	4
OBJECTIVES	4
EMERGENCY RESPONSE ACTIONS TO BE DISCUSSED	4
INITIAL CONDITIONS	5
TIMELINE NARRATIVE	5
Reference/Data Section	13
Table 1. Victim Injury Conditions	13
Figure 1. Accident Scene	14
Figure 2. Trailer Markings	14
Figure 3. Class 7 Radioactive Placard	15
Shipping Information from Transportation Company	15
Figure 4. Bill of Lading	16
Figure 5. EMERGENCY RESPONSE GUIDE 165	17
Figure 6. EMERGENCY RESPONSE GUIDE 128	19

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop

MODERATOR NOTES

Read initial conditions for the tabletop to participants. Ensure participants understand the purpose of the tabletop is to provide them (the Emergency Response Organization [ERO] members) an opportunity to respond to a simulated transportation accident, through participant discussion. If at any time a participant does not understand his/her responsibilities, stop the tabletop and take the steps necessary to ensure understanding. Read the time on the Timeline Narrative and the corresponding event that takes place. Allow the participants time to jot down notes as necessary. Ask questions to get all the participants involved. **There are several example questions already written down and the portion of the audience the question is for is shown in bold face type.** The answer to each question is part of the expected response for that portion of the incident. The moderator may ask additional questions based on participants' responses. Questions to the moderator from participants should be turned back to the participants as another question.

OBJECTIVES

- Given a simulated radioactive materials transportation accident, applicable procedures, and map references, demonstrate through participatory discussion a working knowledge of the following emergency response and concept of operations elements:
- Concept of operations for the emergency response to a radioactive materials transportation accident, including the Unified Incident Command System utilized in the field.
- Initial and extended response of emergency personnel and the interface between these organizations and Federal and State Regulatory agencies (i.e., Environmental Protection Agency [EPA], Department of Transportation [DOT], and the appropriate State agency).
- Communications between the Incident Commander (IC) and the Emergency Operations Center (EOC).

EMERGENCY RESPONSE ACTIONS TO BE DISCUSSED

- Notification of Federal and State regulatory agencies (i.e., EPA, DOT, and State agency)
- Activation of emergency response facilities and organizations
- Initial law enforcement, fire, and Emergency Medical Services (EMS) response actions
- Hazardous Material Response Team actions
- Protective action decision-making for the public affected by the incident
- Protective action recommendations to other agencies
- Federal and State agencies response
- Measures to correct or mitigate the emergency conditions
- Mutual aid response actions
- Dispatch and actions of field monitoring teams
- Coordination and release of emergency information to the media and the public



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



INITIAL CONDITIONS

- The time of day is assumed to be actual.

Initial Meteorological Conditions

- Overcast with temperatures in the mid 70s
- Wind speed is 5-7 mph
- Wind direction is from 280°

Forecast

Tonight: Cloudy with possible scattered late night showers. Westerly winds at 5-7 mph. Low temperature in the mid 50s.

Tomorrow: Partly to mostly sunny. High in the mid 70s with southerly winds variable from 5-10 mph.

Note to Moderator: Meteorological conditions may be revised at your discretion based on actual conditions in your area. The conditions shown here are only given to facilitate discussion because no "actual" field data are available.

TIMELINE NARRATIVE

T+00:00 The local emergency notification network (local community/county dispatcher, 911 center, etc.) receives a call from a motorist reporting a serious accident on Highway _____, near milemarker _____. The accident involves a tractor trailer and a gasoline tanker. The caller states there is a big fire. There is one person observed at the scene away from the burning trucks.

1. *What actions will the emergency notification network be taking at this time? - Emergency Notification Network Dispatcher*
 - Notify Fire Department Dispatcher of the accident location and other information provided.
 - Ensure law enforcement unit(s) are dispatched to the accident scene.
2. *What actions will the Fire Department Dispatcher be taking at this time? - Fire Dispatcher*
 - Dispatch necessary fire fighting units and EMS Units to the accident scene.
3. *What is the criteria for dispatching more than one EMS unit? - Fire Dispatcher*
 - Dispatch is advised of multiple patients.
 - Or multiple units (vehicles) involved.



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



DEPARTMENT OF ENERGY



T+00:10 Fire Department, EMS, and Law Enforcement arrive at the scene.

1. *What are the initial response actions of the first responder at this accident scene? Remember, at this time you are only aware of a traffic accident. -**Incident Commander***
 - Make an initial evaluation/size-up, which includes observing with binoculars (Fire Department or EMS or Law Enforcement).
 - Secure the scene by restricting unauthorized access.
 - Look for downed power lines, DOT placarding, fire, injuries, visual evidence of chemical or radiological leakage, etc.

2. *Explain the Unified Incident Command System. Who assumes the role of Incident Commander and when? -**Incident Commander***
 - The first response unit on the scene initially assumes the Incident Commander role. This responsibility is shifted “upward”, ultimately belonging to the Fire Chief.

3. *What is Incident Commander’s responsibility? -**Incident Commander***
 - Total incident scene control.
 - Identification of hazards.
 - Safety of all responders at the scene. (Should appoint a safety officer.)
 - Patient safety and care.
 - Determine what additional resources (i.e., mutual aid) are needed and where aid is to be directed.
 - Direct EMS supervisor to establish priority transport of injured.
 - Ensure that Law Enforcement and Emergency Notification Network are aware of condition and status of response and agencies responding.
 - Maintain communications with the local EOC.
 - Media control (Should appoint a Public Information Officer).

4. *What is the Safety Officer’s role? -**Safety Officer***
 - May be assumed by the Incident Commander.
 - Observes the scene to ensure safety for responders.
 - Answers directly to the Incident Commander.

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



2. *What is the Public Information Officer's Role? - **Public Information Officer***

- Ensure the information released is technically correct.
- Serves as the single point of information for release of information to the media. Public Information Officer should coordinate with representatives of various agencies at scene to ensure that disseminated information is accurate.
- Answers directly to the Incident Commander.

6. *What is the interface between Fire, EMS, and Law Enforcement at this time? - **Incident Commander***

- Each would be a separate branch under the Incident Commander.

7. *What are the first actions taken by the responding Law Enforcement unit? How does his/her action differ if the Fire Department and EMS are already on the scene? - **Incident Commander***

- Notify the law enforcement dispatcher of all pertinent data observed at the scene.
- If Fire and EMS are not on the scene, officer will use vehicle to block traffic/prevent entry to the accident area. Identify any potential hazard and cordon off the hazard area. If the jaws of life are needed for the initial assessment they should also notify the Local Emergency Notification Network. If they see a placard they should notify the Local Emergency Notification Network. All notifications to the Emergency Notification Network must then be relayed to the Fire Dispatcher.
- If Fire and EMS are already at the scene, one officer should report to the Incident Commander and the other would function for traffic control.
- If injured personnel are in danger of any hazard the officer will make a decision on whether to move the person or not. They would provide First Aid as capable until Fire and/or EMS arrive.
- Move all personnel away from the scene and out of spill area.
- Direct traffic and advise law enforcement dispatcher of positions for detours/roadblocks.

T+00:20 The initial evaluation/size-up provides the following information:

- Both trucks are still upright and on fire, generating a significant amount of smoke.
- The trailer has placards on the side, but they are obscured by smoke.
- Some identification markings on the truck are visible but are obscured by smoke.
- One driver is away from the vehicles and appears injured.
- The status of the other driver is not known.
- **The accident is near a sparsely populated residential area.**



DEPARTMENT OF ENERGY



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



DEPARTMENT OF ENERGY



3. *What is the Incident Commander's Response? - **Incident Commander***
 - Don bunker gear and Self-Contained Breathing Apparatus (SCBAs), and proceed upwind.
 - Evacuate personnel inside the exclusion zone (1/2 mile) based upon the Emergency Response Guide Book's guidance for a gasoline tanker fire.
 - Notify the dispatcher of the need for Hazardous Materials Response Team (i.e., HAZMAT) at the scene.
 - Evaluate the need for additional resources.
 - Ensure emergency responders dress out in protective clothing and remove victims from the scene and recon (continual observation) the accident scene.
 - Evaluate the explosion risks with the burning tanker versus the threat to the public, etc.
 - The Incident Commander should begin formulating a plan for containing the fire considering the following:
 - Number and type of responders
 - Adequate protective clothing
 - Missions for responders
 - Establishing a staging area
 - Establishing decontamination zones
 - Establishing environmental monitoring

4. *How would the public evacuation be accomplished? - **Incident Commander***
 - At a minimum, the following should be discussed by the Incident Commander:
 - Location of shelter where evacuees would be assembled
 - Means of transportation available to the shelter
 - Measures to protect public property from vandalism and looting during incident

5. *Where will the Incident Command Post be established and what is the criteria for establishing an Incident Command Post? - **Incident Commander***
 - Should be as close to the Incident Scene as possible; however safety first. Should not be so close as to hinder the mitigation of the emergency.
 - Should be upwind and beyond the + mile isolation zone as established in the North American Emergency Response Guide Book.

6. *What is EMS focusing on at this time? - **EMS Personnel***
 - Attending to the injured driver and preparing him for transport to a hospital.
 - Determining the status of the other driver(s) and other potential victims.

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



7. *How does EMS determine which hospital to send the victim to and what precautions are required if any? -EMS Personnel*

- Hospital is chosen based upon type of injuries sustained. Burn victims would go to a hospital with burn unit capability.
- The potential for victim contamination will be evaluated and the hospital will be notified prior to victim transport.

8. *What precautions will the hospital take if the victim is suspected of being contaminated? -Hospital Representative*

- The patient will be isolated from other hospital patients and proper radiation controls (i.e., segregation of clothing, linens, medical equipment, etc.) will be initiated.

T+00:25 The Incident Commander now develops a response strategy. There are Class 7 Radioactive placards visible on the truck. Smoke and fire still obscure the lettering on the truck. EMS is enroute to the hospital with the burned tanker driver.

1. *What response strategy does the Incident Commander adopt? -Incident Commander*

- Extinguish the fire.
- Evaluate potential threat to the public.
- Determine the origin of the truck to determine its contents.
- Request assistance from a Radiation Response Team from the nearest nuclear facility.
- If the contents of the truck have been identified, determine if there is damage to the container on the truck.

2. *When and what notifications should be made to higher agencies? Explain the notification procedure. - Incident Commander*

- Federal, State, and local regulatory agencies should be notified.
- The notification process will vary depending upon local procedures.

3. *What additional assistance should be requested? - Incident Commander*

- County level emergency response support.
- State environmental response team.
- Assistance from other mutual aid agencies.



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



DEPARTMENT OF ENERGY



4. *What is the State environmental response to this call? How would it differ from a chemical emergency response? - **State Response Team***

- Response will vary depending upon specific State procedures.
- Ensure that the local response team has the appropriate personnel and equipment to respond to the situation.

5. *What is the _____ county response to this call? How would it differ from a chemical emergency response? - **County Response Team***

- The response will vary depending upon specific county procedures. The response may still be a chemical emergency response, but may include radiation controls (i.e., monitoring personnel and equipment for radioactive contamination and decontamination [e.g., washing down with soap and water while collecting rinse water for disposal]). If the county does not have the proper equipment to be perform this action, they may request it from the State.
- The local EOC will ensure proper reporting and communications with appropriate authorities.

6. *What actions will the HAZMAT Team take to mitigate danger to the environment and/or public? - **HAZMAT Team Leader***

- Contain runoff from accident scene, including water from firefighting activities and fluids (e.g., gasoline, diesel, oil, antifreeze) from trucks, to the extent possible without endangering response personnel.

T+00:35 **Local media begin arriving at the accident scene. The media try to obtain information from law enforcement, the Fire Department, and/or EMS personnel. They also attempt to get information from the witness (e.g., motorist). A news report is issued stating that officials are planning to evacuate persons within 2 miles from their homes.**

1. *How will the media be addressed? - **Incident Commander***

- The Incident Commander should designate a spokesperson (e.g., Public Information Officer).
- The spokesperson will be responsible for disseminating accurate information to the media that is free of technical jargon. Also, they will monitor the media for rumor control, and correct inaccurate media reports.

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



T+00:45 **The fire appears to be out. The scene is apparently safe to enter.**

1. *When the fire appears to be extinguished, what actions are then taken? -**Incident Commander***
 - Attempt to read lettering on truck (see Figure 2).
 - Contact transport company for cargo information.
 - Determine status of other driver and look for additional victims.
 - Attempt a radiation survey and determine status of the cargo.
2. *The truck has radioactive placards. How will the radiation survey and monitoring be performed? - **Field Monitoring Team Leader***
 - Actions will depend on local response procedures and procedures specific to the organization the monitoring team belongs.

T+01:00 **The transport carrier responds to a call from the Incident Commander and provides shipping information. A visual inspection indicates that the cargo is intact. A radiation survey has indicated background levels of radiation. The driver of the transport truck is determined to be dead, and the coroner is notified.**

1. *What information is desired from the transport carrier? -**Incident Commander***
 - The identification of the shipper (DOE).
 - Identification of the cargo.
 - Special handling or exposure concerns.
2. *The transport carrier identifies the DOE as the shipper. What action occurs next? -**Incident Commander***
 - The DOE is notified of the accident.
 - The Incident Commander requests detailed information on the shipment.



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



DEPARTMENT OF ENERGY



T+01:15 The DOE states that the shipment is fissile radioactive material, consisting of plutonium-239 and uranium oxides and metals with an Emergency Response Guidebook code of 165.

1. *What action occurs next?*-**Incident Commander**
 - The Incident Commander requests DOE (shipper) and/or the transporter to provide assistance with the recovery and cleanup of containers.
 - The IC references ERG code 165 for more information.

2. *What types of mutual aid organizations may be used for this situation?*- **Incident Commander**
 - Mutual aid organizations will depend upon location but may include Department of Defense bases, nuclear power plants, etc.

T+01:30 The radiation response team and coroner arrive at the scene.

1. *Upon arrival of the radiation response team, what actions does the Incident Commander take?*-**Incident Commander**
 - The Incident Commander (e.g., Fire Chief) briefs the Radiation response team on the situation and integrates them into the ICS.

2. *What action does the coroner take upon arrival at the scene?*-**County Coroner**
 - Report to the Incident Commander

3. *What support does the coroner need from the Incident Commander?*-**County Coroner**

T+02:00 Termination of Tabletop.

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



Reference/Data Section

Moderator Notes:

This section contains information and data depicting the accident scene, victim injury conditions, hazardous materials spill and dose projections. It includes the Bill of Lading and placards (for the radioactive materials on board the trailer).

Personnel who would not have first-hand access to this material should describe and discuss their response actions based on the synthesis of this information by scene emergency response players (as result of status briefings, for example).

- Accident scene drawing (Scene responders)
- Victim injury conditions (Scene/EMS and hospital responders)
- Placards

Table 1. Victim Injury Conditions

Victim	Primary Survey	Condition
Victim 1 - DOA Transport Truck Driver Black tag, Priority 4	Airway Breathing Circulation Disability/Consciousness Expose/Examine	Open Not breathing None No response Severe Burns
Victim 2 Tanker Truck Driver Red tag, Priority 1	Airway Breathing Circulation Disability/Consciousness Expose/Examine	Open Regular Rapid Conscious Severe Burns



DEPARTMENT OF ENERGY



**Transuranic (TRU) Waste (Hazard Class 7
Radioactive) Moderator's Version of Tabletop**

Figure 1. Accident Scene



Figure 2. Trailer Markings

ABC TRANSPORTATION COMPANY

ANYTOWN, USA

800 - 555 - 5555

NOTE: You may substitute a local number for use in the trailer markings.



DEPARTMENT OF ENERGY



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



Figure 3. Class 7 Radioactive Placard



Shipping Information from Transportation Company

Provided here, in a package on the following pages, are copies of the various materials, paperwork, etc. the transportation carrier (ABC Transportation Company) provides the IC when requested.

- Bill of Lading
- DOT NAERG book excerpts (Guide numbers 128 and 165)

This material is to be provided to players during the Tabletop for their use/discussion.



DEPARTMENT OF ENERGY



Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop

Figure 4. Bill of Lading



DEPARTMENT OF ENERGY



STRAIGHT BILL OF LADING - SHORT FORM - Original - Not Negotiable

Shipper's No. _____

(Carrier _____ SCAC. _____ Carrier's No. _____)

Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading

at _____ date _____ from _____

The property described below is in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word "company" being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its consignee or delivery at said destination, if on its own road or by its own water line or otherwise to deliver to another carrier on the route to said destination if it is mutually agreed on by each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written herein contained (as specified in Appendix B to the ICCB) which are hereby agreed to by the shipper and accepted for forward and his assigns.

(Mail or street address of consignee for purposes of notification only)

TO: Consignee FROM: Shipper
 Street Street
 Destination Zip: Origin Zip:

Route: _____

Delivering Carrier _____ Trader Initial Number _____ U.S. D.O.T. Hazardous Materials Number _____

No. of packages	HM	Description of articles, special marks, and exceptions	Hazard Class	I.D. Number	Packing Group	Weight (subject to correction)	Class or Rate	Labels required (or exemption)	Check column
1	RQ	Radioactive materials, fissile "Highway Route Controlled Quantity"	7	UN2918	NA	620KG		RADIOACTIVE (YELLOW III)	
		Radionuclide: Plutonium and Uranium 235, and daughters Solid form as Plutonium and Uranium metals and oxides							
		Total Activity: 3.7 TBq							
		Transport Index: 6.0							
		Emergency Response Guidebook Number: 165							
		USA/996778(1)F							

Remit C.O.D. to: Address: City: State: Zip: _____

COD AMT
 \$ _____
 Charges Advanced \$ _____

Subject to section 7 of conditions if this shipment is to be delivered to the consignee without recourse on the consignment, the consignor shall sign the following statement.
 The carrier shall not make delivery of this shipment without payment of freight.

C. O. D. FEE:
 Prepaid
 Collect \$ _____
FREIGHT CHARGES
 Prepaid Collect

This is to certify that the above-mentioned materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

PLACARDS REQUIRED Radioactive Class 7, HRCQ **PLACARDS SUPPLIED** YES NO - FURNISHED BY DRIVER'S SIGNATURE

SHIPPER: _____ DATE: _____ CARRIER: _____ DATE: _____
 PER: _____
 EMERGENCY RESPONSE _____

Permanent post office address of shipper: _____ Member of all laws the Hazardous Materials in transportation industry storage intended to

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



Figure 5. EMERGENCY RESPONSE GUIDE 165

GUIDE 165 **RADIOACTIVE MATERIALS (FISSILE/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 and/or internal radiation exposure.
- Packages (drums or boxes) identified as "Type AF" or "IF" by marking on packages or by shipping papers contain materials that are not life endangering if released. External radiation levels are low and packages are designed, evaluated, and tested to control releases and to prevent a fission chain reaction under severe transport accident conditions.
- Packages (metal and usually very heavy) identified as "Type B(U)F" or "B(M)F" by marking on packages or by shipping papers contain potentially life endangering amounts. Because of design, evaluation, and testing of packages, fission chain reactions are prevented and releases are not expected to be life endangering for all accidents except those of utmost severity.
- The transport index (TI) shown on labels or a shipping paper might not indicate the radiation level at one meter from the package; instead, it may indicate controls needed during transport because of the fissile properties of the materials.
- Some radioactive materials cannot be detected by commonly available instruments.
- Water from cargo fire control is not expected to cause pollution.

FIRE OR EXPLOSION

- These materials are not flammable and packagings are designed to withstand fires without damage to contents.
- Radioactivity does not change flammability or other properties of materials.
- Type AF, Type IF, and Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes.

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.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are 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

Large Spill

- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

- 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.

Page 278



DEPARTMENT OF ENERGY





Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop

Figure 5. EMERGENCY RESPONSE GUIDE 165 (Continued)

NAERG-96

RADIOACTIVE MATERIALS
(FISSILE/LOW TO HIGH LEVEL RADIATION)

GUIDE
165

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.

Small Fires

- Dry chemical, CO₂, water spray or regular foam.

Large Fires

- 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.*

Liquid Spills

- Package contents are seldom liquid. If any radioactive contamination resulting from a liquid release is present, it probably will be low-level.

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.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons who contacted released material may be a minor contamination problem to contacted persons, equipment and facilities.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Page 279

DEPARTMENT OF ENERGY

18

Transuranic (TRU) Waste (Hazard Class 7 Radioactive) Moderator's Version of Tabletop



Figure 6. EMERGENCY RESPONSE GUIDE 128 (Gasoline Tanker)

GUIDE 128	FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE)	NAERG96
POTENTIAL HAZARDS		
FIRE OR EXPLOSION		
<ul style="list-style-type: none"> • HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. • Vapors may form explosive mixtures with air. • Vapors may travel to source of ignition and flash back. • Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). • Vapor explosion hazard indoors, outdoors or in sewers. • Some may polymerize (P) explosively when heated or involved in a fire. • Runoff to sewer may create fire or explosion hazard. • Containers may explode when heated. • Many liquids are lighter than water. • Substance may be transported hot. 		
HEALTH		
<ul style="list-style-type: none"> • Inhalation or contact with material may irritate or burn skin and eyes. • Fire may produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation. • Runoff from fire control or dilution water may cause pollution. 		
PUBLIC SAFETY		
<ul style="list-style-type: none"> • 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. • Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions. • Keep unauthorized personnel away. • Stay upwind. • Keep out of low areas. • Ventilate closed spaces before entering. 		
PROTECTIVE CLOTHING		
<ul style="list-style-type: none"> • Wear positive pressure self-contained breathing apparatus (SCBA). • Structural firefighters' protective clothing will only provide limited protection. 		
EVACUATION		
Large Spill		
<ul style="list-style-type: none"> • Consider initial downwind evacuation for at least 300 meters (1000 feet). 		
Fire		
<ul style="list-style-type: none"> • If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. 		
Page 204		



DEPARTMENT OF ENERGY





Figure 6. EMERGENCY RESPONSE GUIDE 128 (Gasoline Tanker - Continued)

NAERG96FLAMMABLE LIQUIDS
(NON-POLAR/WATER-IMMISCIBLE)GUIDE
128

EMERGENCY RESPONSE

FIRE
CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

Small Fires

- Dry chemical, CO₂, water spray or regular foam.

Large Fires

- Water spray, fog or regular foam.
- Do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from the ends of tanks.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spills

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

FIRST AID

- Move victim to fresh air. • Call emergency medical care.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Page 205



DEPARTMENT OF ENERGY

