Preparing Emergency Responders for Response to a Transportation Accident Involving Radioactive Material

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Transportation by Air, Rail, Highway & Water

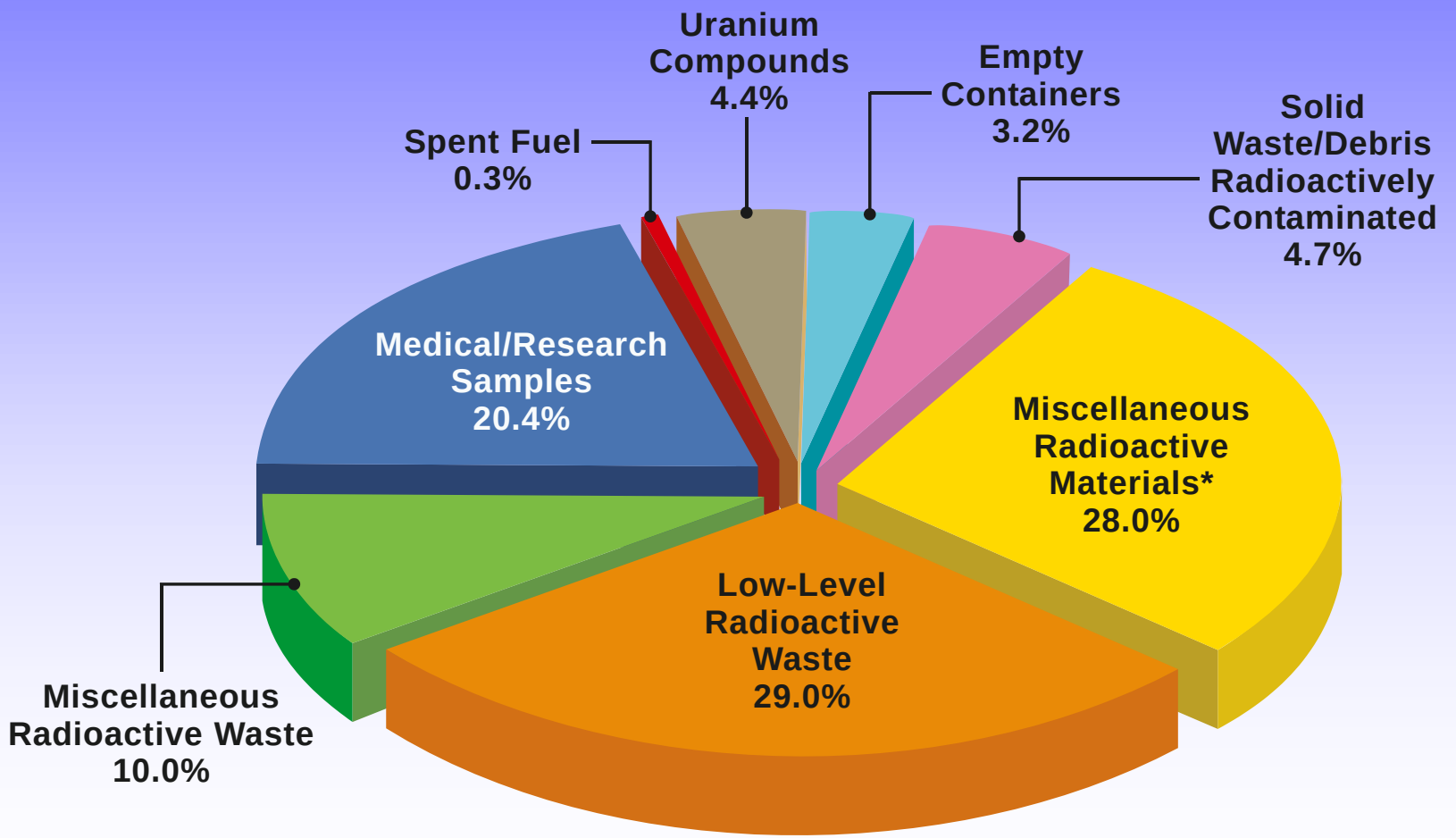
DEPARTMENT OF ENERGY

Transportation by Air, Rail, Highway & Water

- **Annual Estimates of United States Hazardous Materials Shipping Activities**
  - 500 Billion packages
  - 400 Million are hazardous material
  - 3 Million are radioactive
  - DOE ships 5,000 to 20,000



Transportation by Air, Rail, Highway & Air



What do you do when an accident happens?

How can responders prepare for accidents involving radiological material?

- Title 44 in the United States Code of Federal Regulations, Part 351.1 assigns Federal Agency responsibilities for assisting state and local governments in emergency planning and preparedness for radiological/nuclear emergencies.

DOE Implemented the Transportation Emergency Preparedness Program (TEPP)

www.em.doe.gov/otem

TEPP's Mission

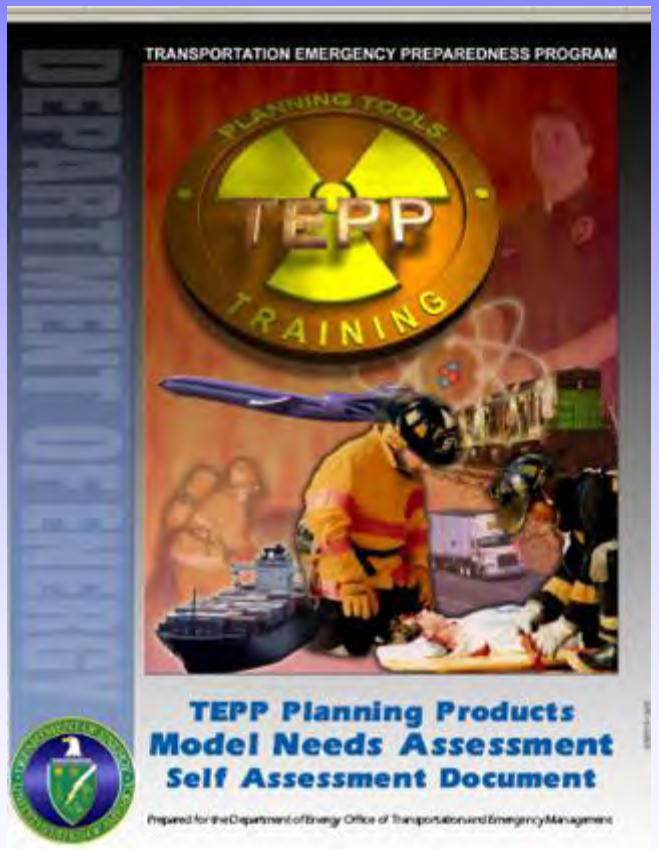
TEPP will assist Department of Energy (DOE) and other federal, state, tribal and local authorities to prepare for response to a transportation incident involving DOE shipments of radioactive material.

TEPP Goals

- Serve as a Department-wide program
- Provide planning and technical assistance to promote a coordinated response to transportation incidents involving radioactive material
- Provide training assistance and promote development of flexible, low-cost, high-quality training materials
- Serve as a link between emergency preparedness and transportation planning

The first step to preparedness. . .

- **Determine applicability and conduct a needs assessment**
- **The Needs Assessment will:**
  - assist in determining readiness
  - identify strengths & weaknesses



Second step – address weaknesses in plans & procedures

TEPP Plans & Procedures

- **Model Initial Response Procedures**
- **Model Annex for Preparedness and Response to a Radiological Transportation Incident**
  - provides basic structure and annotated guidance for transportation addendum to existing emergency operations plans

planning tools

Transportation Emergency Preparedness Program (TEPP) REV 2 - 8/4/2002

Model Procedure for Properly Handling and Packaging Potentially Radiologically Contaminated Patients

12. At the Hot Zone Contamination Control Line, responders should pass the patient across the contamination control line to waiting responders.

Note: Care providers within the Hot Zone should not cross the Contamination Control Line until monitoring conducted by the radiation authority determines care providers to be free of contamination. If additional responders are not available, the treating responders should remove protective clothing at the Hot Zone Contamination Control Line and provide transportation of the patient to the appropriate medical facility. Based on local procedures, the patient may require additional transfers at each of the contamination control zone lines.

13. After transferring the patient to the clean area, Emergency Medical Service Care Providers should cover the patient with the protective barrier that was placed over the transport device.

14. Load patient into the ambulance and transport to hospital.

Note: To reduce/prevent possible contamination of the ambulance, consider the following additional precautions: Open the protective barrier only to administer necessary patient treatment, place floor covering (paper or plastic, etc.) on ambulance floor, and treat all items used in the treatment of the patient as potentially contaminated.

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Develop Procedures as needed.....

- **TEPP Model Procedures**
  - First Responder Procedure
  - Hazardous Materials Team Procedure
  - EMS Responder Procedure for Handling a Radiologically Contaminated Patient
  - Medical Examiner/Coroner Guide for Handling a Radiologically Contaminated Body/Human Remains
  - Radioactive Material or Hazardous Materials Decontamination Procedure
  - Recovery Planning Procedure

. . .and address training weakness

- **Modular Emergency Response Radiological Transportation Training (MERRTT)**
  - **MERRTT has a modular design**
    - 16 modules (some with embedded video clips)
    - Hands-on practical exercises
    - Can be integrated into existing hazmat curriculum or delivered as stand-alone course
    - Can be instructor-led or self-paced instruction
  - **Intended for responders with previous hazardous material response training**
    - MERRTT is designed to supplement existing hazmat training
  - **Many states in the U.S. have adopted MERRTT as their own training program**

MERRTT Program

DAY ONE MODULES

- Radiological Basics
- Biological Effects
- Radioactive Material Shipping Packages
- Hazard Recognition
- Initial Response Actions
- Patient Handling
- Incident Control
- Radiological Survey Instruments & Dosimetry Devices
- Transportation of Safeguards Material

DAY TWO MODULES

- DOE Shipments and Resources
- Decontamination, Disposal and Documentation
- WIPP Module
- Pre-Hospital Practices
- Transportation by Rail
- Incident Command
- Public Information Officer

CY 2010 MERRTT Database

Regions	# Classes	# Students	# Compressed	# TTT	# Full	# Partial	# TMERRTT	# CECBEMS
1, 3, 4	59	1159	107	185	797	93	27	244
2, 5	30	655	135	24	389	52	55	110
6, 7, 8	62	768	384	64	154	166		323
Totals	**154**	**2582**	**626**	**273**	**1340**	**712**	**82**	**743**

MERRTT Student Material

- Student Workbooks have been prepared for each module in the MERRTT program
  - Everything contained on the MERRTT DVD

Hands On Exercises

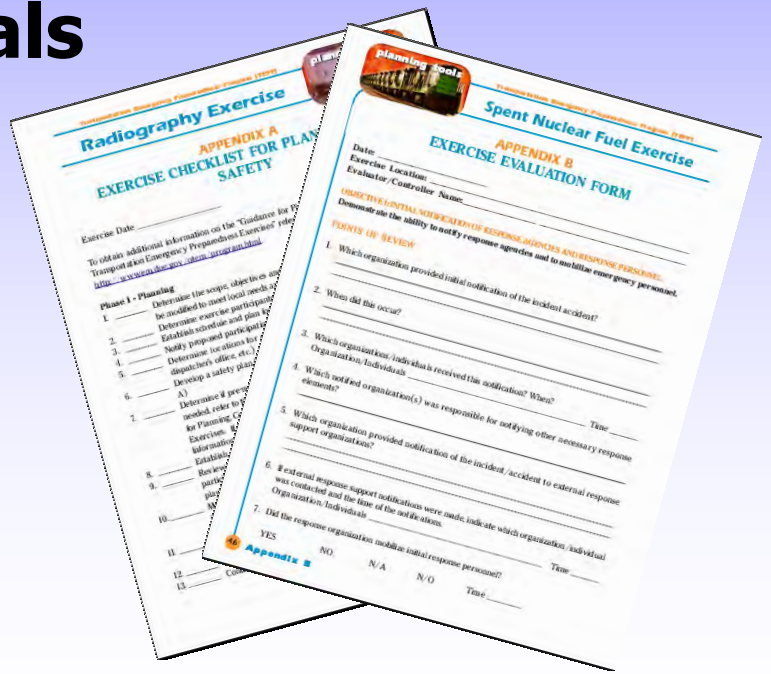
- MERRTT includes hands-on practical exercises to reinforce material presented in the modules
  - Instrument Use
  - Patient Handling
  - Package Integrity
  - Contamination Survey
  - Picture Card Practical

TEPP Exercises

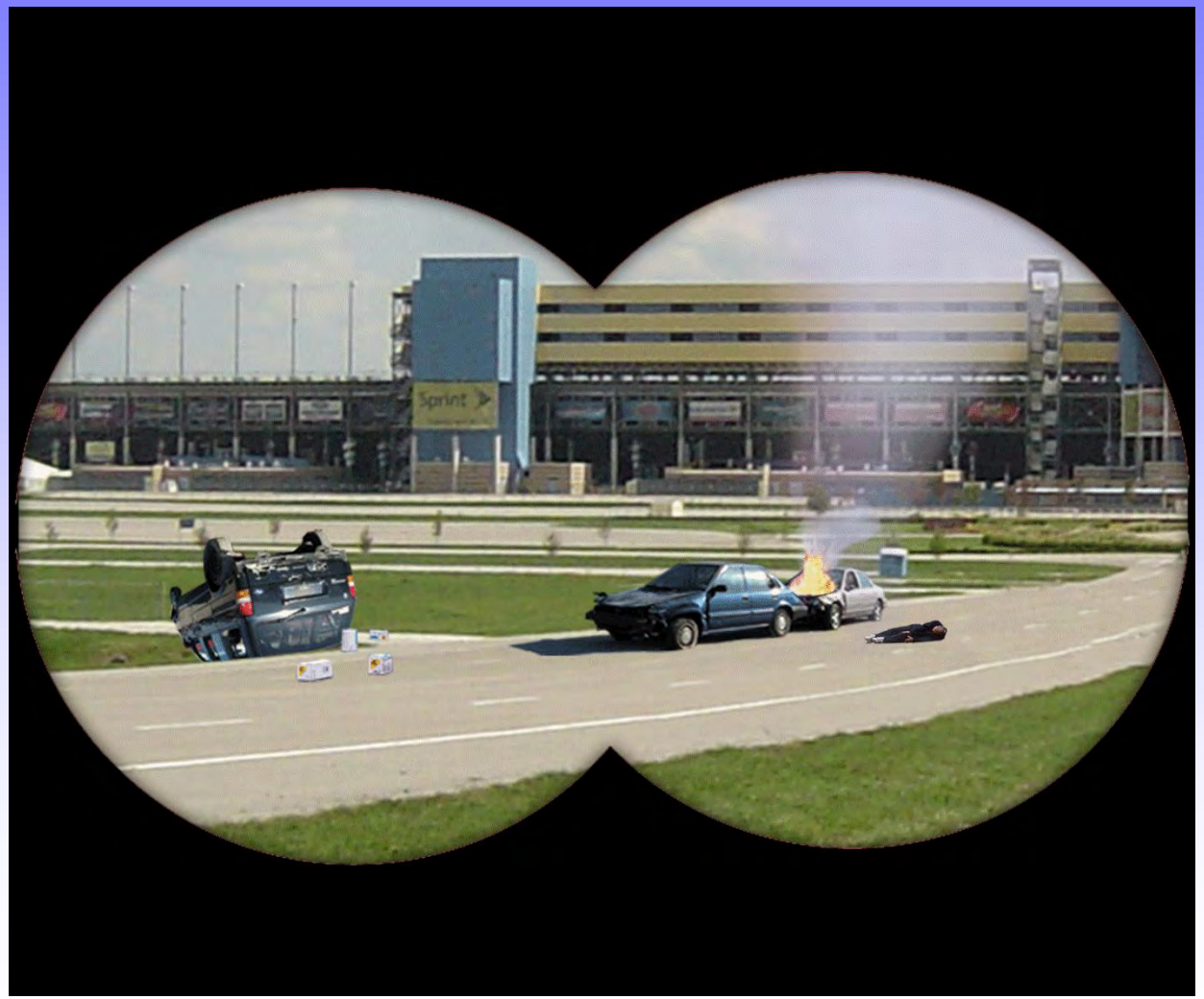
- **Tabletop, Drill & Exercise Program Manual (Drills-In-A-Box):**
  - Guidance For Planning, Conducting and Evaluating Transportation Emergency Preparedness Tabletops, Drills and Exercises

Transportation Accident Exercise Scenarios

- Spent Nuclear Fuel
- Low Specific Activity Material
- Soil Density Gauge
- Radiopharmaceuticals
- Radiography Device



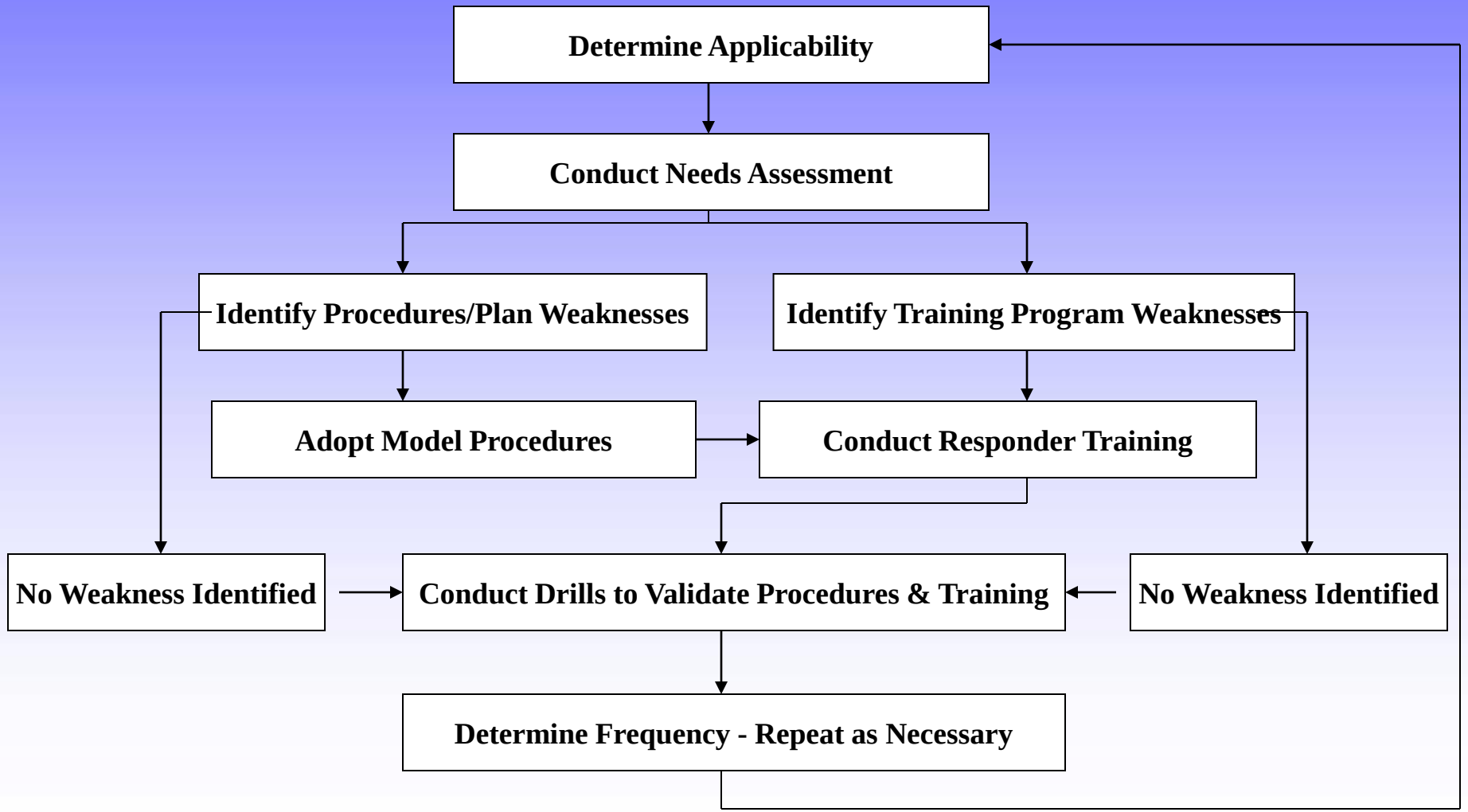
TEPP Full-Scale Exercises



Interagency Coordination

- National Fire Protection Association (NFPA)
  - Participation in development of Standards 472 and 473
- Radiation Specialist Program meeting NFPA 472 requirements
- Hospital Training Program
  - Designed for emergency room personnel

TEPP Implementation Process



Want to know more?

- The TEPP web site provides one-stop shopping
  - MERRTT Training Schedule
  - 24-Hour Points of Contact
  - Model Needs Assessment
  - Exercise Planning Resources

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Questions