



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
ENVIRONMENTAL  
MANAGEMENT

# Northeast High-Level Radioactive Waste Transportation Task Force TEPP Update



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**Ellen Edge, TEPP Program Manager**

**Mark Linsley, Contract Coordinator DOE Regions 1 and 5**  
*Technical Resources Group, Inc.*

**October 25, 2023**

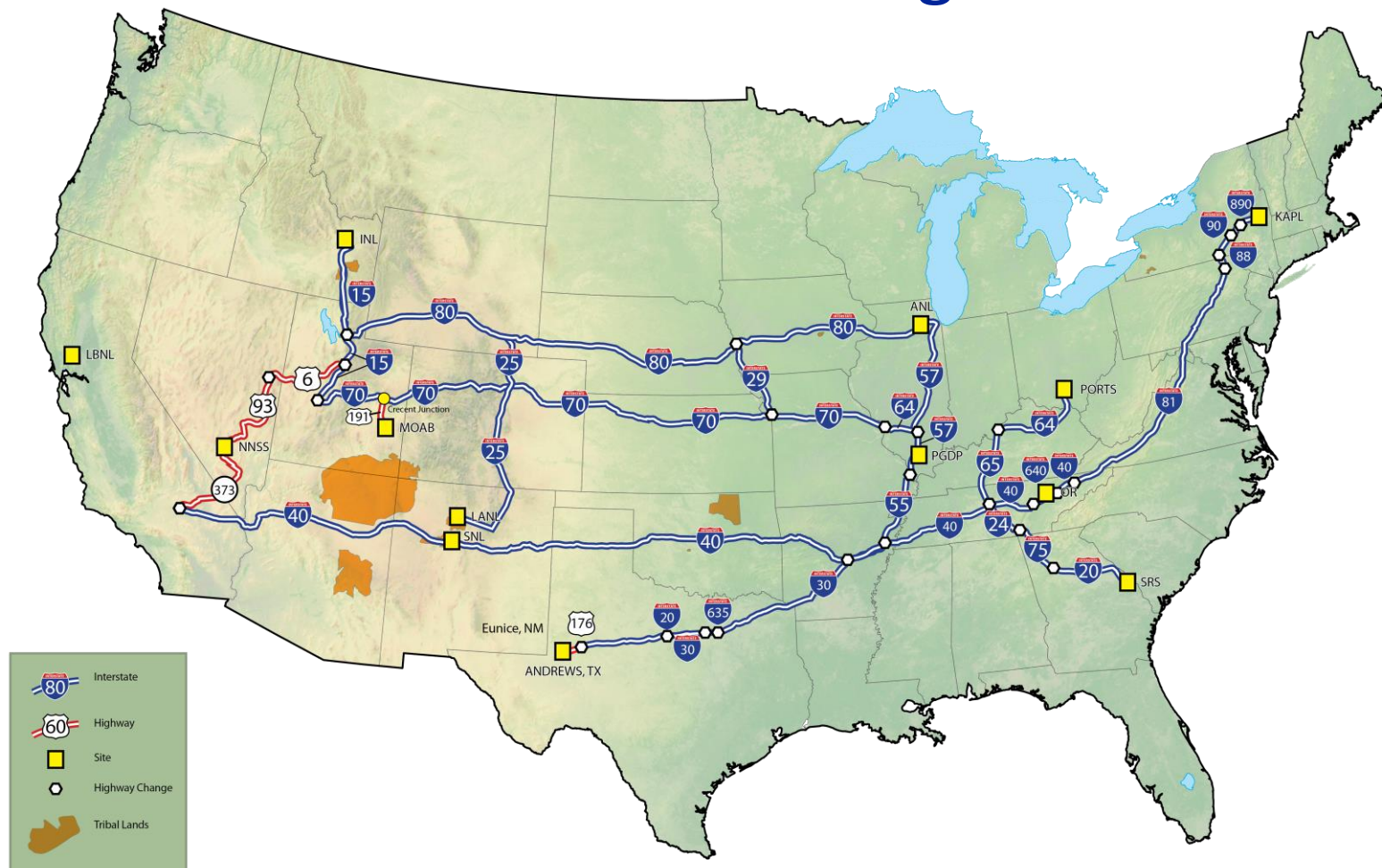
# Discussion Topics

- TEPP's Mission
- FY 23/24 Training
- Upcoming Events
- MERRTT Revision



To ensure that federal, state, tribal, and local responders have access to the plans, training, and technical assistance necessary to safely, efficiently, and effectively respond to transportation accidents involving DOE-owned radioactive materials. To accomplish this mission, a suite of tools have been developed to aid the response jurisdictions in their readiness activities.

## Office of Environmental Management



## Waste Isolation Pilot Plant



## National Nuclear Security Site



## TYPICAL NAVAL SPENT FUEL SHIPPING ROUTES



## Pennsylvania

Course	Classes	Students
Full MERRTT	7	107
CMERRTT	28	344
TMERRTT	2	45
Rad Specialist	1	30



## TEPP/WIPPTREX Exercise

- Pecos, TX
- 17 agencies
- > 125 player



## Upcoming Activities

- 10/27-29: PEMA RODEO Pittsburgh, PA
- 1/24: 4 MERRTTs Altoona, PA
- 2/3/24: TMERRTT Reading, PA
- 10/15-16/24: MERRTT Allentown, PA
- 10/17/24: TMERRTT Allentown, PA

### Radiation Specialist

- 1/15-19/24: Golden, CO

## Upcoming Activities

- Working with Nancy Stanley (NJDEP) and Vincent Williams (NJSP)
- Possible MERRTT classes in Bergen and Middlesex Counties, NJ
  - Carlos Morales
  - Scott Saunders

- Comment matrix distributed to ad hoc committee
- 3 members provided feedback:
  - Greg Gothard – Michigan
  - Tad Rumas – Ohio
  - AJ Bhattacharyya - Kentucky

## TEPP web site provides one-stop for information

- National Training and Exercise Schedule
- State 24-Hour Points of Contact
- Needs Assessment
- Model Procedures
- Exercise Planning Resources
- TEPP Regional Coordinators
- Online MERRTT Refresher

**[em.doe.gov/otem](http://em.doe.gov/otem) or [teppinfo.com](http://teppinfo.com)**



# Transportation Emergency Preparedness

A Comprehensive Emergency Management System established by the U.S. Department of Energy

Home

MERRTT Training Program ▾

Scheduled Events

TEPP Tools ▾

Contacts ▾

MERRTT Modules

How-to Videos

TEPP Full Length Videos

Training Aid - RAM Flatsheet

TEPP Training Aid - Decon Corridor

TEPP Course Descriptions/TEPP Training Matrix

tribal **Online MERRTT Refresher**

## Our Mission

emergency management system established by [DOE Order \(DOE O\) 151.1, Comprehensive](#)

emergency planning and preparedness activities under a single program with the goal of responding promptly, efficiently, and effectively to possible accidents involving DOE s

implemented using an approach to ensure that initial responders to a radiological transportation accident have the necessary knowledge and skills to respond to a radiological transportation accident. This program is designed to ensure that federal, state, tribal, and local responders have access to the plans, training, and technical assistance needed to respond to a radiological transportation accident involving DOE-owned radioactive materials. To accomplish this mission, a suite of tools have been developed to a

## MERRTT Program

The Modular Emergency Response Radiological Transportation Training (MERRTT) program is designed to take the complex topic of a radiological transportation accident and break it down into manageable pieces.

MENU

▼ MERRTT Refresher

Welcome ✓

Scene Size-up ✓

Patient Rescue ✓

Fire/Shipping Papers 🔒

Decontamination 🔒

Hazmat Response 🔒

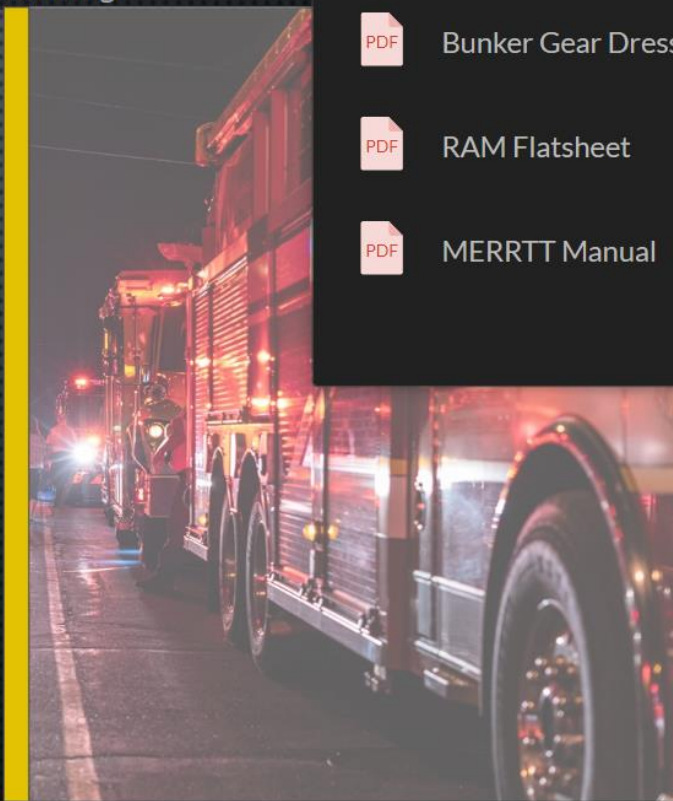
Scene Wrap-up 🔒

☰ MERRTT Refresh

# MERRTT

Modular Emergency Response Training

# MERRTT



RESOURCES

- PDF ERG
- PDF Bunker Gear Dressdown
- PDF RAM Flatsheet
- PDF MERRTT Manual

## Online MERRTT Training

The DOE Transportation Emergency Preparedness Program (TEPP) developed the Online MERRTT Training to provide an interactive refresher on accidents involving radioactive material. This training is roughly 45 minutes long and participants will receive a certificate of completion at the end of the training.

To enroll in this training course, please complete the form below, hit the submit button, and you will receive an email from Rise.com that will allow you to begin taking the online course. Please check your junk mailbox as the Rise.com email can be sent there.

If you have any additional question, contact TEPP Central Operations at [admin@merrtt.com](mailto:admin@merrtt.com).

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\* Name

First

Last



# My Learning

In-Progress

Completed

Assigned to me

My list



MERRTT Refresher



1 Lesson | 30 min

MENU

▼ MERRTT Refresher

Welcome ✓

Scene Size-up ✓

Patient Rescue ✓

Fire/Shipping Papers 🔒

Decontamination 🔒

Hazmat Response 🔒

Scene Wrap-up 🔒

☰ MERRTT Refresh

# MERRTT

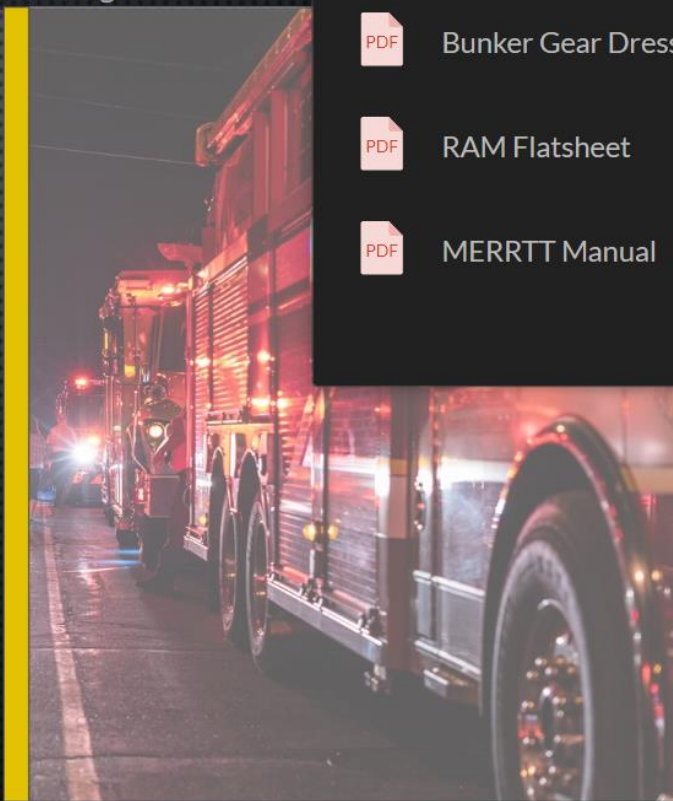
Modular Emergency Response Training

# MERRTT



RESOURCES

- PDF ERG
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# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training

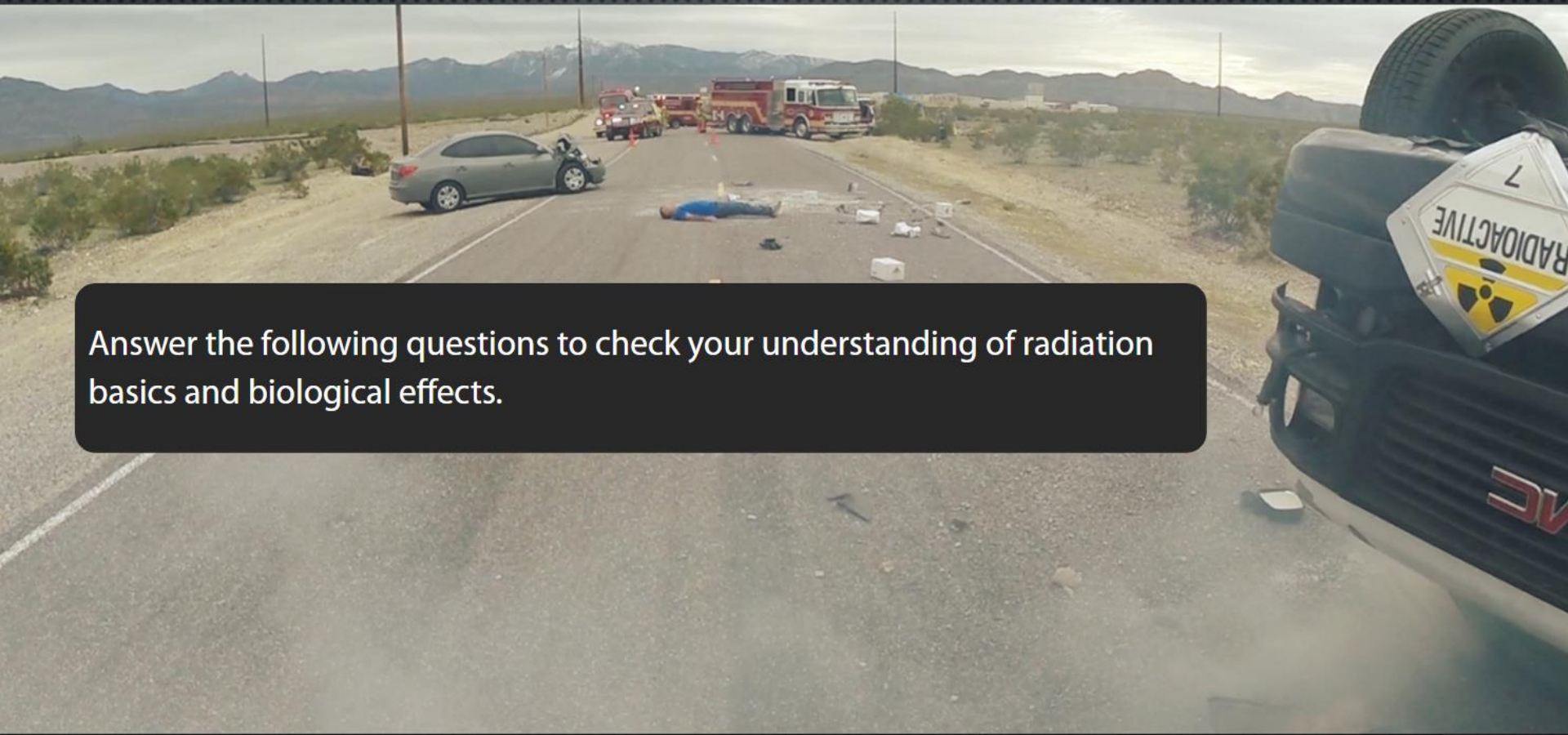


# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training

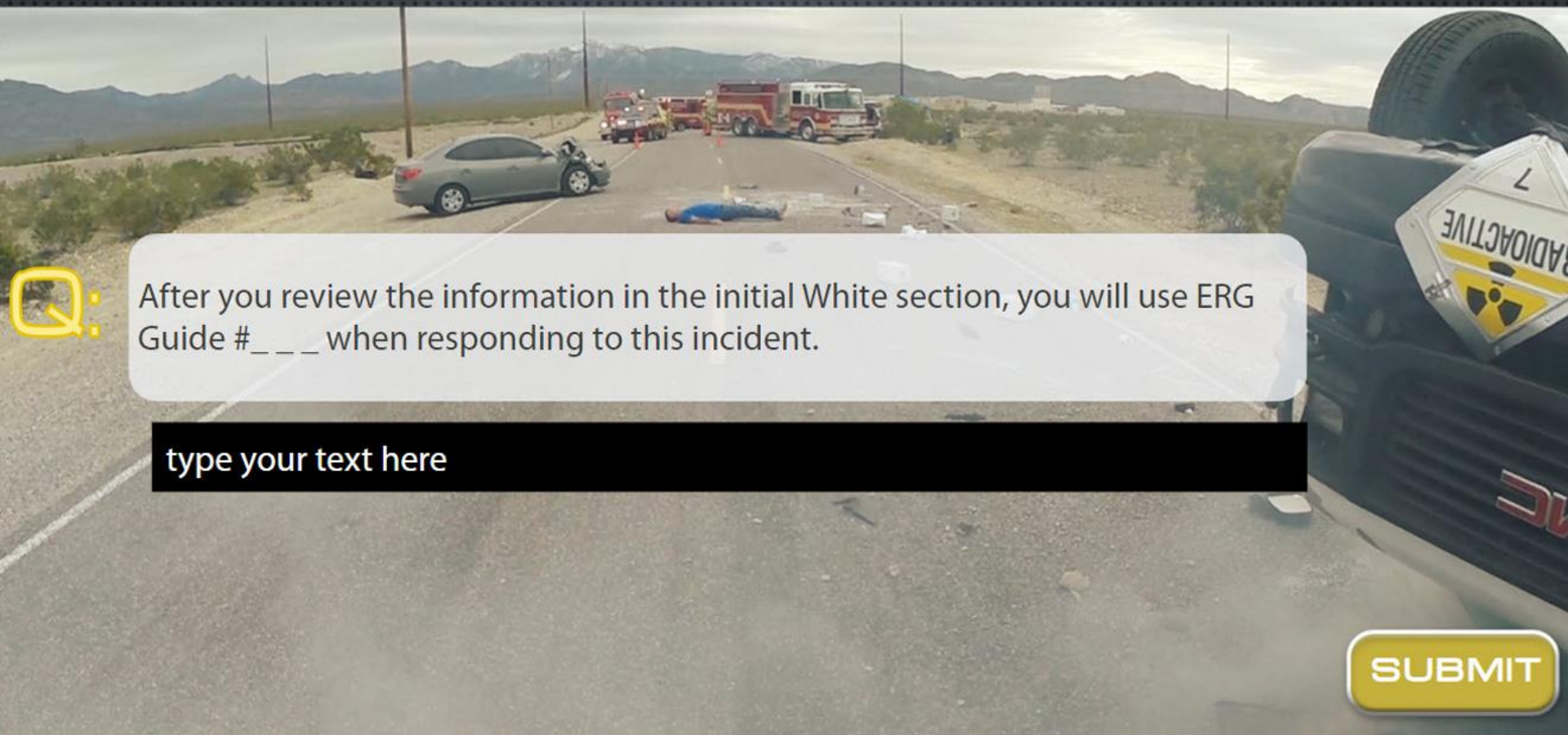


Answer the following questions to check your understanding of radiation basics and biological effects.



# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training



After you review the information in the initial White section, you will use ERG Guide #\_ \_ \_ when responding to this incident.

type your text here

SUBMIT

# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training



Correct

CONTINUE

- A Alpha
- B Neutron, gamma, UV, microwave
- C Gamma, beta, neutron, alpha
- D Beta, positron, neutron, neutrino

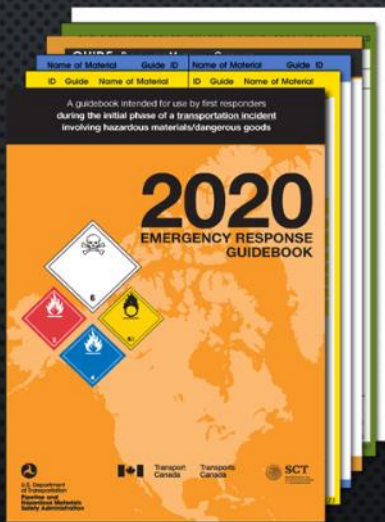
SUBMIT

# MERRTT Refresher

## Modular Emergency Response Radiological Transportation Training



To complete the rest of this training, you will need the Emergency Response Guidebook (ERG), Radioactive Material (RAM) Flatsheet, and Bunker Gear Job Aid. Click on the image below to download each document. When ready, select the next arrow to begin



### Transportation Emergency Preparedness Program Emergency Responder Radioactive Material Quick Reference Sheet

#### Initial Response/Scene Size Up

From a distance, try to identify the following:

- Spills, leaks, or fire
- Any victims needing rescue
- Type of vehicle and packages involved
- Placards, labels, or package markings
- Container/package damage
- Any person knowledgeable of the scene
- Location of shipping papers
- Proper protective clothing needed for entry

For radioactive materials, establish an **initial isolation zone of 75 feet** in all directions. Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels. Attempt to detain uninvolved personnel who may be contaminated until they can be surveyed by local Radiation Authority.

#### Vehicle Placards

**Standard Placard**

Vehicle placarding is required when transporting:

- One or more packages with a Yellow-II label
- Exclusive use shipments of LSA/SCO materials
- HRCQ shipments (see placard below)

**Highway Route Controlled Quantity (HRCQ) Placard**

HRCQ is a high activity shipment transported in a Type B package. The package will always have a Yellow-II label regardless of radiation level. HRCQ shipments by highway will require the standard placard on a white square background with a black border as shown at left.

#### Package Labels

**Radioactive White-1**  
Expect up to 0.5 mrem/hr at surface of package.

No Transport Index associated with this label.

**Radioactive Yellow-II**  
Expect <math>0.5\text{ mrem/hr}</math> up to 50 mrem/hr at surface of package.

Maximum Transport Index is 1 or 1 mrem/hr at 1 meter.

**Radioactive Yellow-III**  
Expect <math>50\text{ mrem/hr}</math> up to 200 mrem/hr at surface of package.

Maximum Transport Index is 10 or 10 mrem/hr at 1 meter.

**fissile Label**  
For packages containing fissile material, this label will appear with one of the three labels shown above. Critically Safety Index on label is used by skipper to limit the number of packages on a conveyance.

**EMPTY Label**  
For packages that previously contained radioactive material (e.g., Type B Packages) and have been emptied of their contents. Package may still contain internal contamination. Expect <math>0.5\text{ mrem/hr}</math> at surface of package.

#### Shipping Paper Information

Look for the following information on shipping papers for radioactive material:

- Emergency response telephone number
- Proper Shipping Name and UN ID
- Name of radioactive isotope(s) (e.g., Co-137)
- Radioactivity level per package in MBq, GBq, etc. (will be listed as "activity")
- Category of label applied (i.e., White-1, Yellow-I, Yellow-II)
- Transport Index (for Yellow-II and Yellow-III labeled cargo only)
- The letters "SCQ" if material is a Reportable Quantity of hazardous material
- Package Type (e.g., B, Type A, Type B)
- Physical and chemical form of material (if not special form)
- "Fissile Excepted" or Criticality Safety Index (for fissile materials only)
- "Exclusive use" if shipment is being made under exclusive use provisions
- Highway Route Controlled Quantity or "HRCQ" (if shipment is HRCQ)

**Common Prefixes**

The activity level shown on shipping papers and on the radioactive label is required to be labeled in becquerel (the becquerel (Bq) is a quantity of radioactivity. The Bq is a very small amount of activity, equal to 1 nuclear disintegration per second. Because a typical industrial or medical amount of activity, perhaps an alpha source, is in the range of 100,000 Bq, it is common to use the prefix "M" for million, "G" for billion, "T" for trillion, and "P" for quadrillion.

Symbol	Prefix Value
M	Mega = 1 thousand
G	Giga = 1 million
T	Tera = 1 trillion
P	Peta = 1 quadrillion

### Transportation Emergency Preparedness Program Bunker Gear Decontamination Corridor Set Up, Dress Up, and Dressdown Job Aid

#### Decontamination Corridor Set Up

Select a location that is **uphill, upwind, and** **downstream** from the incident scene.

Prior to setting up the decontamination corridor, survey the selected location to verify that the area is free of radioactive contamination and that radiation levels are at or near natural background levels.

Position elements: tarp, waste cans, pails, cones/anchors, and tool drop area as indicated in the graphic below:

#### Dressing Up in Bunker Gear

Wear typical firefighting **bunker gear**, which includes, helmet, hood, coat, pants, boots, and gloves.

Wear **respiratory protection**, e.g. self contained breathing apparatus (SCBA) or air purifying respirator (APR).

Put on **communication equipment** and wear **dentistry** as available.

#### Dressing Down from Bunker Gear

Wipe feet at the entrance and step into the decontamination corridor.

Decontamination workers will dressdown the responder by doing the following:

- Remove the responder's **firefighting gloves** and place in waste collection container.
- Decontamination worker changes gloves**
- Put medical exam gloves on responder's hands and have them step forward.
- Remove the **helmet and hood** and place in the waste container. Responder steps forward.
- Remove the responder's **SCBA harness/ backplate**. Responder steps forward.
- DO NOT REMOVE FACEPIECE OR TURN OFF AIR SUPPLY - MAINTAIN RESPIRATORY PROTECTION**
- Remove the **firefighting coat** and place in the waste container. Responder steps forward.
- Put the pants down to the top of the boots. Have the responder step forward while stepping out of their firefighting boots.
- Decontamination worker changes gloves**
- As available, put temporary **footwear** (shoe covers, sandals, etc.) on the responder, then place **boots/pants** in the waste container.
- Have responder remove their **facepiece** and hand it to the decontamination worker. Responder steps forward.
- Remove responder's **final pair** of medical exam gloves and conduct **final contamination survey**.
- Decontamination workers will conduct a self-decontamination using the steps above.

# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training





# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training



- Scene Size-up
- Patient Rescue
- Fire/Shipping Papers
- Decontamination
- Hazmat Response



Congratulations! You have successfully set up the Decontamination Corridor and performed gross decontamination of firefighters exiting the hot zone.

# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training



There are several steps taken to perform gross decon on a nonambulatory patient. Select each step and drag and drop it in the correct sequence.

Cut clothing away from body

Treat non-life threatening injuries

Enter hot zone and place backboard adjacent to patient

Responders remove outer pair of gloves

Prepare backboard

Load patient on backboard and wrap inner protective barrier around patient

Don appropriate protective clothing

Carry patient to boundary of hot zone and pass patient across control line

Step 1

Step 2

Step 3

Step 4

Step 5

Step 6

Step 7

Step 8



< PREV

NEXT >

# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training



*Drag and drop items in the trash can in the order they are removed or hand items to decontamination worker.*



Perform decontamination dressdown.  
Tip: Use your downloaded [Bunker Gear Job Aid](#) as a reference.



< PREV

NEXT >

# MERRTT Refresher

Modular Emergency Response Radiological Transportation Training



You have successfully completed the MERRTT Refresher!



Certificate of Course Completion

# MERRTT Refresher

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Celeste Cusack

June 2, 2022

**TRG**

# Questions

