

PER-241

WMD Radiological/Nuclear Course for Hazardous Material Technicians

This course prepares the hazardous materials (HazMat) Technician to respond to an incident involving a radiological or nuclear weapon of mass destruction (WMD), such as a radiological dispersal device (RDD, “dirty bomb”) or an improvised nuclear device (IND). The course begins by giving the participant awareness of the fundamentals of radiation, health effects, recognition, and terrorist use of radiation and radiological material. Participants are given hands-on experience with radiation fields while learning the basic operation of radiation detectors and dosimeters. Participants are taught how to use these instruments to conduct surveys of personnel, vehicles, facilities, and outdoor areas. Hands-on activities blend cognitive knowledge of radiation and instruments with survey techniques used in detecting the presence of radiation, locating radioactive material, and measuring levels of radiation and radiological contamination.

Once individual and small team skills are mastered, participants are taught operational considerations when responding to a radiological WMD incident. These considerations include operating in high-radiation areas, limiting responder radiation doses, and rescuing contaminated victims. Participants form operational teams that deal with cadre-evaluated realistic drills involving likely terrorist use of radiological material.

Course Objectives

- Explain the process for keeping exposure to radiation and radioactive material As Low As Reasonably Achievable (ALARA).
- Identify current radiological/nuclear threats, including who may obtain and locate radiological/nuclear material and the impact and consequences of terrorists’ use of the material.
- Explain the adverse health effects of ionizing radiation and the operational considerations for working near elevated levels of ionizing radiation.
- Explain the concepts of time, distance, and shielding to reduce exposure while operating in a radiation environment.
- Describe the design and construction features of containers used for the transportation of radiological/nuclear material.
- Explain how to operate both analog and digital radiological instruments to determine the presence and quantity of radiation.
- Explain how to conduct radiological surveys of areas and equipment.
- Explain the basic tactical procedures for responding to a WMD radiological/nuclear incident.
- Explain how to conduct and use personnel contamination survey techniques to determine the presence of radiological contamination.
- Describe the radiological decontamination process for responders and the public.

Min/Max Enrollment: **95-110**

Hours: **32 hours (4 days)**

CEUs: **N/A**

Format: **Resident**

DHS Course #: **PER-241**

Prerequisites:

AWR-140 or AWR-140-W

Introduction to Radiological/Nuclear WMD Operations

Recommended

Prerequisites:

It is recommended but not required that Participants be Certified Hazardous Material Technicians.



CTOS Instructor providing guidance during a decontamination exercise at the NNS-CTOS/NNSA