Office of Counterterrorism and Counterproliferation

Nuclear Incident Policy and Cooperation

Course content:

- Basic radiation principles
- Ship effect and neutron radiation
- Commercial and industrial radiation sources
- Radiation detector operation
- Detection instrumentation
- Concept of operations
- Mission planning and maritime operations
- Source localization and pinpointing
- Ship characterization
- Cargo container characterization
- Radionuclide identification
- Alarm adjudication with DOE TRIAGE system

For nuclear or radiological emergency assistance, please contact the U.S. Department of Energy, Emergency Operations Center 24/7 at +1 202 586 8100

National Nuclear Security Administration

U.S. Department of Energy, National Nuclear Security Administration
Office of Counterterrorism and Counterproliferation
Office of Nuclear Incident Policy and Cooperation

International Radiological Search in a Maritime Environment (I-Maritime)

Course Overview

Radiological Search in a Maritime Environment is an advanced training course designed to provide international partners with specialized training for radiological search and identification operations in the maritime and shipboard environment. The course focuses on responding to radiation alarms or operational intelligence of a radiation source in a cargo container on a ship in port or at sea. The training can be conducted as a train-the-trainer course to assist organizations in the development of an effective and efficient nuclear and radiological first responder program.

The course provides instruction through briefings, hands-on equipment demonstrations and field exercises employing a wide range of radiation detection instrumentation and radiation sources. Participants are encouraged to bring and use their radiation detection instrumentation as part of the course.

The course covers response methods to a radiation alarm or operational intelligence for a radiation source located on a ship or in a cargo container. Training includes techniques and procedures in radiation source detection for gamma-rays and neutrons, localization and pinpointing radiation sources, radiation source characterization, radiation mapping, radionuclide identification, and alarm adjudication. At the conclusion of the course, students will have practical knowledge and experience to investigate and adjudicate radiation alarms in maritime environments.

Course Objectives

- To improve first responder preparedness against nuclear and radiological threats or emergencies in a maritime and shipboard environments
- To improve emergency response to nuclear or radiological incidents or accidents in a maritime and shipboard environments
- DOE instructors/facilitators are experienced health physicists, scientists, and radiation emergency response personnel from the U.S. Department of Energy national laboratories. The Radiological Search in a Maritime course typically lasts 4.5 days. Participating organizations are encouraged to bring their radiation detection instrumentation for incorporation into the class demonstrations and exercises. The course content can be customized to meet specific needs.

For more information please contact

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Quick Facts:

- Target audience: first responders, radiation specialists, and emergency managers responsible for maritime radiological emergency response
- Class size: 20–25 participants
- Instructors/facilitators: 5-7
- Length: 4.5 days
- Location: best taught with access a bay or harbor with vessels, cargo container, or a ship in port with several cargo containers for training and field exercises
- Focus: classroom lectures, hands-on equipment demonstrations, and field exercises

Other Training Courses:

- Radiological Emergency Response
- Nuclear Security at Major Public Events
- Radiation Alarm Adjudication for Ports
- Emergency Operations Center Assistance
- Radiological Plume Modeling
- Geographic Information Systems
- Medical Management of Radiation Injuries
- Aerial Measuring System
- Consequence Management
- Exercise Development and Support

International Reachback Capabilities:

- TRIAGE (spectral analysis, advice, and consultation)
- IXP (radiological plume modeling)
- REAC/TS (radiological medical assistance)

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