



Office of Counterterrorism  
and Counterproliferation

## Nuclear Incident Policy and Cooperation

### Course content:

- Basic radiation principles
- Radiation detectors for alpha, beta, gamma, and neutron radiation and their operating principles
- Radiation protection concepts, including the selection and proper use of personal protective equipment
- Common commercial, medical, and industrial radiation sources
- Radiation search techniques
- Radiation detection strategies and commonly used detection equipment
- Radiation identification methods, including the DOE TRIAGE system
- Organizing a response: mission planning, command and control
- Basics of radiological/nuclear terrorism threats
- Personal Protective Equipment and source recovery
- Alarm interdiction and adjudication procedures

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



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

# International Radiological / Nuclear Training for Emergency Response (I-RAD)



## **COURSE OVERVIEW**

The International Radiological/Nuclear Training for Emergency Response (I-RAD) is a radiological training course designed to provide international partners with specialized training for radiological emergency preparedness and response operations. The training can be conducted as a basic, advanced, or a train-the-trainer course to assist organizations in the development of an effective and efficient nuclear and radiological first responder program.

The I-RAD course is designed to teach first responders and technical specialists the fundamental elements of radiological emergency response to better protect personnel and the environment. The course provides instruction through briefings, equipment demonstrations, activities and field exercises employing a wide variety

of radiation detection instrumentation, radiation sources, and the use of personal protective equipment.

The course covers response methods to a variety of nuclear and radiological accidents or incidents, including mission planning, search, response to a radiation detector alarms, and addresses events ranging from a small, localized release to a larger accident or incident such as a radiological dispersal device. At the conclusion of the course, participants will understand the principles needed to organize and conduct a radiological emergency response operation, have practical experience applying those principles in realistic scenarios, understand how to protect themselves and the public from the risks of radiation exposure or contamination.





## ***COURSE OBJECTIVES***

- To improve first responder preparedness against radiological/nuclear threats and emergencies along with emergency response operations to radiological/nuclear accidents and incidents
- To provide the participants a hands-on engaging training in a realistic scenario

## ***COURSE DESCRIPTION***

- DOE facilitators are subject matter experts experienced in health physics, radiation protection, and emergency response operations from the U.S. Department of Energy national laboratories.
- I-RAD can be taught in conjunction with host country facilitators or entirely by DOE personnel.
- The course typically lasts 4.5 days and the course can be conducted in English or through translation as required.
- The field exercises and equipment demonstrations can use any combination of host country and DOE equipment. 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 and public safety personnel responsible for radiation emergency response operations
- Class size: 20–25 participants
- Facilitators: 4–6
- Length: 4.5 days
- Focus: classroom lectures, hands-on radiation equipment demonstrations, activities and field exercises

### **Other DOE Training:**

- Aerial Measuring System
- Nuclear Security at Major Public Events
- Radiation Alarm Adjudication for Ports
- Emergency Operations Center Assistance
- Radiological Plume Modeling
- Geographic Information Systems
- Radiological Search in a Maritime Environment
- Medical Management of Radiation Injuries
- 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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