

Field: EMERGENCY PREPAREDNESS AND RESPONSE

Topic: EMERGENCY PREPAREDNESS AND RESPONSE (EPR) OF THE GOVERNMENTAL INSTITUTIONS INCLUDING THE REGULATOR

Course type	TUTORING	Objective
Host institute	Centre for Energy Research Budapest, Hungary	The course focuses on the simulation-based modelling and on-the-job training in nuclear crisis management. In a synthetic training and modelling environment, tutees will learn about the outcomes of different nuclear crisis scenarios, as well as the modelling of how the environment and the public are affected by contamination and how countermeasures work. Knowledge will be acquainted about the operation of the country-wide early warning and monitoring systems and mobile radiation detection system as well as their usage in EPR will be demonstrated.
Co-host institute	Gamma Technical Corporation Budapest, Hungary	
Date	15 April – 10 May 2024	
Duration	Four weeks	
Working language	English	

Outline of course content

- Introduction to a constructive simulation system:
 - the constructive simulation concept;
 - understanding of core, CBRN (chemical, biological, radiological and nuclear) related functionality;
 - training to use the simulation system, scenario preparation, execution and AAR (after action review).
- Introduction to a virtual early warning and monitoring network:
 - getting to know the purpose of the software;
 - understanding the functions of the early warning environment;
 - training to use the simulated detector network software.
- Introduction to a complex training system designed for radiation reconnaissance vehicles:
 - familiarization with the components of the training environment;
 - getting to know to manipulate the system components;
 - testing various crisis situation;
 - testing and learning how to manage crisis situations in a simulated environment.
- On-the-job trainings on
 - managing different scenarios regarding virtual nuclear events;
 - exercises with radiation measuring instruments, including
 - familiarization with stack and emission control systems with aerosol and iodine monitoring detectors,
 - test measurements and performance analysis of portal radiation monitors,
 - isotope identification and activity determination exercise with scintillation-type detectors,
 - analysis of different environmental and food samples in the case of nuclear emergencies;
 - using detector simulators for different test scenarios.
- Information on protective and decontamination equipment essential for emergency preparedness.

Technical schedule and delivery methods

The course consists of one module taking 4 working weeks (i.e. 4 × 5 workdays).

1–2 working weeks deal with simulation applications, the related training is structured as follows:

- **Classroom lectures** take 2 days with 2 units per a day (tentatively morning sessions with 2 lectures of 90 minutes each, with time allocated for discussions and appropriate breaks).
- **On-the-job training** on
 - simulator environment creation;
 - running different scenarios;
 - analyzing the effectiveness of countermeasures.

3–4 working weeks focus on radiation measurements, the related training is structured as follows:

- **Classroom lectures** take 2 days with 2 units per a day (tentatively morning sessions with 2 lectures of 90 minutes each, with time allocated for discussions and appropriate breaks).
- **On-the-job training** on
 - gamma spectrometry, analysis of solid, liquid and aerosol samples,
 - alpha and beta measurements,
 - radiation monitoring system designs for a nuclear laboratory,
 - area radiation reconnaissance with on-board systems,
 - surface contamination measurements,
 - radiation portal monitor studies.

Target audience

This course is intended for experts and professionals of Nuclear Regulatory Authorities (NRAs) and Technical Support Organisations (TSOs) with responsibilities in the field of emergency preparedness and response.

Target number of participants: 2

Prerequisites and requirements for participants

Participants should have basic nuclear safety knowledge and an adequate level of knowledge in English (at least an 'Independent user' level defined by the CEFR). A related university degree (preferably with nuclear specialization) and at least 2 years of professional experience in functions relevant to the content of the course is also a prerequisite.

Relevancy of the course topic in the work and institutionally justified interest in participating will be considered as selection criteria as well as the need and opportunity for filling competence gaps. Efforts are made to ensure gender equality.

Terms of participation

The project is implemented under the European Union (EU) external assistance programme, called the European Instrument for International Nuclear Safety Cooperation (INSC), and aims to support the National Nuclear Regulatory Authorities (NRAs) and their Technical Support Organisations (TSOs) in non-EU countries in strengthening their capabilities with regard to their regulatory tasks and responsibilities in the field of nuclear safety and radiation protection.

Employees of the NRAs or their TSOs in the Beneficiary Countries are eligible for financially supported participation in the T&T courses. Beneficiary Countries of the project are published on the website <https://training.ek-cer.hu/>.

Costs

Travel and accommodation costs and subsistence allowances (including the international and national travel tickets as well as shuttle services, insurance and visa costs, per diems) for participants will be covered from the project budget.

Application

Application via the website <https://training.ek-cer.hu/>, according to the process and deadlines indicated there.

Suitable candidates will be interviewed online as part of the selection process.

Examination

Technical and linguistic tests will be written by the applicants as part of the application and selection process to assess their underlying knowledge and preparedness. Knowledge and development of selected participants will be assessed through technical tests throughout the course.

Work reports will be prepared by the participants to allow for progress monitoring and determining their final development through acquisition of knowledge, practical experience and expertise, as well as task completions.

Participants attending the full course will be issued with attendance certificates. Successful participants will receive certificates confirming their knowledge achieved and skills acquired.
