

Field: RADIATION PROTECTION AND WASTE MANAGEMENT

Topic: RADIATION PROTECTION IN INDUSTRIAL APPLICATIONS

Course type: TRAINING

Date: 22-26 May 2023

Duration: One week

Location: Amman, Jordan

Working language of the course: English

Objective and learning outcomes

Participants will become familiar with industrial applications of radioactive materials, with particular regard to regulatory issues. The training course will provide information on inspecting and assessing the radiation protection of industry actors with special emphasis on field applications of radiation sources in the framework of industrial activities.

Outline of course content

- Introduction of the fundamentals of the radiation and the interaction between the radiation and the materials.
- Introduction to radioactive sources and their application: identifying and categorization of radioactive sources, lifetime management, common applications of radioactive sources.
- General requirements for protection and safety: principles of radiation protection, responsibilities of parties (regulatory framework).
- Assessment of exposure – general review: calculate, measure and interpret the doses to individuals arising from external exposure.
- Design a monitoring program for individual dose.
- Planned exposure situation: optimisation of protection and safety, dose and risk constrain, responsibilities of the parties, assessment of the occupational exposure and health surveillance of workers, features of facility design, personal dosimetry and radiation protection of personnel, classification of the areas, controlled and supervised area,
- Emergency Exposure situation and emergency preparedness and response: emergency management system, assessment of hazards, protection strategy for emergency exposure, protective actions, medical response, instruction and communication.
- Radiation protection related issues of safe transport of radioactive materials and radioactive waste management.
- Quality assurance, monitoring and reporting.
- Tabletop exercise for development of Radiation Protection Plan of an industrial facility (Source Cat 1. and Cat 4.)
- Tabletop exercise for development the inspection plan of some typical industrial application, main goals of inspection, description and applicability of procedures.
- Tabletop exercise for evaluating the emergency preparedness report.
- Technical visit to the Gamma Irradiation Facility at Jordan Atomic Energy Commission (JAEC).

Technical schedule and delivery methods

The course consists of one module taking a working week (i.e. 5 workdays).

- **Classroom lectures** take 4 days with 4 units per a day (tentatively morning sessions with 2 lectures of 90 minutes each, afternoon sessions with 2 lectures of 90 minutes each, with time allocated for discussions and appropriate breaks).
- **Tabletop exercise** will be included for which participants will form groups (4-5 persons each), and a 30-minute group discussion will be followed by a 45-minute exercise in two consecutive units.
- **Technical visit** to Gamma Irradiation Facility at Jordan Atomic Energy Commission (JAEC).

Target audience

This course is intended to experts and professionals of Nuclear Regulatory Authorities (NRAs) and Technical Support Organizations (TSOs), preferably with responsibilities and experience related to emergency preparedness.

Target number of participants: 15 – 25

Prerequisites and requirements for participants

Participants should have a university degree obtained in engineering or physics faculties with nuclear specialization, at least 1-2 years of related experience, and an adequate level of knowledge in English.

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 costs and subsistence allowances (including the international and national travel tickets, per diems, shuttle services, insurance and visa costs) for participants will be covered by the project.

Application

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

Examination

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

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