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Version 1

Field: NUCLEAR SAFETY

Topic: FUNDAMENTALS OF SAFETY ASSESSMENT (FSA)

Course type:	TRAINING
Date:	10-14 July 2023
Duration:	One week
Location:	Lucca, Italy
Working language of the course:	English

Objective and learning outcomes

Participants will become familiar with the background knowledge on the safety assessment and with IAEA Safety Standards as well as they will obtain general knowledge in nuclear technology aspects important to safety, regulatory issue and processes, safety standards and requirements necessary to carry-out either the safety assessment or the safety assessment reviews.

Outline of course content

- The prime objective of the course is to develop practical skills required for the preparation and review of the safety related documentation.
- Role of nuclear regulation and scope of safety assessment: key safety principles and diverse elements of the safety case will be discussed, as well as the new issues and possibilities arising in the 21st century.
- The course primarily focuses on preparation and review of design basis deterministic safety analyses and includes practical exercises on review of selected parts of the Safety Assessment Report (SAR) of pressurized water reactors (PWR and VVER) and boiling water reactors (BWR). Concept of the safety assessment process is discussed including the relevant safety issues, such as defense in depth, graded approach, basic safety functions.
- Role and function of major international organizations will be discussed.
- Lectures will summarize the highlights of some of the national experiences and the international guidance from the leading organizations.
- Simplified plant simulator calculations are used during the exercises to enhance the development of review and evaluation skills. The safety assessment requirements practiced during the course are based on IAEA Safety Standards.

Technical schedule and delivery methods

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

- **Classroom lectures:** the course is organized in 14 theoretical lectures.
- **Tabletop exercise:** a time of work in groups (4-5 persons each) is allotted to test the knowledge of the trainees and evaluate their achievements.
- **Simulator calculations:** Simplified plant simulator calculations are used to enhance the development of review and evaluation skills.
- **Technical visit:** On the third day afternoon, a technical visit is planned to visit a Laboratory close to Lucca.

Target audience

This course is intended to experts and professionals of Nuclear Regulatory Authorities (NRAs) and Technical Support Organisations (TSOs), and plant personnel involved in the process of the preparation and review of the safety documentations.

Target number of participants: 10 – 20

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.