info@training.ek-cer.hu
https://training.ek-cer.hu

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Version 1

Field: NUCLEAR SAFETY

Topic: FUNDAMENTALS OF SAFETY ASSESSMENT (FSA)

Course type:	TRAINING
Format:	Massive Open Online Course (MOOC)
Duration:	4 × half days *Working through the course at own pace*
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 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 in this field 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 will be 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 will be organized as a MOOC with theoretical lectures (pre-recorded video presentations) continuously accessible, regular consultation sessions and opportunity to ask questions.

The course will take about 4 × half days, but participants can work through the course materials at their own pace.

Target audience

This course is intended for young professionals aiming at understanding the main concepts needed to deal with more advanced topics of nuclear safety. Employees of Nuclear Regulatory Authorities (NRAs) and Technical Support Organizations (TSOs), and plant personnel involved in the process of the preparation and review of the safety documentations preferably with responsibilities related to nuclear safety or wishing to interact consciously and effectively with experts in this area, with little initial technical knowledge and skills but with potential for future direct involvement, are the ideal target audience.
The fundamentals acquired here will be applicable not only in everyday work but the course, as an introductory methodological approach, will create a shared and common background and ensure that adequate knowledge is available to comprehend the regular, more advance courses on nuclear safety.

Prerequisites and requirements for participants

As this is a foundation course, no specific technical knowledge or preparation is required but participants should have an adequate level of knowledge in English.

Participants need to have possibility to attend pre-recorded video lessons via the Internet.

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

Participation and access to the course materials is free, but registration is required.

Application

Application via the website https://training.ek-cer.hu/, according to the process there, enrolment in the course following appropriate registration.

Examination

Acquired knowledge of the participants will be assessed through a technical test at the end of the course, which full course completion and successful test can be a prerequisite for attending the regular, more advance nuclear safety courses. Participants attending the full course will be issued with attendance certificates.