

## Field: NUCLEAR SAFETY

### Topic: FUNDAMENTALS OF SAFETY ASSESSMENT (FSA)

<b>Course type:</b>	TRAINING	<b>Objective and learning outcomes</b>  This course provide background technical knowledge on the safety assessments and the nuclear technology aspects important to safety, as well as information about the regulatory policies and approaches and safety standards and requirements so that the trainees can improve their competences and abilities to carry-out either safety assessments or the safety assessment reviews.
<b>Date:</b>	20-24 November 2023	
<b>Duration:</b>	One week	
<b>Location:</b>	Rio de Janeiro, Brazil	
<b>Working language of the course:</b>	English	

#### 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.
- The role of nuclear regulation, the scope of safety assessment and the key safety principles and diverse elements of the safety case will be discussed, as well as the new issues and possibilities arising in the 21<sup>st</sup> 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 will be 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.
- The 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 consists of one module taking a working week (i.e. 5 workdays).

- The course will include 15 **theoretical, classroom lectures**.
- **Tabletop group exercises** and **simplified plant simulator calculations** will be used to enhance the development of review and evaluation skills.
- **Technical visit** will be organized to get acquainted with local practices at first hand.

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### **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.

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**Target number of participants:** 10 – 20

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### **Prerequisites and requirements for participants**

Participants should have an adequate level of knowledge in English (at least an 'Independent user' level defined by the [CEFR](#)). A university degree obtained in engineering or physics faculties with nuclear specialization OR at least 1-2 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 well as the need and opportunity for filling competence gaps. Regional connections to the course location are prioritized and efforts are made to ensure gender equality, so these aspects may also be taken into account as selection criteria.

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### **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/>.

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### **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.

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### **Application**

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

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### **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.

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