

Reactor Neutronics Computer Codes

Session: 16-27 September 2018

Registration deadline: 5 August 2018

Duration: 2 weeks

Certificates will be issued to participants who attend the full course.

Location: Alger, Algeria

Price: Customized training, consult us

Code: 2018_CO1050

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Online catalog

www.enstti.eu/training-catalog

Examination:

Knowledge testing (Multiple choice exam) will be performed on the full course content and successful candidates will be issued with a Knowledge Certificate.

Teaching methods:

Lectures, discussions and practical sessions are included.

Working group exercises are supervised by experienced TSO experts belonging to the LEI team.

A USB stick containing the course material will be provided.

OBJECTIVES

To provide a thorough background on criticality phenomena and its estimation methodology for any object containing a fissile material (nuclear fuel assembly, waste and etc.) following with the methodology on sensitivity and uncertain assessment.

PUBLIC

Professional involved in nuclear safety and employed by nuclear regulators or their technical safety organizations.

LEARNING OUTCOMES

- Obtain important up-to-date information for their activities in the fields of nuclear criticality safety,
- Get practical experience on criticality and uncertainty and sensitivity assessment,
- Be familiarized with the state-of-the-art system computer codes SCALE and SUSAN, and
- Receive some skills regarding the model development and performance of the criticality analysis.

PRE-REQUISITE

Basic knowledge in the area of nuclear science and technologies.

PROGRAM

During the first week will be covered the criticality methodology, the requirements for safety assessment regarding the criticality issues based on international requirements (IAEA SSG-27). Will be presented the KENO-Va, KENO-V1 and TRITON modules of SCALE Code which are used for criticality calculation.

On the second week will be covered the uncertainty and sensitivity methodology in term of criticality assessment. For that purpose, will be used two approaches the TSUNAMI module of SCALE Code and the SUSAN Code together with KENO module. TSUNAMI-3d is a SCALE control module that enables calculation of sensitivity coefficients, and the calculation of the uncertainty in criticality due to cross-section covariance data. The SUSAN Code allows to estimate the uncertainty range of output parameter at predefined confidence level and identify which input parameters of the model mostly influence the calculated result uncertainty bases on identified model geometrical uncertainties and code parametrical options.