![ASNR ACADEMY logo] **ASNR** ACADEMY — Autorité de sûreté nucléaire et de radioprotection

EXAMPLE OF TRAINING PROVIDED

CRISTAL
Tools for Criticality Safety Calculation

Code: CO1055

Session:
On demand

Registration deadline:
3 months prior to course

Duration: 5 days
Certificate of attendance will be issued to participants who attend the full course.

Price: Contact us!

TO BE DESIGNED ACCORDING TO YOUR EXPECTATIONS

Prerequisites

Knowledge in neutronics and main principles on nuclear criticality safety (criticality control parameters, fissile materials, etc).

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.

Practical exercises and software practice on real cases will take place during the week.

A USB stick containing the course material will be provided.

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Objectives

The main objective of the training is to use the CRISTAL V2 package for criticality calculations with LATEC graphical front-end and simulation back-end with CRISTAL codes (APOLLO2, MORET 6 et TRIPOLI-4®).

Underlying numerical recipes of simulation and their limitations in the criticality-safety assessment framework are described.

This training is designed to meet the needs of nuclear criticality safety practitioners.

Target Audience

A person and organization responsible for design, fabrication, maintenance or review of nuclear criticality safety for a process or transportation.

These persons would be Nuclear criticality safety specialists with the responsibilities of assessment and calculation.

CRISTAL package is used to performed calculations for:

- fissile materials transportations.
- nuclear fuel cycle facilities (fuel processing, reprocessing...).
- laboratories and storage units.
- unloaded nuclear reactor core.
- decommissioning or decommissioned facilities.

Learning Outcomes

After the course, participants will :

- Have a general knowledge of CRISTAL package (structure, simulations tools, libraries, etc).
- Be able to perform criticality calculations with CRISTAL V2 package, relying on state-of- the-art neutronic simulation tools (APOLLO2, TRIPOLI-4®, MORET 6) and international nuclear database.
- Understand the application range of different simulation tools and methods.

Program

Basics

CRISTAL V2 package – Architecture and main components – Calculation routes

Deterministic method

APOLLO2 simulation code, recommended calculation routes, standard calculations, practical cases.

Monte Carlo method

MORET 6 and TRIPOLI-4® simulation codes, features, practical cases.

Modelling environment

LATEC workbench, dilution laws, basics, perform and validate criticality-safety calculations

Contact :
training-tutoring@asnr.fr

Online catalogue
https://academy.asnr.fr/en/