



## Application of International Regulations in Qualification and Approval of Packages for the Transport of Radioactive Materials

**Session:** Consult on-line training schedule

**Registration deadline:** 3 months prior to course

**Duration:** 5 days

Certificate of attendance will be issued to participants who attend the full course.

**Price:** €2,500 per participant

Code: CO1018

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### Contact

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### Online catalogue

[www.enstti.eu/training-catalogue](http://www.enstti.eu/training-catalogue)

### Examination

Knowledge testing 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 and technical visits are supervised by experienced TSO experts.

A USB stick containing the course material will be provided.



### OBJECTIVES

The design and development of packages for the transport of radioactive materials must comply with the IAEA's strict safety requirements. With that in mind, the course presents the philosophy behind the regulations, the general context, and the major technical issues relevant to safety demonstrations.

### TARGET AUDIENCE

Professionals involved in the safety of transport of radioactive materials, such as:

- package designers,
- applicants for package approvals,
- members of Nuclear Regulatory Authorities (NRAs),
- members of Technical Safety Organisations (TSOs).

### LEARNING OUTCOMES

- A better understanding of the principles of the international regulations for the transport of radioactive materials.
- An ability to perform complete assessments of safety analysis reports (NRAs, TSOs).
- A better understanding of how to take into account every aspect of transport safety when designing packages (from concept to maintenance operations) and to demonstrate that they comply with regulations (designers, applicants, etc.).

### PREREQUISITES

Participants should have basic knowledge in the fields of nuclear safety, mechanical studies, material behavior and heat transfer.

### PROGRAM

The training covers the principles of international regulations on the transport of radioactive materials; how to perform complete assessments of safety analysis reports; how to take every aspect of transport safety (from concept to maintenance operations) into account in the package design; and demonstrating compliance with the regulations.

#### Lectures

Covering all aspects of the safe transport of radioactive materials, the lectures focus on a correct understanding and interpretation of international regulations (such as IAEA GSR and SSR-6). European practices are also presented as examples. Subjects include:

- international regulations and practice.
- package safety demonstrations (covering mechanical behavior, thermal behavior, containment, radiation protection, criticality safety, radiolysis/thermals).
- safe, correct use of packages.
- assuring compliance.
- emergency management.

#### Working groups

A ~100-page, 11-part safety analysis report (SAR) on a concept package is used, covering every aspect of safety demonstrations (IAEA SSR-6, chapters I, III, IV, VI and VII). Each trainee receives a copy of the SAR. The objective is to perform a quick assessment (or preliminary analysis) of each of the following:

- elements important for safety and material classification (2 hrs).
- mechanical behavior (4½ hrs).
- thermal behavior (2½ hrs).
- containment (2½ hrs).
- radiation protection (1½ hrs).
- criticality safety (3 hrs).

*Participants are guided by a much simplified, yet complete version of the "IRSN Feedback Experience List for Transport Safety Assessment", a document from the French national guide for applicants (Guide ASN n°7) that addresses every issue encountered frequently in safety demonstrations. Divided into groups of 4 to 6 people, the trainees use their level of knowledge to perform the assessment either by themselves or guided by the trainers.*