

NUCLEAR TECHNOLOGY EDUCATION CONSORTIUM

NUCLEAR SAFETY CASE DEVELOPMENT

N07

Summary

The NTEC N07 Nuclear Safety Case Development module examines the fundamental building blocks and the supporting processes and methodologies used in the formulation of a 'modern standards nuclear safety case'.

Within the statutory framework that regulates the nuclear industry, there is an overriding requirement to demonstrate through an adequate and appropriate safety case that all hazards associated with operations on a Licensed Site are understood, effectively managed and controlled. This Module introduces the knowledge and skills necessary to effectively judge and influence the adequacy of licensees' nuclear safety cases.

On completion, students should:

- Understand the requirement for a modern standards nuclear safety case;
- Have an appreciation of the main building blocks of a modern standards nuclear safety case;
- Have an awareness of the main supporting processes and methodologies used in developing a modern standards nuclear safety case.

Syllabus:

This module consists of pre-course reading, a one-week taught component and an assessed post-course assignment.

Pre-course reading:

- HSE Safety Assessment Principles for Nuclear Facilities
<http://www.hse.gov.uk/nuclear/saps/index.htm>
- IAEA Nuclear Safety Tutorials
<http://www-ns.iaea.org/tutorials/bptc/intro/index.htm>
- Guidance on application of ALARP
<http://www.hse.gov.uk/risk/theory/alarpcba.htm>

Taught:

- Legislative Requirements for a Nuclear Safety Case
- Purpose and Scope of a Nuclear Safety Case
- Introduction to Deterministic Analysis and Fault Analysis
- Safety Assessment Principles, Design Standards and Numerical Targets
- The Safety Case Lifecycle
- Introduction to the Engineering Substantiation
- Design Basis Analysis
- Probabilistic Safety Analysis Level 1
- Consequence Assessment
- ALARP
- The Safety Case Implementation, Operation, Maintenance and Review.

Post-course assignment

- Preparation of a Preliminary Safety Report for a model installation using scenario data provided.