

NUCLEAR TECHNOLOGY EDUCATION CONSORTIUM

N29 DECOMMISSIONING TECHNOLOGY & ROBOTICS

Summary

The aim of this module is to provide an ability to design and plan an effective decommissioning programme with an emphasis on immediate demolition using automation and remote handling. Topics covered include strategies for effective decommissioning characterisation, costing and analysis. Techniques for material cutting and waste minimisation, manual techniques, human exposure and protection are included with elements of robotic systems and their integration and control. The module includes a look at the international picture and also an industrial site visit to a live decommissioning project.

The coursework consists of the development of a decommissioning plan for a specific project

On completion, students should:

- Have knowledge of the range of cutting technologies available for demolition
- Understand the concepts of hazardous waste management, minimisation, transport and disposal.
- Be aware of the range of robotic and remote handling techniques and have developed skills in their selection, integration, simulation, and interfacing.
- Develop skills in user interface design for automated systems
- Know about equipment cleaning and surface decontamination
- Be aware of safety and legal issues in decommissioning
- Be exposed to techniques of decommissioning project costing and analysis.
- Be aware of the current state-of-the-art in the USA with regard to decommissioning technology

Syllabus

- Strategies for effective decommissioning, together with planning and economics.
- Techniques for material cutting and waste minimization.
- Manual techniques, human exposure and protection.
- Elements of robotic systems together with their integration and control.
- User interface design and implementation using LabView.
- Facility characterisation and final survey
- Decommissioning in the USA