

# **NUCLEAR TECHNOLOGY EDUCATION CONSORTIUM**

## **N21 Geological Disposal of Radioactive Wastes**

Radioactive waste disposal has been a significant issue both historically and at present within the UK and this has resulted in major impacts to the nuclear industries both decommissioning and new-build. The CORWM consultation has decided that the UK's radioactive wastes will be disposed of via deep geological disposal in a candidate community; however this decision is subject to the site being geologically and hydrogeologically suitable and in a location that is not adversely vulnerable to geohazards.

This module will examine historic and current UK developments in radioactive waste management and will introduce both geology and hydrogeology to the student. Shallow and deep methods of geological disposal and the multi-barrier concept will be investigated using UK and overseas case studies. Techniques of investigating the suitability of sites for geological disposal will be covered together with the correct recording methodology for soil and rock description. For both types of geological disposal the near and far-field processes will be considered; as will geohazards in relation to geological time.

A series of exercises provides practical experience for the student.

The module will examine the following:

- Regulation and legislation of radioactive waste disposal
- Radioactive waste disposal in the UK
- An introduction to geology and hydrogeology
- Geological methods of radioactive waste disposal including multi-barrier concepts
- Site investigation (including geophysical methods), soil and rock description
- Near and far-field processes for repositories
- Geohazards, geological time and the implications for geological disposal
- Case studies: historic and current methods both UK and overseas.
- Contaminated land and its management and Safeguards