
TRANSFER OF RADIOACTIVE WASTE DISPOSAL KNOWLEDGE TO FUTURE GENERATIONS: A STIFF CHALLENGE FOR UNIVERSITIES

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In general, effective knowledge management strategies rely on the capacity to perform a full range of allied functions, among which education and research are the key components. However, in most countries and notably in Europe, universities which have to conduct leading-edge research and to supply society with future skilled staffs on radioactive waste disposal, suffer from both the shortage of the institutional national support and the decline of interest among students.

This paper gives an overview of the academic educational challenges in geological disposal of radioactive waste. Prior to presenting possible solutions to overcome difficulties encountered in this field, the causes of the present failure that seriously threaten the future provision of human resources are identified and analysed. Some of the main findings are:

- The poor image of nuclear issues in general and the lack of public confidence in the management and disposal of radioactive waste in particular.
- The smallness of the radwaste community and the narrowness of the job market at the national level.
- The organisational structure of most universities that inhibits partnerships with non-academic institutions and impedes collaborative activities.
- The reticence of most governments to invest public funds in the academic education on radwaste disposal.

These particular motives added to the common problems shared by the whole nuclear sector such as the lack of educational programmes, the ageing of teachers, and the decline in academic R&D activities, bring about the need for collaborative actions. The paper gives an example of possible solutions through the development of a European academic initiative.

In response to the rising alarm about the future shortage of expertise, EURATOM has launched the ENEN II⁷ project. The goal of this project is to consolidate the European nuclear education, training and knowledge management activities in the areas of nuclear engineering, radiation-protection and radioactive waste management including underground disposal. Studies in this last field is conducted by a consortium called PETRUS⁸ group, which unites 15 leading European higher education institutions and relevant stakeholders (nuclear waste management agencies, research centres and industry). The main objective of the PETRUS group lies in creating attractive common university courses on geological disposal with a particular emphasis on multidisciplinary topics. The development of a common curriculum aims at sharing the best human resources and pedagogic materials available in each partner

⁷ European Commission 6th FP project No. FP6-036414 for years 2007-2008.

⁸ Programme for Education, Training and Research on Underground Storage

institution, so as to incite talented students to choose and pursue studies on underground disposal. Beyond the educational objective, the group aims at federating academic efforts for the development of co-operative multidisciplinary research.

The paper describes successive steps towards these goals that are:

- The identification of needs, the inventory of available resources and the conception of the common educational programme by taking into account both academics and stakeholders point of view.
- The development of the common curriculum, which is adequate to address the identified needs
- The development of a framework for the mutual recognition and accreditation of the common curriculum,
- The settlement of a plan for assuring the update, dissemination and long-term sustainability of the common educational programme,
- The development of a framework for improving and supporting academic research activities (i.e. PhD programmes).

Live Distance Teaching using the synchronous 2-way audio and visual capability of the Internet-based systems is one of the outstanding aspects of this project. This method allows supplying live lectures to students at multiple distance sites and enables broad dissemination of the curriculum beyond the consortium partners.

The paper concludes with the expected outcomes of the present project underlining the vital requirement to win the radwaste academic educational challenge as it play a pivotal role in generating, acquiring safeguarding and transfer of knowledge.

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