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SAPIERR PAVES THE WAY TOWARDS EUROPEAN REGIONAL REPOSITORY

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ABSTRACT

Only a few months after its start, the 6th EC Framework Programme project, SAPIERR, has attracted substantial attention from European countries and beyond. SAPIERR stands for Support Action: Pilot Initiative on European Regional Repositories and it is carried out by the consortium of DECOM Slovakia and ARIUS.

This project aims to bring together countries with an interest in investigating the possibilities for shared repositories for spent nuclear fuel / high-level radioactive waste, and in particular those countries with small nuclear power programmes that do not have the resources or the full range of expertise to build their own repositories. The prospect of building and operating a single regional repository (or a limited number of such facilities) shared by several European countries was raised in the draft Directive of European Commission on radioactive waste management and was encouraged by the related resolution passed by the European Parliament. Practical support for this idea has been demonstrated by the Commission by its approving of the SAPIERR project and providing funding.

It is already a significant achievement of this project that 21 organisations from 14 countries have agreed to take part in the SAPIERR working group. This working group is an essential tool of the whole project. Its participants came together at a kick-off meeting in Piestany, Slovakia on 19th – 20th February 2004. The consortium explained the project objectives and established communication channels between the working group participants. The group members are at the moment gathering national information on their potential waste inventories for a potential shared repository, as well as on their national legislative backgrounds. These inputs should help DECOM Slovakia and ARIUS to produce analytical studies on the waste inventories and legal aspects of the European Regional Repository.

Based on these and other input data, the consortium will prepare a technical report on possible scenarios and concepts for European regional disposal and will formulate proposals for areas of relevant trans-national research and development to be carried out in future. High profile will be given to so-called co-operative scenario, which is most appropriate for the European context. The identification of the potential host country was deliberately excluded from the scope of SAPIERR project in this first phase.

The working group participants will correspond throughout the two year duration of the study and will meet again towards the end of the project at an international seminar in Brussels in October 2005. The objective of the seminar will be to review and disseminate results of the project to a wide audience and to agree on subsequent steps on the way towards a European Regional Repository.

Keywords

Regional Repository, Inventory, Legal Aspects, Research and Development, SAPIERR; European Commission

1 SAPIERR HISTORY

Following an initiative started by Arius, Switzerland, a consortium composed of DECOM Slovakia and Arius submitted a proposal within the EC 6th Framework Programme for a pilot study called SAPIERR on the regional approach to waste disposal. SAPIERR stands for Support Action: Pilot Initiative on European Regional Repository. The option of shared disposal facilities for small countries has been deliberately kept open in the most recent draft of EC Directive on the Management of Spent Fuel and Radioactive Waste dated 30th January 2004 and was encouraged by the related resolution passed by the European Parliament.

The proposal for the SAPIERR project was submitted to the European Commission in the first batch of the Calls for proposals under the 6th Framework Programme in May 2003. The proposal received a high score in the formal independent evaluation organised by the European Commission and, following two rounds of negotiation in September and October 2003, the project was launched on 1st December 2003. Meanwhile, commitments to participate in a project working group were given by numerous organizations in Western and Central Europe. By coincidence, so called Ljubljana initiative meeting, which resulted out of discussions between small European countries at the 2003 General Conference of the IAEA, took place the day after SAPIERR had been launched. This coincidence enabled SAPIERR to expand its project working group by new members recruited in Ljubljana.

The financial resources for DECOM's work, as coordinator of the study, are provided by the EC in Brussels; under the bilateral arrangements between Switzerland and the EU, Arius is supported directly by the Swiss Department of Education and Science. The most important project event to date was a working group kick-off meeting in Piestany, Slovakia on 19th – 20th February 2004, details of which are given later in this paper. Planned project duration is 2 years.

2 PROJECT OBJECTIVES AND STRUCTURE

SAPIERR is a pilot initiative to help the European Commission to begin to establish the boundaries of the European Regional Repositories issue, collating and integrating information in sufficient depth to allow concepts for potential regional options to be identified and any new research and technical development (RTD) needs to be scoped. The primary objective of SAPIERR is to bring together Member States of the current and the extended European Union wishing to explore the feasibility of regional European solutions for the deep geological disposal. Specific proposals for regional facilities, including potential siting are deliberately left beyond scope of this initial pilot study. The development of a geological repository is a very long-term project with an overall duration of decades. Given the rapid geopolitical development in Europe, the socio-political reservations concerning multinational repositories that have been expressed by some countries may well have been overcome by the time of actual construction, and the environmental and economic advantages of these solutions may prevail over the political problems.

To enable smooth and controllable implementation, SAPIERR project has been broken down into 5 work packages:

1. Data gathering & analysis
2. Scenarios & RTD requirements
3. Working Group
4. Information dissemination
5. Management Activities

2.1 Data on inventories and legal aspects

In the data gathering & analysis work package, the consortium will collate and document the data and views from European countries interested in regional solutions; this will be done interactively with the working group participants. These data will be complemented by a review of the existing information from other European Commission programmes, and from IAEA databases. The issues looked at will comprise:

- for each country, the amounts, types and times of arising of wastes that might be candidates for disposal in a regional disposal facility
- the nature of legal issues concerning waste transfer, liability and waste transport, export/import
- national political and organisational views and policy, European radioactive waste policy
- national social perspectives
- economic aspects of shared facilities (nationally and in the European Union).

The above information is collected from the working group participants by means of two questionnaires: on inventories and on legal aspects. The questionnaires were prepared by the consortium and further discussed and refined at the working group kick-off meeting. Reserved for possible follow on phases of the work are technical tasks, such as review of the geological situation in each country, and social studies, such as polling of public attitudes.

2.2 Working group

It is already a significant achievement of this project that 21 organisations from 14 countries have agreed to take part in the SAPIERR working group. This working group is an essential tool of the whole project. Its participants came together at the kick-off meeting in Piestany in February 2004. All countries already involved in SAPIERR and represented in the SAPIERR working group are shown with light hues in Figure 1. It is still feasible for further countries to join the project.



Figure 1. Map of Europe showing the countries involved in SAPIERR – in light colours

The consortium explained the project objectives and established communication channels between the working group participants. A significant part of the discussion was devoted to finalising the contents of the questionnaires for data gathering so that all working group participants were satisfied.

Following the Piestany workshop, the working group continues to interact on the basis of e-mail and internet communication. A dedicated internet site has been established: www.sapierr.net and it is fully operational since the kick-off meeting. The working group participants will supply to the consortium information needed in the analytical work and later will review the documentation produced.

2.3 Options and scenarios

Scenarios and possible concepts for European regional disposal will then be identified as well as related RTD needs to propose mechanisms for developing strategy options and future research programmes within the European Union. There is an IAEA TECDOC in preparation called “Developing and implementing multinational repositories: Infrastructural framework and scenarios of co-operation”. In this publication, three basic scenarios are distinguished for possible preparation and implementation of a shared disposal facility. They are namely:

1. ADD-ON scenario, when the host country offers to complement its national inventory of wastes for disposal by wastes imported from other countries.
2. CO-OPERATION scenario characterised by the participation of other (partner) countries in developing a repository programme jointly together with the potential hosting country or countries. In this case one or more other countries interested to dispose their waste in the potential hosting country or countries will be involved directly in an early stage of repository development and implementation.
3. INTERNATIONAL or SUPRANATIONAL scenario in which a higher level of control and supervision is implemented by an international body.

The co-operation scenario will be given the highest priority in SAPIERR, as this is the scenario that is most relevant at the present time for European countries with small nuclear power programmes or with only institutional radioactive wastes which are now members of the SAPIERR working group. It is for Europe much more likely, that countries can initially come together to discuss the advantages and drawbacks of a shared repository if they do so without defining the potential host or hosts at the outset. The identification of the potential host country was deliberately set beyond the scope of SAPIERR project. As in national disposal programmes, it is not a promising approach to nominate at the very outset potential sites; considerable technical and societal studies are needed before this milestone can be reached.

The study on options and scenarios will be complemented by identification of requirements on trans-national research and technical development (RTD) to be carried out in future, as such an output is a requirement of the Support Action instrument. SAPIERR will try to clarify the RTD requirements to address unresolved safety, governance, and economics aspects of a potential European regional repository. More specifically, it should also propose mechanisms for developing strategy options & RTD needs in future European Union programmes.

3 THE WAY FORWARD

The working group participants will correspond throughout the two year duration of the study and will meet again towards the end of the project at an international seminar in Brussels in October 2005. The objective of the seminar will be to review and disseminate results of the project to a wide audience and to agree on subsequent steps on the way towards the European Regional Repository. Regional repositories are also of

interest outside Europe but have been little studied. SAPIERR and its concluding seminar will hopefully put the European Union in a leading position to provide advice and, possibly, services to other countries.

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