TECHNICAL MEETING ON

Application of Geological and Geographic Information Systems (GGIS) in Radioactive Waste Disposal

P&B Project / Task 3.L.2.04/12

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1. RATIONALE

Many of the Member States plan or have already initiated the development of a repository, either of surface or subsurface/geological type. During the whole lifecycle, from initial studies till the closure of the facility and terminating institutional control of the site, a tremendous amount of information needs to be collected, treated, interpreted, published and stored.

Over the past two decades the use of computer software tools for processing geospatial information and digital mapping methods linked with modern database environment united to the platform, known as geological and geographical information systems (GGIS), has been adopted for that purpose by developed countries. The clear tendency is to generate and maintain the data that deal with site dependent information in a digital form. This approach enhances handling, keeping and processing all information, its easy publicising and comparing data in a simple way in extended time periods to support decision making process. Clear benefits are seen particularly when planning and implementing the project of a repository development together with necessary monitoring of possible impacts of this nuclear facility on living environment to protect a human health.

The potential of GGIS to facilitate the management of information relevant to repository lifecycle is rather high, but the method is still much underused for several reasons, the most evident being missing guidance how to employ it for this purpose. Therefore, advice on bases of the system, on its design and development, on principles of data collecting, processing and uses, and collecting information about existing applications and about GGIS incorporation in waste disposal projects is seen as highly topical and effective way how to promote the uses of the method.

2. OBJECTIVE

Originally, GGIS was developed for geospatial data and information acquisition to learn more about the Earth, it comes for non-nuclear uses: it works on common platform (data sources, software and hardware), this technique provides a backbone for collecting and managing data. But, similarly as in many other applications, the content (selection of information to be treated) shall be adopted to specific needs of the development and operation of a radioactive waste repository independent of the place of the implementation, so it is an objective tool for RWM. Thus, the document shall provide information about GGIS as a tool for data processing and managing and advice on selecting and processing data applicable for all stages of a repository lifecycle, including both surface and geological inputs.

3. EXPECTED OUTCOME OF THE TECHNICAL MEETING

An advanced draft of a document advising on establishment of the GGIS as a tool for data collecting and processing and bringing in recommended utilisation of GGIS platform for all phases of a repository lifecycle (development, operation, closure, institutional control period).

4. USERS

Implementers of radioactive waste disposal projects.