EUROPEAN COMMISSION

Community Research

Call for Papers

ESDRED

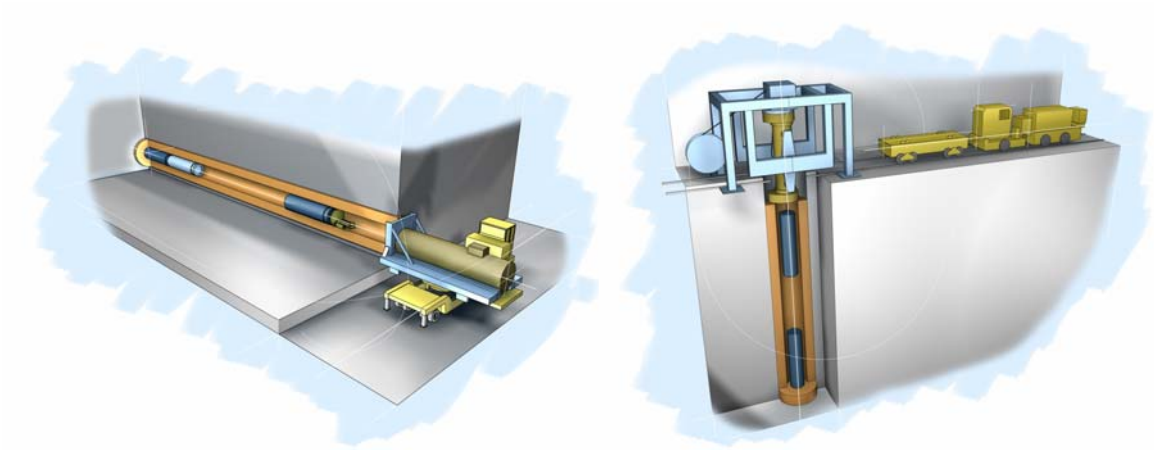
First Circular & Registration

International Technical Conference on the Practical

Aspects of Deep Geological Disposal of Radioactive Waste

THEME

Underground Disposal Unit Design & Emplacement Processes For a Deep Geological Repository "Operational & Safety Considerations"



Czech Technical University – Faculty of Civil Engineering

Centre of Experimental Geotechnics

Prague

June 16-18, 2008

ANDRA SÚRAO GRS

Underground Disposal Unit Design & Emplacement Processes
For a Deep Geological Repository
"Operational & Safety Considerations"

16-18 June 2008, Prague, Czech Republic

Organised by the ESDRED Project and Co-Sponsored by the EC, RAWRA, Czech Technical University, ANDRA and GRS

BACKGROUND

The key component of a geological repository for high level long lived radioactive waste is the **disposal unit** (a borehole, a drift, a room or a cell) which contains the waste. The disposal unit design is mainly based on the long term safety requirements to ensure that the radionuclides will be confined or sufficiently delayed in their migration. Nevertheless, this design must also be sufficiently realistic with regard to operational considerations which encompass notably the construction and the waste emplacement processes.

So far, in most international conferences, the attention dedicated to the long term performance tends to imply that this aspect is the main criterion for assessing the feasibility of a deep disposal. However, today the nuclear waste management agencies and research organizations are becoming more and more aware of the importance of the operational considerations.

First of all, it must be demonstrated that the input data taken into account in the long term safety calculations are realistic given the construction processes envisaged.

Secondly, it must also be shown that the waste emplacement process is duly taken into account in the design of the disposal units and that this process can offer a high level of occupational safety particularly in terms of radioprotection.

Thirdly, protecting the people and the environment during the next century is at least as important as protecting them over the long term. Consequently, operational safety should be an integral part of the feasibility demonstration.

In some national concepts reversibility, retrievability and an associated monitoring programme must also be taken into account.

This conference is a first of its kind insofar as it will provide a unique opportunity to demonstrate how the combination of operational and long term safety considerations are intimately linked to the different disposal unit concepts. It is organised within the framework of the ESDRED Project which is part of the European Union's 6th EURATOM Framework Programme for Nuclear Research and Training.

ESDRED PROJECT - A BRIEF OVERVIEW

The primary goal of the integrated ESDRED Project is to design, fabricate and test technological demonstrators in order to show that designs are realistic and to demonstrate the industrial feasibility of various geological repository concepts. ESDRED (***Engineering Studies and Demonstrations of Repository Designs***) is a joint research effort by 7 major European national radioactive waste management agencies and 6 R & D organisations. The research is conducted by 13 partners from 9 European countries who decided to work together on engineering and technology. ESDRED is co-ordinated by ANDRA, the French national radioactive waste management agency. The five year project has a total budget of €18.7 million, of which 7.3 million is a grant from the EU's 6th Framework Programme.

ESDRED is focused on technology and has three main objectives.

- To fabricate full scale technological demonstrators and to prove their feasibility.
- To promote a shared European vision in the field of technology.
- To disseminate widely the objectives and the knowledge developed within ESDRED.

AIMS & OBJECTIVES OF THE CONFERENCE

The objective of this conference is to examine the technical and the practical aspects of different disposal unit concepts and associated waste emplacement processes. This will include looking at concepts that fall within the boundaries of the ESDRED Project as well as looking at some other national concepts that are not being considered within ESDRED; always in the context of practical operational considerations as well as operational and long term safety. This conference aims to provide a forum for exposing the concepts that have been, or are in the process of being, developed throughout the world in various host rocks such as salt, granite, tuff and clays. The wastes concerned are vitrified waste, spent fuel as well as medium level long lived waste such as technological waste or TRU Waste.

These various concepts will be compared and discussed at an international level. For each concept, the operational and long term safety requirements, the construction and waste emplacement processes as well as the rationale in terms of occupational safety will be exposed. Specific attention will be given to full scale demonstrations and to operational experience in existing facilities, underground research laboratories (URL's) or surface mock-ups.

There will be a single stream of presentations in a large well equipped lecture hall. Posters will be on display throughout the Conference in the spacious front entrance hall of the University. Authors are free to propose papers, posters or both.

The conference should be of interest to designers, decision makers, licensing authorities, policy makers, waste producers and politicians. In particular there will be a strong representation from the New Member States including representatives from their national waste management agencies and other governmental agencies.

CONFERENCE HOST

Czech Technical University, Faculty of Civil Engineering Centre of Experimental Geotechnics: http://ceg.fsv.cvut.cz

IMPORTANT DATES

First Circular and earliest Pre-registration, April *16, 2007*
Abstract Submission, September *15, 2007*
Notification of Acceptance of Paper, November *15, 2007*
Second Circular and Programme, January *30, 2008*
Deadline for Submission of Full Paper, April *15, 2008*
Deadline for Registration, April *15, 2008*

STEERING COMMITTEE

Prof. J. Pacovský, *Czech Technical University, Centre of Experimental Geotechnics*
Vitezslav Duda, *Managing Director, Czech Radioactive Waste Repository Authority (RAWRA)*
Chris de Bock, ONDRAF/NIRAS & ESDRED Module 1 Leader
Wolf K Seidler, *Coordinator ESDRED Project (Andra)*
Prof. Dr. Wernt Brewitz, *Head of Final Repository Safety Research Division (GRS)*
Tilmann Rothfuchs, *Head of Geotechnics Department (GRS)*

CONFERENCE SECRETARIAT

Czech Technical University:
Pavla Bauerová
Karel Kunc
Jiri Svoboda
Radek Vasicek

CONTACT

Pavla Bauerová
esdred.conference@andra.fr

CONFERENCE VENUE AND RELATED DETAILS

The conference will be held on the campus of the Czech Technical University, Faculty of Civil Engineering located less than 20 minutes from the airport and 10 minutes from beautiful downtown Prague. Public transit connects both to the airport and to downtown.
The university facilities are modern and fully equipped. Accommodation in various price ranges is available nearby and through the university. See the ESDRED web site (**www.esdred.info**) for details regarding the conference, abstracts, posters, registration, accommodation, the University, the city, etc.

CONFERENCE LANGUAGE

The working language of the conference is English. A maximum number of 100 participants will be accepted.

REGISTRATION FEES

These fees will cover the cost of providing an electronic copy of the proceedings, an ice breaker on the Sunday evening, coffee breaks, lunches and a conference dinner on the Monday evening. Fees for accompanying persons cover the cost of the ice breaker and the conference dinner only.

Participants/authors	*200 €*
Accompanying persons	*50 €*
Students	*nil (for access to presentations only)*

NOTE 1: Participants from New Member States who face financial constraints may apply for a reduction in fees at time of registration.

NOTE 2: All correspondence regarding registration should be addressed to Pavla Bauerová at **esdred.registration@andra.fr**

TECHNICAL PROGRAM

The three day conference is being organized on the basis of a mix of invited speakers (primarily from the ESDRED Project and from New Member States) and this international “Call for Papers”. The activities will terminate with an open meeting with students from the university in the afternoon of the last day.

MAIN THEMES FOR PAPERS

1- DISPOSAL UNIT CONCEPTS

- Disposal unit based on the use of a Super Container containing the engineered barrier (EBS) as well as the waste package: summary overview of design concepts including the rationale, the emplacement process, the sealing, the radioprotection and the reversibility.
- Disposal unit based on the use of an EBS emplaced before or after the waste package: summary overview of design concepts including the rationale, the emplacement process, the sealing, the radioprotection and the reversibility.

- Horizontal disposal unit without EBS: summary overview of design concepts including the rationale, the emplacement process, the sealing, the radioprotection and the reversibility.
- Vertical disposal unit without EBS: summary overview of design concepts including the rationale, the emplacement process, the sealing, the radioprotection and the reversibility.

2- Operational Safety and Radioprotection

- Rationale and safety objectives in term of radioprotection during waste emplacement process
- Management of concurrent activities of construction and nuclear operations
- Design of shielding protection for waste emplacement process
- Remote operation and waste emplacement process
- Ultimate emergency system in case of failure during waste emplacement process

3- Full or Reduced Scale Demonstrations and /or Operating Experience in Existing Facilities, URL's or Surface Mock-ups

- Characterization of disposal unit and EBS
- Demonstration of disposal unit construction
- Demonstration of waste emplacement process
- Demonstration of waste retrieval
- Operational/URL experience related to disposal unit construction
- Operational/URL experience related to the waste emplacement process

PROVISIONAL PROGRAM (revised 16/11/07)

Day 1- morning

08H30 - 10H00: Opening session

10H00 - 12H30: Disposal Units in Clay

Day 1 - afternoon

14H30 - 17H30: Operational Safety and Radioprotection

Day 2 - morning

08H10 - 12H30: Engineered Barrier Systems

Presentations related to (i) concepts (ii) demonstrations (iii) operating experience

Day 2 - afternoon

14H30 - 17H30: Engineered Barrier Systems

Presentations related to (i) concepts (ii) demonstrations (iii) operating experience

Day 3 - morning

08H10 - 10H30: Disposal Units in Granite

10H30 - 13H10: Disposal Units in Salt, Tuff and Limestone

Presentations related to (i) concepts (ii) demonstrations (iii) operating experience

DAY 3 - AFTERNOON

13H10 - 13H30 Conclusion of the conference

14H30 - 16H30 Open session with students

ABSTRACTS

The deadline for submission of abstracts is September 15, 2007.

Authors should submit, electronically, a one page (max 2 pages) English synopsis of their paper, in MS Word format, to **Pavla Bauerová** at **esdred.technicalpapers@andra.fr.**

For consistency please use A4 sheets, Times New Roman text with single line spacing and 2.5 cm margins.

- Notification of acceptance of paper: November 15, 2007
- Deadline for submission of complete paper: April 15, 2008

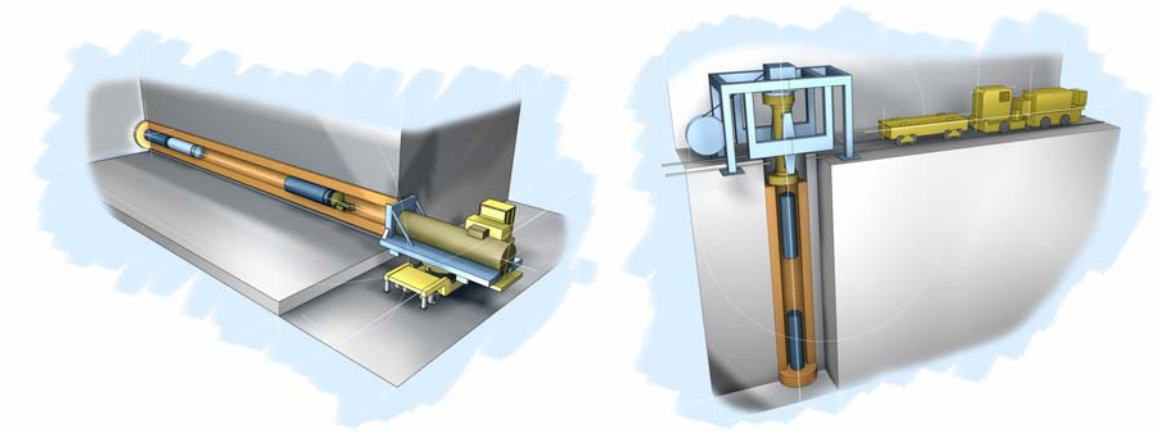
PAPERS

Thirty minutes will be allocated to each paper including 5 to 10 minutes for questions.

REGISTRATION

On line registration is available in the "Conference" area of the ESDRED web site (**www.esdred.info**). Registration (attendance limited to 100) may be made directly by using this tear-off form and sending it by fax (+420 2 2435 4330), by post or via email to **Pavla Bauerová** at **esdred.registration@andra.fr**.

Postal address: Pavla Bauerová, Czech Technical University, Faculty of Civil Engineering, Centre of Experimental Geotechnics, Thákurova 7, 166 29 Prague 6, Czech Republic



THE FOLLOWING ORGANISATIONS HAVE ALREADY CONFIRMED THEIR PARTICIPATION:

Andra	French National Waste Management Agency
DBE-TECHNOLOGY GmbH	Subsidiary of the German Waste Management Company
GRS	German Expert Institution on Nuclear Safety
NAGRA	Swiss National Waste Management Agency
Ondraf/Niras	Belgian National Waste Management Agency
RAWRA	Czech Radioactive Waste Repository Authority
SKB	Swedish National Waste Management Agency

☐**Mrs** ☐**Ms** ☐**Mr**	**Phone**
Name	**Fax**
First Name	**e-mail**
Company	**Accompanied by Mrs/Ms/Mr** ☐**No**
Title	**Name**
Address	**First Name**
	Are you presenting a paper? ☐**Yes** ☐**No**
Zipcode	**Are you presenting a poster?** ☐**Yes** ☐**No**
City	**Title**
Country	