

FIRST ANNOUNCEMENT

WORKSHOP ON ARTIFICIAL CLAY BARRIERS FOR HIGH LEVEL RADIOACTIVE WASTE REPOSITORIES

Lund, Sweden
October 5-7, 1988

ORGANIZED BY
Swedish Nuclear Fuel and Waste Management Co. (SKB)
in co-operation with
OECD Nuclear Energy Agency
and
Commission of European Communities

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Objective of the Workshop

The objective of the workshop is to provide an opportunity to exchange information and ideas on clay barrier research in order to prepare recommendations on future needs for research in support of engineering design and safety assessment of waste repositories located in different geological media. This will involve discussion and comparison of parameters considered, measuring techniques used and physical and mathematical models developed for engineering design and safety assessment purposes.

Topics to be addressed

The following topics will be considered:

- (i) Overview of R & D into artificial clay barriers for repositories in crystalline and argillaceous geological media
- (ii) Research into the longevity of clay barriers
 - * chemical stability
 - * physical stability (erodability, displacements, etc)
 - * conceptual models for performance assessments
- (iii) Research into the conductivity of clay barriers
 - * hydraulic conductivity
 - * diffusion of dissolved substances
 - * heat conductivity
 - * conceptual models for performance assessments
- (iv) Research into the rheology of clay barriers
 - * shear strength
 - * stress/strain relationships
 - * creep
 - * relevance to engineering design and performance assessments

WORKSHOP ON ARTIFICIAL CLAY BARRIERS
FOR HIGH-LEVEL RADIOACTIVE WASTE REPOSITORIES

Background

Research into the behavior of artificial clay barriers for sealing repositories for high level radioactive wastes has been carried out for a number of years in several OECD Member countries and within a major research program undertaken by the Commission of European Communities. In Sweden a major part of the International Stripa Project has been devoted to developing an understanding of the behavior of bentonite clay as plugging and backfilling materials. This trend is being continued into Phase 3 of the Project where various types of sealants for rock grouting will be examined, including cementitious and bentonite-based materials. Similar work has also been carried out in Belgium, Canada, the Federal Republic of Germany, France, Japan, Switzerland, the United States and other countries in order to assess alternatives for different repository design concepts. These concepts include locating the repository within crystalline or argillaceous rocks at depths of between 300 m-1000 m below ground level.

Given the broad range of activities devoted to investigating and modelling the behavior of backfilling and sealing materials, it is appropriate that an exchange of experience and views should be held at an international level. This is necessary to ensure that excessive duplication of effort does not occur, and also to provide a forum for critical appraisal of the results of research carried out to date. It is for these reasons that the Swedish Nuclear Fuel and Waste Management Company (SKB) through the Swedish Geological Company is organising a workshop on artificial clay barriers in cooperation with the OECD Nuclear Energy Agency's Advisory Group on In-Situ Research and Investigations for Geological Disposal (ISAG) and the Commission of European Communities (CEC).

Each of the topics will cover basic material research, physical modelling and mathematical modelling. The rationale behind the choice of parameters and processes being studied will also be included.

Audience

The workshop will be of interest to those conducting R & D into the behavior of clay barriers for radioactive waste repositories. It may also be of interest to those directly responsible for the orientation of R & D concerning the behavior of clay barriers, particularly from the engineering design and safety viewpoint. The level of presentation will reflect the state-of-the-art in this area with emphasis on the practical applications of R & D to the use of clay barriers for repositories.

Format

A combination of invited and submitted papers will be presented at the Workshop. There will be considerable time allocated for discussion of the results presented in each paper. The talks will be of 10-15 minutes duration followed by an equivalent time for discussion. A final session will be held involving summaries of the findings from each session followed by discussion to prepare a set of recommendations on research, development and modelling needs and conclusions on the current status of R & D into clay barriers.

Organization of the workshop

The workshop will be held at the Science Park IDEON in Lund, Sweden, October 5-7, 1988. It is sponsored by SKB in co-operation with the OECD/NEA In Situ Advisory Group (ISAG) and the Commission of European Communities. A small fee, 1500 Scr, will be charged to each participant to cover all the costs incurred, including lunch meals and coffee during the meeting. In addition, field demonstration of sealing experiments will be provided during guided tours to the field test sites at the Stripa mine and Forsmark (LLW and MLW repository), starting on October 3 and ending on October 4. These tours will be arranged if a sufficient number of attendants are interested, the cost including bus tours but without accomodation fee will be 1500 Scr.

The organizing committee comprises Roland Pusch (SGAB, Chairman), Anders Bergström (B), Gunnar Börgesson (SGAB) and Malcolm Gray (AECL). The office of Swedish Geological Co in Lund will serve as headquarters to which all correspondence should go, the address being:

SWEDISH GEOLOGICAL CO
Science Park IDEON
University Site
S-223 70 LUND
Sweden

Telephone 46 46 16 85 76

Telex 337 09

Correspondence should be addressed to

Mrs Jeanette Stenelo

Attendance

The number of active attendants, i.e. contributors of written papers, is limited to 50, while another 50 attendants are accepted for auscultation.

General time schedule

Nominations for participation should be made to Swedish Geological Company, Lund, by 1st February 1988.

Abstracts of submitted papers should be submitted to Roland Pusch of the Swedish Geological Co by 1st March 1988. The organizing Committee will then prepare the final program for the workshop.

Distribution of the second announcement, comprising preliminary agenda, will be made in April 1988.

Written contributions should be sent to the Swedish Geological Co, Lund, by 1st June 1988. A full set of papers will be distributed to participants at least 3 weeks prior to the workshop.

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