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Mineralogical aspects of the disposal of radioactive waste

PREFACE

THIS meeting was organized by the Applied Mineralogy Group of the Mineralogical Society in association with the Commission of the European Communities on the 10 and 11 November 1983 in Burlington House, Piccadilly, London and is the first meeting organized by the Society on this topic. These proceedings include all the papers submitted for publication in the Magazine.

The meeting was so arranged that the first day included the Hallimond Lecture by Professor A. E. Ringwood and papers on Engineered Barriers (Near Field Studies) followed by a general discussion. The second day was devoted to Geological Barriers (Far Field Studies) followed by a general discussion on this subject. The proceedings follow the order in which the papers were presented to retain the structure of the meeting.

The papers presented here demonstrate the importance of applied mineralogical studies to the nuclear fuel cycle which requires that methods be established for the safe disposal of radioactive wastes accruing today and in the future. It is also important that the research findings should be made available for scrutiny by the wider scientific community to ensure that technical policy is based on sound technical information.

We are grateful to our co-convener Mr P. J. Bourke (AERE Harwell), and Drs J. D. Mather and S. H. U. Bowie, FRS who acted as session chairmen and directed the many discussions on constructive pathways.

Finally our thanks to Jane Hurdley (BGS) for organizational aspects of the meeting, to Dr Andrew Clark for his assistance with editorial matters, and our anonymous referees for their thorough and professional treatment of the manuscripts.

P. R. SIMPSON
M. IVANOVICH

Welcome address from P. F. Venet, Commission of the European Communities, Brussels

IT is an honour for me, as a representative of the Commission of the European Communities, to be present today at this meeting of the Mineralogical Society. Due to its extensive involvement in radioactive waste research over many years, the Commission was invited to co-sponsor this conference and it is therefore a pleasure, on behalf of the Applied Mineralogy Group of the Mineralogical Society, and the Commission of the European Communities, to welcome and thank you for having come to participate.

This meeting was developed from the theme of the Hallimond Lecture to be given today by Professor Ringwood, and has been extended to the presentation of work carried out in several countries in the field of mineralogical aspects of radioactive wase disposal, with the emphasis being placed, nevertheless, on work carried out in the United Kingdom. Many of the results which will be contributed today and tomorrow have been obtained within the framework of Community programmes concerned with the management and storage of radioactive waste.

This meeting is, in our opinion, of particular

interest for three main reasons. First it will offer an opportunity to compare different ideas and approaches for the management of radioactive waste and more particularly its immobilization; several options having been advanced by different groups of workers, with part of this morning being devoted to the presentation of Professor Ringwood's work. However, it is well known that a slightly different approach is presently favoured in the Community. Secondly, it is of the greatest value to apply information from a specialized scientific topic, such as mineralogy, to a multidisciplinary activity like radioactive waste management. It is also advantageous for mineralogists to see their activities within a broader context and so enable research to be undertaken with realistic objectives. Thirdly, the selection of an appropriate management strategy for radioactive waste and its disposal in geological formations, is ultimately a political decision. This choice must, however, be based on options which are both technically feasible and conform to sound scientific principles. A consensus among scientists who are well informed in this subject should help the public to have confidence in the options proposed by management, and greatly reduce the emotional and polemic aspects of this subject. This meeting should, in our opinion, contribute to establishing such a consensus.