

# PREFACE

Clearly, the engineering of geological waste repositories represents one of the great engineering tasks that confronts the nuclear industry. Given the public attention to waste disposal, it is not an understatement to say that the future of nuclear energy as a viable energy source depends on our ability to demonstrate safe and reliable containment of radioactive material. The task is formidable—to guarantee the isolation of dangerous substances for thousands of years.

A fascinating variety of technical problems is generated by consideration of the long-term effects of radiation exposure on containment materials and surrounding geological media. Important questions that must be addressed range from changes in mechanical properties of structural materials to the effect on chemical interactions at solid/liquid interfaces. Of overriding importance is the effect on leaching rates of exposure to radiation.

These are some of the issues addressed in the following papers, which were originally presented at a workshop held at Argonne National Laboratory on October 1 and 2, 1981. We hope that you find them to be a useful and significant contribution to an important area of research and development.

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*Acting Associate Editor*