

# PREFACE

## SECOND NATIONAL TOPICAL MEETING ON TRITIUM TECHNOLOGY IN FISSION, FUSION AND ISOTOPIC APPLICATIONS

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Over the years, there have been few formal meetings on the subject of tritium. The first significant symposium on tritium was held in summer, 1971, in Las Vegas, Nevada. It was sponsored by the University of Nevada and the U.S. National Environmental Research Center, Las Vegas. That symposium covered a wide range of topics and the proceedings remain a valuable handbook. In 1974, a symposium on tritium technology related to fusion reactor systems was held at Mound Laboratory, Miamisburg, Ohio.

The next major tritium meeting was held in Gatlinburg, Tennessee, in 1975 and was sponsored by the Oak Ridge National Laboratory. The thrust of this meeting was tritium technology as it related to controlled fusion research. The application of tritium to peaceful uses of fusion energy was very significant in the disclosure of tritium-related information, which had previously been obtained by the nuclear weapons community. Interest in tritium by the fusion community was evident from the increasing number of papers on this subject presented at the American Nuclear Society (ANS) Topicals on Fusion Energy.

During the years following 1975, there was also increased interest in tritium as a commercial resource in self-luminous devices and as a contaminant in heavy-water-moderated reactors. This last interest was centered in Canada where heavy-water-moderated CANDU reactors were becoming an increasingly important source of power. In the past several years, the Canadians have made significant contributions to tritium technology, and their recent commitment to fusion will significantly aid its commercialization. In 1978, the International Atomic Energy Agency sponsored a symposium on the Behavior of Tritium in the Environment and a Technical Committee Meeting on

Handling of Tritium Bearing Effluents and Wastes. These meetings highlighted and increased international interest in tritium technology.

In response to the growing international interest in tritium, the first ANS Topical Meeting on Tritium Technology was held in Dayton, Ohio, in spring, 1980. The purpose of that first topical meeting was to foster the kind of technical information exchange that was apparently needed by the scientists and engineers working in the field.

Because of the popularity of the first topical meeting, the organizers planned a second topical meeting on tritium technology in 1985. An interval of 5 years was selected to allow significant development in the field. About 240 scientists and engineers from ten countries convened to exchange information and share their experience in the field of tritium technology. With nearly one-third of the attendees from outside the United States, this topical meeting was international in scope. Ninety presentations covered a variety of topics ranging from the design of tritium processing equipment to the modeling of a tritium release to the environment. Not all papers deal directly with fusion; however, most of the information presented is valuable to any process dealing with significant quantities of tritium.

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