

member of the American Chemical Society and the American Institute of Chemical Engineers; he is also a Fellow of the American Nuclear Society and the American Institute of Chemists.

Assessment of Radioactive Contamination in Man

Editor International Atomic Energy Agency

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Pages 698

Price \$21.00

Reviewer Norman A. Baily

Assessment of Radioactive Contamination in Man contains the thoughts and recent work of the leading experts in this field. The status of research and technology (as of November 1971) with relation to this important problem which arises from the various current uses of radioactive nuclides is well summarized. The volume consists of 45 individual papers and the discussions which followed their delivery. As is stated in the Introduction, the meeting produced very little in the way of new technology. However, much new methodology has been introduced, such being aimed at increasing accuracy, sensitivity, and speed in assessing the degree of radioactive contamination in human subjects.

Dr. Morgan's introductory presentation is excellent and clarifies the reasons for the change from Maximum Permissible Concentration levels in man to the concept of Dose Commitment (rem to critical organ of reference man per μCi intake).

The book is divided into five major sections:

1. Direct Methods of Assessment
2. Indirect Methods of Assessment
3. Body Burden Assessment Programs
4. Distribution Studies and Dosimetry
5. Investigation of Accidents.

In addition to instrumentation and methodology, a considerable amount of actual uptake data and concentration of radionuclides found in man is given in the various papers. This

makes the volume a handy reference for engineers and physicists normally expert in other aspects of the field.

Norman A. Baily is professor of radiology and chief of the Division of Radiological Physics and Engineering at the University of California, San Diego. His research spans the areas of dosimetry, radiobiology, and roentgen imaging techniques. He is a diplomate of the American Board of Radiology and the American Board of Health Physics.

Peaceful Uses of Atomic Energy, Volume 9: Isotope Enrichment; Fuel Cycles; Safeguards

Editor International Atomic Energy Agency

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Pages 536

Price \$14.00

Reviewer John A. Wethington, Jr.

This volume contains 34 compendia; although a comprehensive review is virtually impossible, a few comments are in order. Each paper endeavors to present "the state of the art" for a particular project in a particular country. In general, the authors have succeeded. The collection of references makes the book worth the price, and considering the present-day cost of books, this volume is a real bargain.

Isotope separation is of major interest to the reviewer. Seven papers deal with this subject and the the costs of enrichment services. The history of secrecy in centrifuge technology, as revealed in some of these papers, is fascinating. In 1960, workers in the United Kingdom, the Federal Republic of Germany, and the Netherlands—at the request of the United States Government—classified all centrifuge research and worked independently of each other. In 1968, workers in the three countries concluded that all were at the same level of achievement, and in 1970 these countries joined together and signed the Amelo Treaty of Col-

laboration. Commercial plants, owned and operated by the Tripartite Enrichment Organization, are now under construction. So goes secrecy!

Thirteen papers deal with fuel cycles. Lack of interest in thorium is apparent, since only four papers, all from foreign countries, treat this subject. The paper from the KEMA laboratories is the only one dealing with liquid reactors. This interesting area is obviously in a moribund state.

The area of greatest interest in this volume is safeguards analysis, objectives, and techniques. Fourteen papers, roughly 40% of the book, deal with this subject. These papers show that this is rapidly becoming a very active field with problems involving statistical quality control and inventory. New techniques in non-destructive testing are badly needed. The paper describing the U.S. Atomic Energy Commission Nuclear Materials Information System was fascinating, and it reflects the complexity of the problem.

John A. Wethington, Jr. (PhD, chemistry, Northwestern University, 1950), professor of nuclear engineering, has been at the University of Florida for twenty years. During this time, he spent two years at the Puerto Rico Nuclear Center and one year at the Lawrence Livermore Laboratory. His current interests include radiation effects, tritium transport in the environment, and natural radioactivity in the phosphate industry.

Peaceful Uses of Atomic Energy, Volume 12: Nuclear Methods in Food Production; Education, Training, Public Information

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Pages 531

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Reviewer C. L. Comar

As indicated by the title, this volume is comprised of papers presented in the given subject areas,