

in his many professional honors are the Ernest O. Lawrence Award (1972) and the John Simon Guggenheim Memorial Foundation Fellow (1974 to 1975). He is a member of the American Nuclear Society (Fellow), American Mathematical Society, American Physical Society (Fellow), Federation of American Scientists, and the International Association for Mathematical Physics. Dr. Zweifel is also the editor-in-chief of the journal *Transport Theory and Statistical Physics*.

### Nuclear Power and Its Environmental Effects

*Authors* Samuel Glasstone and Walter H. Jordan  
*Publisher* American Nuclear Society (1980)  
*Pages* 395  
*Price* \$25.95 cloth; \$18.95 paper  
*Reviewer* Carolyn Heising-Goodman

Samuel Glasstone and Walter Jordan provide a lucid and technical presentation of the effects of nuclear power on the environment. Addressing a multitude of issues ranging from the biological effects of radiation to nuclear reactor safety and the disposal of waste heat, the 14 chapter outline covers most of the issues relating to nuclear environmental impact. The book also covers the safeguarding of nuclear materials, but does not deal with the nuclear weapons proliferation issue. Written in a classic textbook style, the famous authors carry on their tradition of excellence in the presentation of important factual information. This book provides a background for more in-depth studies into any of the specific areas and, as such, is recommended as a supplemental text for advanced undergraduate or first-year graduate students of nuclear engineering. The text can also bring practitioners of nuclear engineering up to speed in areas that may not be their particular specializations.

As a more advanced textbook, the book does not provide a detailed enough in-depth treatment to qualify for use in this manner. However, as a broad overview of a wide range of material, the text fulfills its mission brilliantly. The specialist in any particular area will find the material presented elementary and introductory in nature and is thus not recommended as a text for use in advanced studies. However, the educated layperson will probably find the material illuminating if not novel, and the book serves well the purpose of educating an often misinformed public. The book is therefore recommended for use in any endeavors directed at public education in these matters.

The book is published by the American Nuclear Society and, therefore, is of utmost publishing quality. The book is written in an informative, textbook style and avoids the use of more emotional or sensational journalistic technique. As such, the reader should find the book quite educational and "to-the-point" factual. This book is highly recommended for those involved with public education projects, for introductory level nuclear engineering courses and courses that deal broadly with energy issues across the spectrum.

Carolyn D. Heising-Goodman received her BS (1974) in applied physics from the University of California at San Diego, and her MS (1975) and PhD (1978) in nuclear engineering from the Department of Mechanical Engineering at Stanford University. She also holds a PhD minor in operations research from Stanford University. Currently, she is an assistant professor of nuclear engineering at the Massachusetts Institute of Technology in the area of reliability and nuclear safety analysis. She is working on contract to the Nuclear Safety Analysis Center with Professor Norman C. Rasmussen on class 9 accident mitigation system analysis and methods for resolution of generic nuclear safety issues.

### Formation of Uranium Ore Deposits

(Proceedings of a Symposium, Athens, May 6-10, 1974)

*Editors* Editorial Staff, International Atomic Energy Agency  
*Publisher* International Atomic Energy Agency (1974)  
*Pages* 748  
*Price* \$38.00  
*Reviewer* Arthur L. Reesman

These proceedings contain 42 papers, which were contributed from 23 countries and reports from the six working groups. English dominates (32 of the papers) and all papers have English abstracts. Absent from the volume are papers from the USSR, China, and Eastern Europe, except Yugoslavia and Rumania.

The objective of the symposium was to provide information that will aid in future exploration of uranium ores. Papers are organized into sessions that parallel the "working groups," which were established at a previous meeting sponsored by the International Atomic Energy Agency. The six groups are

- I. Chemical and physical mechanisms in the formation of uranium mineralization, geochronology, isotope geology, and mineralogy (8 papers)
- II. Sedimentary basins and sandstone-type deposits (three sessions, 21 papers)
- III. Uranium in quartz-pebble conglomerates (1 paper)
- IV. Vein- and similar-type deposits (6 papers)
- V. Other uranium deposits (3 papers)
- VI. Relation of metallogenic, tectonic, and zoning factors to the origin of uranium deposits (2 papers).

The number of papers in each category shows an imbalance that does not represent the relative significance of it but the experiences of the authors. The single review paper on quartz-pebble conglomerate deposits is not indicative of the ~40% of low-cost reserves represented by them. The sandstone-type deposits, considered by group II, contain about an equal amount of low-cost and most of the known moderate-cost reserves (the next