presents an interesting model for evaluating the effects of the explosion of vapor clouds.

Siting of Nuclear Facilities, as a symposium report, suffers from the lack of continuity and organization in the manner in which the various topics are presented. There is also repetition stemming from the fact that, by and large, most countries use similar techniques and criteria to site nuclear plants. The book is valuable, however, as it portrays at a particular point in time the efforts made and techniques being used by the nations of the world to address the question of nuclear plant siting—an endeavor complicated by conflicting, often nebulous, requirements and generally unfavorable public attitudes. The question sessions after most papers add a personal touch, which allows the reader who did not attend the symposium to get something of the feel of the sessions. While the book could hardly serve as a textbook, it would be a valuable addition to the library of any school or industrial organization working in the nuclear field.

W. Reed Johnson received his DSc from the University of Virginia in 1962 and has served on the nuclear engineering faculty there since 1964. Prior to that, he worked as a shielding engineer for the Electric Boat Division of General Dynamics, and for Alco Products Company on the design and operations of the Army Package Power Reactor. In 1962 he headed a cooperative project between the University of Virginia and the Philippine Atomic Energy Commission. In 1969 he spent a sabbatical year with the U.S. Atomic Energy Commission Directorate of Licensing. He has served on nuclear safety review committees for Babcock & Wilcox and the Virginia Electric & Power Company. In 1974 he was nominated to the Atomic Safety and Licensing Appeal Panel, and he continues to serve as a half-time member of that body.

Thorium: Physico-Chemical Properties of Its Compounds and Alloys

Editor	O. Kubaschewski
Authors	M. H. Rand, O. von Goldbeck, R. Ferro, K. Girgis, and A. L. Dragoo
Publisher	International Atomic Energy Agency, Vienna, 1975, and Unipub, Inc.
Price	$15.00
Pages	241
Reviewer	J. Fuger

This book is part of a series of monographs (published by the International Atomic Energy Agency, Vienna) dealing with the physicochemical properties of some metals important in reactor technology, together with their alloys and compounds. Previous issues covered plutonium, niobium, tantalum, and beryllium and were concerned as the present one with thermochemical properties, phase diagrams, crystal structure and density data, and diffusion rates. Such publications go much further than providing an up-to-date review of the field since they present the essential advantage of furnishing a consistent set of data that were selected after a careful and critical assessment. This aspect is particularly important in the case of the thermochemical properties and related phase boundaries. All the authors of the present book have acquired a very high international standing in their respective fields, and this, by itself, is a criterion of the quality of the selected data.

The chapter on thermochemical properties (M. H. Rand) covers the metal, the ions in aqueous media (excluding complex species), binary and quasi-binary compounds, alloys, and miscellaneous compounds (nitrates, sulphates . . .). The material is presented in an extremely orderly and critical fashion, the author invariably justifying his choice for a selected value. At the end of the chapter, thermodynamic quantities tabulated as a function of temperature will be particularly handy for the user.

The phase diagram data (O. von Goldbeck) also yield an excellent synthetic view of a vast field in which the experimental results are sometimes fragmentary. Areas where the existing data are inconsistent are clearly outlined, and here again due consideration is given to the choice of the best values.

The next chapter, on crystal structures and densities (R. Ferro and K. Girgis), is a comprehensive compilation of data and also constitutes a priceless source of information. One may somewhat regret, however, that uncertainty limits are absent from the values reported in the first part of this chapter (R. Ferro).

Although covering adequately the existing data, the last chapter (A. L. Dragoo), devoted to diffusion rates in the metal and the dioxide, is very limited in length (three pages), thus reflecting our relative lack of information in this technologically important field.

In summary, this book is indispensable for all the scientists and engineers interested in the development of the uses of thorium as fertile material in breeder reactors or more simply in the knowledge of the properties of thorium and its compounds.

J. Fuger is presently associate professor at the University of Liège (Belgium), where he teaches nuclear chemistry and microchemical techniques. His research field is concerned with the physico-chemical properties of the actinides and their compounds, more particularly thermodynamic and structural data. He has been associated for various periods of time with the Lawrence Berkeley Laboratory of the University of California, Oak Ridge National Laboratory, and Argonne National Laboratory, and has lectured in many American and European institutions. He is serving now as director of the U.S. Calorimetry Conference for the period 1975-1977.

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Nuclear energy does not have adequate review journals. The function