never substantiating the claim or clarifying their feelings as to why or how it is dangerous.

This book is written by authors whose academic background is in policy sciences. However, they are writing about energy--a major part of which is a technical subject. They should have sought the help of a scientist or engineer so they could have "cleaned up" some of the technical blunders. One such serious one being on p. 99, when they talk about "storing heat." According to thermodynamics, heat is defined as energy realized in transition and neither heat nor work can be stored!

All in all, this book is not meant for a technically minded reader and as for the general lay public, there doesn't seem much to be gained from this book. At best, it is a very shallow treatment of two very important and noble ideas.

Varada Charyulu is a professor in the School of Engineering at Idaho State University. He has had varied experience and interests. His main research interests are in fast reactor safety and physics. Recently he was at Kernforschungszentrum Karlsruhe in the Federal Republic of Germany on sabbatical leave where he was doing some work on two-phase flow and fast reactor safety. He has been a consultant to energy conservation firms and has been active in promoting conservation energy programs.

Near-Field Phenomena in Geologic Repositories for Radioactive Waste

Publisher	Nuclear Energy Agency; (Organisation for Economic Co-Operation and Development) (1981)
Pages	408
Price	$20.00
Reviewer	Claudio Pescatore

The disposal of nuclear waste in deep geologic formations may be accompanied by a substantial alteration in the physical, chemical and mechanical properties of the original mined facility. These changes should be well understood, as they may act as negative feedbacks on the performance of the repository. In the early life of a repository, changes in physical, chemical, and mechanical properties are mostly associated with the thermal and radiation fields generated by the stored waste. The localized scale on which these fields play a role is termed the "near-field" of the repository.

The book under review consists of the proceedings of a workshop on near-field phenomena in geologic repositories for radioactive waste held in Seattle, Washington, from August 31 to September 1, 1981. It brings together state-of-the-art contributions by specialists from Belgium, Canada, Finland, France, the International Atomic Energy Agency, Germany, Japan, the United Kingdom, and the United States, all having a vigorous nuclear waste research program.

Radiation-related phenomena are only cursively touched on. Thus, the emphasis is on thermally controlled phenomena. Topics covered include rock mechanics in stressed and heated conditions, thermally induced groundwater flow in fractured rocks, chemical changes to rock surfaces associated with changes in the chemical and thermal environment, chemical solubilities and sorption properties of radionuclides, long-term integrity of containers and packing materials for waste packages, and source terms for irradiated fuel. The contributed papers are conveniently organized into six sessions, each session reporting the round of questions and answers at the end of the various presentations. A seventh session reports on the conclusions reached by working group discussions on (a) granite and crystalline host rocks, (b) salt formations, and (c) other host media (e.g., clay and tuff) and engineered barriers.

Fundamental issues are raised by the participants in this workshop. It is suggested, for instance, that further work should be done in order to include constitutive equations for creep in thermomechanical analyses of repositories, that the effort needs to be greater in the near-field model integration area than in new model areas, and that near-field thermomechanical and chemical phenomena are least understood for tuff and clay formations. Also, a wide consensus is reported about the need for adequate experimental data to support the presented models. At the same time, we learn that thermally driven groundwater flow is possibly the principal transport mechanism in fissured rocks and that estimated migration times for radionuclides are long enough that canister lifetime does not play a role in the dose rate to man unless the canister is extremely long lived (in excess of 10^5 yr!). Indeed, the book is a stimulating one, and areas for further research are consistently indicated.

With few exceptions, the content of the papers is highly technical, which makes them challenging but effective reading for the novice desiring to explore these new areas constructively and desirable reading for the more experienced researcher in the field. I would recommend it to both.

Claudio Pescatore is a recent PhD graduate in nuclear engineering from the University of Illinois at Urbana-Champaign. He has been active in modeling of nuclear waste form leaching during the past four years. He is presently an assistant nuclear engineer on the research staff of the Nuclear Waste Management Group at Brookhaven National Laboratory.

Neutron-Transmutation-Doped Silicon
(3rd International Conference, Copenhagen, August 27-29, 1980)

Editor	Jens Guldberg
Publisher	Plenum Press, New York (1981)
Pages	505
Price	$59.50
Reviewer	Heinz Herzer

The third international conference covered in this publication deals mainly with three different fields of interest (as can also be seen from the list of participants):