various contributors from Atomics International, Phillips Petroleum, California Research Corporation, and Combustion Engineering, reporting on work done at these laboratories as well as at other laboratories. Much of the work described has not been generally accessible before. In many instances, information found only in internal reports of the contractors is presented for the first time.

There is a rather complete and comprehensive chapter describing problems of film formation on heat transfer surfaces. This is the greatest problem remaining to be solved before organic reactors really can come into their own. In recent years, interest has shifted from the use of organic liquids as a coolant and moderator to coolant only, where fouling may, therefore, be less serious. New coolant types are also discussed and the means for obtaining and maintaining better coolant-impurity control.

Editor Makens and his editorial advisory committee consisting of C. A. Trilling, R. O. Bolt, J. C. Hillyer, and R. T. Keen have done a very commendable job in compiling the information about organic liquids and organic reactors. The book is recommended as an excellent reference work to all scientists and engineers who have an interest in this field.

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About the Reviewer: Mr. Weisner is an engineering graduate of the University of California at Berkeley and has been associated with Atomics International since 1950, where he has worked on various types of landbased and space reactors. He was chief project engineer for the Piqua Nuclear Power Facility.

The Propagation of Gamma Quanta in Matter. By O. I. Leipunskii, B. V. Novozhilov, and V. N. Sakharov, Pergamon Press, Long Island City, N.Y., 200 pp.,$15.00.

This Russian monograph, edited by Spinney, Butler, and Sykes and translated by Prasenjit Basu, bears the publication date 1965. The Russian original was published in 1960 and summarizes the literature as of about January, 1959. It is a little over 200 pages in length.

The organization of the material follows a standard pattern: The first chapter introduces basic concepts of radiation sources, gamma-ray interactions, flux and current, dose, buildup factor, etc. The second chapter summarizes penetration theory. The third chapter, which is almost half the book, presents and interprets data for different configurations. The appendixes give supplementary tables of attenuation coefficients (due to Gladys Grodstein), the exponential integral function, and one additional problem which didn't quite fit anywhere else.

The style of presentation is direct and terse; the authors do not often elaborate on, or qualify, the assertions made. The mathematical level is not deep, nor are mathematical questions and niceties considered. The theory in the second chapter concentrates most directly on moment theory. But the authors include an approach to Monte Carlo which I greatly appreciate: They take a simple problem and work through a case history completely as by desk computer, identifying each random number and each reference graph in turn.

All in all, the book seems to be essentially a series of lectures on gamma-ray penetration to students in an introductory graduate course in shielding, to give the students an initial orientation on what has been done and by whom, and how things stand. There are no problems. I don't think it would make a good text, but I do think that students would appreciate it as supplementary reading and reference material. Like most introductory presentations, it is apt to lead students to feel that matters are simpler, more complete, and more permanently fixed than they really are.

As a reference book for professional physicists and nuclear engineers, the book has a place, but with limitations. Its greatest advantage is as a summary of Russian literature prior to 1959. It will also have some use as a handy compilation of penetration data, though this application becomes more limited as better data are produced.

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About the Reviewer: Lew Spencer is professor of physics at Ottawa University (Kansas) presently on leave at the National Bureau of Standards. He is chairman of the Advisory Committee on Civil Defense of the National Academy of Sciences, and received the Distinguished Service Award of the Office of Civil and Defense Mobilization in 1960. Dr. Spencer completed his graduate studies at Northwestern in 1948, was at the NBS until 1957, and has been on the NBS staff part time since then. His primary interest is in the theory of radiation penetration and diffusion.