

theoretic probability is most helpful in those sections dealing with populations depending on a continuous parameter, but the reviewer can attest that even without such knowledge, while some of the proofs may be obscure, the main results seem quite intelligible. Indeed Dr. Harris often accompanies such results by non-rigorous arguments which would convince most physicists. His presentation is generally quite lucid and, for a mathematical work, relatively informal. Conjecture and speculation about unproved results is even included.

For any serious student of the stochastic theory of neutron multiplication, this book should be of great value.

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About the Reviewer: George Bell received his doctorate in theoretical physics at Cornell University in 1951. Since then he has been a staff member in the theoretical division of the Los Alamos Scientific Laboratory. In 1962-63 he was a lecturer on applied physics at Harvard.

Power Reactor Experiments. Proc. Symposium, Vienna, (October 23-27, 1961). International Publications, Inc., New York City. Vol. I, 402 pages, \$6.00. Vol. II, 285 pages, \$4.00.

The symposium that was held in Vienna in 1961, under the auspices of the International Atomic Energy Agency, included the 32 papers that are published with discussions in this two-volume set. Reviewing the set of papers must be done in the context of the time of the symposium, which was nearly three years ago. All of the reactor systems discussed were developmental in nature, ranging from conceptual design studies to operating experimental reactors such as SRE and the Dounreay fast reactor. If the number of papers presented represented the interests of the industry, it would appear that the greatest activity was in the fields of high temperature gas cooled reactors, fast breeder reactors, and in nuclear superheat.

The collection of papers makes an interesting status report of advanced reactor development in 1961. Unfortunately, as in all collections of this type, the papers vary considerably in the effectiveness of their presentation. In many cases the discussion following the paper proves to be more enlightening than the paper itself.

Among the better papers on developmental reactors are those on Dragon, SRE, Dounreay,

BORAX V and the ESADA program. The paper on the Molten Salt program at ORNL is of particular interest because it is the updating of a novel concept with a background of operating experience and discusses the design problems and the engineering details.

The most serious omission was that of the group of papers on Rapsodie, which were not included because of their length. The abstracts that were included are not very informative and the discussion that follows suffers because of the omission of the papers.

This reviewer would like to see experimenters give more details on their experiments and techniques. Under the pressure of space restrictions they tend to dismiss the experimental procedures in a paragraph or two and devote much of the space of the results. Often the results are strongly affected by the experimental method. This is particularly true in studies of fission product releases such as those presented by Brown Boveri/Krupp where a diagram of the loop would have been of considerable interest.

These proceedings are a worthwhile addition to any library collection of reactor engineering information.

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Applications of Neutron Diffraction in Chemistry. By G. E. Bacon. Vol. 1 of Topic 11, "The Ideal Crystalline State," *The International Encyclopedia of Physical Chemistry and Chemical Physics*. Edited by E. A. Guggenheim, J. E. Mayer, and F. C. Tompkins. The Macmillan Company, New York, (1963). 141 pp; \$6.50.

This small book contains a valuable review of the contributions which have been made by neutron-diffraction methods to the solution of chemical problems. The author, a principal contributor in the field, writes lucidly and authoritatively.

Chapter 1, "Principles and Methods," provides the absolute minimum discussion of the crystallography, neutron-scattering theory, and experimental techniques needed for appreciation of the