

BOOK REVIEW

The Physics of Nuclear Reactors, by S. GARG, F. AHMED and L. S. KOTHARI. Tata McGraw-Hill, New Delhi. (1986). 513 pages.

The authors have produced an interesting book on reactor physics which can serve as a graduate text and prove valuable to practising nuclear engineers. Although basically there is nothing new in this book it does bring together in a consistent manner the fundamentals of fission and the associated methods of reactor theory. It commences with a detailed discussion of the interaction of the neutron with matter with particular emphasis on cross sections. Although there is no discussion on the derivation of resonance cross sections from first principles, the outline is good and sets the scene for the work to come. The fission chain is discussed next and the concept of criticality introduced. We are then pitched directly into reactor types and some of their characteristics and then,

after a brief discussion of breeding and fuel cycles, the more "meaty" reactor theory starts. Neutron slowing down, thermalization, transport theory, diffusion theory, criticality, heterogeneous systems, reactor kinetics, reactor control, heat generation and removal are all there. Some topics are treated more deeply than others, and there is nothing that cannot be found in other books. Closest to this book is Bell and Glasstone's *Nuclear Reactor Theory* now nearly 17 yrs old but still good reading. However, Garg, Ahmed and Kothari have done a good job and their book deserves to be in all nuclear engineering libraries.

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