

Nuclear Energy Technology, Theory and Practice of Commercial Nuclear Power.

By RONALD A. KNIEF. Hemisphere/McGraw-Hill, 1981. 600 pp. \$33.95.

Decay Heat Removal and Natural Convection in Fast Breeder Reactors.

Edited by A. K. AGRAWAL and J. G. GUPPY. Hemisphere/McGraw-Hill, 1981. 423 pp. \$55.

Nuclear Reactor Safety Heat Transfer.

Edited by O. C. JONES. Hemisphere/McGraw-Hill, 1981. 959 pp. \$99.

The first of these three volumes is by an author whose present responsibilities, Manager of Training Facilities at Three Mile Island for the General Public Utilities (an appointment taken up after the TMI-II accident) make this study text on the practice of nuclear power particularly interesting. It has a broad coverage, directed mainly at nuclear power reactors themselves rather than the associated infrastructure of enrichment, waste management, etc., although these aspects are not ignored. The text is far more than a reactor-physics, reactor-engineering text, and includes a chapter on possible fusion reactors and aspects of public concern, acceptability, etc., including problems of proliferation and safeguards. It makes relatively light demands on mathematical ability and would be suitable therefore for training of operators as well as an undergraduate text, albeit with an entirely US approach.

The second volume is the record of the Brookhaven Specialists' Meeting devoted to thermal safety in the fast breeder reactor. A wide range of international review and application papers are included in a well-presented record. Major divisions of papers are: Out-of-pile Experiments; Analytic Modelling; Experiments and Analyses. A section discusses problems in gas-cooled fast reactors, but naturally enough the major portion of the effort was directed to sodium cooling. The proceedings provide a valuable review of the state of safety research in the area with the one omission of the concern that a liquid-metal coolant might provide for a self-induced magnetodynamic generator and the possibility of an electrical back-pumping negating the coolant circulation.

The third volume is a substantial textbook directed to safety consideration in the cooling of nuclear power reactors, both light-water and liquid-metal cooled. It resulted from the 1980 Summer School at Dubrovnik (International Centre for Heat and Mass Transfer). It contains much advanced material but no problems and therefore will be more suitable as a reference book or for collateral reading than as a primary text even in a graduate course. The book gives a good understanding of design base accidents for both reactor types and a specialist study of the Three Mile Island accident (1979).

J. D. LEWINS

CORRIGENDUM

The premixed flame in uniform straining flow

By P. A. DURBIN

Journal of Fluid Mechanics, vol. 121, 1982, pp. 141–161

The stability analysis in §3 contains an error. As given it is valid for two-dimensional disturbances, for which $l = 0$. For three-dimensional disturbances it is correct only in the limits of short and long wavelength. Because of the latter, it can still be concluded that straining acts to suppress the longwave instability.