Ann. nucl. Energy, Vol. 15, No. 3, p. 163, 1988
Pergamon Press plc. Printed in Great Britain

BOOK REVIEWS

Heat Transfer—A modern approach, by MARTIN BECKER. Plenum Press (1986). U.S.$39.50. 421 pages.

There are many books written about heat transfer, a lot of them very good ones. However, they tend to be "traditional" texts which cover the usual topics in the usual way. Martin Becker's book is different. It takes a very pragmatic view of the heat-transfer problem and recognizes what many other authors do not; namely, that most engineers, scientists and indeed students, possess computers. Thus, whilst this book does cover the usual topics, it does not do it in the usual way. The new way is very refreshing and typical of a nuclear engineer. Since the field of nuclear engineering pioneered the use of computers, it is not surprising to find advocacy of them in a book written by a distinguished nuclear engineer. In adopting this policy, the author has been able, not just to cover the usual topics, but to illustrate them readily as they apply to practical problems. The book is full of numerical examples, both in the text and as exercises. Several useful BASIC programs are available and numerous algorithms for numerical procedures can be found which enable quite complex problems in heat transfer to be brought into the range of a student's ability. This book is more than a student's text, however, since it can be read with profit by experienced engineers. This reviewer certainly learned a trick or two from it. To be more specific, the book covers the following areas:

1. Heat conduction both steady state and time dependent.
2. Natural and forced convection.
3. Convection with phase change.
4. Radiation.
5. Heat exchangers.
6. Design problems.

There are also some very useful appendices covering heat-transfer data (in SI units, thankfully), computer programs and various mathematical formulae and equations.

For those desiring an introduction to heat transfer prior to, or concurrent with, a course on reactor heat-transfer, this book would prove very useful. Although there are no specific reactor applications in the book, the principles and techniques are readily transferred to reactor design problems.

The University of Michigan M. M. R WILLIAMS
Ann Arbor

Pressure Vessel Codes and Practice. R. W. Nichols, Ed. Elsevier Applied Science, London (1987). 313 pages.

This volume is the fifth in a series published covering the technological developments in pressure vessels and related areas and is mainly concerned with American, British, German, French and Japanese codes and standards. An attempt has been made to devote one chapter each to the countries mentioned. In each case, the code/standard gives a full explanation of the basic philosophy and is supported by extracts from the original texts. Much of the volume is taken-up by the ASME code.

Although continuity exists throughout the text, the authors disregard the concept of bringing uniformity to the units adopted in the texts. This lack of coherence is a stigma on the presentation. After all, the purpose of such a text is always to have coherence in all aspects when bringing different codes into one volume. Moreover, the text misses the critial comparison of the codes/standards. A critical appraisal would have helped the proposed International Standards of the E.E.C., and the engineers, designers and constructors, unfamiliar with respective codes, working in different countries on pressure vessels.

The main advantage of this text is the methodology developed on the application of the codes and on many ways of explaining the codes. A number of useful references exist for those who wish to gain understanding of the technical problems associated with vessels.

Middlesex Polytechnic Y. BANGASH
U.K.