Book Review

Tyler G. Hicks, *Power Generation Calculations Reference Guide,* McGraw-Hill, NY, 1987, x + 366 pp., $36.50

The material in this book is reproduced verbatum from applicable sections of *Standard Handbook of Engineering Calculations,* 2nd. ed., from the same publisher. Readers already in possession of the handbook therefore need not consider purchasing the guide. Each calculation is presented by solving a realistic practical problem, posed as a practicing engineer might actually encounter it. The problems are presented with realistic complexity, and the detailed solutions are rich in practical guidelines not commonly found in engineering texts. Because the calculations are merely presented and not explained, however, the reader will need to possess a thorough understanding of all the basic engineering principles involved. An undergraduate engineering degree should in most cases suffice for this.

This book will be most useful to engineers concerned with the overall design and operation of conventional power plants. Individual components and processes are treated insofar as they affect other components and processes, but for the most part are not explored in detail. Thus combustion is covered, mostly by means of furnace problems, only from a thermodynamic point of view, and although the book therefore cannot be recommended as a combustion reference, a more extensive treatment would not have been appropriate. Likewise, engineers exclusively interested in internal combustion engines, compressors, refrigeration, and the like will find more complete information elsewhere.

One weakness of the book is that it attempts to be too broad. It contains many interesting problems on pumps and piping systems, the thermodynamics of steam cycles and various plant components, and energy conservation measures, but the chapter on heat transfer and heat exchangers is, by comparison, rather short. A similarly complete coverage of the latter topic would have provided a logical closure to the book, but this appears to have been sacrificed in favor of problems dealing with walk-in meat freezers, wind energy, and woefully inadequate chapters on nuclear engineering and materials handling. The book would have been much better focused had it concentrated on fluid and thermal systems likely to be found in conventional steam cycle power plants, and omitted less relevant material. Nevertheless, the guide should prove a valuable quick reference to engineers faced with the kinds of practical problems it addresses.

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