Discussions of plasma waves and plasma stability are deferred until Chaps. 7 and 8, where traditional materials such as Landau damping and kink instabilities are presented. Again, the presentation is well organized and readable.

Chapters 5 and 6 are devoted to plasma equilibria and transport, respectively. Both are very nice treatments that include important materials not contained in other comprehensive texts on plasma physics. For example, Chap. 5 contains descriptions of flux and current profiles required for toroidal equilibrium and Chap. 6 discusses neoclassical and trapped-particle diffusion.

More elaborate treatments of the material in the first eight chapters can be found elsewhere. However, the concise format of the presentation and the integration of these topics into a well-organized text make this work an excellent plasma physics reference.

The material in Chaps. 1 through 8 could easily fill a full semester first-year graduate course in plasma physics. With proper supplemental lectures, this book would be a fine text for such a course. It would be difficult, however, to cover this entire text in one semester and to expect more than a cursory comprehension on the part of the student. It may be prudent, then, in the organization of such a course to delete sections of the earlier chapters so that more time could be devoted to the important material presented in the latter chapters.

Chapters 9 through 14 cover important topics in fusion technology that are essential to current research efforts in magnetic confinement. One chapter each is devoted to plasma heating, radiative losses, plasma wall interaction, and power balance. The level of mathematical sophistication required is below that demanded in the earlier chapters, even though the material presented has been accumulated from recent research efforts in tokamak design. Major references are included, but often refer to voluminous reports and conference proceedings, rather than siting specific papers and authors directly.

Many of the concepts presented in earlier portions of the text are applied to the analysis of tokamak reactors in Chap. 13. Power balance and macroscopic stability of toroidal systems are discussed along with system constraints imposed by magnet performance, radiation shielding requirements, and material damage considerations. Various regimes for tokamak reactor operation are also discussed.

The final chapter covers other magnetic confinement options, including the tandem mirror, the ELMO bumpy torus, and the reversed field pinch. Again, much of this material is extracted from recent research publications but is integrated nicely into the general flow of the text.

In conclusion, this text is well written and organized. However, without a very good introductory course in plasma physics, the student may be hard-pressed to maintain the author's pace through the early chapters. The latter portion of the text is an excellent introduction to problems in fusion engineering. Its inclusion fills a void between theory and application that often exists in plasma physics courses at this level. It should also be noted that an entertaining set of problems, varying in degree of difficulty, accompanies each chapter. This book is recommended to educators as a fine text, and to all those interested in an up-to-date and complete reference in plasma physics and fusion technology.

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Nuclear Reactor Safety

Author	David Okrent
Publisher	University of Wisconsin Press, Madison, Wisconsin (1981)
Pages	370
Price	$29.50
Reviewer	Robert S. Wick

This book is an excellent combination of the history of nuclear power and discussions of the continuing changing of the philosophy of qualitative assessment of safety into a combination of safety, risk, and cost-benefit analysis on an ever-increasing quantitative basis. The author, in addition to his technical credentials, has a decided advantage over those of us who have had only very specific interactions with the regulatory process in that he was part of the developing regulatory process during the years of its most significant evolution. In his Preface, he states the purpose of the book is to look at history, not to examine or comment on the question "How safe is safe enough?" In the present era of increasing public scrutiny of engineering judgments and demands for engineering design perfection, it is important from a professional point of view to understand how we (engineers and the profession) reached the present state of environment that we are increasingly expected to work in. Obviously, these changes evolved in an atmosphere of high emotional fervor and social-political forces, which throughout history only occasionally have combined in such a dramatic way. It seems to the reviewer that the evolutionary development of the regulatory process in the nuclear power field is "spilling over" into all aspects of our high-technology-based society and hence the need to understand what has happened and is happening.

The author has added some very useful guides for the reader. For example, he presents a separate chronology of some important events in the history of light water reactor safety and then cites the appropriate chapter for discussion. This is important because many of the chapters are devoted to the discussion of general topics including reactor siting, the China Syndrome, seismic safety, etc. In other words, the book itself is not a straight-ahead chronological record of events but rather an attempt on the author's part to show evolving patterns and shifts in emphasis from one phase of the reactor safety regulatory process to another. This is certainly a difficult task and the author has done admirably.

Although this book is not light or casual type reading matter, the reviewer found it hard to put down at times. The author has a very good narrative style, which he employs very effectively to describe the unfolding of events and