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# Nuclear Energy: Principles, Practices, And Prospects





## Synopsis

This second edition represents an extensive revision of the ?rst edition, - though the motivation for the book and the intended audiences, as described inthepreviouspreface, remainthesame. Theoverallengthhasbeenincreased substantially, with revised or expanded discussions of a number of topics, - cluding Yucca Mountain repository plans, new reactor designs, health e?ects of radiation, costs of electricity, and dangers from terrorism and weapons p-liferation. The overall status of nuclear power has changed rather little over the past eight years. Nuclear reactor construction remains at a very low ebb in much of the world, with the exception of Asia, while nuclear powerâ <sup>™</sup>s share of the electricity supply continues to be about 75% in France and 20% in the United States. However, there are signs of a heightened interest inconsidering possible nuclear growth. In the late 1990s, the U.S. Department of Energy began new programs to stimulate research and planning for future reactors, and many candidate designs are now contendingâ •at least on paperâ •to be the next generation leaders. Outside the United States, the commercial development of the Pebble Bed Modular Reactoris being pursued in South Africa, a French-German consortium has won an order from Finlandfor the long-plannedEPR (European Pressurized Water Reactor), and new reactors have been built or planned in Asia. In an unanticipated positive development for nuclear energy, the capacity factor of U.S. reactors has increased dramatically in recent years, and most operating reactors now appear headed for 20-year license renewals.

### **Book Information**

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### **Customer Reviews**

I am amazed that nobody wrote yet a review of this book. I liked this book a lot. David Bodansky's style is logical, concise and fun to read. What I liked most is that the author succeeds to attack with equal clarity a wide range of diverse subjects about nuclear energy:- Economic considerations on nuclear energy.- The physics principles behind nuclear reactions, and their relevance in reactor design, etc.- Engineering considerations around nuclear reactor design and operations-Administrative considerations around waste disposal. To conclude: if you have some background in physics, math and/or economy, and you need a no-nonsense introduction in the field of nuclear energy, then this book is for you. However, if you just like to read prose, (and you don't enjoy technical details being sprinkled during the exposition) then the book migth be too high-level.

Nuclear Energy: Principles, Practices, and ProspectsThis book offers a wide coverage of both, theory and application, of nuclear energy. Nuclear energy is treated as source of electrical power and as a weapon, with obvious distinction. The physical theory is easy but complete and serves as a good starting point to a wide set of applications that include electrical power production (with a good comparison of costs between nuclear and oter ways of producing electricity), research and weapon principles. All these subjects are explored rather deeply, along with their ramifications. It is a good book, worth his prize.

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