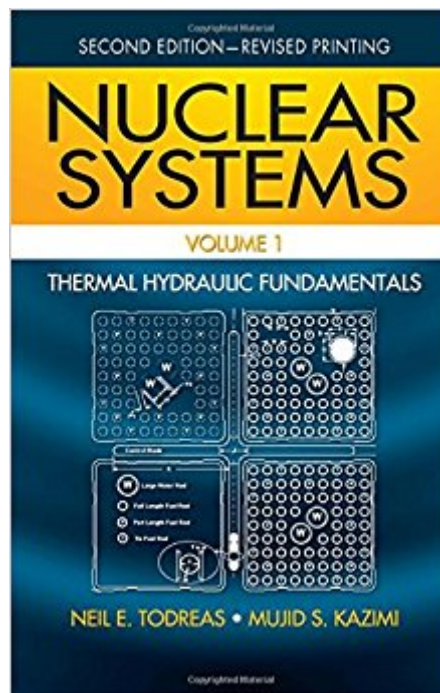




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# Nuclear Systems Volume I: Thermal Hydraulic Fundamentals, Second Edition



## Synopsis

Nuclear power is in the midst of a generational changeâ•with new reactor designs, plant subsystems, fuel concepts, and other information that must be explained and exploredâ•and after the 2011 Japan disaster, nuclear reactor technologies are, of course, front and center in the public eye. Written by leading experts from MIT, *Nuclear Systems Volume I: Thermal Hydraulic Fundamentals, Second Edition* provides an in-depth introduction to nuclear power, with a focus on thermal hydraulic design and analysis of the nuclear core. A close examination of new developments in nuclear systems, this book will help readersâ•particularly studentsâ•to develop the knowledge and design skills required to improve the next generation of nuclear reactors. Tables for Computation available for download at [www.crcpress.com/product/ISBN/9781439808870](http://www.crcpress.com/product/ISBN/9781439808870) Intended for experts and senior undergraduate/early-stage graduate students, the material addresses:

Different types of reactors  
Core and plant performance measures  
Fission energy generation and deposition  
Conservation equations  
Thermodynamics  
Fluid flow  
Heat transfer

Imparting a wealth of knowledge, including their longtime experience with the safety aspects of nuclear installations, authors Todreas and Kazimi stress the integration of fluid flow and heat transfer, various reactor types, and energy source distribution. They cover recent nuclear reactor concepts and systems, including Generation III+ and IV reactors, as well as new power cycles. The book features new chapter problems and examples using concept parameters, and a solutions manual is available with qualifying course adoption.

## Book Information

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## Customer Reviews

Dr. Neil Todreas is professor emeritus at MIT. He has extensive nuclear power experience, having led an industry review group on the Three Mile Island situation from 1983-1988 and served on the NRC's Reactor Safety Research Committee. In addition to his part-time teaching and research, Dr. Todreas continues to be a leading consultant to industry and government. He is a Fellow at the ASME and a member of the national academy of engineering. Dr. Mujid Kazimi is a professor and former head of the Department of Nuclear Engineering at MIT. He also has extensive nuclear power experience, having served on the Board of Managers of the Idaho National Energy Laboratory. He is also a Fellow at the American Nuclear Society and the AAAS, and a member of the AIChE, ASME and ASEE. Dr. Kazimi has been involved with several nuclear safety studies throughout his career, covering reactor systems, as well as their fuel cycles.

A very comprehensive text covering Nuclear Reactor Thermohydraulics. Cover Thermodynamics of nuclear power plants, and both single phase and two phase heat transfer and fluid flow. A excellent text by an expert and well respected nuclear engineering Professor!

Tough subject to make a quality text for since it is a true mashup of many areas of engineering science. There are some nice diagrams and figures. It is an overall good piece to have on the shelf for a nuclear engineer.

I found out there was another copy with more corrections (that includes red dot on the back). Even though I was sold this erroneous version without any prior information on different versions.

Overall a good reference and introduction, but somewhat poorly constructed and hard to follow example problems.

Great condition.

This is an extraordinary book! Very well written it covers the most relevant aspects of nuclear systems in regard to Thermal Hydraulics!

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Nuclear Systems Volume I: Thermal Hydraulic Fundamentals, Second Edition The Hydraulics

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