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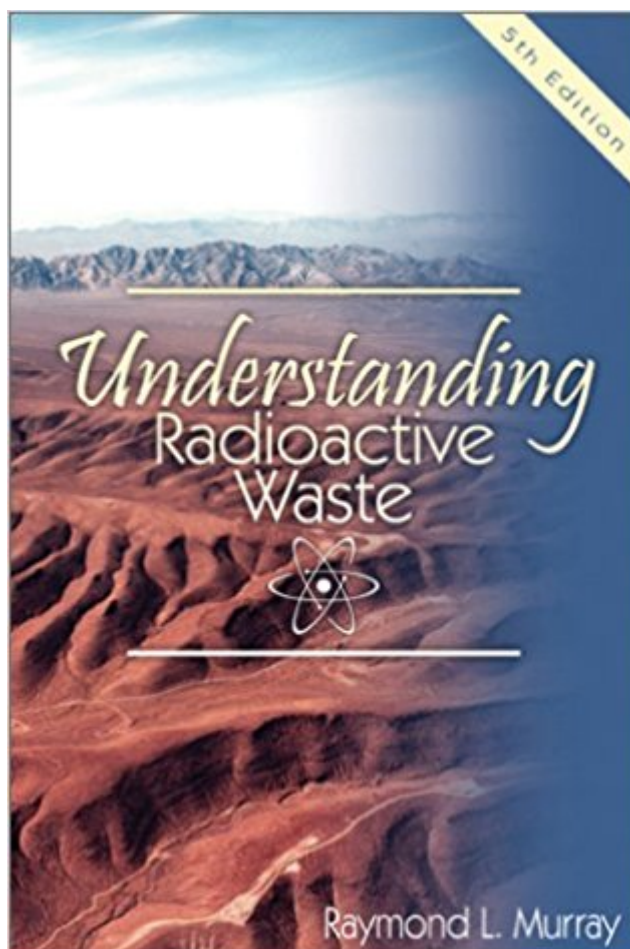
Understanding Radioactive Waste

5th Edition

Understanding Radioactive Waste

Raymond L. Murray

Synopsis

Today, the world faces two major problems: potential scarcity of energy and the pollution of the environment. How countries handle these problems can impact the quality of life for their citizens, their environment, and their economic prosperity. One answer to these problems may be nuclear power; currently, there are over 400 nuclear reactors operating in the world, with 109 of those in the United States. But, what is to be done with the spent nuclear fuel and other wastes created by nuclear power? Approval for new nuclear electric plants and continued use of existing ones may depend on safely disposing of these dangerous wastes. In making decisions about power plants, it is important that citizens and lawmakers know the nature of the waste problem and be able to distinguish opinions, feelings, and myths from the facts. Unfortunately, much of what is written is rhetoric intended to frighten or soothe. There is a wealth of technical literature, but it is often written in highly complex technical terms. Reports on plans and progress are in formal government-ese, making them hard to translate into plain English. In this new edition of Understanding Radioactive Waste, Dr. Raymond Murray explains clearly the origin and nature of nuclear by-products; provides facts and figures about nuclear wastes and the actions being planned on a national basis; provides perspective on the safety of waste isolation systems; and distinguishes knowledge from opinion whenever possible, in an unbiased and candid manner. The author rejects exaggerated statements about the waste problem at both poles of the debate -- assertions by proponents that it is merely a matter of politics, by opponents that a technical solution is impossible. This book -- through its straightforward writing and informative illustrations -- helps you understand such nuclear topics as uranium, radioactivity, radiation, and fission, along with the role of materials, chemical processes, and geology in the treatment and long-term handling of wastes. In addition, the human side of radioactive waste, from the biological impacts to the societal attitudes, are covered. A proven textbook and resource, this latest edition of Understanding Radioactive Waste provides new information on transportation of spent fuel and other nuclear wastes; high-level radioactive waste regulations; licensing of the proposed repository at Yucca Mountain, Nevada; and protecting nuclear facilities against terrorist attacks. Dr. Murray believes that an informed public makes the best decisions. Read Understanding Radioactive Waste, and be informed.

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Customer Reviews

Raymond L. Murray, Ph.D., is a Professor Emeritus at North Carolina State University, where he joined the faculty in 1950 and was a department head for eleven years. He was involved in designing the first nuclear engineering curriculum and starting the first university nuclear reactor. During World War II, he worked on the Manhattan Project, at the University of California at Berkeley and at Oak Ridge, in uranium isotope separation. He has published widely in the areas of basic physics, nuclear engineering, reactor theory and design analysis, and nuclear safety. Several of his books (Introduction to Nuclear Engineering, Nuclear Energy, Nuclear Reactor Physics) have been translated into several languages. For ten years, he served as Executive Editor for the United States of the Journal of Nuclear Energy.

This is an excellent book for those who are new to the concept's of radioactive waste and management. It not only include's information related to the types of hazardous waste, but also includes law and future projections on the subject matter. I highly recommend this book for anyone interested in this subject.

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