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Planning for Rare Events: Nuclear Accident Preparedness and Management (IIASA Proceedings Series, Vol. 14)

Editor	John W. Lathrop
Publisher	Pergamon Press, Incorporated, Elmsford, New York (1981)
Pages	268
Price	$30.00
Reviewer	Gerald A. Schlapper

The International Institute for Applied Systems Analysis (IIASA) is a nongovernmental research institution founded to enable scientists of the 17 participating countries to work together to solve common problems. Recognizing the need for an appraisal of the special problems of accident management of rare events, like nuclear accidents, a workshop was proposed to bring together people who are involved in maintaining preparedness in the member countries. The IIASA Proceedings Series (of which this book is a volume) was established to ensure that the results of these workshops are distributed to a large audience. This volume contains 21 papers along with a discussion of the themes that emerged during the presentations.

Participants in the program included operators, regulators, emergency management groups, and representatives of local, state, and national governments. The presentations and comparisons are based on each nation's current accident management plans. The papers in general are not oriented toward analysis of what went wrong at Three Mile Island but emphasize international experience in accident planning.

Topics discussed range from problems in maintaining preparedness to concerns over liability. Workshop participants are key individuals in their countries and areas of responsibility, and thus their statements are noteworthy, even though it is indicated that the opinions expressed are those of the authors and not necessarily those of their employers or governments. The viewpoints presented are quite diverse, and these differences are clearly expressed. The need for variation in planning due to institutional differences is evident. One must remember when reading this volume that while the U.S. representatives could and did discuss the successes and failures of emergency planning at Three Mile Island, representatives of other nations discussed in theory how their plans would work.

It is noted by various authors that planning for nuclear accidents can be seriously degraded by basing plans on past accidents or hypothetical events where the situation is known. The central problem is that uncertain plant status, meteorological conditions, and other factors make it much more difficult during a real accident to predict possible radiation exposure of the public. The complications inherent in a risk-benefit analysis of a decision to implement countermeasures are discussed. Factors such as accidental loss of life during an unnecessary evacuation, mental stress, and financial penalties are addressed. The need for good communications between the technical staff, government agencies, and the public is emphasized.

The editor is to be commended for the organization of the presentations. Following a brief introduction, points that were discussed during workshop sessions are outlined. This section primarily addresses unresolved problems of emergency planning and convinces the reader to look for more detailed information in the technical papers that follow. The formal technical papers are divided into four areas: perspectives of the accident at Three Mile Island, international perspectives in emergency planning, broad historical and legal issues associated with nuclear power, and technical aspects of nuclear accident management.

This workshop was held in January 1980, and obviously emergency planning is not "standing still" in the United States. Some of the concerns that are noted have already been addressed by regulations and/or standards. However, the majority of the text material is still current. This volume should be on the recommended reading list for those involved with emergency planning and accident management.

While on the staff of the University of Missouri Research Reactor, Gerald A. Schlapper was involved with the Operational Health Physics Program. He also served as a research fellow in the nuclear medicine department of the Harry S. Truman Veterans Administration Hospital. In January 1981, Dr. Schlapper joined the faculty of the Radiological Health Engineering Program of the nuclear engineering department at Texas A&M University. He also serves on the consulting faculty in the Nuclear, Biological, and Chemical Protection Branch of the U.S. Army Academy of Health Sciences.

Nuclear Fuel Cycle Optimization (Methods and Modelling Techniques)

Author	P. Silvennoinen
Publisher	Pergamon Press, Incorporated, Elmsford, New York (1982)
Pages	138
Price	$25.00
Reviewer	Nicholas Tsoulfanidis

This relatively small book (114 pp. text) should be useful to practicing nuclear engineers, especially those who