

PREFACE

DECONTAMINATION AND DECOMMISSIONING

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Nuclear facilities, like other kinds of industrial plants, must be decommissioned at the termination of their service lives. Unlike conventional facilities, their radioactive inventory and contamination does pose a number of specific problems. Decommissioning of nuclear facilities is not only a technical problem, but also a financial one, because the expenditures involved are considerably higher than those arising in conventional facilities. This indicates the need for timely studies of the problems arising from decommissioning nuclear facilities, mainly with respect to safety, licensing, dismantlement techniques, materials clearance, possibilities for final storage, and, last but not least, costs.

Considering the large number of operational and shutdown facilities worldwide, the need for intensive research and development work is evident. Although much has been done, as demonstrated by the results of several international decommissioning conferences, decommissioning work itself is only in the beginning phase and requires many more years of experience in this field.

At present, there are numerous nuclear facilities that are shutdown or for which dismantling is planned or in progress. The aim of every decommissioning project—whether on a long or short time scale—is to obtain “green field” conditions. The basic questions will be how and when this goal will ultimately be obtained or whether it will be possible at all.

The prospects for reaching this aim, aside from the monetary and technical viewpoints, is also a question of the availability of interim storage sites and of the final storage facility. At present, there exist no final storage sites worldwide other than some shallow land burials in various countries. It seems that the nonavailability of final storage capacity is more a problem of political and public acceptance than of technology. Therefore, much work exists for scientists, engineers, and politicians in producing reasonable and acceptable solutions for the final disposal of radioactive materials in the near and distant future.

The following papers give only a rough impression of our present knowledge in the field of decommissioning. By no means is the field covered completely, but the Special Issue presented here indicates the problems lying ahead.