

FOREWORD

Graphite and carbon have been used as a moderator and reflector of neutrons in more than one hundred nuclear power plants, mostly in the United Kingdom (Magnox and AGRs), France (UNGGs), the former USSR (RBMK), the United States of America (HTR) and Spain. In addition many experimental and plutonium production reactors also use graphite as a neutron reflector or neutron moderator. Less frequently graphite is used for manufacturing fuel sleeves and other reactor core components. Many graphite reactors are relatively old, some of them have already been shut down. Therefore, dismantling, characterization and management of radioactive graphite waste are a problem for many IAEA Member States.

Radioactive graphite management is not yet covered in IAEA publications. Only very general and limited information is available in publications dealing with decommissioning of nuclear reactors. Recognising this fact and reflecting the needs of Member States, the IAEA decided to initiate a project on characterization, treatment and conditioning of radioactive graphite from nuclear power plants. The aim is to prepare a publication dealing with all aspects of radioactive graphite waste handling, conditioning and disposal.

The most significant scientific and technical information on the subject has been collected in a few countries operating nuclear power reactors with graphite components in the reactor core. Some other countries have recently been involved in an investigation of particular problems corresponding to their specific requirements. With the aim of collecting information available in various countries and reflecting it in a technical publication, the IAEA, in association with the British Nuclear Energy Society (BNES), convened a Seminar on Nuclear Graphite Waste Management. This publication contains presentations made during the seminar as well as a summary of the participants' discussions.

The IAEA wishes to convey its thanks to the North West Branch of the British Nuclear Energy Society for hosting the seminar and to B.J. Marsden of AEA Technology for his principal contribution to the organization of the seminar and chairing of several principal sessions. The responsible IAEA officer was R. Burcl of the Division of Nuclear Fuel Cycle and Waste Technology.