

FOREWORD

A number of IAEA Member States have extensive thorium resources, in some cases bigger than uranium resources and they are interested in the development of thorium nuclear fuels for the reason of self-sufficiency. The world situation with uranium production could be also one of the factors endorsing R and D on further investigation of thorium fuels.

Until the present time considerable efforts have already been made in the area of fabrication, utilization and reprocessing of Th-based fuels for different types of reactors, namely: by FRG and USA - for HTRs; FRG and Brazil, Italy - for LWRs; India - for HWRs and FBRs. Basic research of thorium fuels and thorium fuel cycles are also being undertaken by Australia, Canada, China, France, FRG, Romania, USSR and other countries. Main emphasis has been given to the utilization of thorium fuels in once-through nuclear fuel cycles, but in some projects closed thorium-uranium or thorium-plutonium fuel cycles are also considered.

Thorium fuel utilization, technical status and development needs were considered in detail by the INFCE Working Group 8 (1977-1980). Some aspects of the thorium fuel cycle were considered at the IAEA Nuclear Power Conferences in Salzburg (1977) and Vienna (1982), as well as, the TCM on Improved Utilization of Water Reactor Fuel with Special Emphasis on Extended Burnups and Plutonium Recycling (Mol, Belgium, 7-11 May 1984), TCM on Advanced Light and Heavy Water Reactor Technology (Vienna, Austria, 26-29 November 1984) and others. In-depth consideration of the technology of some thorium fuels was given at the IAEA Advisory Group on Advanced Fuel Technology and Performance (Würenlingen, Switzerland, 4-7 December 1984).

The purpose of the Technical Committee on the Utilization of Thorium-Based Nuclear Fuel: Current Status and Perspective was to review the world thorium resources, incentives for further exploration, obtained experience in the utilization of Th-based fuels in different types of reactors, basic research, fabrication and reprocessing of Th-based fuels. As a result of the panel discussion the recommendations on future

Agency activities and list of major worldwide activities in the area of Th-based fuel were developed.

The Agency wishes to thank all those who participated in the panel discussion. Special thanks are due to the Sessions' Chairmen, Messrs. M. Peehs, I. Slesarev, C. Ganguly and the IAEA staff members, Messrs. F. O'Hara and M. Ugajin. The officer of the IAEA responsible for the preparation of this document is Mr. V. Onufriev, Division of Nuclear Fuel Cycle.

EDITORIAL NOTE

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