

CEC: **Commission of the European Communities** — The *Commission*, through the Directorate XII of research science and education (research, development and nuclear policy direction) and the Joint Research Center of Ispra, co-sponsored this study with UNIPEDE

FRCC: established in April 1970 by the *European Community's Council of Ministers* the **Fast Reactor Coordinating Committee** has the mandate in the field of *breeder reactor and associated facilities* set down in the Committee's brief:

"to study and put into effect the widest possible coordination and cooperation among the various programs through the most appropriate procedures, and to make any recommendation useful to this end".

The FRCC is composed of national delegations which include representatives of the governments, the electricity producers, the manufacturing industries, and the research organizations.

This study has been conducted on behalf of the FRCC.

UNIPEDE: established in 1925 the **International Union of the Electric Power Producers and Distributors** comprises electricity producers of almost all European countries, excepting the USSR but including some East European countries; some African countries are associate Members.

The purposes of UNIPEDE are set down in its Charter: "The aims of the *Union* shall be the study, at international level, of all problems, the solution of which is likely to contribute to the development of the *electricity* supply industry,..., so as continuously to improve the quality of the service and make it available to consumers under the best possible economic conditions".

UNIPEDE through the *European Community Committee* that groups the power producers of *Europe of the ten* co-sponsored this study with the *Commission*.

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Acknowledgements:

The Group wishes to thank all colleagues who contributed to this effort. A particular mention goes to: **J. Journet** and **E. Mignot** of EdF, and **R.T. Thorne** and **D.J. Western** of CEGB for Part I; to **J.A. Crofts** of CEGB and **B. Zaffiro** of ENEL for Part II.

Abstract

This report was prepared by a working party of experts from both UNIPEDA and the CEC under a mandate agreed by both these bodies in 1977. The report is in two parts. The first part presents studies of the possible future penetration of fast reactors into the electricity generating systems of the European Community and illustrates the effects on the demand for natural uranium. The sensitivity of the results to different assumptions in several key areas is investigated: these areas include the future level of electricity demand and the performance achieved by the fast reactor and its fuel cycle. The second part of the report describes the current state of development of fast reactor fuel reprocessing, an area shown to be of crucial importance.

The report concludes that provided nuclear power develops without undue restriction there is a continuing need within the European Area to develop the fast reactor and its fuel cycle.

The importance of striking a balance between the allocation of resources to reactor and to fuel cycle development is stressed by the report.

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