

INTRODUCTION AND SUMMARY

On the invitation of the Government of the USA the Technical Committee Meeting on Design Requirements, Operation and Maintenance of Gas-Cooled Reactors, was held in San Diego on September 21-23, 1988, in tandem with the GCRA Conference. Both meetings attracted a large contingent of foreign participants. Approximately 100 delegates from 18 different countries participated in the Technical Committee meeting, which was chaired by Mr. A. Millunzi from DOE-Washington.

The session on design requirements was most revealing in terms of displaying the increased international interest in the smaller, modular versions of the HTGR technology. In the industrialized countries, utilities and energy users consider the smaller systems as primarily another nuclear option that better matches future electrical generation load growth patterns as well as cogeneration and process heat applications. Papers delivered by representatives from the United States (U.S.) discussed design requirements for electricity generating plants and also for a cogeneration (electricity and desalination) plant. The papers from the Federal Republic of Germany (FRG) discussed electricity generation and process heat supply.

Industrializing countries, on the other hand, foresee these small nuclear plants, with their simplicity and passive safety, as a compatible match to their grid sizes and their infrastructure capabilities. The electricity generation situation in the People's Republic of China was presented and was a good example of the potential application of these smaller reactors in countries which had these requirements. Financing a nuclear project was identified however as the greatest hurdle facing an industrializing country and innovative schemes in this area were a major topic of discussion. Mitigating the increasingly evident environmental impact of fossil fuel burning was a key factor for all countries and was the particular requirement emphasised in the presentation from Poland where the environmental impact of coal burning is very apparent.

The operation and maintenance session contained several papers presenting the excellent inherent characteristics of gas-cooled reactors. Papers from France and Italy discussed the many years of successful operation of MAGNOX-type reactors in these countries. The papers from the U.S. on Fort St. Vrain and from the FRG on AVR and THTR discussed the nature of both good and bad experiences with these high temperature gas-cooled reactors, emphasizing that all experiences were very valuable if properly considered in future designs. Papers from several countries including Japan, Switzerland, Soviet Union as well as the U.S. and the FRG were then presented which displayed the various designs that are being developed. Papers covering safety, environmental aspects and storage and disposal of spent fuel for HTGRs were also presented and discussed in detail.