

## NUCLEAR REACTOR DEVELOPMENT IN KOREA: IT'S HISTORY AND STATUS

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### ABSTRACT

Currently in Korea, 20 nuclear plants are in operation, generating some 18,000 MWe of electricity which is about 30% of the national electricity supply. Further 8 reactors, including innovative light water reactors developed with 30 years' experience in construction and operation with continuous technology development, are either under construction or being planned. Executing an energetic program of nuclear development, Korea is now the world's sixth-ranked nuclear nation.

In this paper, at first, history of the nuclear reactor development in Korea will be discussed including technology self-reliance efforts of the nuclear industry, and future plan and prospects will also be presented. Secondly, the OPR1000 which is a Korean standard plant will be introduced in detail including its characteristics, design approach and features. Six OPR1000's are being operated with outstanding performance and 4 more units are under construction. The APR1400, an upgraded reactor of the OPR1000 in capacity and design, has been developed as a next generation reactor, and the contracts were signed for the first 2 units' construction in August 2006. Its development process and design features will be described. Finally, Korea's efforts for future nuclear power generation will be introduced. For future reliable energy supply, Korea has been actively participating in international cooperation such as Gen IV International Forum.

In summary, this paper will introduce the history and status of the Korean nuclear reactor development with its past, present and future, which might be helpful to understand the Korean nuclear industry and find a way for international cooperation especially with European countries.