

ENC 2002 Conference Invited Paper

The Framatome ANP Advanced Reactor Designs

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The need to replace the first Nuclear Power Plants commissioned in the seventies, the growing environmental concerns linked to the increased greenhouse effect and the global increase of energy consumption will most certainly result in a Nuclear Energy renaissance in the next decade. The analysis conducted under the leadership of the US Administration shows that it is most likely that a resumption of the construction of new NPPs in the US will participate in this tendency. In anticipation, projects are already planned or being considered in Asia, Finland and Brazil.

Framatome ANP's policy is to satisfy the needs of its potential customers as well as the requirements of the safety authorities through its existing portfolio of advanced designs inherited from the merged companies: Framatome and Siemens KWU. In Brazil and China, for the near future, Framatome ANP offers advanced versions of the recently commissioned Angra 2 and Ling Ao units which exhibit excellent technical and economic performance. In these markets as well as in other markets, Framatome ANP is also in a position to offer the most recently developed PWR and BWR designs:

- ✍ For Pressurized Water Reactors the new main line is the EPR born from the Franco German collaboration involving the national Safety Authorities and the Utilities who support the project. It is an evolutionary design benefiting from the successful operation record of the N4 plants in France and the Konvoi plants in Germany. It complies with the expected Next Generation plants requirements. It takes into account severe accident situations as a design basis as well as more severe loading conditions with respect to external hazards (airplane crash, earthquake). Its high power output (larger than 1500 MWe) is particularly well fitted to the European NPP's replacement market where limiting the number of necessary sites is a must.
- ✍ For Boiling Water Reactors the focus is the SWR 1000. It is an advanced design which integrates passive safety systems well in line with the basic BWR design principles. It complies with the expected Next Generation plants requirements. Its new design features have been experimentally qualified in the framework of international partnerships. It is Framatome ANP's policy to promote this product whenever the customer has a preference for the BWR design.

In parallel, Framatome ANP actively pursues the development of more innovative designs (e.g. Gas Cooled Reactors), whose characteristics are potentially well adapted to the US market as well as to other markets, and which could be submitted for design certification at a more advanced development stage.