

# ENC 2002 Conference Invited Paper

## The Power of Proven Technology

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### Abstract

The case for nuclear electricity is compelling. In a nutshell, it is that nuclear plants are safe, affordable, provide diversity of supply, reduce levels of imported energy, and support a growing economy without increasing air emissions. These advantages were evident to a majority of the members of the Finnish Parliament who voted 107 to 92 in favor of constructing a new nuclear power plant in that country.

Now comes the hard part.

Constructing a new plant is a complicated endeavor to say the least but one that nonetheless must be undertaken and completed on a tight budget and schedule. The stakes are high because Teollisuuden Voima Oy, the company that plans to own and operate the plant, will have made commitments to its customers (most of whom are also the owners of TVO) to provide electricity by a certain date. This electricity is needed to keep the customers' mills and factories operating.

Once the plant is constructed, it goes without saying that it must be operated safely and certainly nothing less will do. The plant must also generate electricity in a highly dependable fashion so that TVO can meet its commitments on an on-going basis and make the economics of the plant justifiable.

We understand and appreciate these needs because General Electric is a company that has made its reputation by consistently meeting commitments to its customers and shareholders.

That is why we think GE and the ABWR nuclear plant are ideally suited for Finland's Fifth Nuclear Unit.

The ABWR is the leader of a new generation of advanced nuclear plants that have higher levels of safety and lower capital costs. What makes the ABWR really stand out, however, is the fact that it is based upon proven technology and is backed by a proven supply team with the caliber of GE. Understandably, owners of power plants--whether gas turbine, combined cycle, coal or nuclear--are quite reluctant to own the first of a new series or, as the pundits like to say, a plant with Serial #1.

The paper will discuss these points and provide an update on the performance of the two operating ABWRs in Japan, which have now accumulated over 10 reactor years of operating experience; and the two ABWRs under construction in Taiwan, which are now about 50% complete. The ABWR has been successfully reviewed against the EUR requirements and the results of this comparison will be presented.