

REPUBLIC OF KOREA

Nuclear power and public acceptance

More emphasis is being placed on public acceptance than ever before

by Dr KunMo Chung



One exhibit at the Kashiwazaki-Kariwa information centre shows the nuclear fuel cycle. (Credit: Tepco)

struction process of Unit-1, all shown on the triple-split screen.

In addition, the APIL guides assist visitors by explaining in plain language the contents of exhibits about nuclear power generation which would otherwise be hard to digest. Also, personal computers are provided to give children an opportunity to learn about energy while "playing" on the machine. And in the natural forest surrounding the service centre, benches and small lodges are installed to provide visitors a place for refreshment and relaxation.

These activities represent an attempt to create the image of "an open and familiar power station" where visitors can be both informed and amused.

Plans are now being considered to start live television shows on local topics, including scenes of APIL guides talking with visitors to the centre, for viewers in Tokyo as far away as 300 kilometres from the nuclear power station. The plan, if put into reality, is expected to go a long way toward making the nuclear power industry a more transparent and open one.

How well are activities working? Favourable responses from many visitors are encouraging: Comments range from "our visit here has made us better informed of what nuclear energy is" to "your exhaustive explanation has given us

a clear understanding of nuclear power generation". Responses from local inhabitants who have visited the centre include those saying that "as long as it is operated safely, the nuclear power plant helps promote the development of the local community". Such comments help to underscore the importance of nuclear activities to further public understanding and acceptance, using an information service centre as a base.

Korea, described by the great Indian poet, Tagore, as the Land of the Morning Calm, is a land blessed with natural beauty and a splendid cultural heritage of 5000 years.

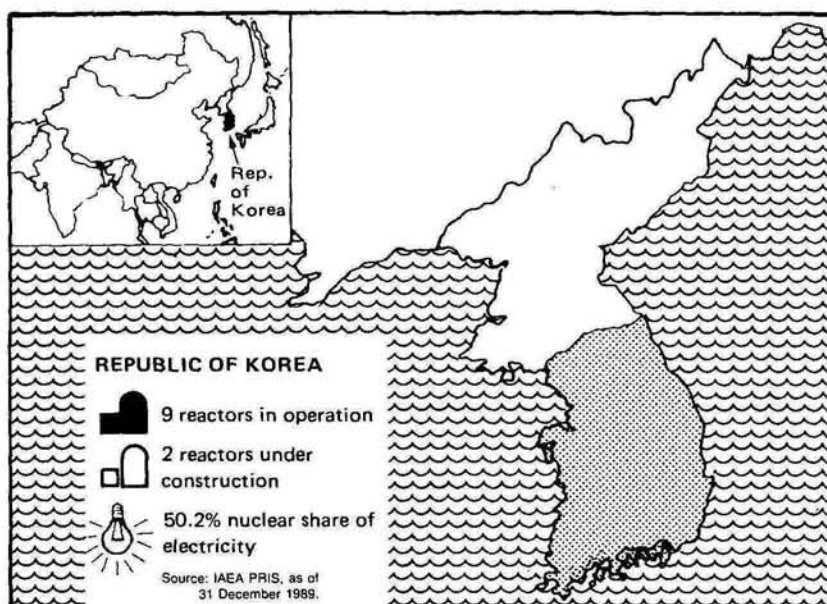
Beauty and culture aside, the country is not blessed with natural energy resources. It has only limited coal deposits and the coal is comparatively low grade. In addition, every drop of oil must be imported.

Furthermore, because of its geopolitical situation, the country has long suffered from mightier neighbours. Thus, its history has seen much pain. These past difficulties, coupled with a complete lack of natural energy resources, were reflected in the nation's once backward economic development. Beginning in the early 1960s, however, the Government executed a series of successful 5-year Economic and Social Development Plans designed to achieve national prosperity.

The country's dramatic economic growth over the past 3 decades has been accompanied by rapid electricity demand growth of more than 15% per year, with

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nuclear power having assumed a key role in meeting this demand since the late 1970s. For the Republic of Korea, nuclear power is an absolute necessity, not an alternative.

The country's first nuclear power plant, Kori-1, a 600 megawatt-electric (MWe) pressurized-water reactor (PWR), went into commercial operation in 1978, marking a new era of power generation in this country. The nation's nuclear power programme has continuously expanded since then. Today the country has nine nuclear power plants in operation and two others under construction. The nuclear share of total installed electrical capacity now accounts for more than 35% and will rise to nearly 50% by the turn of the century.

At the end of 1989, total installed capacity was 20 990 MWe, with fossil fuel-fired power accounting for 53.6%, nuclear 36.3%, and hydropower 11.1%.

Under current load-growth patterns, the nuclear plants handle more than 50% of the country's electricity generation, with the average capacity factor of the operating nuclear units being higher than 70%. This means that, in terms of capacity factor, the Republic of Korea is among the top seven of the

27 countries with nuclear power plants. In addition, the country's nuclear plants also recorded very low trip frequencies. These factors evidence the success of the country's nuclear power programme.

Towards self-reliance in nuclear technology

The country's first three units (two Westinghouse PWRs and one Candu) were constructed on a turn-key basis by foreign vendors. The next six units — the second stage of the Korean nuclear power programme — followed a different approach, one that steadily increased the nation's capability in nuclear power technology. However, this stage is still a far cry from the eventual goal of self-reliance in nuclear power technology.

Currently, the Republic of Korea has moved into the third stage of its programme with the construction of the eleventh and twelfth nuclear units (Younggwang Units 3 and 4), in which foreign vendors become sub-contractors to local prime contractors. This arrangement bears out the country's desire to achieve self-reliance in nuclear power technology and demonstrates its ability to do so.

To this end, the Government, in a well-planned programme, decided to assign technological responsibilities to local specialist groups: the nuclear steam supply system designed by the Korea Atomic Energy Research Institute (KAERI), architect-engineering by the Korea Power Engineering Company (KOPEC), and the reactor and turbine manufacturing by the Korea Heavy Industries and Construction Company (KHIC), among others.

If all goes well, before the year 2000, the Republic of Korea will become a country self reliant in nearly all technological aspects of nuclear power plants.

Public acceptance activities

In spite of the country's ambitious commitment to the development of the nuclear power industry, there is tremendous work yet to be done. One area is public acceptance of nuclear safety.

In parallel with the recent socio-political changes taking place in the Republic of Korea, public interest in nuclear power has risen drastically, with the anti-nuclear movement having been developed by environmental protection groups. Even though the necessity for nuclear power generation has been acknowledged by the greater part of the general public, local demonstrations have become intensified, and doubt and criticism about nuclear plant safety have increased. To efficiently and effectively cope with this challenge, the Government now places more emphasis on public acceptance of nuclear power than ever before. It works closely with utilities, research institutes, and nuclear-related organizations such as the Korea Electric Power Corporation (KEPCO), the Korea Atomic Industrial Forum (KAIF), and KAERI.

In March 1986, the Public Acceptance Committee was organized within KAIF, recognizing the need for strengthened activities. It consists of nuclear experts in areas of public acceptance from the Govern-



Fifteen years ago, the Republic of Korea's first nuclear power plant was under construction. Today, nine nuclear plants are producing one-half of the country's electricity, but not without public opposition.

ment and the nuclear industry. KAIF strengthened its functions by establishing a new public acceptance department in 1987. Meanwhile, KEPCO recently established the Nuclear Safety Office to ensure the safety of nuclear power plants and to further reinforce public acceptance activities.

The ultimate goal is to strengthen the nationwide base for public acceptance, thus eventually promoting a sound nuclear culture.

Since convincing anti-nuclear groups of the benefits of nuclear power is not expected to be easy, the main emphasis will be focused on the general public, which has the right of the ultimate choice.

The press, professors, and medical doctors will be particular targets of efforts, since they meet with the

public more frequently and have a great influence on them.

Bearing this in mind, Government policy directions for nuclear public acceptance activities are set as follows:

- To establish, under an organized and systematic long-term public acceptance programme, the most appropriate strategy for maximum effectiveness and fulfil the nation's "right to know";

- To actively cope with anti-nuclear criticism through objective and scientific materials, and to create a pro-nuclear force to strengthen the sustainable base against anti-nuclear movements;

- To give special attention to the trends in public awareness

about nuclear power and to seek prompt and sincere resolutions to all complaints; and

- To reinforce international cooperation for enhancing nuclear activities in public acceptance areas.

Under these policy directions, every possible measure has been taken to restore public confidence and to strengthen public acceptance of the necessity for nuclear power plants and of their safety.

The current major public acceptance activities in the Republic of Korea include publication of booklets and pamphlets, production of video tapes, and arrangements for various presentations, open fora, plant visits by the public, and accessibility of nuclear plant information. The range of work includes: