



ASSURING NUCLEAR ENERGY'S FUTURE THROUGH INTERNATIONAL CO-OPERATION

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The Nuclear Society of Slovenia is to be congratulated on having chosen as this conference's primary objective, "The fostering of regional co-operation between professionals from utilities, regulatory bodies, research and educational institutions". The choice reflects a clear appreciation of the need for all in the nuclear community to share hard-won experience and know-how if the industry is to operate safely, compete effectively and firmly establish itself as a key supplier of electricity in the years ahead.

I would like to project this theme onto a broader canvas and touch upon some of the co-operative programmes, international developments and trends which I believe will go some way towards determining the future of our technology.

At a recent international meeting in Vienna hosted by the IAEA and co-sponsored by the EC and the Nuclear Energy Agency of the OECD, representatives of Western institutions agreed that substantial progress had been made towards ensuring the continued safe operation of nuclear installations in Eastern Europe while stressing that much remained to be done and that international support must continue.

In a final report, there was special mention of successful efforts being made to strengthen the independence and technical competence of the nuclear regulatory authorities, but a reminder of the need for Governments to ensure that the same authorities have the financial resources and the powers of enforcement to fully carry out their missions.

The meeting also concluded that sound progress was being made on operational safety, though significant additional input was required to produce an effective safety culture. Also, while design safety improvements are in place in all the countries concerned, valuable time and effort in pursuing them could be saved by stepping up the exchange of information on the engineering solutions and implementation of the safety modifications among those involved.

Looking ahead, Carol Kessler, senior co-ordinator for nuclear safety at the US Department of State and Chair-woman of the meeting, told the audience that the focus of operating organisations must now turn to producing safety analyses of the kind nuclear plant operating licences in the West are based on. These would show where to focus resources now for safety improvements on the basis of a specific plants strengths and weaknesses.

To give some indication of the international support being provided, the EC alone under its Phare and Tacis programmes have contributed about 800m Euro since 1991. They have recently begun to provide hardware after years of exhaustive studies, and bilateral and EBRD

funding for safety upgrades. Total committed Western assistance stood at 1.8 billion Euro in February - only a quarter has so far been spent - while 700m Euro has not yet been committed.

The assistance programmes have not been implemented without difficulty. At the Vienna meeting, speakers from recipient countries criticised the programmes operated by the EBRD, and more particularly the EC, for their excessive slowness and inefficiency. From the Western standpoint, it can be said that lack of resources in the East, political and economic instability in certain countries and, till fairly recently, the virtual absence of civil liability legislation - a factor which for some time deterred equipment suppliers from fulfilling a vital role - have hindered progress.

Whatever the shortcomings in programme implementation, nothing can detract from the encouraging progress made in this complex global undertaking.

Commercial

Over more recent years, work in the East has been pursued against a background of burgeoning change in the West, change brought about by liberalisation of electricity markets in the EU and the transformation of the economic, technical and industrial scene.

Deregulation has overturned historical models for the power generation sector and set down a framework within which individual member states have to introduce competition in this area. That competition means that the customer, and especially industrial customers, will no longer be bound to their own power utility. We now live in a buyer's market in which the most successful power company will be the one offering the lowest rates and a service package tailored specifically to the customer's needs. In Western Europe, which has a surplus generating capacity of 35,000 MW, only the company with the lowest generating costs can be the price leader.

Market liberalisation, coupled with improvements in the performance and efficiency of other forms of generation - and gas in particular - present the nuclear industry with a serious commercial challenge. That challenge is currently being met in EU member states and elsewhere by extending the lives of existing plants on which capital costs have largely been depreciated. Up-rating programmes, equipment upgrades, and steam turbine replacement are just some of the measures being taken to enhance competitiveness and at the same time ensure that the majority of units involved operate for 40 or 50 years.

If nuclear energy is to establish itself globally over the long-term, the industry must meet the needs of an increasingly demanding market by developing new and innovative technology. Recognising this need, Europe's power generators have fixed the performance levels they expect of future reactors with regard to economic competitiveness, operating characteristics, plant safety and radiological protection. These requirements, known as EUR - European Utility Requirement for LWR nuclear power plants - have been described within the European Commission as an important turning point in the history of nuclear power.

All major European and American reactor builders are now developing advanced LWR's which meet the criteria defined in the EUR. Of these the French/German European Pressurised Water Reactor (EPR) best exemplifies cross-border collaboration.

It was in 1989 that Framatom and Siemens took the decision to co-operate on the design of a nuclear island that could meet the future needs of power utilities, Nuclear Power International, their joint subsidiary, was formed a year later, while another landmark was reached in 1992 when EDF and leading German utilities joined the co-operative venture, and the project received the backing of the safety authorities of the two countries.

The cost target of the 1750 MW plant is defined in the European utility requirement. It calls for a generating cost advantage of 15 percent over current plants for baseload operation. The preliminary evaluation shows that the cost could be close to the lowest value expected of combined cycle plants, even taking account of their potential for greater efficiency.

From the early beginnings of the project, the safety authorities of both countries pursued a programme of co-operation embracing all aspects of technological development, safety assessment and regulatory matters unprecedented in the nuclear field.

The emergence of common safety requirements for the EPR is expected to lead to wider harmonisation of safety practices in France and Germany. It is also seen as an important step towards a common safety approach in Europe and beyond.

In my address I have touched upon two very different, high-profile projects - safety in Eastern Europe and the Franco/German reactor - which clearly show what can be achieved through international collaboration. Success in these very different areas will greatly enhance the prospects for nuclear energy as a long-term source of electrical power. However, unblemished safety records and superior plant performance may not on their own be enough to secure a future for our technology, for without public and political support there is little prospect that the authorisations needed to construct and operate new facilities will be forthcoming.

Public Information

The need to restore public confidence in nuclear energy in parallel with the development of new technologies and infrastructures that will enable the industry to compete places a heavy responsibility on the shoulders of the communicators.

Over the years, information specialists across the international spectrum have invested substantial resources, energy and skill into gaining the level of public acceptance enjoyed prior to TMI. It has been an uphill struggle, not helped of course by the subsequent accident at Chernobyl. All too often, however, efforts have been hindered by the industry's lack of transparency, the release of poor quality information to the wrong audience and worst of all, public relations blunders committed by operators of nuclear facilities. The discovery of radioactive contamination of flasks used for the transportation of irradiated fuel between countries, and the sheer inadequacy of the response to media interest, perfectly illustrates the tendency to "shoot ourselves in the foot". It is a tendency which must be removed if the positive messages about nuclear are to come to the fore.

Whether addressing public concerns, or promoting the industry's case, all involved must demonstrate an awareness that there are no national borders in nuclear operations, and commit themselves to the task with the same vigour, imagination and collective spirit as has been shown in post-Chernobyl Eastern Europe and in the development of the EPR.

Evidence that the nuclear industries of the West are moving in the right direction is seen in:

- the merger last Spring of the information committees of the European Nuclear Society and the European Atomic Forum (Foratom), a move that will eliminate duplication, make more effective use of specialist skills, and lead to the creation of a common agenda in support of a European communications programme;
- the continuing success of the annual PIME (public information materials exchange) workshop, a major international forum which facilitates the sharing of information and experience between PR specialists worldwide (Ljubljana will host PIME 2000 next February);
- the coming together of major representative bodies - the Uranium Institute, Foratom, ENS - in Kyoto and Buenos Aires to spell out, as a team, the environmental benefits of nuclear.

An important feature of the Kyoto and Buenos Aires initiative was the positive impact made by representatives of the Young Generation Network, a movement set up by ENS in 1995 to ensure that invaluable experience and know-how acquired over decades by an aging workforce is not lost to the industry. In the space of less than five years, the YGN has become established in 17 countries, including Slovenia.

I believe the YGN has a part to play in future public information programmes, and that they are well placed to assist in another area crucial to the future well-being of the industry: nuclear education.

Education

The decline in the number of educational establishments offering courses in nuclear technology, particularly in Europe, causes concern. Aside from the fact that this will ultimately choke off the flow of gifted physicists and engineers the industry needs, the trend is probably an indication that university entrants no longer see nuclear technology as a long term career prospect. The latter further underlines the need for the industry to launch stimulating new projects, typified by the advanced LWRs, to mobilise interest among the young.

To clarify the position, ENS, in co-operation with its member societies, corporate members and sister institutions worldwide, is to review nuclear education facilities to determine whether the European experience is unique, and if so, why. Also, as a positive independent measure, the Society will seek to organise a series of summer schools at universities and colleges with a nuclear tradition.

Conclusion

I have managed to reach the end of my address without appealing for the continued use of nuclear energy on the grounds that, unlike its main competitors, it produces no CO₂ and must, therefore, be an essential component in the global effort to meet the emission targets set in Kyoto. Though an important argument, it cannot on its own restore the fortunes of the industry. We have to face the fact that success will depend on our ability to compete by keeping construction and operating costs down, operate plants safely over time, win the

confidence of the public, and attract the young people needed to take over from the industry's founding generation. We need to make sure this is followed not just in Western Europe, but by stimulating international co-operation and transfer of best practices, we can assure this happens across the whole of the European nuclear industry. The agenda for this meeting gives you the opportunity to contribute towards those goals.