Nuclear Power and Public Opinion

Nuclear power and public opinion are two of the factors which must be taken into account when evaluating national overall energy needs and the ways and means to meet them. In order to enable the public and the press to have at their disposal as much information as possible on these factors, three sessions – one plenary and two technical – were organized on this subject. This was to permit an extensive debate in a scholarly fashion.

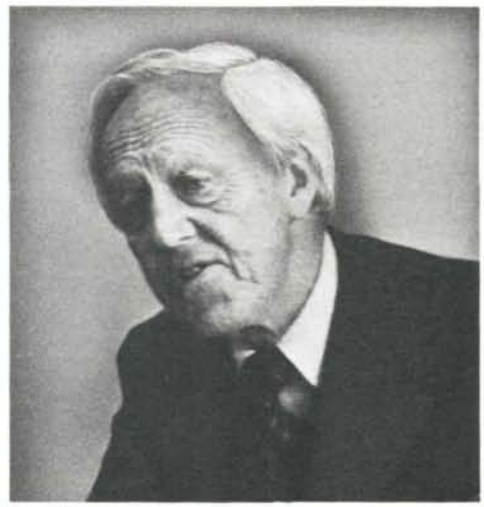
The scope of the debate was defined as follows by the Chairman, Dr. Paul R. Abrecht of the World Council of Churches in his introductory speech:

"The decision of the International Atomic Energy Agency to make nuclear power and public opinion one of the central topics of this conference is to be welcomed. The fact that the organizers of this conference have invited a theologian engaged in Church and Society to chair this plenary session is a significant precedent. We assume it is one more sign that scientists want to work with other people in exploring the ethical and social implications of modern technology. Judging by the very different views we shall hear this morning, this meeting is an indication that the Agency itself favours the widest participation in the discussion of nuclear policy."

"It is my understanding that we are all agreed that our primary concern is the welfare of people, those living now and the generations that are to come. Our concern is to be responsible stewards over this earth and all that it contains. Through modern technology that responsibility has been greatly enlarged."

"Nuclear power has become a central part of that technology, posing in stronger form than ever before the question of the balance between benefits and risks, a dilemma underlined by our presence here this morning. Is nuclear power basically so different from all previous industrial developments that we should suppress it outright as some would advise? Or is it similar in nature to many other discoveries of civilization throughout history, such as fire, gunpowder and the steam engine, which can only be judged in relative terms? In this case we must try to discover its most responsible use despite the obvious uncertainties and anxieties it generates."

"It seems to me that the scientific community has much to gain and nothing to lose by acknowledging clearly that the development of nuclear energy involves great social and ethical dilemmas. We should not encourage public opinion to believe that they can readily be overcome. From a theological and a technological perspective there is no risk-free human existence. We all want to make responsible decisions. The question is how to realize this, especially in the context of the nuclear arms race."



At the plenary session on nuclear power and public opinion, two Nobel Prize winners presented opposing viewpoints on the need for nuclear power. Prof. Hans A. Bethe (left photo), who feels nuclear power is needed in order to avoid an energy crisis, critically reviewed some of the arguments against nuclear power. Prof. Hannes Alfvén (right) presented the case against nuclear power and proposed the development of non-nuclear technologies as the solution for the energy problem.

"The political and social issues of nuclear power are now so important that there must be increased opportunity for public participation in determining the policies and methods. These cannot possibly be decided by nuclear scientists and technologists alone, nor by the various interest groups engaged in the construction and operation of nuclear power systems. Nor can it be decided without them."

"There is a further question. The developing countries rightly feel that 'the public opinion' referred to today still expresses the views of a minority of the world's peoples and is largely biased in favour of a developed country's perspective of power and self-interest."

Dr. Abrecht then expressed the hope that the discussions in Salzburg could be a starting point towards achieving a more balanced and international discussion on these critical issues.

Two Nobel Prize winners, Prof. Hans A. Bethe (USA) and Prof. Hannes Alfvén (Sweden) presented their differing views on nuclear power in the plenary session chaired by Dr. Abrecht. Dr. John M. Francis of the World Council of Churches raised some of the ethical issues involved, based on the convictions that "we cannot live as though nuclear energy had not been discovered", and that "nuclear energy must not be looked upon as an end in itself but must serve social justice and quality of life".

The protection of the public interest was presented by Dr. Jan Dǿderlein (Norway), with emphasis on public health and environmental effects of power production. He emphasized the right of the public to obtain technically proven correct informations and to be protected against the dissemination of "myths". The United Nations Environment Programme (UNEP) gave a review of the environmental impact of nuclear energy, while L.D. Hamilton and A.S. Manne (USA) reviewed the health costs of other energy sources. Dr. Harry J. Otway,

project leader of a joint research project of the IAEA and the International Institute for Applied Systems Analysis (IIASA), reported on the identification of factors influencing social response to technological risks in today's world.

The following points emerged from the plenary session, and were summarized by the Chairman:

"The experiment of the IAEA in engaging in a broader debate about nuclear power was acknowledged to be worthwhile. It was the first step in meeting a public demand for a discussion of critical issues connected with nuclear power programmes. This discussion should be continued and must necessarily now involve all concerned with the technical, environmental, medical, sociological, political and ethical perspectives."

"The public debate about nuclear power is inevitably connected with the much larger problem of providing world energy needs; this must also embrace the question of resources, the comparison and future significance of 'alternative energy technologies', and the preservation of the world environment. Professors Bethe and Alfvén both emphasized the importance of an open debate on contributing to public understanding and eventual judgement on these important issues. They differed on the substantive content of the present argument and also over whether the IAEA should be the appropriate sponsoring agency for organizing such a debate at the international level."

"There is currently a real public concern that information issued by the official agencies does not properly reflect the uncertainties over the future management and control of the nuclear fuel cycle. Consequently, it will be necessary to ensure that a more balanced approach to the public information problem is devised. This could take the form of a new system of co-operation between governmental and non-governmental information channels to generate and to test the objectivity of the approach to specific problem areas that have now been identified."

"The problem of non-proliferation was posed in view of the implied expansion of nuclear energy production in a larger number of countries."

The first technical session was chaired by Dr. Døderlein and reviewed public information programmes in eight Member States – Austria, Federal Republic of Germany, France, Japan, Philippines, Sweden, UK and USA. Mrs. S. Frigren (Sweden) described its government-sponsored, major public information programme on energy. The early and traditional openness to the public of information related to nuclear power in the UK was reviewed by Mr. R.R. Matthews. To sum up the first technical session, it was found that:

- In several countries large and centralized information campaigns have been arranged by the government. Information is also given by a number of private and public organizations, as well as by international organizations. National and regional differences in culture and in needs have led to the use of a variety of plans and methods.

- While a large number of individuals have been reached by information material or campaigns, the percentage of the general population that is well informed appears to be low.

- Measuring and explaning the effects of information campaigns is difficult, and litte quantitative data is available. However, preliminary results are unequivocal in pointing to a strong need for continued and increased efforts to improve communication and

A press briefing and question-and-answer period was held after the plenary session on nuclear power and public opinion. At the table are: Dr. Jan Döderlein (Norway), Dr. J.M. Francis (World Council of Churches), Prof. Hannes Alfvén (Sweden), Dr. P.R. Abrecht (WCC), Prof. H.A. Bethe (USA) and Dr. L.D. Hamilton (USA).

understanding between the public, political leaders, mass media and the scientific-technological community. The close connection between information and education was emphasized.

The second technical session, under the chairmanship of Dr. O. Gimstedt (Sweden), reviewed regulatory processes in some Member States, such as the role of the National Environment Policy in the USA; public awareness in countries like Canada; and the democratic process of decision in Switzerland was described by Dr. C. Zangger.

A perspective on radiation protection problems and risk analysis was given by K.G. Vohra (India), and a social analysis of the various "messages" and "eco-myths" disseminated to the public and certain samples of its reaction were analysed by J.P. Pagès (France).

In his summing up, the Chairman noted that:

- "It is important to keep the public currently and fully informed on the likely consequences of operating nuclear power plants, as well as of comparisons with alternative power production sources. This conference had tried to expose all the relevant aspects of the *peaceful*, civilian uses of nuclear energy. Thus, the technical, sociological, ethical and health aspects have been considered."

- "International organizations – like IAEA and WHO – should play an important role in the dissemination of information on nuclear energy and should contribute to the general awareness and confidence of the public."

- "It was also to be remembered that the IAEA had only the mandate to handle questions of *civilian* peaceful nuclear power. The present conference had tried to define a frame in which civilian nuclear power can be discussed."

- "One should not forget, however, that we live in a world where also other forms of use of nuclear energy potentially exist. If we look upon the problems from this point of view, and I think that some international organization should do that – I believe that we may well find that the possibility of covering a substantial part of the world's increasing energy requirements by nuclear energy will reduce the risk of nuclear weapons being used."

Selected papers:

1. H.A. Bethe, "The controversy about nuclear power". IAEA-CN-36/582.
2. H. Alfvén, "Energy policy and public acceptance". IAEA-CN-36/588.
3. P.R. Abrecht and J.M. Francis, "Public acceptance of nuclear power, some ethical issues". IAEA-CN-36/383.
4. J. Dødderlein, "Nuclear power as a public issue: the protection of the public interest". IAEA-CN-36/451.
5. E.E. El-Hinnawi, "Review of the environmental impact of nuclear energy". IAEA-CN-36/361.
6. L.D. Hamilton and A.S. Manne, "Health costs of alternative energy sources". IAEA-CN-36/448.
7. R.R. Matthews and E.F.F.W. Usher, "C.E.G.B. experience of public communication". IAEA-CN-36/59.
8. C. Zangger, "Nuclear energy control and its influence on public acceptance of nuclear energy in Switzerland: aims and implementation". IAEA-CN-36/579.
9. J. Davies, "Canadian attitudes to nuclear power". IAEA-CN-36/580.
10. K.G. Vohra, "A perspective on the radiation protection problem and risk analysis for the nuclear era". IAEA-CN-36/395.
11. J.P. Pagès, D. Agrafiotis, et al., "Nuclear energy and the public". IAEA-CN-36/254.
12. H.J. Otway, "A review of research on the identification of factors influencing the social response to technological risks". IAEA-CN-36/4.

Round Tables

	Chairman	Participants
Role of Nuclear Power in Future Energy Supply – Prospects and Constraints	W.B. Lewis (Canada)	A.M. Angeli (Italy) R.R. Matthews (UK) I. Morozov (USSR) W.J. Schmidt-Küster (F.R. of Germany) R.D. Thorne (USA)
Developments and Decisions Needed to Assure the Nuclear Fuel Cycle	Sir John Hill (UK)	J.A. Feron (France) H. Murata (Japan) V.S. Shmidt (USSR) R.D. Thorne (USA) J.P.L. van Dievoet (Belgium)
Integrated Planning of the Nuclear Fuel Cycle Industry	K. Davis (USA)	C. Allday (UK) M. Hagen (F.R. of Germany) V. Meckoni (IAEA) M. Pecqueur (France) E. Svenke (Sweden)
Solid High-Level and Long-Lived (Alpha-Contaminated) Radioactive Waste Disposal Options and their Availability	A.M. Platt (USA)	D.W. Clelland (UK) L.N. Lazarev (USSR) N. Rydell (Sweden) Y.S. Sousselier (France) M. Tomlinson (Canada)
Radiation Dose Implications of Different Radioactivity Management Practices	D. Beninson (UNSCEAR)	A.K. Ganguly (India) N.G. Gusev (USSR) H.P. Jammet (France) Sir Edward E. Pochin (UK/ICRP) W. Rossbander (German Democratic Republic)

	Chairman	Participants
Use of Generalized Safety Reviews of Major Nuclear Facilities in Regulatory Practices	J. Servant (France)	S.A. Alonso (Spain) A. Birkhofer (F.R. of Germany) R. Gausden (UK) J.H.F. Jennekens (Canada) B.C. Rusche (USA) V.A. Sidorenko (USSR)
Effectiveness of Safeguards, Role of the National System of Accountancy and Control, its Relationship to International Safeguards and Physical Protection	C.-M. Zangger (Switzerland)	E.B. Giller (USA) D. Gupta (F.R. of Germany) R. Imai (Japan) V.N. Misharin (USSR) R. Rometsch (IAEA) H.W. Schleicher (EURATOM)
Transfer of Nuclear Technology to Developing Countries	J.C. Shah (India)	R.N. Alves (Brazil) A. Boettcher (F.R. of Germany) A. Etemad (Iran) L.D. Ibe (Philippines) M.A. Khan (Pakistan) N.F. Sievering (USA)