

ASSESSMENT OF THE SECOND CONFERENCE

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The Geneva Conference of 1958 was up to then the world's biggest and most comprehensive conference concerned with science and technology. Its description - the peaceful uses of atomic energy - was somewhat deceptive, since the conference covered not only engineering applications and energy problems but the nuclear sciences as a whole. It promoted specialized information, but at the same time attempted to counteract the tendency for overspecialization by attracting scientists and technicians from all the various disciplines which have contributed to the development of atomic energy.

Such a big international meeting held under the auspices of the United Nations was effective in a manner different to that of smaller meetings in that it stimulated Governments to release and review material which otherwise might have remained undigested or buried in sometimes inaccessible reports and documents.

The timing of the conference was propitious. The advanced countries had successfully operated research reactors long enough to enable the less advanced nations to be provided with much needed information; radioisotopes had become available on a relatively large scale and at lower prices. Consequently research, which had previously been restricted to a small number of privileged institutions, could be carried out anywhere; industry could freely benefit from the same tools; and - perhaps most important from the human aspect - methods could be introduced in medicine which offered new possibilities. In theoretical physics a whole series of newly discovered particles with intriguing properties stimulated the imagination of physicists.

After an experimental and testing period the first power reactors were going into operation. Data and experience on fuel and on constructional problems had become available which justified a technical evaluation of the situation. Following the 1955 conference atomic energy activity commenced and gained momentum in a number of countries. Nevertheless progress in the application of nuclear energy for power production had advanced slower than anticipated, therefore making a reassessment highly desirable in the interest of both advanced and developing countries.

There were great expectations concerning nuclear fusion, which just before the conference had attracted the attention of the scientific world. The possibility



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in principle of power production from nuclear reactions similar to those which furnish the energy of the stars had been recognized, but the extent to which scientific and technical problems had to be solved before this theoretical possibility could be realized was unknown.

Nearly 2200 papers presented at the conference not only provided a survey of past achievements but also pointed the way to future developments. The record of the conference, consisting of 33 volumes, published very quickly, represents the most comprehensive reference text in nuclear science and technology and will certainly be of continuing value for many years to come.

The governmental and industrial exhibitions were probably as far-reaching in scope as the conference itself. These were lively exhibitions which attracted the layman as much as the specialist, and included experimental demonstrations of important effects. The exhibits which included operating reactors, full-size models of space probes, and a collection of fusion devices - models and full-size equipment - exceeded all expectations by their novelty, diversity and open display. For a multitude of scientists, who for financial and other reasons could not have afforded visits to the major national laboratories, especially the fusion section gave first-hand information of great value for their own work.

In an attempt to sum up the scientific and technological highlights of the conference it can be said that although no definite conclusions could be drawn from the papers as to the date when nuclear power would break even with conventional power, the conference provided a more realistic evaluation of the situation than was presented in 1955.

Certain domains largely classified before the conference were opened up, as for example the fusion area, where it was made clear that the magnitude of the problems to be solved was so large that only a concerted effort could lead to a solution. On the other hand, the great Powers did not release any substantial information regarding diffusion processes for separating the uranium isotopes. Most important was the fact that a free exchange of information took place between representatives for different disciplines from many different nations. On the whole the conference

showed the world what could be achieved by scientists collaborating without political limitations.

Although the conference in this way made a substantial contribution its size was such as to make questionable the wisdom of arranging a further one of the same wide scope, a consideration which to a large extent led to limiting the scope of the third conference.

The success of the 1958 conference was due in no small measure to the efficiency and dedication of the international secretariat set up by the United Nations and gave an indication of what might be attained if the nations of the world combine their resources in a common enterprise for their mutual benefit. The opportunity which the conference afforded to the less developed nations to present the results of their work demonstrated clearly the useful part they are able to play, in partnership with the more advanced countries, in extending the frontiers of knowledge in the science of atomic energy.