

The International Nuclear Fuel Cycle Evaluation - INFCE

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ORGANIZATION OF INFCE

The International Nuclear Fuel Cycle Evaluation, INFCE, was set up on an initiative of the USA at an organizing conference held in Washington, D.C. on 19–21 October 1977.

This took place against a background of rising concern in some countries about the risks of proliferation of nuclear weapons from nuclear power fuel cycles and international disagreement on how these risks were to be met. The communiqué issued by the organizing conference stated that the participants:

- were conscious of the urgent need to meet the world's energy requirements and that nuclear energy for peaceful purposes should be made widely available to that end;
- were convinced that effective measures can and should be taken at the national level and through international agreements to minimize the danger of proliferation of nuclear weapons without jeopardizing energy supplies or the development of nuclear energy for peaceful purposes;
- recognized that special consideration should be given to the specific needs of and conditions in developing countries.

The organizing conference agreed that INFCE was to be a technical and analytical study and not a negotiation. The results were to be transmitted to governments for their consideration in developing their nuclear energy policies and in international discussions concerning nuclear energy co-operation and related controls and safeguards. Participants would not be committed to INFCE's results.

This communiqué also laid down the organization, terms of reference, procedures and methodology for the study. Eight working groups were established, chaired by countries that volunteered to assume the responsibility:

Working Group 1: Fuel and Heavy Water Availability
(Co-Chairmen: Canada, Egypt, India);

Working Group 2: Enrichment Availability
(Co-Chairmen: France, Federal Republic of Germany, Iran);

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- Working Group 3:** Assurances of Long-Term Supply of Technology, Fuel and Heavy Water and Services in the Interest of National Needs Consistent with Non-Proliferation
(Co-Chairmen: Australia, Philippines, Switzerland);
- Working Group 4:** Reprocessing, Plutonium Handling, Recycle
(Co-Chairmen: Japan, United Kingdom);
- Working Group 5:** Fast Breeders
(Co-Chairmen: Belgium, Italy, USSR);
- Working Group 6:** Spent Fuel Management
(Co-Chairmen: Argentina, Spain);
- Working Group 7:** Waste Management and Disposal
(Co-Chairmen: Finland, Netherlands, Sweden);
- Working Group 8:** Advanced Fuel Cycle and Reactor Concepts
(Co-Chairmen: Republic of Korea, Romania, USA).

The 22 co-chairmen were constituted as a Technical Co-ordinating Committee (TCC) to co-ordinate the working groups from the technical point of view. At its first meeting, the TCC elected Professor Abram Chayes of the delegation of the United States of America as its Temporary Chairman, and he was reconfirmed in that capacity from meeting to meeting.

Originally, 40 countries and 4 international organizations participated in the organizing conference. By the time it concluded, INFCE had as participants 66 countries and 5 international organizations.

THE ROLE OF THE IAEA

The IAEA Board of Governors authorized the Agency to participate in and support INFCE in essentially three different ways:

- by providing administrative services for the large number of meetings held during the INFCE study;
- by providing secretariat services for the TCC and the Plenary Conference;
- by making substantive contributions in areas where the Agency had particular expertise.

In addition, the Agency provided scientific secretaries or rapporteurs for six of the eight working groups, and, in response to a request from the first Plenary Conference in 1978, agreed to publish the INFCE reports and establish a depository of INFCE documentation within the INIS system.

LOOKING BACK AT INFCE

The INFCE working groups held a total of 134 meetings between 1977 and 1979. The TCC had nine meetings and there were two plenary conferences, the first in November 1978 and the final one in February 1980. The Agency reproduced some 25 000 pages of report material for the various working groups and for the Final Plenary Conference. It is very difficult to estimate the total number of experts who participated in the work but the Agency's mailing list of people to whom the papers and reports in the various working groups were sent comprises 700 names. It has thus been a considerable effort which has gone into INFCE. The final result is given in 8 volumes of working group reports and a Summary Volume which contains a Summary and Overview Report by the TCC. The latter volume is

available in the four working languages of the Agency. The Final Plenary Conference which was held from 25–27 February 1980 in Vienna also adopted a communiqué which summarizes some of the conclusions of INFCE. A portion of it is reproduced verbatim in the following.

“At the Final Plenary Conference each Working Group presented its report. The Chairman of the TCC reported on the work of the Committee and presented the Summary and Overview. A general debate followed in which delegations commented on the reports, on the work of INFCE and on future developments.

The participants considered that INFCE has accomplished its task. It has identified ways and means of strengthening assurances of nuclear supply while at the same time minimizing the risk of the proliferation of nuclear weapons. These would involve international co-operation and include technical, legal and institutional measures as well as possible developments in the field of safeguards. As one of its assigned tasks, it analysed the special needs of developing countries in this regard and pointed to actions that might be taken by States through the IAEA and to other means to meet those needs.

The delegates recognized the central role that the IAEA has played in the past and must continue to play in the future in meeting the problems that were the focus of the INFCE study.

The participants noted with satisfaction that the Working Group reports were presented to the Plenary Conference without separate or dissenting views. As with all consensus documents, this did not mean that every Working Group member was in full agreement with every word or endorsed in every case the particular form of expression chosen.

Environmental, health and safety issues were addressed by the Working Groups within their terms of reference, to determine whether specific fuel cycle activities could be carried out in conformity with accepted standards. Study of these problems showed that these standards could be respected. More comprehensive environmental, health or safety assessments are being undertaken in other national and international forums, particularly within the IAEA.

The reports do not contain policy recommendations, because INFCE was intended as a non-political technical and analytic study rather than a negotiation. The delegates agreed that the INFCE reports had made an important contribution to the definition of problems within their fields of study and had produced valuable suggestions, and that INFCE had reduced differences of view and promoted common understanding among the participants.

At the conclusion of its debate the Final Plenary Conference took the following actions:

1. It received the reports of the Working Groups and the Summary and Overview and submitted them to governments of participating States for their consideration in developing their nuclear energy policies and in international discussions concerning nuclear energy co-operation and related controls and safeguards, recalling that participants are not committed to INFCE's results under the terms of the Washington Communiqué. It resolved furthermore that these reports should be made available to all governments and international organizations and conferences interested in the peaceful uses of nuclear energy.
2. It decided that the International Nuclear Fuel Cycle Evaluation has been completed and discharged the Working Groups and the TCC. In this connection it expressed its gratitude for the efforts of all those who had participated in the INFCE study and congratulated them

on the high quality of their work. It expressed particular appreciation to the 22 co-chairmen of the Working Groups, on whom the main responsibility for the study rested, to the Presidents of the Plenary Conferences and, last but not least, to the Chairman of the TCC, Professor Abram Chayes, who had also been the President of the organizing conference.

3. It thanked the IAEA for the outstanding quality of the technical and administrative support it provided to the study.

4. It declared that the International Nuclear Fuel Cycle Evaluation is now concluded and that the Working Group reports and the Summary and Overview should be released to the general public.

Finally, the Conference wishes to state that the findings of INFCE have strengthened the view

- that nuclear energy is expected to increase its role in meeting the world's energy needs and can and should be widely available to that end;
- that effective measures can and should be taken to meet the specific needs of developing countries in the peaceful uses of nuclear energy; and
- that effective measures can and should be taken to minimize the danger of the proliferation of nuclear weapons without jeopardizing energy supplies or the development of nuclear energy for peaceful purposes.

The Conference recognized that the objectives mentioned above can only be achieved through continued international co-operation and the participants are determined to preserve the climate of mutual understanding and co-operation in the international nuclear energy field that is one of the major achievements of INFCE."