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FOURTH INTERNATIONAL CONFERENCE ON THE PEACEFUL USES  
OF ATOMIC ENERGY

Report of the Secretary-General

CONTENTS

	<u>Paragraphs</u>
I. Authority for the Conference . . . . .	1 - 2
II. Participation in the Conference . . . . .	3
III. Governmental Scientific Exhibition . . . . .	4 - 6
IV. Scientific content of the Conference . . . . .	7 - 18
V. Public information programme of the Conference . . . . .	19 - 20
VI. Budgetary and administrative aspects of the Conference . . . . .	21 - 24

## I. Authority for the Conference

1. Under the terms of General Assembly resolutions 2309 (XXII) of 13 December 1967, 2406 (XXIII) of 16 December 1968, 2575 (XXIV) of 15 December 1969, and 2651 (XXV) of 3 December 1970, the Fourth International Conference on the Peaceful Uses of Atomic Energy was held at the Palais des Nations, Geneva, Switzerland from 6 to 16 September 1971.

2. The resolutions authorizing the holding of the Conference provided that the Conference should be more limited in size, cost and duration than those held in 1955, 1958 and 1964. The General Assembly also believed that, as a result of the "growth in the practical applications of atomic energy and the importance of ensuring that such applications are made widely known, a conference whose agenda would concern public officials, economists and planners, as well as technologists, would be desirable". As a result of these decisions, the budget of this conference was smaller than those of the previous conferences, and the agenda was designed to appeal to public officials, economists and planners as well as to technologists.

## II. Participation in the Conference

3. In order to have the broadest public participation in the Conference, the following groups were invited to attend:

(a) All Member States of the United Nations, the International Atomic Energy Agency and the specialized agencies, of which 84 participated;

(b) Thirteen specialized agencies of the United Nations, of which nine participated;

(c) Sixteen interested intergovernmental organizations, of which eight participated;

(d) Twenty-nine non-governmental organizations, whose work relates directly to the peaceful uses of atomic energy, of which 16 participated;

(e) Inasmuch as it was believed that the Conference should be as open as possible, representatives of institutions, universities and industries, as well as individuals who had a legitimate interest in the subject matter of the Conference, were admitted as observers;

(f) To the extent that the space permitted, members of the general public were admitted to the public galleries of the meeting rooms of the Palais des Nations during the 10 general and 51 technical sessions that were held.

A total of 1,816 representatives and advisers and 2,154 observers registered at the Conference.

### III. Governmental Scientific Exhibition

4. In connexion with the Conference, but not as an official part of it, a Governmental Scientific Exhibition was held at the Palais des Expositions, Geneva, from 5 to 16 September. The 19 nations which participated in the Exhibition devoted considerable imagination, time and expenditure to the preparation of the exhibits. National exhibits were largely designed to illustrate the main theme of the Exhibition, namely, "Atoms for development", and displayed, among other things, models of operating power reactors, advanced engineering components and prototypes of fast reactors; demonstrations of the processing, non-destructive testing and handling of reactor fuels; new methods of instrumentation and control; uses of isotopes and radiation in agronomy, medicine, and industry; plasma physics; applications of atomic energy in desalination and information retrieval systems.

5. This Exhibition thus provided an over-all picture of the technological concepts and equipment at present being used in many disciplines related to the peaceful uses of atomic energy.

#### International Atomic Energy Agency Exhibit

6. The International Atomic Energy Agency installed in the Palais des Nations pictorial panels displaying its main activities, together with a display of its technical publications programme.

### IV. Scientific content of the Conference

7. Like the previous Conference, held in 1964, the Fourth International Conference on the Peaceful Uses of Atomic Energy focused on one main theme, the rapid rise of nuclear power as a major source of energy in the world. It also considered the applications of radio-isotopes and radiation in various fields, as well as many other peaceful uses of atomic energy. Unlike the previous Conference, however, its agenda and the papers presented were directed more towards government officials, planners and economists than to technical experts and scientists.

8. The Conference confirmed both the fact that nuclear energy is already playing a very significant role in electricity generation and the predictions that nuclear power will account for about one quarter of the total installed capacity by 1985 and about one half by the year 2000. There was also general agreement that there is not likely to be any real shortage of the basic fuel, uranium, provided that current exploration continues and that breeder reactors can be introduced by the 1990s, as seems probable.

9. The possible global effects of the anticipated increase in power production, as well as the question of the disposal of radio-active waste products from the many large nuclear power plants, which will be in operation by the year 2000, were considered. The Conference examined the safety standards and regulations which have been established to give adequate protection to the workers in the industry and to the public at large. In this connexion, proposals were made concerning the securing of international agreements on safety standards and liability questions.

10. Several sessions of the Conference were devoted to an examination of the operating experience which has been obtained with the currently established nuclear reactor types, namely, pressurized or boiling light-water reactors, carbon-dioxide cooled graphite reactors and heavy-water reactors. In addition, the role of small nuclear-power reactors was studied with a view to developing economical operation of such reactors to meet the needs of developing countries.
11. Another important aspect of the deliberations of the Conference was the future development of fission reactors, including the high-temperature helium-cooled reactor, as well as the breeder reactors which are needed to utilize fully uranium resources.
12. One important subject discussed was the integrated planning of power programmes so as to find the best possible balance between hydro plants, fossil-fuel plants and nuclear plants. The economic management of nuclear fuels was considered and was regarded as most important because of the high value of the materials involved.
13. Another major subject of discussion at the Conference was the development of systems for the safeguarding of peaceful nuclear materials - systems designed to reduce the danger that such materials could be diverted to military purposes. The Statute of the International Atomic Energy Agency, of course, provides for the development of such a safeguards system and the Agency has developed a practical one. The terms of the Treaty on the Non-proliferation of Nuclear Weapons, which came into force on 5 March 1970, has substantially increased the importance of safeguards. The discussions at the Conference revealed that both national and international organizations were engaged in serious work on developing and improving safeguards systems which will be effective and credible while, at the same time, involving minimal costs and designed in such a way as not to interfere unduly with the normal operation of a nuclear reactor.
14. Reports were presented during the Conference describing progress on nuclear fusion. In addition, the Conference reviewed the uses of nuclear explosions for peaceful purposes - both what has actually been done in this field and the possible further use which might be made of this technology.
15. The applications of radio-isotopes and radiation in agriculture as a means of increasing food production and reducing losses of the food produced were discussed, as was the use of tracer techniques in hydrological studies to improve the understanding and management of water resources. The medical applications of radiation and the applications of radio-isotopes in industry were also considered.
16. An important session of the Conference was devoted to discussions of the education and training of scientists and engineers with particular emphasis on the need for a wide base for the technological development in a country and on the fact that nuclear power should be only one facet of a general technology advance.
17. Two stimulating panel discussions were held during the Conference, one on ecological aspects and public understanding of nuclear power and the other on the introduction of nuclear power into developing countries.
18. The proceedings of this Conference, which will include all of the papers which were accepted for presentation or consideration by the Conference, as well as the discussions of those papers, are scheduled to be published by the International Atomic Energy Agency and will be distributed to all Governments and organizations which participated in the Conference.

## V. Public information programme of the Conference

19. The following public information programme was established before the Conference:

(a) Several press releases were issued simultaneously in New York, Vienna, and Geneva to call the attention of Governments and the general public to the Conference.

(b) A public information booklet called "Benefits for mankind" was published by the Office of Public Information, United Nations, New York, and the Division of Public Information of the International Atomic Energy Agency. Twenty-three thousand copies of this bulletin, in English, French, Spanish and Russian, were distributed through the 51 United Nations Information Centres around the world.

(c) In April 1971 representatives of the United Nations and the International Atomic Energy Agency attended the biennial meetings of the Economic Commission for Asia and the Far East in Manila, the Philippines, and the Economic Commission for Latin America in Santiago, Chile, to inform the participating Governments of the nature and importance of the Conference and to encourage them to participate and to send planners and economists as well as technologists to represent them.

20. The public information programme during the Conference was as follows:

(a) As an innovation which was highly successful, pre-session briefing materials were distributed daily to members of the information media;

(b) At the end of each day, press releases were issued describing the activities of the Conference during that day;

(c) At the end of the morning and afternoon sessions of the Conference, press briefings were held with the chairmen of the sessions, who answered questions from representatives of the media;

(d) Throughout the Conference, non-commercial films concerning various aspects of the peaceful uses of atomic energy were presented in the cinema of the Palais des Nations;

(e) Through the courtesy of the Government of the United States of America and under the programme control of the United Nations and the International Atomic Energy Agency, programmes on closed-circuit television were presented each day. These programmes included:

- (i) Live broadcasts of a number of the general and technical sessions of the Conference, which were transmitted to monitors placed at various points in the Palais des Nations and the Palais des Expositions.
- (ii) Taped broadcasts of selected portions of those general and technological sessions which could not be broadcast "live".
- (iii) Broadcasts of panels and round-table discussions on important aspects of the peaceful uses of atomic energy, in which distinguished participants in the Conference and representatives of the information media took part.

# VI. Budgetary and administrative aspects of the Conference

21. The tabulation below shows the budget for the Conference as approved by General Assembly resolution 2651 (XXV) of 3 December 1970.

## BUDGET (In United States dollars)

Purpose	Appropriations			
	1970	1971	1972	Total
Temporary assistance	23,800	88,000	--	111,800
Conference-servicing staff	--	165,000	--	165,000
Travel of staff	4,500	35,000	--	39,500
Public information services	--	25,000	--	25,000
General expenses	--	125,000	--	125,000
Hospitality	--	3,500	--	3,500
Documentation	40,000	95,000	111,000	246,000
Headquarters accommodation	--	12,700	--	12,700
Total	68,300	549,200	111,000	728,500

In addition to the foregoing budget of the United Nations, the International Atomic Energy Agency made a substantial contribution in staff, supplies and services.

22. Due account had been taken of the declaration of the General Assembly that the Conference should "be convened under the aegis of the United Nations, with the fullest possible participation of the International Atomic Energy Agency", and preparations for the Conference were divided between both organizations, the United Nations having primary responsibility for external relations and administrative arrangements, as well as for conference servicing, and the International Atomic Energy Agency being primarily responsible for the substantive and scientific preparations. Both organizations were, however, kept informed of, and co-operated on, all aspects of the Conference, and drew heavily on the knowledge and experience of the members of the United Nations Scientific Advisory Committee.

23. One particularly valuable administrative device was introduced in the course of the organizational work which preceded the Conference. There were three different groups which were planning to participate in the Conference: United Nations Headquarters in New York, the United Nations Office at Geneva and the International Atomic Energy Agency, Vienna. In view of this, it was decided, in 1970, to establish an Inter-Secretariat Conference Planning Group, made up of one senior official from each organization, who had the authority to make plans and develop procedures relating to the external relations and administrative aspects of the Conference, subject, as required, to approval by higher authority. The Planning Group met five times before the Conference and daily during the Conference and was able to resolve satisfactorily the issues that arose.

24. Conference arrangements were characterized by a few departures from the usual preparation procedures:

(a) Block registration, designed to avoid overcrowding at the registration desk on the opening day, was arranged with the co-operation of the participating Governments and organizations, which were asked to fill out in advance the admission cards and registration forms for delegates as well as for officially appointed observers. Thus, the greater part of the cards and forms were ready before the opening day. Acceptance of this system by the participating Governments also led to the early issuance of the list of delegates, despite its considerable length.

(b) A "self-service" for documents was instituted in order to limit the mailing and distribution costs. The arrangements provided that only abstracts (in four languages) were distributed in advance according to a consolidated United Nations/IAEA mailing list; full-length papers were not mailed, but were made available to permanent missions at Geneva three weeks before the Conference. In-session documents, such as the Programme and General Information Handbook and the "List of films", were made available to participants upon arrival. Supplementary requests during the Conference, over and above the initial distribution of one copy per delegate, as well as requests from observers, were dealt with on a self-service basis. This system resulted in a reduction of expenditures in connexion with the distribution of documents.

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