STATEMENTS AND SPEECHES

INFORMATION DIVISION
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No. 55/34 THE PEACEFUL USES OF ATOMIC ENERGY

Statement by the Minister of National Health and Welfare, and Chairman of the Canadian Delegation to the tenth session of the United Nations General Assembly, Mr. Paul Martin, delivered in the First Committee on October 10, 1955.

I have listened with great interest to the statement just made by the distinguished spokesman for the Soviet Union.

I join him in the tribute he paid to the initiative of the Government of the United States in the matter involving the International Scientific Conference on the peaceful uses of atomic energy.

The Soviet Representative has referred to the work of the Disarmament Sub-Committee and to the Soviet proposal of May 10: I doubt whether this is the occasion to discuss disarmament but I would wish to draw attention to the fact that other proposals have been submitted and that any agreement to be reached - in a field which is so directly related to the peaceful prospects of atomic development - will also have to take into account these other proposals. It is to be hoped that the Soviet Union will appreciate the importance we attach to the matter of Control; for us a foundation stone in a scheme of general disarmament.

It is now nearly two years since President Eisenhower, speaking to the General Assembly, urged the adoption of measures to speed the application of atomic energy for peaceful purposes throughout the world and undertook to make fissile material available to all nations for these ends. Last year, the Ninth General Assembly responded to this generous and imaginative proposal by unanimously adopting a resolution which expressed the hope that an International Agency for Atomic Energy would be established without delay and called for a Conference on the Peaceful Uses of Atomic Energy, which was held at Geneva last August. It is appropriate, at this General Assembly, that we should review the progress that has been made in establishing the International Agency and, as provided in the Resolution, that we should have a report on the achievements of the Geneva Atomic Conference. Speaking on behalf of Canada, I intend to make a few remarks on these two aspects of this subject and in addition I should like to describe the progress that Canada herself has made in promoting the peaceful application of atomic energy.

First, a few words on the Geneva Conference. The Canadian Government was one of the co-sponsors of last year's resolution and it is, therefore, a great satisfaction to us to see that the current accounts of the

success of the conference have been confirmed by the formal re of the Secretary-General which we have before us. The Canadia scientists who were at Geneva have been most enthusiastic abo the Conference. I must confess that there was initially amon our scientists considerable apprehension about the possibiliti of success of this conference. There were misgivings, in the first place, that a scientific conference should be run by a primarily political organization such as the United Nations; scientists felt, in the second place, that the subject matter was so broad and the interests of the different national delegates so varied that it would be impossible to arrange a conference that would satisfy both the experts who wished to discuss the details of the latest reactor and the novices who came to Geneva for their initial indoctrination into the principles of atomic energy; to arrange such a conference wou under any circumstances, present enormous difficulties but to undertake an operation of this magnitude and complexity in the time allowed by the General Assembly resolution was to invite disappointment. That these fears have proved groundless is a measure of the tremendous achievement of the Secretary-General the Advisory Committee, Conference Secretary-General Professor Walter G. Whitman, and the Secretariat staff. Equally impressive was the performance of the distinguished Indian scientist, Dr. Homi J. Bhabha, who in his capacity as Presiden contributed so greatly to the success of the Conference. Our delegation had nothing but words of praise to say of Dr. Bhabh striking contribution. It is our opinion that all who went to Geneva returned with the feeling that they had gained immeasura in knowledge of the potentials of atomic energy and it is our belief that the proceedings of this Conference will constitute a significant and lasting contribution to the application of atomic energy for the benefit of all mankind.

One of the most encouraging features of the Conference was the work, as the previous speaker has indicated of the Secretary-General's Advisory Committee. To them was du both the initial planning and the general supervisions of the Conference, and it is most reassuring to find that the technic experts from seven countries agreed so amicably and expeditious on the essentials of this Conference. I would be unduly modest if I did not say that Canada has been proud to be represented this body. The Canadian Government hopes that this Advisory Committee will be continued to deal with the unfinished busine arising from the Conference and to develop proposals for simil conferences in the future. In this connection we have noted with interest the suggestions made by the distinguished representative of the Soviet Union.

In our opinion the principal benefits of this conference, one of the largest and most successful scientific meetings ever held, were three fold:

I The release to the public domain of a great mass of scientific information which had hitherto been secret;

II The opportunity for scientists and engineers from all over the world to learn at first hand of the work of their confreres in other lands, and to discuss common problems;

III The focussing of public attention not only on the role which atomic power is expected to play in the future, but also on the formidable problems which must be overcome before it can be exploited to economic advantage throughout the world.

Although the discussions on atomic power attracted the widest general attention, the valuable reports of work in such fields as raw materials, basic physics and chemistry, medicine and biology, and the applications of radio-isotopes deserve mention, as do the interesting and useful exhibits of the products of atomic technology arranged by many of the participating nations.

It has been pointed out often enough that the origins of atomic science are international, that the pioneers in this field come from many lands, and that "science knows no boundaries." With these thoughts in mind it is perhaps not inappropriate to suggest that one of the most valuable features of the conference was the opportunity it gave to the nations with large and long-established atomic energy programmes to repay their debt to international science by making information acquired in secrecy during the past fifteen years available for the benefit of all.

The political implications of the Conference have not been less significant. There is no doubt that together with the Summit meeting and the San Francisco commemorative meeting it was conceived and organized as an expression of a new mood in international affairs, a mood which we hope will not be transitory. With the other meetings just mentioned, the scientific conference provides the proof that when there is a will to co-operate, to approach problems with moderation and in a positive fashion, impressive results can be achieved.

The Conference which has provided a concrete proof of the new spirit has in turn contributed to an improvement in the international scene. In the course of our general debate, many speakers have referred to it as one of the reasons why we should face our problems with greater confidence in the assurance that as a result of such meetings, in spite of diverse opinions and interests, the new international climate favours the development of more delicate and complex projects than we could have undertaken before. Nothing succeeds like success.

The achievements of the Conference also demonstrate that in an improved international situation the United Nations Organization can play a more influential role: by the same occasion, it has been conclusively shown that our organization can be equal to the opportunities that are offered and through timely and effective intervention it can ensure that all of us will derive the maximum benefits which such opportunities can provide.

And now I should like to say a word about the progress being made toward the establishment of an International Atomic Energy Agency.

At the ninth General Assembly Canada had the honour to be one of the co-sponsors of the resolution, adopted unanimously, which dealt with the proposed establishment of an International Atomic Energy Agency. What progress has been made in carrying out the terms of the resolution? If I may borrow a saying from my medical friends, "Slower than hoped for but much better than expected."

The drafting of a constitution which will ensure the establishment of the Agency on a sound foundation, so that it will be able to fulfil its role with maximum effectiveness and with the greatest measure of support from potential member nations, has admittedly been complex and difficult. However, by the time of the conference on the peaceful uses of atomic

energy in Geneva last August, the work had advanced to the po where the United States representative was able to announce th the eight nations (including Canada) which had been discussing the possible establishment of the agency had reached agreement on a draft statute and that this draft statute would be distributed to member countries of the United Nations.

It is our hope that the draft statute will find general favour and that it will be implemented at an early date, so that the Agency will be in a position as soon as possible to get on with its important work of aiding in the development of the peaceful uses of atomic energy throughout the world, and in doing so will provide a base for peaceful co-operation in our time as perhaps nothing else can or will.

All states members of the United Nations or of the Specialized Agencies have received copies of the draft statute and, undoubtedly, will have constructive comments to offer. Last year, in this Committee, it was generally accepted in the debate -- and tacitly acknowledged in the resolution -- that the detailed negotiation on the Statute must be left to a small group of states. The resolution suggests that when the agency is established it shall negotiate an appropriate form of agreement with the United Nations. Mr. Pearson, in his statement to the last General Assembly, said that "this is one field in which the United Nations should not, and I am confident will not be by-passed." My Government continues to be strongly of the view that the Agency, once established, should negotiate an appropriate form of agreement with the United Nations.

For the present it would seem to be most advantageous to follow the procedure envisaged in the resolution and the one which I am sure will lead most quickly to the establishment of an agency; the resolution provided in fact "that the views of members which have manifested their interest be fully considered." Each nation can therefore assist by submitting comments on the draft statute as soon as possible. The Canadian Government as one of the negotiating states, for its part, will welcome all these comments and consider them most earnestly in reviewing the Statute which will ultimately be submitted for individual approval.

It will have been noted that the draft statute as it now stands makes careful provision for the representation in the structure of the agency of the various interests involved and in particular of the major areas of the world. Special account has been taken of the under-developed countries of their requirements. We hope that countries from other areas than those which are now or potentially the major contributors will examine the draft statute and offer suggestions to ensure that the agency is so devised that it can serve adequately their present and future needs. We for our part are anxious that the agency should be the instrument of the common goal and that like other United Nations Agencies it should play an important and ever increasing role in fostering the establishment of conditions of greater equality in opportunities between all countries. We note with approval the decision of the Soviet Government to support the proposals to set up the international agency. My Government may wish to comment on the various detailed suggestions put forward in this connection by the Soviet Government when there has been an opportunity to examine them.

I would now like to deal with the Canadian atomic energy programme: certain of its features are related to the very subjects I have been discussing and I am hopeful that what I am about to say will receive the particular attention of those nations which are just now launching national atomic

energy programmes of their own, and especially of those nations with potential, but as yet unproven or undeveloped radioactive mineral resources. Such nations are faced with the question of how much external help they should seek or accept.

As I said a few moments ago, the great advances in atomic energy have been the work of many men from many lands. International co-operation is essential to its rapid and successful application to meet the needs of mankind. It should also be remembered that co-operation implies an arrangement which works to the advantage of all participants. Above all, co-operation is not a synonym for charity.

It is with this thought in mind that I suggest that the Canadian atomic energy programme merits attention. For it is our belief that we have demonstrated that it is possible to work in association with two great powers in this field, and yet establish and develop an independent national programme which in quality, if not in size, is unsurpassed.

Nuclear research in Canada had its origin over fifty years ago when Ernest Rutherford, working in collaboration with Frederick Soddy at McGill University announced in 1902 the results of his investigation of the nature of radioactivity, but it was only during the second world war that Canada first became an active participant with the United States and the United Kingdom in a programme aimed at possible practical applications of atomic energy. During the war, of course, efforts were directed primarily toward the development of the atomic bomb, but even at that time the possible application of this tremendous energy source to peaceful purposes was in the minds of all concerned, and it was clear that much of the research on atomic weapons could in due course be put to effective use in pacific projects.

The Canadian contribution during the war which was of most immediate value was, of course, the supply of uranium ore. But the research facilities provided by Canada not only for its own scientists but also for those from the United Kingdom, France and other European countries, made an important contribution to the wartime development programme.

Since the end of the war, Canada has carried out a very active programme to find and develop sources of supply of uranium, and by the end of 1957 uranium production in Canada will be over twelve times as great as it was at the end of the second world war. The annual gross income from that production will be approximately one hundred million dollars, and it will rank in fourth place in the gross dollar value of our metal production.

Canada's first mine producing radioactive ore was discovered on the shores of Great Bear Lake in the North-west Territories in 1930 and went into production in 1933. The ore was taken to a refinery which was built at Port Hope, Ontario, and the first ounce of radium for medical purposes was produced in 1936. In spite of the fact that the mine was nearly a thousand miles north of Edmonton and only about twenty-five miles from the Arctic circle, the radium produced from its ore forced a reduction in the world price. The mine at that time was operated by a private company which was forced to halt its operations in 1940 owing to the dislocation of radium markets. In 1942 the mine was quietly re-opened to provide the uranium needed for the atomic bomb programme and shortly afterward it

was bought by the Canadian Government and has since been oper by the Government-owned company, Eldorado Mining and Refining Limited.

In 1947 the Government put into force regulations which were designed to encourage private individuals and companies to participate in the search for uranium. The most important occurrences which have subsequently been discovered and exploited are those in the region of Beaver-lodge Lake on the north shore of Lake Athabaska and in Blind River regio of Ontario. The uranium produced from these mines and from others which we are confident will be opened up in the years to come will play a large part in ensuring the adequate suppl of fissile material required to meet the needs of power react throughout the world.

In addition to its raw material programme, Canada has continued a vigorous programme of research and developmen on the applications of atomic energy. Since the end of the w its programme has been exclusively for peaceful purposes -- p for domestic and industrial use and radio-active isotopes for medicine, agriculture and industry. I share with my Soviet colleague the important implications and possibilities of ato energy for alleviating the distress that comes to mankind in illness and disease. The centre of this programme is the Atomic Energy Project, located on the Ottawa River near the village of Chalk River and operated by the Government-owned crown company, Atomic Energy of Canada Limited. It is engage in four main activities: (1) development of economic atomic power, (2) fundamental research, (3) operation of nuclear reactors and separation of nuclear fuels, (4) production of radioactive isotopes and associated equipment such as Cobalt 60 Beam Therapy units.

Canada's first reactor, known as the "zeep" which stands for zero energy experimental pile, went into operation in 1945. It operated at a mere 10 watts but made possible studies which were essential to the design of the second reac the NRX, which went into operation in 1947. The NRX was a natural uranium-heavy water reactor. It was then, and so remained for several years, the most powerful research reacto in the world. Even today, after eight years, this reactor is playing a leading role and is being used not only by Canada but also by the United States and the United Kingdom for ato power studies.

The success of NRX and the demand for still stro neutron beams for fundamental research and for engineering studies resulted in a decision in 1951 to build another natur uranium-heavy water reactor, known as NRU, which is now under construction and is expected to go into operation in 1956. This reactor will have a neutron flux five times that of the reactor and a power output of two hundred thousand kilowatts. It will produce significant quantities of plutonium and will have advanced experimental facilities.

Early in 1954 a power reactor feasibility study was begun at Chalk River in collaboration with a number of Canadian power agencies. As a result of this study it was decided to design and construct a small atomic power station known as NPD -- nuclear power demonstration -- and at the sa time to carry out a preliminary design study for a large pow station. NPD will be purely an experimental power station and will generate from 10,000 to 20,000 kilowatts of electri power. It is scheduled to go into operation in 1958 and wil located at the power station of the Hydro-Electric Power

Commission of Ontario near the village of Des Joachims on the Ottawa River about 150 miles northwest of Ottawa -- some twenty miles from Chalk River. The NPD is not expected to generate electricity at a cost competitive with that produced by hydro electric or conventional thermal stations but will provide information and operating experience for a large scale plant and give practical information on the economics of power production from reactors of this type.

Only last week the Canadian authorities announced that they will build another experimental reactor at Chalk River. This is to be a swimming pool type of reactor of low power and low flux and is intended primarily for studies of the absorption of neutrons by various types of reactor fuels. At the same time the Canadian authorities said that additional test equipment will be incorporated in the NRU reactor and this will permit the testing of uranium fuels and fuel assemblies in the interior of the reactor under a variety of conditions. These two additions to the experimental equipment at Chalk River will greatly increase the effectiveness of test facilities for reactor development in Canada which, in some respects, are already unique.

Canada has developed a large radioactive isotope production progamme and has pioneered in the use of radio-active Cobalt 60 in therapy units for the treatment of cancer. These therapy units have been placed in upwards of thirty hospitals in Canada, the United States, the United Kingdom, France, Italy and Brazil. Last year Atomic Energy of Canada Limited made 1,200 shipments of various isotope products. We are certainly bent on making available whatever technical ability we have in this capacity to every country.

Based on the experience gained in Canada in advancing to the stage where we are now commencing the construction of a demonstration power reactor, my Government is convinced that the first requirement of countries newly entering the Atomic field is for their scientists to acquaint themselves with the basic technology on the subject. Canada is anxious to assist such countries in getting their atomic energy programmes under way and although we cannot offer such assistance on the same scale as our larger associates, the United States and the United Kingdom, we have already given, and intend to continue to give, every measure of help within the limitations of resources available for this purpose. When I spoke to the committee on the subject last year I said that Canada was prepared to exchange reports on atomic energy with foreign scientific research institutes and to furnish information on the structure and operation of research reactors and on the techniques of exploring for radioactive ores and their mining and milling operations. I said also that in the field of health, Canadian cancer and radiological research centres would welcome from other countries qualified radiologists and specialist physicians who wished to visit our clinics and study the application of radio isotopes to the problems of disease.

I also said last year that in addition to these measures my Government was considering possible additional measures which were within our capabilities and give promise of being useful. It is with great satisfaction that I can now cite as a practical example the recent joint announcement by the Governments of India and Canada that these two countries envisage a closer co-operation in the atomic field and we for our part in Canada are confident that such arrangement will operate to our mutual benefit as well as to that of other countries who will be involved indirectly. This is an example of the kind of project which we visualize could be developed on a much wider scale of course under the auspices of the proposed agency.

As I said a moment ago, the NRX reactor is a high powered research tool which has also proven to be of great value in the production of isotopes. In offering to make such a reactor available to India the Prime Minister of Canada expressed the hope that in research and in the development of the peaceful uses of atomic energy this reactor would serve India as well as it had served Canada. In accepting the offer, the Prime Minister of India indicated that his Government would be prepared to allow accredited foreign scientists including those from other Colombo Plan countries in south and southeast Asia to use the facilities that will be available at the Atomic Energy Centre in India where the reactor will be located.

It is the hope of the Canadian Government that the NRX reactor to be built in India will make a significant contribution to the development throughout the whole of south and southeast Asia of the technological skills and research capacity prerequisite to the general application of atomic energy for the benefit of all nations in that part of the world

This short survey of the Canadian atomic energy programme will show, I hope, that in close association with larger powers we have been able to achieve considerable progress in research and development for peaceful purposes and to share the results of our work with other countries. We consider that the prospects of co-operative arrangements for the peaceful uses of atomic energy are encouraging. The success of the scientific conference suggests that the political and scientific circumstances may now be favourable for the launching of more ambitious schemes. In the proposed agency, we have, I think, the instrument which would make it possible to undertake operations in this field on a permanent and much wider basis than the conference could provide. It is therefore my hope that the opportunity will not be lost and that, together, under the aegis of the United Nations we will advance to occupy what is almost a new continent which should be developed for the good of all nations and in the interests of Peace.

I know of no better way to conclude what I have to say than to quote the words used by the distinguished Indian scientist, Dr. Bhabha, who presided at the Geneva Conference: "It is to be hoped that through the remarkable improvement in the political climate which has taken place recently, and which we hope will continue, the barriers which remain will gradually disappear altogether. If so much has been achieved through the individual and isolated efforts of a few countries, how much more could be achieved by the combined effort of all. Those who have the good fortune to participate in this Conference are privileged to be in the vanguard of the march of history. We have the unique opportunity of giving of our knowledge to others for the common good. I hope this Conference will play its part in helping the progress of mankind towards the ever-widening dawn of the atomic age, with the promise of a life, fuller and happier than anything we can visualize today."

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