

**November 19, 1966**

**India Department of Atomic Energy, 'Cooperation with USA in the Development of Atomic Energy for Peaceful Purposes'**

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**Summary:**

Packet of material prepared by the Department of Atomic Energy regarding research cooperation with the United States. Includes a letter from Glenn Seaborg, Chairman of the United States Atomic Energy Commission, a letter from Myron B. Kratzer, of the Division of International Affairs, and a draft of the research agreement.

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DEPARTMENT OF ATOMIC ENERGY

Sub: Co-operation with U.S.A. in the development of  
atomic energy for peaceful purposes.

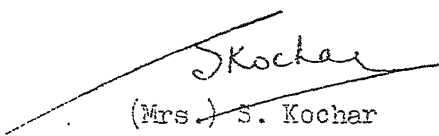
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Annexure X

Placed below for consideration is a letter dated October 27, 1966 from Dr. Glenn Seaborg, Chairman, United States Atomic Energy Commission, addressed to Dr. Sarabhai specifying the spheres in which co-operation between the two countries in respect of peaceful uses of nuclear energy will take place in the near future. This letter is also a confirmation of the understanding reached in this respect between the representatives of the United States Atomic Energy Commission and Dr. Sarabhai and the team of Indian scientists who visited USA recently. The letter and its annexures are self explanatory.

Annexure Y

Another letter dated 27.10.1966 addressed to Dr. Sarabhai by Mr. Myron B. Kratzer, Director, Division of International Affairs in the United States Atomic Energy Commission is also placed below for consideration. This letter expresses the United States Atomic Energy Commission's preference to transfer as early as possible, the safeguards responsibilities in respect of the Tarapur project to the International Atomic Energy Agency. Its enclosure, which is a draft for a trilateral agreement to be entered into with the International Atomic Energy Agency in that event, is being examined separately. However, "the agreement of co-operation between the Governments of USA and India for the civil uses of atomic energy" which concerns the Tarapur project is attached for ready reference. Article VIII thereof is relevant in this respect.



(Mrs) S. Kochar  
Deputy Secretary  
19.11.66

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545  
27/10/1966.

Dear Dr. Sarabhai:

The visit of you and your associates to the United States for discussions of activities of mutual interest in the broad field of the peaceful uses of nuclear energy is a milestone in expanding cooperation between our two countries in this important field. We are pleased to have had this opportunity to resume discussions of specific projects in which closer cooperation can lead to mutual benefits. As you know, plans for a detailed review of our work on such things as use of thorium, recycle of plutonium, fuel cycle studies, and accelerators, were initiated many months ago and were summarized in my letter of April 30, 1965, to Dr. Bhabha. We are happy to note that some additional areas of mutual interest have been indentified during the current discussions, and we gladly accept these as areas deserving special effort toward improved communication and closer cooperation.

We have found it generally useful to set down in writing understandings with respect to technical exchange arrangements to identify the technical areas of special interest, and the general terms under which the arrangements are intended to proceed. We have also found it desirable to designate individuals to assume responsibility for coordination of activities implementing such arrangements.

We propose that our expanded cooperation be carried out under an arrangement as set forth in Attachment A to this letter. Your comments or concurrence in this proposal would be welcomed. If you concur, we will consider the arrangements to become effective as of the date of your response.

Initial actions for implementation of this technical exchange arrangement, which we believe were agreed to in your discussions with Commissioner Ramey and our staff, are set forth in Attachment B. Your comments or concurrence in these actions also would be welcomed. This arrangement is limited to exchange of information. We recognize that transfer of special nuclear materials for use in the experimental programs may be of interest in the future. We will be pleased to consider such arrangements as the needs become more clearly defined. As stated in my letter of April 30, 1965, to Dr. Bhabha either a new agreement for Cooperation or an amendment to our existing Agreement for Cooperation would be a means of permitting us to transfer special nuclear material to India for uses other than the Tarapur reactor. We note that in his letter of July 2, 1965, Dr. Bhabha has communicated the following: "We would be glad to come to a separate agreement with you regarding the supply of fissionable material for our research program, and we note that in this connection the safeguard responsibility will be promptly transferred to the International Atomic Energy Agency".

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We are looking forward to the expanded cooperation envisaged by these proposals and are confident that such cooperation will contribute toward our common objective of furthering the use of atomic energy for peaceful purposes.

Sincerely yours,

Chairman.

Dr. Vikram A. Sarabhai, Chairman  
Indian Atomic Energy Commission  
Apollo Pier Road  
Bombay 1, India

Attachments:

1. Attachment A - Technical Exchange Arrangement Between Indian Atomic Energy Commission and the U. S. Atomic Energy Commission
2. Attachment B - Specific Actions to be Undertaken During Next Several Months to Implement Technical Exchange Arrangement with India

ATTACHMENT ATECHNICAL EXCHANGE ARRANGEMENT BETWEEN  
INDIAN ATOMIC ENERGY COMMISSION AND THE U. S. ATOMIC ENERGY COMMISSION

1. The USAEC and the Indian AEC, recognizing their mutual interest in research and development related to the civil uses of atomic energy, and recognizing mutual benefits to be achieved through cooperation in areas of common interests, agree to exchange information in the following areas:

- a) Parametric studies of reactor systems in various sizes (both thermal and fast) and nuclear fuel cycles in relation to technical feasibility, economic potential, resources of nuclear source materials, and advantages of a multiple products industrial complex around a large, low-cost energy source, with special reference to India,
- b) Technology of the use of thorium for production of electric power,
- c) Technology of the recycle of plutonium in thermal neutron reactors, " "
- d) Use of radiation for improving production of food products and reducing their losses during storage or distribution,
- e) Techniques for disposal and storage of radioactive waste materials,
- f) Uses of radiation in biology and medicine not covered in (d) above, and
- g) Technical information in support of proposed tandem Van de Graaff and Variable energy cyclotron projects.

2. The foregoing information shall be exchanged by reports, letters, drawings, specifications, visits, and the long-term assignment of personnel and such other means as the parties may agree to from time to time. It is understood that the parties are not required to exchange information owned by third parties which has been received under terms prohibiting its further distribution.

3. The parties will consider further what specific type of cooperative activities would be most appropriate in the areas of fast reactors, desalting, and maritime reactors.

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4. Visits and long-term assignments of personnel shall be considered by the parties on a case-by-case basis and the terms and conditions thereof will be subject to mutual agreement.

5. It is expected that some of the information exchanged under this arrangement will be in the form of preliminary and informal reports which are not considered by the originating party as appropriate for publication. Information received by either party under the arrangement and bearing a restrictive grading may not be published by the recipient party without the prior written consent of the transmitting party but may be distributed by the recipient party as follows:

- a) to persons within or employed directly by the recipient party,
- b) to prime or sub-contractors of the recipient party engaged in work relating to the subject matter of the information exchanged under this arrangement, and
- c) to industry within the country of the recipient party for normal commercial use (i.e., industrial firms or individuals which intend to use the information for a constructive purpose).

6. One or more coordinators shall be designated by each party for the purposes of developing and controlling the details for implementing the effective exchange of information under this arrangement.

7. It is anticipated that the areas will expand as programs in each country progress. Additional areas will be identified by mutual agreement.

8. This arrangement shall come into force upon receipt of a letter from the Indian Atomic Energy Commission stating its concurrence in the terms outlined above, and shall remain in effect for a term of five years. Either party may terminate the exchange on one year's notice if it so desired.

ATTACHMENT BSPECIFIC ACTIONS TO BE UNDERTAKEN DURING NEXT  
SEVERAL MONTHS TO IMPLEMENT TECHNICAL EXCHANGE  
ARRANGEMENT WITH INDIA

1. The USAEC will send two or three people to India to participate as members of a joint group with Indian representatives, on a technical and economic evaluation of reactor systems and nuclear fuel cycles in relation to India's estimated resources of nuclear source materials—thorium and uranium. The visit is intended to start early in 1967 and last about a month. Participation in these studies by experts in fields other than nuclear energy will be arranged as appropriate. The Indian AEC will also send people to the U. S. in connection with this work.
2. The USAEC will send one experimental reactor physicist with experience on critical or exponential experiments, such as those with U-235 in D2O lattices at BNL, to participate in planning the future reactor physics program at the Atomic Energy Establishment, Trombay. The assignment would be for about one month starting as soon as the individual can be made available. Longer term assignments will be dependent upon the nature of the program decided upon.
3. The USAEC will provide India with engineering drawings and bid packages for the Texas A&M variable energy cyclotron as needed for assistance in estimating domestic and foreign exchange requirements in connection with planning for construction of a duplicate machine in India.
4. The Indian AEC will send one or more people to the U.S. for a detailed review of work on use of radiation to improve productivity and reduce distribution losses of food products.
5. Each party will prepare and transmit to the other a bibliography of reports prepared since January 1, 1965, on subjects identified in the scope of the technical exchange arrangement.
6. Each party will designate exchange coordinators to assume responsibility for implementation of the arrangement.
7. The USAEC will review and comment on preliminary studies by the Indian AEC on the use of nuclear reactors for marine propulsion or for desalting of water.

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545  
27/10/1966.

Dr. Vikram A. Sarabhai, Chairman  
Indian Atomic Energy Commission  
Apollo Pier Road  
Bombay 1, India

Dear Dr. Sarabhai:

During your discussion with Chairman Seaborg on October 17, and at your meeting with Commissioners Ramey, Tape, Nabrit, and John - son on October 18, 1966, we noted the desirability of proceeding promptly with the steps connected with the transfer to the International Atomic Energy Agency of safeguard responsibilities under our Agreement for Cooperation on the Tarapur project, if we are to meet the time schedule contemplated by the Agreement without undue difficulty. Toward this end, we indicated we would provide you with copies of a proposed transfer agreement for your review and comment. Agreement between ourselves on the terms of this document would be the first step preparatory to seeking the agreement of the IAEA to the transfer of safeguards responsibility in accordance with the terms of a trilateral agreement.

In accordance with our discussion, I am enclosing copies of the document and would appreciate hearing whether you regard it as a suitable basis for initiating negotiations with the IAEA looking toward a transfer of safeguard responsibilities on the schedule provided for in our Agreement.

Inasmuch as formal negotiation of the transfer document will involve our two foreign offices, perhaps your response could be conveyed to the Department of State either through our Embassy in New Delhi or your Embassy here in Washington.

We also plan to furnish you shortly the draft of a new bilateral agreement to cover the supply of additional material for projects other than the Tarapur nuclear power project.

Sincerely yours,

Myron B. Kratzer, Director  
Division of International Affairs