OPERATIONS COORDINATING BOARD
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DRAFT

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SPECIAL REPORT ON THE U.S. INTERIM PROGRAM TO DEVELOP PEACEFUL USES OF ATOMIC ENERGY

Part I - Summary of Program

1. Concurrently with the planning and negotiation of an Agreement setting up an International Atomic Energy Agency, first proposed by the President in his General Assembly speech of December 8, 1953, plans have been formulated for the U.S. to initiate several interim programs to assist friendly foreign countries in developing the peaceful uses of atomic energy, in accordance with NSC 5431/1.

2. These programs consist of the following:

a. The establishment of a Reactor Training School at Argonne National Laboratory in March 1955;

b. Technical assistance in the construction in friendly foreign countries of research reactors, including the necessary amounts of enriched nuclear materials;

c. Additional courses at Oak Ridge Institute of Nuclear Studies to train foreign nationals in radioisotope techniques;

d. Training courses in the utilization of atomic energy in the fields of biology and medicine and agriculture;

e. Training courses in industrial medicine and hygiene;

f. Invitations to a number of foreign doctors, surgeons and specialists to spend about two months in the U.S. visiting Argonne and Oak Ridge Cancer Hospitals and other research centers;

g. Presentation of a number of AEC technical libraries to countries or regional groups; and

h. Preliminary training in nuclear sciences, engineering, etc., where required to provide underdeveloped countries with cadres of personnel with appropriate basic training to qualify for participation in specialized atomic energy programs.

3. While participation of foreign nationals in one or all of the programs is being encouraged, no commitment is being made that all requests for assistance can be met. The U.S. Government will make the final decision as to who will participate in the various training programs. As a general rule requests will probably be handled on a first come first served basis; however, regional representation will be taken into consideration in making the selections. For example, it is expected that the Reactor Training School may be of most benefit to South American, Mediterranean, and Asian countries. Accordingly, applications from these areas may receive greater consideration. Advanced training in the field of industrial hygiene would appear to be of immediate benefit to Western European countries, and applications from that region for participation in this program may receive greater consideration.

Part II - Detailed Description of the Programs

Reactor Training School

4. This school will be opened in March 1955 at Argonne National Laboratory (near Chicago, Illinois.) It is expected that up to twenty foreign students and scientists can be accommodated at the first course, which is expected to last approximately seven months. The second course will begin in October or November 1955 with accommodations for up to 50 foreign students and scientists. The courses will include lectures, laboratory work, and actual work with reactors, their components and associated facilities. The tuition for the first course will be approximately $500.00. The AEC will have final responsibility for selecting students, taking into account State, FOA, and field recommendations. It is felt that this type of training will be of most benefit to representatives from the underdeveloped areas.

Aid in the Design and Fueling of Research Reactors Abroad

5. The U.S. will be prepared to assist friendly foreign countries in the design and fueling of research reactors. These reactors, utilizing slightly enriched uranium, are valuable research tools and a basic necessity for training in the atomic energy field. (No country can realistically plan to construct a reactor for power without first having a group of trained personnel.)

Some of the uses of such reactors are:

a. Production of radioisotopes for use in medicine, chemistry, biology, agriculture, and other fields of research or industrial application.

b. Medical therapy by use of external beams of neutrons and gamma rays.

c. Basic research in areas such as solid state physics, nuclear properties of matter, radiation physics measurements.

d. Reactor engineering experiments on such things as radiation effects on corrosion, strength of materials, instrumentation, etc.

e. As a versatile training tool for reactor operators and a laboratory for students specializing in various aspects of nuclear science.

6. Prior to the actual construction of such a reactor utilizing fissionable material from the U.S., an Agreement for Cooperation must exist between the recipient country and the U.S. under Section 123 of the Atomic Energy Act of 1954. Each field Post has been requested to report their recommendations on the possibility and feasibility of U.S. assistance in the design and fueling of research reactors in the country in which they are located.

7. Each foreign government or group requesting assistance must bear the cost of construction of the reactor and the fuel elements. These reactors range in price from $100,000 to several millions of dollars for construction, and require from a few tens of thousands to several hundreds of thousands of dollars per year for operating costs. Necessary amounts of enriched nuclear materials to charge the research reactors would be available from the AEC.

Training Course in Radioisotope Techniques at Oak Ridge Institute of Nuclear Studies (ORINS).

8. Radioisotope technique courses of 4 weeks duration each are designed for individuals who have the equivalent of a Bachelor's Degree and adequate training and experience in the field in which they propose to use radioisotopes. An understanding of the English language is also necessary. A special course for up to 32 foreign nationals will be given at ORINS in May 1955. Thereafter there will be billets for about five foreigners in each regularly scheduled course. Students will be expected to pay their own living expenses, which should amount to approximately $200-$300 exclusive of travel. Deadline for receipt of applications by the AEC for the special course beginning in May 1955, is February 1, 1955.

Training Courses in Utilization of Atomic Energy in the Fields of Biology, Medicine, and Agriculture

9. Pre- and post-doctoral training of from one to two years will be provided at Oak Ridge, the Brookhaven National Laboratory, the Argonne National Laboratory and the Argonne Cancer Research Hospital at the University of Chicago, the AEC Projects at the University of California, Berkeley, the University of California, Los Angeles, and the University of Rochester School of Medicine and Dentistry, for a number of qualified foreign students per year under this program. In addition, the Harvard University medical physics laboratory and the New England Deaconess Cancer Research Laboratory in Boston, and the Western Reserve University School of Medicine offer similar opportunities in biophysics, pathology, radiation toxicity, and biochemistry, for from two to four foreign scientists each year.

10. As presently envisaged the program will be set up along the following lines: persons accepted by the above-named institutions for pre- and postdoctoral training and research in the peacetime applications of atomic energy will spend six to eighteen months as active participants with a research group using the tools of atomic energy under the leadership of an outstanding scientist in the field of science constituting the applicant's principal interest. It is recommended that those not previously familiar with radioisotope techniques plan to take the regular Oak Ridge Institute of Nuclear Studies radioisotope training course referred to above before embarking on this type of training. The average cost for each trainee will be about $2,500 per year, exclusive of travel.

Course in Industrial Hygiene for Industrial Dealing with Atomic Materials.

11. This training will be opened to five to ten foreign applicants per year. The first course will be offered by mid-1955. Applicants should have good speaking, reading and writing knowledge of English. This type of training at present will be of more practical benefit to those countries in which there are now industries which handle atomic materials. As the uses of this material become more widespread, it is believed this type of program will become of greater interest to a wider number of countries. This nine-month program will give indoctrination in the following fields: industrial hygiene, engineering techniques and radiological health physics. Costs will run from a few hundred dollars to $1,200. Living expenses exclusive of travel should be about $1,500.

Invitation to Foreign Doctors and Specialists to Visit U.S. Cancer Hospital Facilities.

12. Beginning early in 1955 invitations will be extended to a limited number of doctors, surgeons, etc., to visit the U.S. for

study and conversations over a two-month period at various research facilities such as the Argonne Cancer Research Hospital. This program will be carried out under the administration of the Educational Exchange Program of the Department of State. It is expected that a number of those who will be invited to visit the installations will already be in the U.S. on various exchange programs. It is also expected that one group of ten to twelve doctors from approximately as many different countries will be invited to make a special trip to the United States for this purpose. The special group would make their visit in the Spring of 1955 in order that they might also attend the Conference of the Third Inter-American Congress in Radiobiology in April 1955. Expenses of the doctors in the special group will be a charge against the money allocated to each country for leaders. A circular instruction on this subject will be dispatched soon to those countries which it is hoped will participate, and to those which indicate a desire to select one or more leaders for this program.

Technical Libraries

13. The AEC is prepared to give ten or more technical libraries to friendly foreign countries and regional research groups such as the Cooperative Organization for European Nuclear Research. A technical library consists of about 10,000 AEC research and development reports, 28 bound volumes of the Commission's National Nuclear Energy Series, 9 volumes of abstracts of some 50,000 technical reports and articles published in the U.S. and abroad, and 25,000 sets of index cards and other material. The collection is a duplicate of material now available in 42 repository libraries in the U.S. Recipients will receive the same additions to the libraries that are added from time to time to the American libraries. One such library was recently presented to the Japanese Government; others, earlier, were made available to Belgium, the UK, and Canada. Requests for libraries have been received from several countries, including France.

14. In the case of the technical libraries, decisions as to the distribution will be based on the recommendations received from the field. Here again efforts will be made to see that they are distributed so that no geographic area will be slighted. The U.S. will ask in return for these libraries that the recipient countries provide, on a current basis, their collections of similar official unclassified papers.

Preliminary Training

15. Arrangements will be made for a few outstanding students with proper scientific aptitudes but lacking basic technical training to receive one to two years of such basic training in nuclear sciences, engineering, etc., where required to permit them to qualify

for participation in specialized atomic energy programs. Such training will be under the auspices of universities cooperating in the Atomic Energy Commission's program. Participation in this pre-training program will be limited to underdeveloped countries which presently lack personnel with necessary basic training.

Financing and Implementation Procedures

16. The U.S. Government, through AEC, will be bearing heavy costs of previous adevelopment work and provision of training facilities necessary for above programs. The general assumption is that other governments' interest in these programs will be so great and direct costs of participation for most of them relatively so small that governments and other foreign sponsors will, in most cases, be willing and able to carry direct costs of participation themselves. Such costs include transportation, living costs and tuition for trainees, costs of U.S. technical advisors, and construction costs of reactors.

17. However, primary consideration is to stimulate participation by other countries in a manner which will best serve broad objectives of program as outlined by the President and the Secretary of State. The U.S. will therefore utilize existing government foreign assistance and educational exchange programs where feasible, and will endeavor to arrange U.S. private foundation support to the extent required to avoid in so far as possible financial difficulties preventing otherwise desirable participation.

18. Regardless of financial arrangements, requests for participation in training programs will be processed through existing mechanisms of FOA technical cooperation or technical exchange program, or the State Department's Educational Exchange Program.

19. The attached chart illustrates department and agency responsibilities for processing applications for the foregoing programs.

Attachment:
Tab I.

TAB I.

PROCESSING CHANNELS FOR PEACEFUL USES PROGRAMS

PROGRAM	COUNTRIES IN WHICH FOA HAS TECHNICAL COOPERATION OR TECHNICAL EXCHANGE PROGRAMS	OTHER COUNTRIES
1. Reactor Training School	To be handled as FOA Project on behalf of AEC	To be handled under IES Educational Exchange Program on behalf of AEC
2. Construction of Research Reactors		Direct approach to AEC through Department of State (preferably in Washington) on behalf of AEC
3. Radioisotope training		To be handled pursuant established application procedures.
4. Training in practical applications	a. Handle as FOA Project where field of interest is public health, agriculture or industry. b. Handle under IES Educational Exchange program where field of interest is curative medicine, biology or physical sciences.	To be handled under IES Educational Exchange program on behalf of AEC.
5. Training in industrial medicine and hygiene	Handle as FOA project on behalf of AEC	Handle under IES Educational Exchange on behalf of AEC
6. Doctors study tour	Handle under IES Educational Exchange program	Handle under IES Educational Exchange program.
7. Preliminary basic training	a. Handle as FOA project where field of interest is public health, agriculture, or industry. b. Handle under IES Educational Exchange program where field of interest is curative medicine, biology or physical sciences.	To be handled under IES Educational program on behalf of AEC.
[illegible]nical Libraries		Direct application to AEC through Department of State