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## A REVIEW OF THE TECHNICAL ASSISTANCE PROVIDED BY THE AGENCY IN 1959 AND 1960

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NOTES

- 1. Unless otherwise stated all sums of money are expressed in United States dollars.
- 2. All financial data are given on the basis of the Agency's audited accounts for 1960.

## INTRODUCTION

1. Under paragraph 20 of the Guiding Principles and General Operating Rules to Govern the Provision of Technical Assistance by the Agency [1], the Board of Governors reviewed in June 1961 the technical assistance provided by the Agency during 1959 and 1960. It did so on the basis of a report submitted by the Director General. The present document consists of that report amended to take account of the views expressed by the Board. It constitutes a review of the technical assistance provided in the form of fellowships, visiting professors, experts, equipment and training courses and through the use of the Agency's two mobile radioisotope laboratories. The resources available for these activities are first discussed, then the use that has been made of them; the experience gained in providing assistance is summarized in the next section and finally some conclusions are drawn.
2. The Agency's technical assistance program began with the provision of a limited number of fellowships in 1958. Since then, requests for technical assistance have steadily become more numerous and more varied; they now come from countries at practically all stages of development in the utilization of nuclear energy. The actual demand for this assistance, however, exceeds considerably the Agency's present financial means for the purpose.
3. Recipient countries are primarily interested in knowing the extent of the assistance which the Agency can provide to supplement their own efforts and resources in talents, manpower and money. The provision of experts, equipment, fellowships, visiting professors and training facilities have therefore been considered by the Secretariat as different components of the Agency's technical assistance program and efforts have been made to ensure that they supplement each other and are co-ordinated.

## THE MEANS

### Total resources

4. The resources at the disposal of the Agency for its technical assistance program are of three kinds, namely:
  - (a) Voluntary contributions of money to the General Fund;
  - (b) Gifts by Member States of services, such as the provision of experts completely or partially free of cost, granting of fellowships at national institutions free of cost (Type II Fellowships), and gifts of equipment; and
  - (c) Funds made available to the Agency as a result of its participation in the Expanded Programme of Technical Assistance (EPTA).
5. The total value of the Agency's technical assistance, as defined in paragraph 1, approved for 1959 amounted to \$1 637 000 and increased to \$2 562 000 for 1960. The resources for the implementation of the programs, including the estimated value of services, equipment and facilities made available gratuitously are shown in Table 1 below.

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[1] GC(IV)/RES/65, Annex.

Table 1

Assistance by type of resources

Resources	1959 Program	1960 Program
<u>Monetary resources</u>		
Agency	798 408	1 044 702 <sup>a/</sup>
EPTA	277 334	592 372
Sub-total	1 075 742	1 637 074
<u>Resources in kind</u>		
Estimated value of cost-free fellowships (Type II)	561 500	733 000
Estimated value of gifts of equipment	-	192 000
Sub-total	561 500	925 000
TOTAL	1 637 242	2 562 074

a/ This figure exceeds amount of the pledged contributions for 1960, because \$100 000 were transferred from the reserve in the General Fund to the Operating Funds and savings under the 1959 program were utilized under the 1960 program, together with income from investments.

Voluntary contributions of money

6. The target for voluntary contributions to the General Fund was \$1.5 million for each of the years 1959 and 1960. The total amount pledged for 1959 was \$1 183 044 of which \$1 182 044 had been paid by 30 June 1961, and for 1960 the corresponding figures are respectively \$996 103 and \$995 368.

7. As a result of this shortfall in pledges of voluntary contributions, the funds which could actually be made available for technical assistance were considerably below the estimates in the budgets for 1959 and 1960, as can be seen from Table 2 below.

Table 2

Agency funds for technical assistance

Funds	1959 Program	1960 Program
Budgeted	1 100 000 <sup>a/</sup>	1 367 000
Actually made available	798 000 <sup>b/</sup>	1 045 000

a/ Includes an amount for research assistance, not specified in the budget.

b/ Does not include \$14 584 for research assistance.

Gifts of services, equipment and facilities

8. Up to the end of 1960, 19 Member States have offered to the Agency subsidized fellowships in their national universities and research institutes. These fellowships (Type II Fellowships) have been either entirely or almost free of cost to the Agency. Many Member States have also made available openings in their training facilities or opportunities in special courses on the science and technology of nuclear energy. This generous contribution has been a major part of the Agency's resources, as can be seen from Table 1, and has made possible an early and effective start of the fellowship program.

9. Seventeen States have made experts available to the Agency, in some cases free of cost. These experts are normally available only for assignments of short duration. The Agency has therefore taken advantage of the generous offer of their services mainly by appointing them members of special missions or preliminary assistance missions on which they have rendered valuable service.

10. In 1960, the Government of the United States of America offered to supply equipment up to the value of \$200 000 for the Agency's technical assistance program, and an amount of \$192 000 was obligated for this purpose by the Government after the Board's approval of the 1960 program. This contribution made it possible to increase very considerably the assistance rendered in the form of equipment and supplies in 1960 as compared with 1959.

Funds provided under EPTA

11. The Agency joined EPTA in October 1958, too late to be included in EPTA's normal programing procedure for 1959, but nonetheless received for that year a special allocation of EPTA funds amounting to \$187 000. Additional funds were later made available by the Executive Chairman of the Technical Assistance Board (TAB), bringing the total to \$277 334. In 1960 the Agency received EPTA funds amounting to \$592 372.

THE PROGRAM

Summary

12. The Agency's technical assistance activities started in 1958 with the provision of fellowships and grew in 1959 to cover all types of assistance, namely fellowships, visiting professors, training courses, the provision of experts and equipment, and the use of the Agency's mobile radioisotope laboratories. These forms of assistance were approved for 43 countries in 1959 and for 46 countries in 1960, the funds approved for the purpose being respectively \$1 075 742 and \$1 637 074. In addition, the estimated value of services, equipment and facilities made available gratuitously for use under the 1959 program was \$561 500, and under the 1960 program \$925 000. The estimated total value of assistance approved for each country is shown in Annex I.

13. The value of the various types of technical assistance approved is shown in Table 3 below. The estimated value of cost-free fellowships and equipment made available by Member States is included in the value of assistance provided from the Agency's own resources.

Table 3

Types of assistance  
(Value expressed in thousands of \$)

Type of assistance	1959 Program				1960 Program			
				Per-centage				Per-centage
	Agency	EPTA	Total		Agency	EPTA	Total	
Experts	297 <sup>a/</sup>	28	325	19.8	298 <sup>a/</sup>	203	501	19.6
Equipment and Supplies	59 <sup>a/</sup>	15	74	4.5	277 <sup>a/</sup>	83	360	14.1
Fellowships	938	234	1 172	71.7	1 249	306	1 555	60.7
Research grants	13	-	13	0.8	13	-	13	0.5
Visiting professors	24	-	24	1.4	96	-	96	3.7
Training courses	16	-	16	1.0	8	-	8	0.3
Mobile radioisotope laboratories	13	-	13	0.8	29	-	29	1.1
<b>TOTAL</b>	<b>1 360</b>	<b>277</b>	<b>1 637</b>	<b>100.0</b>	<b>1 970</b>	<b>592</b>	<b>2 562</b>	<b>100.0</b>

a/ A number of projects approved by the Board were subsequently financed under EPTA. Only the value of projects to be financed from the Agency's own resources is included in this figure.

14. As can be seen from the above table, the largest part of the approved program has been devoted to fellowships (71.7 per cent in 1959 and 60.7 per cent in 1960). This reflects the fact that the training of competent staff was the first problem to be dealt with in most countries, and the provision of fellowships consequently received high priority.

15. It was considered that the planning of other components of the Agency's technical assistance program could best be done after sufficient knowledge had been obtained of the requirements of Member States. Therefore, in addition to discussions at Headquarters with representatives of these States, the Agency began in 1959 to dispatch preliminary assistance missions to establish direct contacts with national authorities responsible for the development of nuclear energy, obtain preliminary information on programs, and offer suggestions on the plans of the countries visited as well as on the possibilities of assistance by the Agency. By the end of 1960 six preliminary assistance missions had visited 28 countries in Africa, Asia, Europe, the Middle East and Latin America. The work of these missions proved very useful in relating the Agency's fellowship program more closely to national needs and in preparing the ground for the provision of experts, equipment and the services of visiting professors.

16. The value of equipment to be supplied amounted to 4.5 per cent in 1959 and 14.1 per cent in 1960 of the total value of the Agency's approved programs in each of these years. The corresponding ratio for equipment supplied under EPTA by all participating organizations varied during the six year period 1954-59 between a minimum of 7.2 per cent in 1959 and a maximum of 13 per cent in 1956.

17. The provision of experts and visiting professors was a relatively small part of the total value of the programs, being only 21.2 per cent in 1959 and 23.3 per cent in 1960. There is, however, already noticeable a tendency towards increasing emphasis on the provision of experts, equipment and visiting professors, as the programs for developing the peaceful uses of nuclear energy begin to take shape in Member States.

Experts, equipment and supplies

Cost

18. In Annex II is shown the financial status of the implementation of the 1959 and 1960 programs as at 31 December 1960. The actual expenditures, unliquidated obligations (funds set aside to cover contractual obligations) and earmarkings (funds approved by the Board and set aside in the Agency's accounts for experts and equipment but not yet obligated or spent) are shown separately.

19. The total value of assistance (including the estimated value of gifts) in the form of experts, equipment and supplies approved for the 1959 program amounted to \$399 315 of which \$356 589 was to be financed from the Agency's own resources and \$42 726 under EPTA. Under the 1960 program, the total value of assistance had increased to \$861 910 of which \$575 439 was to be financed from the Agency's own resources and \$286 471 under EPTA. These figures include all assistance by experts approved by the Board or under EPTA for field assignments. Services of experts on short missions financed from the Administrative Fund are not included.

20. Assistance was approved for ten countries in 1959 and 24 in 1960. The assistance provided for the services of 23 experts at an estimated cost of \$325 292 under the 1959 program and 45 experts at an estimated cost of \$501 348 under the 1960 program. The supply to seven countries of equipment essential to the work of the experts was also approved under the 1959 program at a total estimated cost of \$74 023. Under the 1960 program, the supply of equipment, valued at \$360 562, to 20 countries, was similarly approved, the equipment grant of \$192 000 by the United States of America having made it possible to increase the value of such assistance in that year.

Implementation

21. After projects for the provision of experts and equipment have been approved, the Secretariat starts recruiting the experts. Candidates are found mainly with the assistance of Governments, and in particular the national technical assistance committees set up in many States that are in a position to provide experts. All Member States have been requested to supply names of experts who would be available for technical assistance assignments. Detailed information on all posts to be filled, including the date by which the expert is needed, is continuously given to all those Governments who have expressed an interest in receiving such information.

22. In accordance with the Agency's Guiding Principles to Govern the Provision of Assistance [2], a candidate is selected on the basis of the principles and criteria set forth in Annex I to resolution 222 A (IX) of the Economic and Social Council of the United Nations, paragraph 2 of which, inter alia, states that "experts should be chosen not only for their technical competence, but also for their sympathetic understanding of the cultural backgrounds and specific needs of the countries to be assisted and for their capacity to adapt methods of work to local conditions, social and material". In selecting an expert, his ability to master a language in which he can communicate with his counterparts in the country to which he is to be assigned is also considered. Finally, his name and details of his qualifications are submitted to the recipient country for approval. The filling of an expert post thus depends on the availability of suitable candidates and the acceptability of the candidate to the country requesting such assistance. There is thus an interval, frequently not insignificant, between the approval of a post and the recruitment of the expert.

23. It should further be noted that with regard to the program financed from the Agency's own resources, a fixed procedure for consideration and approval of requests for experts and equipment has only been in force since the beginning of 1961. An ad hoc procedure was used in 1959 and requests were considered by the Board when they were received by

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[2] See document GC(IV)/RES/65, Annex, paragraph 1.

the Agency. Some of the requests under the 1959 program were approved so late in 1959 that implementation in that year was not possible. For the 1960 program, a provisional procedure was established by the Board and requests were considered in two stages, namely, in April on the basis of requests received by the end of January 1960, and in July on the basis of requests submitted by the end of May. This procedure made it necessary to carry the implementation of part of the 1960 program over to 1961.

24. Based on the above procedures, eight experts were recruited in six countries during 1959, and assigned to six other countries. In 1960 the number of experts had increased to 40; they were recruited in 12 countries and assigned to serve in 20. In Annexes III and IV are shown respectively the country of origin and of assignment of the various experts who were in the field in 1959 and 1960.

25. In Annex V are listed the fields of work in which experts have been engaged, the most important being the various applications of radioisotopes followed by assistance in connection with nuclear raw materials, and finally assistance in connection with health physics and radiation protection.

### Fellowships

#### Cost

26. The fellowships program - one of the first and immediately effective activities of the Agency - has expanded rapidly since its inception in 1958. It was possible to make a start in that year because of the generous co-operation of Member States in placing free fellowships at the Agency's disposal and in accepting fellows in their research and training institutions. The value of the approved fellowships program (including the estimated value of free fellowships offered by Member States) was approximately \$1 173 000 in 1959 and increased to approximately \$1 555 000 in 1960, of which \$234 609 were to be provided in 1959 and \$305 899 in 1960 from EPTA funds.

27. Fellowships were approved for 42 countries in 1959 and 40 countries in 1960. The estimated value of the fellowships received by or approved for each country is shown in Annex VI.

#### Implementation

28. Applications for fellowships are made to the Agency only through Governments. The selection for awards is made from a list of candidates whose applications have been endorsed and submitted by the Governments concerned. Fellowships are awarded only if the Government gives an assurance that the fellowship holder will be offered adequate opportunities after his return to his own country to engage for a period of not less than two years on work involving the peaceful uses of nuclear energy.

29. Fellowships are awarded by the Director General on the basis of a study by the Secretariat of the qualifications of the candidates. The number of awards is limited by the availability of facilities and opportunities for the type of training required, as well as the funds. Normally, the Agency grants fellowships of up to one year's duration. In exceptional cases, it is possible to obtain an extension.

30. At the end of 1960 the total number of fellowships awarded was just above 1 000; participation in the program is spread over a wide geographical area, as can be seen from the fact that nationals of 54 countries have been awarded fellowships since 1958 and opportunities for study have or will be provided in 29 countries.



31. Details concerning the implementation of the fellowships programs for 1959 and 1960 are given in Annex VII. Information about fellowships for which funds were obligated is given in Annexes VIII, IX and X, classified respectively by the nationality of the recipient, the country of study and the field of study.

#### Exchange and other training

##### Visiting professors

32. In 1959 the Agency began to arrange, on request, visits to Member States of professors to conduct lectures, advise on the curriculum of an educational establishment or initiate research projects. The approved cost (expenditures and obligations) of this program increased from \$23 711 in 1959 to \$95 578 in 1960 (see Annex XI). Under the 1959 program seven visiting professors went to three countries. The demand for such assistance has been continuously increasing and under the 1960 program a total of 17 visiting professors went to seven countries.

##### Research grants

33. In connection with the exchange program the Agency also provides research grants. These grants are awarded mainly to scientists with considerable research experience who are already working in their own countries on a promising line of research which cannot be developed fully because of the lack of equipment, laboratory facilities, etc. One grant was awarded under the 1959 program and four under the 1960 program to nationals of an equal number of countries. The costs were approximately \$13 000 under each of the two programs.

##### Training courses

34. The Agency has also supported international and inter-regional training courses and educational seminars, at a cost of \$15 918 in 1959 and \$7 735 in 1960. In each of these years, two international training courses were assisted. In 1959 a training course on radioisotopes in agriculture was organized by the Agency and was co-sponsored by the Food and Agriculture Organization of the United Nations (FAO), the Government of the United States of America and Cornell University. In 1959 also, the Agency helped the Atomic Energy Commission of Argentina to organize a course, for Latin American countries, on the applications of radioisotopes in agriculture and in medicine. In 1960 an international course, sponsored jointly by the Agency, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Government of India, on the use of radioisotopes in agricultural research was held in New Delhi. The Agency also co-operated in an international course on the applications of radioisotopes, organized by the Commission for Technical Co-operation in Africa South of the Sahara, and co-sponsored by the World Health Organization (WHO), which was held in Leopoldville, Congo.

##### Mobile radioisotope laboratories

35. The Agency's two mobile radioisotope laboratories were used to give training courses on general radioisotope techniques. The first of these laboratories was initially tested in Austria and was then sent to three countries in Europe in 1959. In 1960 it was dispatched to the Far East and was working in two countries. The second mobile radioisotope laboratory began functioning in 1960 and was used for courses in two countries in Latin America. The cost of operating the laboratories increased from \$12 601 in 1959 to \$28 948 in 1960.

## EXPERIENCE GAINED

### General

36. The experience gained from the Agency's technical assistance activities in 1959 and 1960 is not enough to allow of final conclusions being drawn about the program. The two years have, however, provided useful general experience which is summarized under relevant headings in the paragraphs that follow.

### Inter-agency co-ordination

37. In planning and implementing its technical assistance program, the Agency was able to draw on the administrative, legal and procedural experience of the United Nations, the specialized agencies and in particular the experience gained in the implementation of EPTA. This has greatly facilitated the Agency's initial activities. Various peaceful uses of nuclear energy are of interest to other organizations in the United Nations family. Within the framework of the relationship agreements concluded with them and with the United Nations, various standing arrangements have been made to enable the substantive aspects of the Agency's technical assistance program to be planned and carried out in close co-operation with the interested organizations and to keep them informed of the results of the Agency's work.

### Forms of assistance

38. The assistance provided has been adapted to meet the circumstances of each particular country and each specific problem. In many cases, a certain measure of technical and scientific development is necessary to obtain the full benefit of nuclear technology. For instance, radioisotopes are often used as new tools to assist in technical and scientific work that is already being undertaken. Similarly, a nuclear reactor and nuclear laboratories can be most efficiently run in places where there is easy access to a number of technical services, and to spare parts and supplies. These facts have a bearing on the form of the Agency's assistance in various countries.

39. In countries that are taking the first steps on the road to development, scientific education is a primary requirement. It can be viewed in three distinct stages, namely:

- (a) The training of specialists in basic science, which in its turn would depend on the existence of institutions for higher scientific education having firm roots in a good basic educational system;
- (b) The training of specialists in nuclear science; and
- (c) The creation of conditions that would enable the persons trained to apply the knowledge acquired.

The first is primarily a matter within the competence of UNESCO. In regard to the second the Agency can render useful assistance by promoting higher education that has a bearing on work for which the Agency has a special responsibility, for example, introducing nuclear techniques in hospitals and in agricultural and medical research centers, and contributing to the solution of particular problems, such as those connected with hydrology. Fellowships, training courses, and the services of visiting professors are means for achieving this end. In so far as the third stage is concerned, research contracts, the provision of equipment and the services of visiting professors can play an important part in helping those who have been trained abroad to continue doing useful work after they return home.

40. The limited experience so far gained indicates that the widest use of the whole range of the Agency's possibilities for providing assistance is made by States which have taken the first steps to establish scientific institutions, and possess the basic elements of a technical society. They request assistance in the form of fellowships and visiting professors and also utilize the services of experts in more or less specialized fields, sometimes complemented by the supply of equipment by the Agency.

41. More advanced countries require assistance in their work on such specialized subjects as the metallurgy of materials for cladding fuel elements. The Agency has also provided further specialized assistance - outside the scope of the technical assistance program - in connection with such activities as the evaluation of reactor hazards.

#### Provision of counterpart personnel

42. In order to make the visit of an international expert fruitful it is, in most cases, necessary that the recipient country assign one or more persons (counterparts) to work with the expert, the purpose being that within a reasonable length of time they should acquire the knowledge and experience necessary to enable them to continue the expert's work after his departure. The Agency's experts have so far had counterparts of widely varying qualifications. Experience has clearly shown the importance for the success of a project of having qualified counterparts.

43. The rank and position of the counterpart is also important. If a very senior person is so designated, he is often too busy to spare more than a small part of his time for working with the expert. On the other hand, if the counterpart is very junior in rank, he is unable to give adequate support and assume the expert's responsibilities after his departure.

44. The important question of providing suitable counterparts can be solved only with the active interest and co-operation of the recipient country. The Agency can assist by providing training of counterparts and supporting personnel, in advance of the expert's arrival.

#### Technical and financial support by Governments

45. It is essential that the necessary minimum laboratory facilities and equipment be provided and that the national authorities give sufficient financial backing to projects that are assisted by the Agency. In some cases, equipment and laboratory facilities have been inadequate for the expert's work and much time has been lost, after the expert's arrival, in providing the minimum facilities required. As a result, it has not always been possible to obtain the full benefit of the expert's visit.

46. The Agency's experts have, in other cases, taken part in projects which have been planned with great care by the national authorities in advance of the expert's arrival. Subsequently, the projects have received strong administrative and financial support from the respective Governments concerned, by the timely provision of further equipment and supplies which were necessary for the continuation of the project. As a consequence, the expert's time could be fully utilized and the project successfully completed.

#### Groups of experts

47. Nuclear energy covers a very wide number of subjects, and often an expert can only carry out his work successfully if he co-operates with other specialists in related subjects. In some cases, it is therefore necessary for a country simultaneously to receive assistance in more than one branch of activity.

48. Cases have been noted where a small group of experts working in co-operation with each other would have been able to provide better assistance than the same number could have if they visited the country at different times. It is also believed that such a group of experts might profitably serve several neighboring countries simultaneously and thereby effect savings in time and money.

49. The technical merits of these possibilities are attractive. The implementation would, however, require some co-ordination of the work in the countries which should be assisted by such a group as well as co-ordination of the requests for assistance. These conditions can only be fulfilled with the active co-operation of the Governments requesting such assistance.

#### Fellowships

50. It is most important that the fellowships program should be fully co-ordinated with other activities of the Agency. For instance, when an expert has been assigned to a country, the award of a fellowship for work in which the expert specializes should wherever possible be co-ordinated with his presence in that country, so that the fellow returns home in time to co-operate with the expert and possibly to assume the responsibilities of the expert upon his departure. Efforts to achieve such co-ordination have been made and it is hoped that this will be further improved next year.

51. Proficiency in the language that is the medium of instruction of the country in which the fellow is to be placed is of special importance and tests to ascertain this are being applied more strictly. Where feasible, resident representatives of TAB are consulted about special fellowship applications.

52. The emphasis in the program has so far been on fellowships of up to one year's duration and preference has been given to candidates who have a university degree or an equivalent qualification. Experience has shown that there is also need for fellowships of longer duration which would enable the fellow not only to learn a specialized technique but also to obtain a broader background. It has further proved desirable to expand the number of awards for technicians. These are urgently needed to man the supporting services in many countries that are now developing their nuclear energy programs.

#### Countries' role in planning the program

53. Technical assistance is given only at the request of Governments, and the authorities in the requesting countries therefore play the central role in the development of the program. National plans are the starting point for developing the Agency's program. The Agency can, however, assist the countries in preparing their plans, and this has already been done in a number of ways.

54. One way has been through the dispatch of preliminary assistance missions. Further, experts provided by the Agency have, in several cases, been of assistance in crystallizing national plans; in some cases, their services have been requested for that specific purpose. Direct contact between the national authorities and the staff of the Agency has also been of assistance and a number of the Agency's scientific meetings have had as one of their purposes or, as their main purpose, the provision of a basis for developing national plans.

#### Future needs for assistance

55. Although the fundamental research which led to the practical use of nuclear energy only started in the last decade of the nineteenth century and the first nuclear reactor began operating just 19 years ago, research in and the application of nuclear energy for peaceful

purposes has become very widespread. Since the first Geneva Conference in 1955, the construction of about 200 reactors has been begun or was finished in some 40 countries and the use of radioisotopes has spread to almost every country in the world.

56. As a result of this widespread and intensive activity, the need for assistance is likely to increase in the future. For example, it will be needed in the completion, proper operation and full utilization of research reactors which are now being built in a number of developing countries and in the construction and operation of adequate supporting facilities. Similarly, it would be of great value in connection with the large number of radioisotope laboratories for various purposes which have been built or are under construction in most Member States. Moreover, in cases where bilateral assistance has largely been limited to the initial setting up of facilities, continued multilateral assistance will often be necessary to ensure that the project fully achieves its purpose.

57. Assistance provided by the Agency can help the countries concerned to draw on the experience already gained by others in this fast developing field of knowledge, to avoid undesirable duplication and possibly expensive errors and thereby to derive the maximum benefit from the scarce resources invested in research facilities. It is also likely that the Agency's assistance will continue to be required on the important subject of radiation protection in connection with the operation of these facilities.

58. Furthermore, with the establishment of closer working relations between the scientific staff of the Agency and scientists in Member States, specific instances are found where the use of radiation sources might be of economic importance, for example, as a means of destroying pests in stored grain, or could contribute in solving problems in agriculture and medicine. The implementation of such projects will, where appropriate, be undertaken in co-operation with FAO and WHO.

#### Inadequacy of resources

59. The demand for assistance exceeds the means at the Agency's disposal. The value of requests for experts and equipment in any one year has amounted to between \$1.6 and \$1.8 million. Several of these requests have however later been withdrawn by the States concerned because it became obvious that sufficient funds would not be available to meet them. Moreover, the Director General understands that actual requirements are not fully reflected in the requests because of the knowledge that the financial means of the Agency are very limited and the belief that funds would therefore not be available.

60. With regard to fellowships, the Agency had, up to the end of 1960, received some 1 500 applications from about 60 different Member States. About 1 300 of these were from candidates with the requisite qualifications but because of financial and other limitations only about 1 000 awards could be made. The inadequacy of the financial resources is also strongly felt in the program for the provision of visiting professors, the demand for which has been expanding particularly in 1960 and the beginning of 1961.

61. The growing needs have thus not been matched by increasing resources. In fact, it has only been possible to implement the approved projects because unforeseen resources of a non-recurring character have become available or unexpected savings have occurred. The critical financial situation of the Agency's technical assistance program became clear when the 1961 program for the provision of experts and equipment was approved. Of the funds necessary for implementing the approved program only three-fifths of the total are available. The programs for the provision of fellowships, visiting professors and training courses are affected in a similar way by the shortfall in pledges of voluntary contributions to the General Fund.

62. On 15 December 1960, the General Assembly of the United Nations, convinced of the importance of the Agency's program of technical assistance, adopted Resolution 1531 (XV) inviting the economically developed States Members of the United Nations and Members of the Agency to increase their voluntary contributions to the Agency's General Fund.

#### CONCLUSIONS

63. The experience so far gained indicates that in future years there will be need for all the assistance the Agency can provide whether it be in the shape of technical assistance or in any other form. The task will be to give priority to the most worthwhile projects and this problem of priorities and equitable allocation of funds will become increasingly important. Since assistance is only given at the request of Governments, the final responsibility for selection of priority projects will ultimately rest with the requesting countries; the Agency can, however, give advice and assist in the selection as it has done in the past.

64. A second conclusion that has emerged is that it is obviously impossible for the Agency to meet all needs for assistance. The basic criterion for the usefulness of nuclear energy projects will continue to be that the country concerned considers the project worthwhile in the light of its own needs and resources in money and manpower. The Agency's assistance can supplement a country's efforts; it cannot replace them.

65. Finally, experience shows that when this supplementary assistance is carefully used and well integrated with national programs, it can have important positive effects which far exceed the financial cost of the assistance provided. With somewhat increased means, the Agency should be able to face successfully the task of providing this essential supplementary assistance.

## ANNEX I

Value of assistance approved: classified  
by recipient countries<sup>a/</sup>

Country	1959 Program			1960 Program		
	Agency	EPTA	Total	Agency	EPTA	Total
Afghanistan	9 940		9 940	54 000	4 000	58 000
Argentina	28 543	19 298	47 841	77 971	59 852	137 823
Austria	28 748		28 748	52 233		52 233
Brazil	18 704	32 988	51 692	138 870	34 875	173 745
Bulgaria				41 300		41 300
Burma	18 072	10 273	28 345	7 500	33 792	41 292
Cambodia	3 000		3 000			
Ceylon	9 500	2 488	11 988		12 348	12 348
Chile					14 658	14 658
China	45 431	14 493	59 924	64 928	11 552	76 480
Colombia					10 800	10 800
Czechoslovak Socialist Republic	32 569		32 569	47 023		47 023
Denmark	27 880		27 880			
Ecuador	4 678	5 175	9 853	729		729
Finland	4 695	1 839	6 534	7 495		7 495
France	10 000		10 000	3 000		3 000
Greece	46 578	1 480	48 058	49 900	21 520	71 420
Guatemala	7 250		7 250			
Hungary	30 494		30 494	52 186		52 186
Iceland	5 000		5 000	34 700		34 700
India	13 000		13 000	5 100	43 300	48 400
Indonesia	201 658	3 326	204 984	221 865	35 076	256 941
Iran	24 889	7 842	32 731	83 049	10 368	93 417
Iraq				63 450	13 629	77 079
Israel	1 013	3 585	4 598	24 600	18 825	43 425
Italy	49 071		49 071	42 979		42 979
Japan	68 013	37 118	105 131	76 000	16 000	92 000
Korea, Republic of	72 119	9 309	81 428	56 472	17 084	73 556
Mexico	14 038	10 233	24 271	12 414		12 414
Monaco	3 283		3 283			
Morocco				15 000		15 000
Netherlands	6 900		6 900	7 910		7 910
New Zealand				5 000		5 000
Nicaragua				4 892		4 892
Norway	1 547		1 547	1 715		1 715
Pakistan	20 885	14 012	34 897		42 525	42 525
Paraguay	5 600		5 600			
Peru				3 300	8 500	11 800
Philippines	15 392	9 983	25 375	51 574	35 189	86 763
Poland	28 197		28 197	73 354	4 700	78 054
Romania	17 544		17 544			
Spain	1 333		1 333	28 168		28 168

Country	1959 Program			1960 Program		
	Agency	EPTA	Total	Agency	EPTA	Total
Sudan				10 400		10 400
Switzerland	4 500		4 500	2 835		2 835
Thailand	112 200	39 291	151 491	31 994	49 954	81 948
Tunisia	37 185		37 185	3 100		3 100
Turkey	44 077	9 823	53 900	145 344	10 681	156 025
Union of South Africa	26 118		26 118	34 108		34 108
United Arab Republic	162 372	25 733	188 105	89 046		89 046
United States of America	6 500		6 500			
Venezuela	10 000		10 000	74 771		74 771
Viet-Nam					15	15
Yugoslavia	51 390	19 045	70 435	131 127	83 129	214 256
<b>Overheads</b>	<b>1 483</b>		<b>1 483</b>	<b>1 617</b>		<b>1 617</b>
<b>Sub-total</b>	<b>1 331 389</b>	<b>277 334</b>	<b>1 608 723</b>	<b>1 933 019</b>	<b>592 372</b>	<b>2 525 391</b>
Mobile Radioisotope Laboratories	12 601		12 601	28 948		28 948
Training Courses	15 918		15 918	7 735		7 735
<b>TOTAL</b>	<b>1 359 908</b>	<b>277 334</b>	<b>1 637 242</b>	<b>1 969 702</b>	<b>592 372</b>	<b>2 562 074</b>

a/ The table covers all types of assistance indicated in Table 3 in the main part of this report. The estimated value of cost-free fellowships and equipment made available by Member States is included in the column headed "Agency".



ANNEX II

Value of the services of experts, and of equipment and supplies  
received or approved: classified by recipient countries<sup>a/</sup>

A. EXPERTS

Country	Agency				EPTA			Total Agency and EPTA
	Expendi- tures	Obliga- tions	Ear- markings	Total approved	Expendi- tures	Obliga- tions	Total approved	
1 9 5 9 P R O G R A M								
Brazil	920		5 800	6 720	8 845		8 845	15 565
Burma	2 020		1 741	3 761				3 761
Denmark	7 271	7 059	70	14 400				14 400
Greece	14 968	3 129	269	18 366	1 480		1 480	19 846
Indonesia	4 143	18 399	75 058	97 600				97 600
Pakistan	1 221		11	1 232	9 043		9 043	10 275
Thailand	34 347	14 420	633	49 400	8 335		8 335	57 735
Tunisia	10 991	9 315	10 070	30 376				30 376
Turkey	8 857	4 693		13 550				13 550
United Arab Republic	4 743	5 650	50 433	60 826				60 826
Overheads	1 358			1 358				1 358
<b>TOTAL</b>	<b>90 839</b>	<b>62 665</b>	<b>144 085</b>	<b>297 589</b>	<b>27 703</b>		<b>27 703</b>	<b>325 292</b>
1 9 6 0 P R O G R A M								
Afghanistan	45	124	17 231	17 400				17 400
Argentina					12 638	2 115	14 753	14 753
Austria			17 000	17 000				17 000
Brazil	4 715	2 740	43 495	50 950	5 638	469	6 107	57 057
Burma					26 933	3 072	30 005	30 005
Ceylon					6 397	278	6 675	6 675
Chile					8 958		8 958	8 958
China					10 802	750	11 552	11 552
Greece					2 020		2 020	2 020
Iceland			8 700	8 700				8 700
Indonesia					9 243	637	9 880	9 880
Iran	2 260	24 172	18	26 450	6 378	990	7 368	33 818
Iraq	6 244	15 293	18 263	39 800				39 800
Israel					10 827	1 498	12 325	12 325
Korea, Republic of	7 893	1 250	457	9 600	10 155	6 929	17 084	26 684
Pakistan					15 670	1 036	16 706	16 706
Philippines	5 242			5 242	2 638	151	2 789	8 031
Sudan			2 900	2 900				2 900
Thailand					45 376	4 173	49 549	49 549
Turkey			44 950	44 950	3 367	290	3 657	48 607
United Arab Republic	28	4 405	4 267	8 700				8 700
Venezuela			26 100	26 100				26 100
Yugoslavia	5 007	17 685	17 208	39 900	3 012	569	3 581	43 481
Overheads	647			647				647
<b>TOTAL</b>	<b>32 081</b>	<b>65 669</b>	<b>200 589</b>	<b>298 339</b>	<b>180 052</b>	<b>22 957</b>	<b>203 009</b>	<b>501 348</b>

B. EQUIPMENT AND SUPPLIES

Country	Agency				EPTA			Total Agency and EPTA
	Expenditures	Obligations	Ear-markings	Total approved	Expenditures	Obligations <sup>b/</sup>	Total approved	
1 9 5 9 P R O G R A M								
Brazil					15 023		15 023	15 023
Greece	5 950	145	35	6 130				6 130
Pakistan	13 539		661	14 200				14 200
Thailand	1 825	3 909	185	5 100				5 100
Tunisia	6 427	369	13	6 809				6 809
Turkey	2 414	5 974	212	8 600				8 600
United Arab Republic	6 117	12 044		18 161				18 161
<b>TOTAL</b>	<b>36 272</b>	<b>21 622</b>	<b>1 106</b>	<b>59 000</b>	<b>15 023</b>		<b>15 023</b>	<b>74 023</b>
1 9 6 0 P R O G R A M								
Afghanistan	25 000 <sup>c/</sup>			25 000 <sup>c/</sup>				25 000 <sup>c/</sup>
Argentina	25 000 <sup>c/</sup>			25 000 <sup>c/</sup>				25 000 <sup>c/</sup>
Austria	7 291	2 694	15	10 000				10 000
Brazil			30 700	30 700		5 867	5 867	36 567
Burma					3 608	179	3 787	3 787
Ceylon						2 273	2 273	2 273
Greece	27 000 <sup>c/</sup>			27 000 <sup>c/</sup>				27 000 <sup>c/</sup>
Iceland	26 000 <sup>c/</sup>			26 000 <sup>c/</sup>				26 000 <sup>c/</sup>
Indonesia					4 370	2 026	6 396	6 396
Iraq					1 116	12 513	13 629	13 629
Israel	22 000 <sup>c/</sup>			22 000 <sup>c/</sup>				22 000 <sup>c/</sup>
Pakistan					3 142	22 677	25 819	25 819
Philippines	21 000 <sup>c/</sup>			21 000 <sup>c/</sup>				21 000 <sup>c/</sup>
Sudan			7 500	7 500				7 500
Thailand					405		405	405
Turkey	37 000 <sup>d/</sup>			37 000 <sup>d/</sup>	373	6 650	7 023	44 023 <sup>d/</sup>
United Arab Republic	9 000 <sup>e/</sup>		4 000	13 000 <sup>e/</sup>				13 000 <sup>e/</sup>
Venezuela	705	28 733	62	29 500				29 500
Viet-Nam					15		15	15
Yugoslavia			3 400	3 400	6 617	11 631	18 248	21 648
<b>TOTAL</b>	<b>199 996</b>	<b>31 427</b>	<b>45 677</b>	<b>277 100</b>	<b>19 646</b>	<b>63 816</b>	<b>83 462</b>	<b>360 562</b>

a/ For projects approved under EPTA, the figures represent the program as carried out. With regard to the program financed from the Agency's own resources, a fixed procedure for consideration and approval of requests for experts and equipment has only been in force since the beginning of 1961. An *ad hoc* procedure was used in 1959 and requests were considered by the Board when they were received by the Agency. Some of these requests under the 1959 program were approved so late in 1959 that implementation in that year was not possible. For 1960, a provisional procedure was established and requests were considered in two stages, namely, in April on the basis of requests received by the end of January 1960, and in July on the basis of requests submitted by the end of May 1960. This procedure made it necessary to carry the implementation of part of the 1960 program over to 1961.

b/ These obligations were liquidated in the first months of 1961.

c/ Provided in kind by the United States of America.

d/ Of which equipment worth \$37 000 was provided by the United States of America.

e/ Of which equipment worth \$9 000 was provided by the United States of America.

## ANNEX III

Experts engaged in technical assistance projects:  
classified by nationality<sup>a/</sup>

Country of origin	1959 Program				1960 Program			
	Agency		EPTA		Agency		EPTA	
	Num-ber	Man- <sup>b/</sup> months	Num-ber	Man- <sup>b/</sup> months	Num-ber	Man- <sup>b/</sup> months	Num-ber	Man- <sup>b/</sup> months
Austria							1	3
France			1	3	2	2.5	1	1.5
Germany, Federal Republic of	1	3.5					2	3.5
Netherlands					1	3		
New Zealand			1	1.5			1	12
Norway					3	13.5	1	6
Portugal					1	3.5	1	4.5
Spain							1	6
Sweden							1	8
Switzerland	1	1.5			1	3.5		
United Kingdom of Great Britain and Northern Ireland	1	1	2	7.5	4	26	6	38.5
United States of America			1	3	6	21.5	7	17.5
TOTAL	3	6	5	15	18	73.5	22	100.5

<sup>a/</sup> Includes experts who completed their assignment during the year as well as those still in service at the end of the year.

<sup>b/</sup> The figures represent the number of months served by the experts during the year concerned, not the total duration of their assignment.



## ANNEX IV

Experts engaged in technical assistance projects:  
classified by country of assignment <sup>a/</sup>

Country of assignment	1959 Program				1960 Program			
	Agency		EPTA		Agency		EPTA	
	Num- ber	Man- months	Num- ber	Man- months	Num- ber	Man- months	Num- ber	Man- months
Argentina							2	4
Brazil			2	6	2	4.5	2	2
Burma	1	1				1	2	20.5
Ceylon							1	2.5
Chile							1	6
China							2	7.5
Denmark					1	5.5		
Greece	1	3.5	1	1.5	1	11		
Indonesia					1	2.5	1	4.5
Iran					1	1.5	1	1
Iraq					1	2		
Israel							1	3
Korea, Republic of					1	5.5	2	6
Pakistan			1	1.5			1	12
Philippines					1	3	1	0.5
Thailand			1	6	3	17.5	3	25
Tunisia					1	5		
Turkey					1	7	1	3
United Arab Republic	1	1.5			2	3.5		
Yugoslavia					2	4	1	3
<b>TOTAL</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>15</b>	<b>18</b>	<b>73.5</b>	<b>22</b>	<b>100.5</b>

a/ Includes experts who completed their assignment during the year as well as those still in service at the end of the year.

b/ The figures represent the number of months served by the experts during the year concerned, not the total duration of their assignment.



## ANNEX V

Experts engaged in technical assistance projects:  
classified by field of assignment <sup>a/</sup>

Field of assignment	1959 Program				1960 Program			
	Agency		EPTA		Agency		EPTA	
	Num-ber	Man-b/ months	Num-ber	Man-b/ months	Num-ber	Man-b/ months	Num-ber	Man-b/ months
Physics (especially nuclear and reactor physics)							1	1.5
Nuclear instrumentation and electronics			1	3			1	8
Nuclear raw materials	1	1			3	6	7	40.5
Technology of reactor materials and components					1	5.5		
Reactor design, construction and operation							1	1
Health physics and radiation protection	1	3.5	2	4.5	4	12	3	18.5
Chemistry (of special interest to the nuclear field)			1	1.5	1	3	3	11.5
Application of radioisotopes								
Agriculture	1	1.5			4	22	1	9.5
Medicine (including radiotherapy)			1	6	4	22	2	6
Other					1	3	1	2.5
Other fields							2	1.5
TOTAL	3	6	5	15	18	73.5	22	100.5

<sup>a/</sup> Includes experts who completed their assignment during the year as well as those still in service at the end of the year.

<sup>b/</sup> The figures represent the number of months served by the experts during the year concerned, not the total duration of their assignment.





**A N N E X VI**

Value of fellowships received or approved

A. 1958

Country	Agency				
	Type Ia/			Type	
	Expenditures (1)	Obligations (2)	Sub-total (3)	Expenditures <sup>c/</sup> (4)	Obligations <sup>d/</sup> (5)
Afghanistan	5 240	4 700	9 940	-	-
Argentina	3 714	-	3 714	4 070	5 900
Austria	12 212	1 555	13 767	6 625	4 400
Brazil	8 757	3 226	11 983	-	-
Burma	3 642	3	3 645	6 972	3 694
Cambodia	-	-	-	3 000	-
Ceylon	-	-	-	5 611	3 889
China	10 066	4 365	14 431	21 423	9 577
Czechoslovak Socialist Republic	7 264	10 805	18 069	6 898	7 602
Denmark	13 480	-	13 480	-	-
Ecuador	-	-	-	2 120	2 557
Finland	695	-	695	4 000	-
France	-	-	-	8 044	1 956
Greece	5 583	-	5 583	13 951	2 549
Guatemala	-	-	-	5 395	1 855
Hungary	15 691	8 303	23 994	3 645	2 855
Iceland	-	-	-	3 340	1 660
Indonesia	364	-	364	38 258	65 436
Iran	3 581	-	3 581	19 766	1 542
Israel	1 013	-	1 013	-	-
Italy	17 536	8 466	26 002	20 937	2 100
Japan	13 804	5 280	19 084	31 663	12 337
Korea, Republic of	11 136	10 686	21 822	23 572	26 724
Mexico	14 038	-	14 038	-	-
Monaco	3 283	-	3 283	-	-
Netherlands	1 900	-	1 900	5 000	-
Norway	1 547	-	1 547	-	-
Pakistan	3 763	1 690	5 453	-	-
Paraguay	2 029	571	2 600	1 531	1 469
Philippines	9 234	1 158	10 392	4 359	641
Poland	13 716	4 768	18 484	7 410	2 302
Romania	3 122	2 422	5 544	9 879	2 121
Spain	1 333	-	1 333	-	-
Switzerland	-	-	-	4 500	-
Thailand	18 333	3 445	21 778	32 045	3 877
Turkey	8 615	12	8 627	6 817	6 483

V I

classified by recipient countries

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b/ Sub- total <sup>e/</sup> (6)	Total columns (3) and (6) (7)	EPTA		Total columns (8) and (9) (10)	Total columns (7) and (10) (11)
		Expend- itures (8)	Obliga- tions (9)		
-	9 940	-	-	-	9 940
10 000	13 714	18 823	475	19 298	33 012
11 029	24 796	-	-	-	24 796
-	11 983	8 425	696	9 121	21 104
10 666	14 311	8 777	1 496	10 273	24 584
3 000	3 000	-	-	-	3 000
9 500	9 500	2 488	-	2 488	11 988
31 000	45 431	14 209	284	14 493	59 924
14 500	32 569	-	-	-	32 569
-	13 480	-	-	-	13 480
4 677	4 677	5 175	-	5 175	9 852
4 000	4 695	1 332	507	1 839	6 534
10 000	10 000	-	-	-	10 000
16 500	22 083	-	-	-	22 083
7 250	7 250	-	-	-	7 250
6 500	30 494	-	-	-	30 494
5 000	5 000	-	-	-	5 000
103 694 <sup>f/</sup>	104 058	3 326	-	3 326	107 384
21 308	24 889	4 700	3 142	7 842	32 731
-	1 013	780	2 805	3 585	4 598
23 069	49 071	-	-	-	49 071
44 000	63 084	29 168	7 950	37 118	100 202
50 296	72 118	9 308	1	9 309	81 427
-	14 038	10 233	-	10 233	24 271
-	3 283	-	-	-	3 283
5 000	6 900	-	-	-	6 900
-	1 547	-	-	-	1 547
-	5 453	4 228	741	4 969	10 422
3 000	5 600	-	-	-	5 600
5 000	15 392	9 166	817	9 983	25 375
9 712	28 196	-	-	-	28 196
12 000	17 544	-	-	-	17 544
-	1 333	-	-	-	1 333
4 500	4 500	-	-	-	4 500
35 922	57 700	27 148	3 808	30 956	88 656
13 300	21 927	9 023	800	9 823	31 750

Country	(1)	(2)	(3)	(4)	(5)
Union of South Africa	11 434	184	11 618	10 668	3 83
United Arab Republic	17 153	9 733	26 886	38 566	17 93
United States of America	2 338	4 162	6 500	-	-
Venezuela	-	-	-	4 805	5 19
Yugoslavia	26 542	8 002	34 544	15 187	1 65
Overheads	127	-	127	-	-
<b>TOTAL</b>	<b>272 285</b>	<b>93 536</b>	<b>365 821</b>	<b>370 057</b>	<b>202 21</b>

B.

Afghanistan	4 229	4 771	9 000	-	2 600
Argentina	3 084	2 600	5 684	2 122	30 570
Austria	7 666	5 100	12 766	1 515	7 730
Brazil	1 647	3 110	4 757	2 858	5 140
Bulgaria	4 187	19 613	23 800	-	17 500
Burma	-	-	-	559	6 940
Ceylon	-	-	-	-	-
Chile	-	-	-	-	-
China	4 038	10 877	14 915	-	41 000
Colombia	-	-	-	-	-
Czechoslovak Socialist Republic	5 197	16 579	21 776	-	25 240
Ecuador	729	-	729	-	-
Finland	-	2 495	2 495	1 395	3 600
Greece	-	3 600	3 600	1 858	17 440
Hungary	2 737	24 549	27 286	-	21 600
India	-	-	-	-	5 100
Indonesia	2 915	11 600	14 515	2 006	205 240
Iran	1 703	31 396	33 099	2 573	20 000
Iraq	3 368	12 432	15 800	-	7 850
Israel	2 337	263	2 600	-	-
Italy	6 985	17 794	24 779	2 150	16 050
Japan	649	32 151	32 800	5 816	37 380
Korea, Republic of	9 233	23 839	33 072	1 371	12 420
Mexico	1 714	5 600	7 314	-	5 100
Morocco	-	-	-	1 696	13 300
Netherlands	3 070	4 840	7 910	-	-
New Zealand	-	-	-	1 368	3 630
Nicaragua	2 272	2 620	4 892	-	-
Norway	1 015	700	1 715	-	-
Peru	-	-	-	-	3 300
Philippines	3 493	12 740	16 233	1 659	7 440
Poland	8 751	32 207	40 958	-	26 200
Spain	1 634	7 266	8 900	2 205	16 190
Switzerland	815	2 020	2 835	-	-

(6)	(7)	(8)	(9)	(10)	(11)
14 500	26 118	-	-	-	26 118
56 499	83 385	20 580	5 153	25 733	109 118
-	6 500	-	-	-	6 500
10 000	10 000	-	-	-	10 000
16 846	51 390	17 249	1 796	19 045	70 435
-	127	-	-	-	127
572 268	938 089	204 138	30 471	234 609	1 172 698

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2 600	11 600	-	4 000	4 000	15 600
32 700	38 384	7 620	37 479	45 099	83 483
9 250	22 016	-	-	-	22 016
8 000	12 757	1 113	21 787	22 900	35 657
17 500	41 300	-	-	-	41 300
7 500	7 500	-	-	-	7 500
-	-	1 099	2 301	3 400	3 400
-	-	-	5 700	5 700	5 700
41 000	55 915	-	-	-	55 915
-	-	-	10 800	10 800	10 800
25 247	47 023	-	-	-	47 023
-	729	-	-	-	729
5 000	7 495	-	-	-	7 495
19 300	22 900	4 890	14 610	19 500	42 400
21 600	48 886	-	-	-	48 886
5 100	5 100	-	43 300	43 300	48 400
207 350 <sup>f/</sup>	221 865	-	18 800	18 800	240 665
23 500	56 599	-	3 000	3 000	59 599
7 850	23 650	-	-	-	23 650
-	2 600	-	6 500	6 500	9 100
18 200	42 979	-	-	-	42 979
43 200	76 000	4 946	11 054	16 000	92 000
13 800	46 872	-	-	-	46 872
5 100	12 414	-	-	-	12 414
15 000	15 000	-	-	-	15 000
-	7 910	-	-	-	7 910
5 000	5 000	-	-	-	5 000
-	4 892	-	-	-	4 892
-	1 715	-	-	-	1 715
3 300	3 300	-	8 500	8 500	11 800
9 100	25 333	17 498	14 902	32 400	57 733
26 200	67 158	-	4 700	4 700	71 858
18 400	27 300	-	-	-	27 300
-	2 835	-	-	-	2 835

Country	(1)	(2)	(3)	(4)	(5)
Thailand	4 531	8 263	12 794	-	19 200
Tunisia	-	-	-	-	3 100
Turkey	3 552	18 542	22 094	435	40 863
Union of South Africa	7 018	7 090	14 108	6 560	13 440
United Arab Republic	11 102	26 228	37 330	480	26 120
Venezuela	-	-	-	-	5 100
Yugoslavia	14 456	24 561	39 017	8 095	33 900
Overheads	970	-	970	-	-
<b>TOTAL</b>	<b>125 097</b>	<b>375 446</b>	<b>500 543</b>	<b>46 721</b>	<b>701 370</b>

- a/ Type I Fellowships are financed from the Agency's monetary resources.
- b/ Type II Fellowships are fellowships made available to the Agency by Member States and financed entirely or mainly by them.
- c/ The estimated monetary value of such part of all Type II Fellowships as was completed by 31 December 1960.
- d/ The estimated monetary value of such part of all Type II Fellowships as was not yet completed by 31 December 1960.

(6)	(7)	(8)	(9)	(10)	(11)
19 200	31 994	-	-	-	31 994
3 100	3 100	-	-	-	3 100
41 300	63 394	-	-	-	63 394
20 000	34 108	-	-	-	34 108
26 600	63 930	-	-	-	63 930
5 100	5 100	-	-	-	5 100
42 000	81 017	6 465	54 835	61 300	142 317
-	970	-	-	-	970
748 097	1 248 640	43 631	262 268	305 899	1 554 539

e/ The estimated monetary value of Type II Fellowships, computed on the basis of total man-months of fellowships awarded multiplied by the average monthly cost of equivalent fellowships financed by the Agency or EPTA in the country concerned. For the years 1959 and 1960 the estimated monetary value of these fellowships is \$561 500 and \$733 000. In addition are included the Agency's expenditures and obligations which were \$10 768 and \$15 097 respectively.

f/ The value represents 450 man-months under the 1959 program and 948 man-months under the 1960 program (see Annex VIII).





ANNEX VII

Status of implementation of the fellowships program  
as at 31 December 1960

1959 Program

Nominations received	577 from 45 Governments		
Selected for awards	380 from applicants in	43 countries to study in	27 countries
Awards financially obligated <u>a/c/</u>	345 to applicants from	42 countries to study in	27 countries
Withdrawals <u>b/</u>	74		
Fellows studying	183 from	38 countries	in 23 countries
Fellowships completed	84 from	28 countries	in 11 countries
Fellows being placed	39		

1960 Program

Nominations received	648 from 43 Governments		
Selected for awards	468 from applicants in	41 countries to study in	24 countries
Awards financially obligated <u>c/</u>	429 to applicants from	40 countries to study in	24 countries
Withdrawals <u>b/</u>	40		
Fellows studying	94 from	29 countries	in 14 countries
Fellowships completed	4 from	3 countries	in 2 countries
Fellows being placed	330		

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a/ In addition, 27 awards made under the 1958 program were financially obligated in 1959. Hence the total of awards financially obligated during the year 1959 was 372 (see Annex VIII).

b/ Includes refusals and cancellations.

c/ At end of each calendar year.



ANNEX VIII

A. Fellowships under the 1959 program for which funds were obligated by 31 December 1959:  
classified by the nationality of the recipients

Country of origin	A g e n c y						E P T A		T o t a l	
	Type I		Type II		Sub-total		Num- ber	Man-a/ months	Num- ber	Man-a/ months
	Num- ber	Man-a/ months	Num- ber	Man-a/ months	Num- ber	Man-a/ months				
Afghanistan	3	30			3	30			3	30
Argentina	<u>h/</u>	<u>h/</u>	1	12 <u>c/</u>	1	12	6	55	7	67
Australia	<u>i/</u>	<u>i/</u>			1	12			1	12
Austria	7	40	3	27	10	67			10	67
Brazil	5	38			5	38	4	39	9	77
Burma	1	12	4	48	5	60	3	36	8	96
Cambodia			1	10	1	10			1	10
Ceylon			1	12 <u>d/</u>	1	12	1	12	2	24
China	5	54	5	42	10	96	5	57	15	153
Czechoslovak Socialist Republic	7	64	2	23	9	87			9	87
Denmark	3	31			3	31			3	31
Ecuador			2	24	2	24	3	23	5	47
Finland	2	7	1	9	3	16	2	12	5	28
France			2	24	2	24			2	24
Greece	3	15	6	60	9	75			9	75
Guatemala			2	22	2	22			2	22
Hungary	14	85	4	24	18	109			18	109
Iceland			1	12	1	12	1	12	2	24
Indonesia			9	450	9	450	1	12	10	462
Iran	1	12	6	70	7	82	2	24	9	106
Israel	1	2			1	2	1	6	2	8
Italy	17	160	14	124	31	284			31	284
Japan	4	45	8	90	12	135	8	96	20	231
Korea, Republic of	5	51	9	106	14	157	3	36	17	193
Mexico	3	36			3	36	3	33	6	69
Monaco	1	12			1	12			1	12
Netherlands	1	6	1	12	2	18			2	18
Norway	3	6			3	6			3	6
Pakistan	3	36			3	36	2	24	5	60
Paraguay	<u>e/</u>	<u>e/</u>	<u>2e/</u>	<u>72e/</u>	2	72			2	72
Philippines	<u>3</u>	<u>30</u>	1	12	4	42	3	30	7	72
Poland	9	89	4	33	13	122			13	122
Romania	2	22	5	40	7	62			7	62
Spain	1	6			1	6			1	6
Switzerland	1	3	1	12	2	15			2	15
Thailand	5	54	10	93	15	147	9	98	24	245
Turkey	3	36	8	79	11	115	6	60	17	175
Union of South Africa	4	48	2	22	6	70			6	70
United Arab Republic	8	70	18	187	26	257	11	120	37	377
United States of America	<u>3f/</u>	<u>36f/</u>			3	36			3	36
Venezuela	1	12	1	12 <u>g/</u>	2	24			2	24
Yugoslavia	16	115	8	60	24	175	10	84	34	259
<b>TOTAL</b>	<b>146</b>	<b>1 275</b>	<b>142</b>	<b>1 823</b>	<b>288</b>	<b>3 098</b>	<b>84<u>b/</u></b>	<b>869<u>b/</u></b>	<b>372</b>	<b>3 967</b>

- 
- a/ Figures in this column represent the total number of man-months covered by the award.
- b/ 94 fellowships were originally awarded for financing from EPTA funds; owing to 10 withdrawals, cancellations, etc., this number was reduced to 84 fellowships of which 27 awarded in 1958 were implemented in 1959 and financed from EPTA funds.
- c/ The award was subsequently extended to 24 months.
- d/ The award was subsequently extended to 22 months.
- e/ These awards were subsequently changed to one Type I award for 12 months and one Type II award for 12 months.
- f/ These awards were subsequently reduced by two cancellations, to one 12-month fellowship.
- g/ The award was subsequently extended to 24 months.
- h/ A fellowship, awarded in 1958, was extended in 1959 as a Type I Fellowship.
- i/ This award was subsequently cancelled.

B. Fellowships under the 1960 program for which funds were obligated by 31 December 1960:  
classified by the nationality of the recipients

Country of origin	A g e n c y						E P T A		T o t a l	
	Type I		Type II		Sub-total		Num- ber	Man- <sup>a</sup> / months	Num- ber	Man- <sup>a</sup> / months
	Num- ber	Man- <sup>a</sup> / months	Num- ber	Man- <sup>a</sup> / months	Num- ber	Man- <sup>a</sup> / months				
Afghanistan	3	31	1	6	4	37	1	12	5	49
Argentina	1	12	9	96	10	108	13	144	23	252
Austria	6	32	5	34	11	66			11	66
Brazil	2	21	2	18	4	39	6	72	10	111
Bulgaria	12	108	5	52	17	160			17	160
Burma			2	22	2	22			2	22
Ceylon							2	10	2	10
Chile							1	12	1	12
China	3	36	10	96	13	132			13	132
Colombia							2	24	2	24
Czechoslovak Socialist Republic	9	88	6	65	15	153			15	153
Finland	2	12	1	12	3	24			3	24
Greece	2	18	6	56	8	74	6	60	14	134
Hungary	20	133	7	66	27	199			27	199
India			1	12	1	12	9	102	10	114
Indonesia	4	39	18	948	22	987	4	48	26	1 035
Iran	9	108	6	64	15	172	1	6	16	178
Iraq	5	60	3	90	8	150			8	150
Israel	1	12			1	12	1	12	2	24
Italy	9	78	4	48	13	126			13	126
Japan	12	126	9	108	21	234	4	24	25	258
Korea, Republic of	9	108	3	36	12	144			12	144
Mexico	2	18	1	12	3	30			3	30
Morocco			1	72	1	72			1	72
Netherlands	3	21			3	21			3	21
New Zealand			1	12	1	12			1	12
Nicaragua	1	12			1	12			1	12
Norway	1	6			1	6			1	6
Peru			1	12	1	12	2	24	3	36
Philippines	5	53	2	24	7	77	7	84	14	161
Poland	19	180	5	58	24	238	1	12	25	250
Spain	4	32	5	54	9	86			9	86
Switzerland	1	12			1	12			1	12
Thailand	4	36	6	48	10	84			10	84
Tunisia			1	12	1	12			1	12
Turkey	9	87	10	114	19	201			19	201
Union of South Africa	4	48	4	48	8	96			8	96
United Arab Republic	11	127	7	65	18	192			18	192
Venezuela			1	12	1	12			1	12
Yugoslavia	16	126	12	120	28	246	25	148	53	394
<b>TOTAL</b>	<b>189</b>	<b>1 780</b>	<b>155</b>	<b>2 492</b>	<b>344</b>	<b>4 272</b>	<b>85</b>	<b>794</b>	<b>429</b>	<b>5 066</b>

<sup>a/</sup> Figures in this column represent the total number of man-months covered by the award.



## ANNEX IX

Fellowships for which funds were obligated by 31 December of the year  
concerned: classified by country of study<sup>a/</sup>

Country of study	1959 Program			1960 Program		
	Agency	EPTA	Total	Agency	EPTA	Total
Argentina	3	1	4	2		2
Australia	5	6	11	10	2	12
Austria	2		2	1	1	2
Belgium	15	2	17	9	3	12
Brazil				1		1
Canada	11	13	24	21	6	27
Czechoslovak Socialist Republic	4		4	5		5
Denmark	3		3	7	1	8
France	27	1	28	27	11	38
Germany, Federal Republic of	19	10	29	28	3	31
Hungary	1		1			
India	2		2	1		1
Israel	1		1	2		2
Italy	11		11	8	2	10
Japan	15	3	18	18		18
Netherlands	2	3	5	4	3	7
New Zealand	1		1			
Norway	1	3	4	3		3
Poland	3		3			
Romania	2		2	5		5
Spain	2		2			
Sweden	8	6	14	10		10
Switzerland	5		5	4	1	5
Union of Soviet Socialist Republics	23		23	18	6	24
United Arab Republic				1		1
United Kingdom of Great Britain and Northern Ireland	33	31	64	55	23	78
United States of America	85	5	90	94	22	116
Yugoslavia	1		1	5		5
CERN	1		1	1	1	2
IAEA				4		4
OEEC	2		2			
TOTAL	288	84 <sup>a/b/</sup>	372	344	85	429

a/ Since not all fellows are finally placed, the distribution by country of study represents in some cases the intended country of study.

b/ 94 fellowships were originally awarded for financing from EPTA funds; owing to 10 withdrawals, cancellations, etc., this number was reduced to 84 fellowships of which 27 awarded in 1958 were implemented in 1959 and financed from EPTA funds.





## ANNEX X

Fellowships 1958-1960: classified by subject of study

Subject of study	Nominations received	Fellowships financially obligated	Fellowships completed and fellows studying
Application of radioisotopes and radiation	468	346	138
Chemistry <sup>a/</sup>	165	94	73
Geology <sup>b/</sup>	68	39	14
Health physics	140	80	51
Nuclear chemical engineering	67	30	11
Physics <sup>c/</sup>	264	146	96
Reactor engineering	329	229	116
Miscellaneous	11	10	10
TOTAL	1 512	974	509

a/ For example, analytical, "hot" and radiochemistry.

b/ For example, of nuclear raw materials.

c/ For example, nuclear, neutron and theoretical physics.



## ANNEX XI

Cost of the services of visiting professors  
as at 31 December 1960

Country	1959 Program			1960 Program		
	Expendi- tures	Obliga- tions	Total approved	Expendi- tures	Obliga- tions	Total approved
Argentina	12 537	2 293	14 830	3 929	10 658	14 587
Austria	3 952		3 952	3 218		3 218
Brazil				14 685	29 778	44 463
China				8 169	844	9 013
Japan	4 929		4 929			
United Arab Republic				3 287	129	3 416
Venezuela				7 886	6 185	14 071
Yugoslavia				5 714	1 096	6 810
TOTAL	21 418	2 293	23 711	46 888	48 690	95 578

