

EUROPEAN ATOMIC ENERGY COMMUNITY

EURATOM

THE COMMISSION

Fourth

GENERAL REPORT

on the

Activities of the Community

(April, 1960 - March, 1961)

18 May, 1961

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INTRODUCTION

I. The period covered by the present Report marks the conclusion of last year's activities, in which the progress made was slow and lamentably inadequate, and ushers in a new phase of concrete achievement in which a major part of the leeway has been made up.

The pattern of expenditure under the heading of research is, at the moment, largely on a par with that specified in the five-year programme laid down in the Treaty, while the number of research personnel employed exceeds the 1,100 mark.

II. The setting up of the Joint Research Centre has played a major role in bringing about this development and, although the agreement concluded with the Italian Government on the Ispra Centre did not come into force until 1 September 1960, this establishment, together with the annex set up provisionally at Saluggia, already employs a staff of nearly 800 persons.

Pending the completion of the buildings and laboratories destined to house the European Transuranium Institute in Karlsruhe, the agreement for the construction of which took effect on 21 December 1960, a large number of the engineers and scientists due to work there are taking part in training schemes or are engaged on various research projects farmed out under contract.

The Central Nuclear Measurements Bureau, set up at Mol in the immediate vicinity of the Belgian Centre d'Etudes de l'Energie Nucléaire, is continuing to develop and is working at full pressure.

Finally, there are grounds for hope that the agreement for the setting up of a branch establishment of the Joint Research Centre at Petten in the Netherlands will be signed in the very near future.

III. At the same time, the policy of associations and contracts, under which the Commission makes available both financial support

and the services of its own scientists to the other contracting party, is being continued and amplified.

The contract placed with the French Atomic Energy Commission (CEA) dealing with controlled fusion and plasma physics has been supplemented by a sub-contract with the Italian Atomic Energy Commission's (CNEN) laboratory at Frascati. A further important contract has been concluded with the Institut für Plasmaphysik GmbH, Munich-Garching, while negotiations are also in progress with a view to collaboration with the Jülich institute.

Work on the homogeneous suspension reactor is being carried on under the association with the N.V. tot Keuring van Electrotechnische Materialen (KEMA).

Activities under the association with the Belgian Centre d'Etudes de l'Energie Nucléaire for the operation of the BR 2 test reactor will rapidly get into full swing immediately after the commissioning of this reactor, which is due to take place in the near future.

A further agreement for association, this time with the Instituut voor Toepassing van Atoomenergie in de Landbouw (ITAL, Netherlands), was concluded recently for studies in the vast field which encompasses the agricultural uses of radiations.

In the course of the period under review, moreover, the Commission has placed 68 further contracts, under which various enterprises or laboratories are entrusted with the carrying out of certain clearly-defined research projects which Euratom is either reluctant or unable to undertake with its own facilities. Some of these contracts were placed on the basis of competitions between industries or designing firms of the Community for the drawing up of draft designs for equipment needed under the Joint Research Centre's programme.

Some of this work has already produced concrete results in the form of scientific publications and applications for patents.

IV. The way in which the research programme is crystallized, and the extent to which the Community will be able to derive benefit

from it, will depend ultimately on the projects already initiated or planned by the various public or private bodies involved, while at the same time the Commission must be enabled to keep track of these developments if it is to coordinate and direct them to the maximum advantage.

The systematic surveys which have been undertaken under this heading have therefore been centred on biology in relation to nuclear power and the production and use of radioelements, and have been supplemented by discussions on subjects of common interest, in which direction the Scientific and Technical Committee has continued to provide assistance of incalculable value. Moreover, the links between the programmes of the individual Member States and that adopted by the Community will be further consolidated by the setting up of the Consultative Committee for Nuclear Research.

V. The research effort being made will be brought to full fruition and the growth of nuclear industries assured only by industrial-scale plants which, however limited, will have to expand in line with the status of technological development and the requirements which, sooner or later, they will be called upon to meet.

In this connection, the Commission sees no reason to modify the forecasts advanced in the previous General Report concerning the future progress of the power plant programme on the basis of the study which it has since devoted to the question.

This study, in which the Commission examined the difficulties encountered by the electricity producers in their efforts to build nuclear power plants in the prevailing economic climate, led to the conclusion that, if the projects vital to the development of the Community's nuclear industries are to be carried out, the industrial hazards involved must be mitigated and some of the stumbling-blocks must first be removed.

In the first years of operation, reactors are subject to the growing pains which beset the introduction of any new technology. The Commission considers it just and in the interest of the Community, which benefits, after all, from these experiments, to assume

part of the risk involved. In this way, the Commission is prepared to stimulate the development of the highly specialized fuel element fabrication process by contributing towards the purchase of such elements as are manufactured in the Community. This plan, which was drawn up in pursuance of one of the Treaty provisions, has now been put before the Consultative Committee on Nuclear Research and will later be submitted to the Council of Ministers.

VI. A solution must urgently be devised to the problem of nuclear hazard coverage. Since the ceiling of coverage provided for under the OEEC Convention, signed at the end of 1960, was too low, a supplementary convention, which should involve first of all the Community countries, but which should remain open to non-member states, was drawn up. The Commission hopes that agreement will soon be reached on the only remaining point at issue.

VII. The shipyards and shipowners are vitally interested in the application of nuclear power to the propulsion of merchant shipping, but many problems still remain to be solved before economically viable projects can be undertaken in this field. The Commission already has a share in a study programme being carried out in Hamburg and is contemplating taking part in certain other programmes which have been submitted, while dissipation of effort will be avoided by the setting up of a liaison committee between the various projects.

VIII. Radioisotopes and radiations constitute a powerful vehicle of progress, with regard both to research and to the practical uses to which they may be put in medicine, agriculture and industry, but they have not yet, within the Community, found as wide an application as would be justified by the potential advantages which they afford. The Commission has set up an Information Bureau on Radioisotopes, the function of which it will be to enlighten the firms as to the benefits which they may derive from these new techniques, to assist in the development of new applications and to advise users on the possibilities offered by the existing production centres.

IX. Taking a general view, it can be said that the machinery established for disseminating the information acquired by Euratom and

for keeping the firms abreast of the latest developments has been expanded, but the spate of scientific and technical literature is increasing so rapidly that the traditional methods of documentation will soon be totally inadequate to cope with them in a rational way. Studies initiated in conjunction with the Joint Computer Centre at Ispra are therefore being pursued with a sense of the utmost urgency in order to develop machines which will be capable of carrying out automatic documentation and, if possible, translation.

X. Important as they undoubtedly are, research and the dissemination of information are by no means the sole foundations for the development of the nuclear industry. One of the indispensable prerequisites for further progress consists in the enactment of legal and regulatory provisions to govern nuclear activities : health and safety, supply and supervision of the use made of fissile materials and the development of the nuclear common market.

XI. As far as the protection of nuclear workers and the general public is concerned, the application of uniform safety regulations throughout the whole Community is guaranteed by the Basic Standards, issued in 1959. The Commission has followed up its policy in this respect by ensuring the implementation of these Standards in the Member States, by providing for their revision at regular intervals and by ascertaining that the laws passed by the individual states are in compliance with them. These activities involve monitoring stations, radioactivity measurements, reactor safety, the carriage of radioactive substances and the medical supervision of nuclear workers as well as the legal and administrative problems entailed in the health and safety field. The Commission is thus helping to make it possible for the nuclear industry to develop under much more stringent safety conditions than those obtaining at the time when other industries were growing up.

XII. The mode of operation of the Supply Agency, which assumed its functions on 1 June 1960, has been adapted to the prevailing market conditions, while at the same time guaranteeing the observance of the basic principle of equal access to available resources.

Also, apart from the fact that the methods and procedures adopted for exercising control over the production and use of ores, source materials and special fissile materials have been borne out in practice, systematic on-the-spot inspections have been made to check the statements which, under the Treaty, installations are required to submit listing the fundamental technical characteristics as well as the stocks and traffic in materials.

Some of the statements submitted to the Commission have been shown to be inadequate, and the Commission is taking all the necessary steps, in line with the procedures provided for this purpose, to ensure compliance with the Treaty provisions as well as to uphold the principle of equality of rights and obligations as between all persons and enterprises within the Community.

XIII. The nuclear common market, designed to ensure the free circulation of all nuclear products, was brought into being on 1 January 1959.

Furthermore, the Commission has drafted a set of directives concerning free access to qualified employment. The Economic and Social Committee has been consulted on the matter and the proposal has now been brought before the European Parliament.

XIV. The Community has broadened its relations with non-member states and international organizations. A codicil has been subjoined to the agreement with the United States, cooperation with Great Britain and Canada has intensified, an agreement for cooperation with Brazil is due to be signed in the near future, and the contacts established with other countries have been steadily pursued. It is a quite special concern of the Commission, in this connection, to assist the newly-developing states in every possible way, particularly by arranging for people from these countries to take part in training schemes.

An agreement has also been concluded with the International Labour Organization.

XV. The present conjunction of world affairs requires, more than ever before, a Europe imbued with a sense of unity and purpose, if

the universal dream of peace, liberty and progress is to become a reality.

The Commission is fully alive to the responsibility which devolves upon it to contribute by all the means at its command to the task of European unification, a task which can be fulfilled only if the principle of complete equality between all participants, which is the very corner-stone of the Treaties establishing the European Communities, is scrupulously observed. To ensure the observance of the Treaty of Rome, in the spirit as in the letter, is therefore its paramount concern.

The consolidation of the Communities is vital to the creation of the new Europe. In this respect, it is a source of the utmost gratification to note that, in accordance with the Treaty provisions, the practice of majority decisions on the part of the Council of Ministers has been strengthened over the past year. The Commission has also taken further measures designed eventually to bring about the replacement of the two Commissions and the High Authority by a single European Commission, on the understanding, in line with its declaration before the European Parliament, that no encroachment will be made on the authority of the Communities as they stand and that the new Commission will inherit all the powers vested by the Treaty in the bodies which are superseded.

Beyond purely economic, scientific and technical development, however, we must not forget the need to foster the growth of a new European spirit, a task towards which such measures as publicity to project the Community image, the setting up of the European schools, which have been joined by the two new schools inaugurated last year, at Varese near Ispra and at Mol respectively, and the urgently needed establishment of the European University at Florence, will all make a signal contribution.

The progress made and the experience which the Community has acquired should now make it possible, in response to the appeal of the peoples represented by the European Parliament, to overcome distrust, to transcend sectional interests and to make new and decisive strides in the progressive development of our common European heritage.

CHAPTER I

RESEARCH

STARTUP OF THE FIRST JOINT RESEARCH CENTRE ESTABLISHMENTS — CONSOLIDATION AND EXPANSION OF CONTRACTUAL LINKS WITH FIRMS AND RESEARCH INSTITUTIONS IN THE MEMBER COUNTRIES — DEVELOPMENT OF THE COMMUNITY'S RESEARCH PROGRAMME — ENCOURAGEMENT OF RESEARCH PROJECTS IN THE MEMBER COUNTRIES — COORDINATION OF THE NATIONAL PROGRAMMES

1. It is now accepted as axiomatic that nuclear energy will sooner or later be called upon to supplement conventional power sources, abundant as they may be at the present time.

The more realistic view of the economic outlook for nuclear energy which has supplanted the optimistic forecasts prevalent some years ago, while it does not minimize the need for full-sized reactors constructed and operated on an industrial scale, does underscore the importance of Euratom's task in the research field, since it is to research that we must look for a solution to the manifold problems which remain to be overcome if nuclear power is to be put on a competitive footing.

2. In the research field the Community is working on a whole range of projects of its own, which have been elaborated to dovetail with the programmes underway in the Member States.

Now that the first branch establishments of the Joint Research Centre are being set up and the links with research institutions and industries inside and outside the Community consolidated, the regular

research investment pattern of the Commission is beginning to take shape.

In a number of cases, projects originally planned for 1961 are now to be extended beyond 1962, a point which raises the question of the Community's second five-year research programme and the need for immediate action on the preparatory work which this will involve.

The first research programme is being implemented along the lines already indicated, i.e., via the branch establishments of the Joint Nuclear Research Centre, contracts of association, research contracts and international agreements for cooperation.

3. It has already been pointed out in previous General Reports that the range of the research centres already operational in the Community (though in some cases they are inadequately developed) is wide enough to enable the Joint Research Centre to be built up around existing laboratories, thus avoiding the need for the construction of new plant.

This is the background to the negotiations held between the Commission and the governments of several Member States in the course of 1959 with a view to setting up the Centre's first four branch establishments at Ispra, Mol, Karlsruhe and Petten. The possibility of spreading the Joint Centre's activities over a number of geographically separate establishments in this way is expressly provided for under Article 8, Paragraph 2, of the Euratom Treaty.

The conclusion of these negotiations will mark a vital step forward in the development of the Community's research programme. A point to be stressed, in this connection, is that these agreements involve or will involve on the part of the governments concerned a considerable contribution to the infrastructure costs of the establishments located on their soil, which means, in effect, that Community participation acts as a spur to the efforts being made by the individual states, a fact which needs to be brought out very clearly, since the Community's activities, far from purporting to supersede the national programmes, are designed to stimulate and to supplement them.

A fundamental concern of the Commission in installing and fitting out these establishments is to enlist, wherever possible, the

services of manufacturers and firms of industrial designers in the Member States on an international and competitive basis.

4. This same objective—the creation of a stronger nuclear industry—is also at the basis of the Commission's policy of placing research contracts, collaborating with firms of industrial designers on the study of the various technical and economic problems arising in conjunction with nuclear energy production and, finally, of following up the nuclear shipping projects being undertaken in the Community.

The considerable additions which have been made to the Commission's own facilities since the publication of the third General Report cannot fail to speed up and facilitate the work being carried out under the various contracts of association and under the programme of technical collaboration with non-Community countries and other international organizations.

As in previous years, mention must be made of the difficulties of recruiting top-grade staff, on whom the effectiveness of the Commission's work and the progress that can be made ultimately depends.

* * *

I. Links with Institutions in the Member States

Planning

5. In the interest of intelligent planning, it is vital to have a clear picture of how National research projects stand in comparison with the Commission's own programme.

The necessary machinery enabling the Commission to take action and exercise its influence in this direction is provided for by the research surveys dealt with under Article 5 of the Treaty and by the system of investment declarations covered under Article 41. Both clauses, which are designed to help Euratom keep abreast of develop-

ments, also stipulate that the Commission shall voice opinions and issue recommendations.

Relations with the national institutions are, however, by no means confined to formalities. Working sessions of the most varied kinds are organized on particular subjects, not to mention the regular work done by the specially nominated experts of the Scientific and Technical Committee, or the Commission-sponsored meetings attended by the heads of the various national programmes (Brussels, 15 December 1959) or experts in particular fields (Baden-Baden, February 1959 - Royaumont, 17-18 September 1960).

Another innovation of interest in this connection is the committee of experts from the Member States which the Council of Ministers and the Commission decided to set up during discussion of the draft budget for 1961; the committee will meet under the chairmanship of the President of the Commission, will have a secretariat consisting of a member of the Secretariat General of the Council of Ministers, and will be aided by an expert designated by the Commission.

a) *Research Survey (Article 5 of the Treaty)*

6. Although the survey is carried out on a permanent routine basis, the results are not published annually.

The main topics dealt with in 1960 were nuclear biology and the production and use of radioisotopes.

In both these fields, the Commission was faced with the problem of working out a line of policy of its own; an account of the results achieved is given in the present report.

b) *Coordination with the Programmes Being Carried out on the National Level*

7. *High Flux Reactors*

The construction of several high flux reactors will be completed in 1961. With the French reactors already in operation, the Commis-

sion will have adequate facilities at its disposal to cope with the irradiation tests required in the immediate future.

On the debit side, the setting up and equipping of the hot laboratories and auxiliary installations attached to the majority of these reactors has been delayed in various ways. It has been recommended that the completion of these installations be given priority.

A number of sub-working groups have been set up by the Commission to study particular problems in this field. This provides the parties concerned with an opportunity to compare notes, to arrange for the farming out of certain types of development work and to standardize various measuring processes.

8. *Dosimetry*

The work of one of these sub-groups is focussed on research relating to neutron spectra and in-pile integrated flux measurements, with particular reference to high flux reactors.

The first meeting was spent in surveying the programmes under way in the various laboratories engaged on integrated flux measurement.

The second meeting was devoted to thermal neutron dosimetry methods; cobalt was chosen as flux integrator, and a standard is being drafted for use in this process. A proposal for the adoption of a uniform approach to the question of nuclear constants was favourably received.

Another problem dealt with by the working group was the use of threshold detectors in determining fast neutron spectra. Numerous problems connected with the measurement of the fast integrated flux and different methods for measuring fast neutron spectra were also discussed. An initial scheme for coordinating the research-work in progress in the various laboratories within the Community was put forward.

9. *Hot Laboratories*

Laboratories where very highly active objects can be handled are not only urgently needed; they are extremely expensive and at the same time complicated to operate.

A special working group on hot laboratories, set up at the end of 1960, has now drawn up a general survey of the present status of work on the design, construction and operation of such laboratories within the Community as well as of the hot cells attached to reactors.

At the time of writing, there is only one hot laboratory in service within the Community. Four others, however, are being built, an additional three are in the designing stage, and preliminary plans are being studied for four further projects. Not counting the hot cells attached to reactors, the Community can thus count on having 10 or 20 hot laboratories at its disposal by 1963, representing a total investment of about 25 million EMA units of account.

The working group is undoubtedly of great value at the present stage as a medium for the exchange of information, but it is hoped that the group will eventually expand its functions so as to be able to contribute materially to the problem of coordinating the various hot laboratory projects and promoting standardization wherever possible.

c) *Meetings and Study Tours*

10. *US-Euratom Agreement*

Subsequent to the meetings held in 1959 on plutonium and uranium oxide, two further important meetings have been arranged with American experts under the US-Euratom Agreement for Co-operation; one meeting was held to discuss stability and control in boiling water reactors, while the other dealt with the steels used in reactor vessels and the welding of thick sheets.

The first meeting, at which wide-ranging discussions took place, was also attended by the representatives of institutions and firms which have submitted to the Joint Board research proposals connected with reactor control. In the course of the meeting, the USAEC representatives extended an invitation for four Community scientists to take part in the SPERT programme being carried out at the National Reactor Testing Station at ARCO, Idaho, which has four

reactors specially designed for the study of transient phenomena in water piles. It was also proposed that a Euratom engineer participate in the Argonne experiments on the EBWR reactor. So far, however, the Commission has unfortunately been prevented from responding to this invitation by the difficulty of recruiting or arranging for the detachment of engineers with sufficient experience in the study of transient phenomena in reactors.

Thanks to the second meeting, centred on the steels and welding programme, a clear picture emerged of the research to be undertaken by a number of large steel firms in the Community, and arrangements were made to coordinate this programme with the work being carried out in the United States.

The fundamental problems involved under this heading relate to the welding of thick steel, the use of high strength steels, the weld-plating of vessels with stainless steel, the study of corrosion, stress and deformation phenomena, the adaptation and application of non-destructive testing processes to the checking of thick steel, steel properties and changes in these properties brought about by irradiation, and finally, to the review and standardization of the engineering codes in use in the nuclear field. To date, half-a-dozen contracts for research on these problems have been authorized and a much larger number are in preparation.

11. Existing ties between European and American industrial experts will be strengthened in 1961 by the setting up of specialized working groups.

Mention should finally be made of the general study and technical inspection tour organized during the year in connection with the research contracts placed in the United States by the Joint Board and as a result of which a number of valuable contracts were established with American contractors. In particular, the USAEC has invited engineers employed by European contractors engaged on joint programme work as well as Commission representatives to take part in seminars on certain technical subjects which it organizes periodically with American laboratories carrying out work on its behalf. Under this scheme, representatives of two Community con-

tractors had an opportunity of attending a seminar held at Oak Ridge on recent USAEC research work on uranium carbide.

12. *Agreement between Euratom and Atomic Energy of Canada Ltd. (AECL)*

This agreement for cooperation provides for periodic consultations between the two contracting parties.

The first of these meetings was held in Brussels in 1959 and the second, on the occasion of which the Commission's representatives visited the Chalk River, Toronto and Peterborough establishments, where the AECL and Canadian General Electric are studying their ORGEL-type reactor, took place in Canada from 30 May to 3 June 1960. A full exchange of views was held on the work being carried out on both sides.

13. *Dragon Project*

The first annual Dragon Project Symposium, held at Bournemouth on 28 and 29 April 1960, and attended by representatives both of the Commission and of the other signatories of the project agreement as well as by representatives of the American HTGR project (high temperature gas reactor), was devoted to discussion of the engineering problems arising in connection with the Dragon reactor. The meeting, held as it was soon after the signing of the Agreement for Cooperation with the USAEC, also provided executive staff of the Dragon and United States projects with an opportunity of establishing contact with one another.

14. *Euratom - UK Agreement*

Following the meeting held at the end of 1959 on fast reactors, the United Kingdom Atomic Energy Authority (UKAEA) organized a symposium at Risley on 25 and 26 April 1960 to discuss the technical and economic features of AGR-type reactors (advanced gas-cooled).

After the working sessions, in which several Community experts read papers on advanced-type AGR projects being undertaken in

their own countries, a visit was paid to the AGR-type reactor being built at Winfrith Heath.

15. *European-American Nuclear Data Committee*

This Committee, on which the Community and OEEC countries as well as the United States and Canada are represented, was set up in 1960 on the initiative of the Commission and the European Nuclear Energy Agency.

The results of the first phase of the Committee's work are described under Section IV, B (Central Nuclear Measurements Bureau).

* * *

In all these various ways, the Commission has been and will continue to be instrumental promoting closer contact in the technical field among the member countries themselves, between the member countries and the Commission, and between the Commission and the outside world.

II. The Commission's Activities

General

16. In 1960, the Commission's research activities have continued to be held up by the lack of suitable establishments and laboratories. Ispra was not taken over until August 1960 and since then efforts have been concentrated on installing the personnel and providing the necessary facilities.

At Mol, the first sections of the Central Nuclear Measurements Bureau have now been set up; at the end of 1960 the Bureau took over part of the facilities earmarked for it under an agreement shortly to be signed with the Belgian authorities.

Under the ORGEL project, a special test reactor has been designed and considerable progress has been made with a critical experiment project.

In a different field, i.e. automatic scientific data-processing, studies have been actively pursued.

Pending the completion of the Ispra research establishment, the recruitment of staff and the placing of orders for equipment have been going ahead.

Work has also been forging ahead—in conjunction with the German technicians involved—in preparation for the setting up of the Karlsruhe research establishment. A large number of engineers have been assigned to training courses in the various laboratories or to projects in which Euratom is taking part.

* * *

The year 1960 was marked by the appearance of Euratom's first scientific publications and the filing of the first Community patents (see chapter on Dissemination of Information).

* * *

17. Parallel to the development of the Euratom Joint Centre establishments the Commission's research and association contract policy has been continued and intensified, in an attempt to strike a satisfactory balance between the various branches of its research activities.

As a result of this policy, a large number of research contracts were concluded, renewed and drafted in the course of 1960.

Similarly, work has gone ahead under the contracts of association concluded between the Commission and various firms and bodies occupied in research in the Member States; more contracts have been signed and the scope of the activities being carried on under this heading has continued to develop.

A particular point should be made of the harmonious atmosphere which prevails in the joint teams which have been set up to

implement this work. The Commission is highly appreciative of the contribution being made by these contracts to its research programme generally and is pleased to note, on the basis of numerous statements made by its co-partners, that this satisfaction is mutual.

By 31 March 1961, 94 contracts had been concluded, representing a total expenditure of 87,721,000 EMA units of account, and breaking down as follows :

Contracts :	
— US-Euratom Agreement programme	35
— ORGEL	15
— CETIS	12
— Contracts of Association	8
— Study contracts	4
— Central Nuclear Measurements Bureau	4
— Mineralogy	2
— BR 2	1
— Fast reactors	1
— Ispra	2
	Sub-total :
	84
— Supplementary agreements (US Agreement)	5
— Agreements with non-member countries	2
— Agreements concluded within the Community (Ispra, CNMB, Karlsruhe)	3
	Total :
	94

* * *

18. On the same date (31 March 1961), the staff coming under Euratom's research and investment budget amounted to 1,098 persons, with a further 80 persons in possession of formal letters of appointment. The following table shows their geographical distribution.

	Personnel on the job as of 31 March 1961	Holders of formal letters of appointment
Headquarters and Miscellaneous Staff	106	4

*Joint Research Centre**Branch Establishments*

(including JRC staff working on long-term assignments under contracts being carried out elsewhere, other than those listed below)

— Ispra	810	65
— CNMB (Mol)	59	1
— Karlsruhe	12	4
	987	74
Sub-total :	987	74

*Agreements, Contracts of
Association and Other Contracts*

— BR 2	38	5
— Fusion	46	1
— Dragon	27	—
	111	6
Sub-total :	111	6
	1,098	80
Total :	1,098	80

III. Research Programme

The items discussed under this heading will be examined point by point in the order in which they appeared in the Official Gazette of 6 June 1959 in the section dealing with the Community research programme.

A. Production of Radioisotopes and Labelled Molecules

19. A scheme for the coordination of radioisotope production has now been proposed by the Commission and producers in the Community.

This project, the details of which are currently being worked out, would also cover allied processes such as the manufacture of sealed sources and the checking and packing of fabricated products. The recovery of long half-life fission products which could be employed in certain industries is likewise envisaged.

Another suggestion made by the Commission in this connection pertains to the question of labelled organic compounds. In view of the difficulties involved in the preparation of compounds of this sort, the idea of setting up a collection of rare labelled molecules has now been mooted and an appeal directed at the laboratories equipped to produce marked molecules which are not commercially available was published in the Official Gazette and in the relevant trade papers in March 1961. A number of replies have already been received.

B. Biology

The overall biology programme is at present being examined by the Scientific and Technical Committee. In the meantime, action has been taken along the following lines :

20. b. 1) *Animal Radiobiology*

Following the contract concluded on 1 December 1959 with the Nederlandsche Centrale Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek (TNO) for the study of radiation sickness treatment and the breeding of specific pathogen-free animals, a series of other contracts are now being negotiated.

As was pointed out above, the survey provided for under Article 5 has been amplified in this field, and several meetings have been held between Community and US experts to rough out a course of action.

21. b. 2) *Plant Radiobiology and Agricultural Uses*

The third General Report mentioned that negotiations had been initiated with the Instituut voor Toepassing van Atoomenergie in de Landbouw (ITAL), one of the establishments belonging to the Wageningen agricultural and botanical research set-up (Netherlands).

As a result of these negotiations, an agreement was signed on 25 April 1961 providing for a joint research scheme centred on a study of the genetic and somatic effects of irradiation on plants, the use of radiations for preserving foodstuffs and the behaviour of radioelements in the soil, plants and animals.

Work has already been started on this research at ITAL, but the full programme cannot get under way until the new laboratories are available in August or September of 1961. Euratom participation should make it possible for work on these projects to branch out on a far more generous scale.

In addition, both sides will work to promote closer collaboration between plant radiobiology research centres throughout the Community.

C. Controlled Thermonuclear Reactions

22. In conjunction with the Scientific and Technical Committee, the Commission has now confirmed its earlier impression that the time is not yet ripe for the setting up at Ispra of large-scale equipment for this kind of work. The Commission's activities in the field of controlled thermonuclear reactions will therefore continue to be carried out, for the time being at least, under contracts of association with Community laboratories already engaged in research of this kind. The Commission has already decided to renew the contract of association concluded in 1959 with the French Atomic Energy Commission (CEA) when it expires at the beginning of 1962.

A sub-contract concluded in 1960 under this agreement with the Italian Atomic Energy Commission (CNEN) provides for the study at Frascati of a number of specific problems.

Under this Euratom-CEA-CNEN scheme, two particularly interesting lines are being pursued :

- magnetic mirrors, primarily of the pyrotron type
- rapid discharges.

The research being carried out at Fontenay-aux-Roses and Frascati has already given rise to several patent applications.

A new contract of association with the Institute for Plasma Physics in Munich-Garching, came into force on 1 January 1961 and further negotiations are at present in progress with another Community laboratory, at Jülich.

Mention should also be made of the fact that, side by side with the work being carried out within the Community, exchanges of views also take place periodically with special laboratories, particularly in Britain, at the meetings originally organized for the European countries by the European Council for Nuclear Research (CERN). There is also liaison in this field with the United States.

23. c. 1) *Euratom - CEA Contract of Association*

In 1961, the joint team set up at the Fontenay-aux-Roses Nuclear Research Centre south of Paris will have at its disposal, apart from the TA 2000 (medium-size stabilized toroidal discharge apparatus), equipment for carrying out adiabatic plasma compression experiments by pulsed magnetic field.

The theory group has already obtained highly interesting results in the field of magneto-hydrodynamics. It has, for example, succeeded in extending the necessary stability conditions already brought about for cylindrical symmetry and scalar pressure, to axial symmetry and asymmetrical toroid geometries as well as to certain cases of non-scalar pressure. Other research has centred on the examination of dynamic effects, statistical mechanics, wave propagation in plasma, the interaction between particle beams and plasma, spectroscopy, etc.

Experimental work has been concentrated on magnetic mirrors. An adiabatic compression mirror machine (DECA) is almost com-

pleted and preliminary tests have been made using a titanium gun as the plasma source. At the same time, electrodeless guns have been developed and appreciable improvements have been made in the existing models. These guns are now being used for original experiments. Parallel with this work, longitudinal and transversal injection experiments have been carried out and new types of plasma sources are being developed.

A great deal of progress has been made with the construction of a continuous mirror device based on the injection and trapping of molecular ions by dissociation and a high performance annular ion source has been completed.

Other types of source are likewise being developed. Theoretical and experimental studies have been made of trajectories before dissociation. Thanks to the theoretical work which has been done on plasma formation before dissociation, the possibility has now been revealed of dispensing with the dissociating arc after a short initial period.

In the pinch field, the TA 2000 torus, in which certain improvements have been made, will be employed for stability experiments in connection with the above-mentioned theoretical work and also for research in spectroscopy. A device for the production of tubular pinch effects is being built.

Other experiments in progress bear on the interaction between electron beams and plasma, improvements of diagnostic techniques and on certain technological problems.

Under the contract of association, the Saclay Nuclear Research Centre has also carried out work on microwaves and effective dissociation cross section measurement.

24. c. 2) *CNEN Sub-Contract*

The programme of work pursued at Frascati under this sub-contract involves research on two major projects: the study of orthogonal pinch and the production and use of thin layers of high density plasma.

For the first part of the programme, the Frascati group has been working on a small discharge. A medium-scale device (Charybdis), incorporating a number of novel improvements elaborated by the group, is due to be completed shortly.

Two techniques are being investigated in connection with the second project :

- the production, by magnetic implosion of a cylindrical layer, of a small diameter plasma belt;
- the production and use of very powerful magnetic fields (several MG) by compressing a pre-existent magnetic field using various types of energy sources.

At the same time, various diagnostic techniques, mainly optical, have been developed.

25. c. 3) *Contract with the Garching Plasma Physics Institute*

The contract of association with the Plasma Physics Institute at Munich-Garching, mentioned in the third General Report, took effect on 1 January 1961. The preliminary research programme encompasses a number of pinch experiments (stabilized linear pinch, tubular pinch, orthogonal pinch), an investigation into the physical properties of a stationary plasma (transversal diffusion, interaction with ion and electron beams, electrical and thermal conductivity, etc.), a study of high density arcs, an examination of various technological problems and theoretical research into several branches of plasma physics.

Several Euratom employees had already started work in Munich and Garching before the actual contract was concluded.

26. c. 4) *Contract with the Gesellschaft zur Förderung der Kernphysikalischen Forschung (Society for the Promotion of Research on Nuclear Physics), Jülich*

Preliminary negotiations have taken place with a view to concluding a contract of association with this Society, which has a nuclear research centre at Jülich.

Agreement in principle has been reached on a joint programme centred on the study of fast magnetic compression by medium-scale experiments.

D. Reactors and Allied Studies

27. The Commission's own activities in this area of research are concentrated on the ORGEL-type reactor (natural uranium, heavy water moderated and organic liquid cooled).

Plans in the field of fast reactor research are also beginning to take shape; progress here will depend on the availability of the requisite staff and the possibility of concluding suitable agreements.

In addition, the Commission is involved in a number of research projects on other reactor types under various contracts and agreements:

- water reactors;
- heavy boiling water reactor (Halden);
- homogeneous suspension reactor (KEMA);
- advanced gas-cooled reactors : Dragon; HPGP (high performance gas pile);
- organic liquid reactor (Hamburg).

The Commission has also been approached with regard to other types of reactor and has been asked either to give an opinion or actually to take part in various ship reactor, superheated reactor, etc., research projects.

On this subject, the Commission's view is that, while its terms of reference certainly encompass the encouragement of engineering skills and inventiveness in the Community and the provision of guidance to national institutions, it would nevertheless be a mistake to depart from its concentrated operational programme and become involved in too wide a range of projects, the very variety of which would lead to a dissipation of the resources available and would thus jeopardize any real prospect of success.

Its policy is, therefore, in all the plants constructed on its entire or partial responsibility, to go ahead only with such projects as hold out a reliable promise of yielding good results.

28. Elsewhere, the Commission plans to operate or to assume some part in the running of certain experimental reactors built originally by other bodies : the BR 2 reactor, in conjunction with the Belgian Nuclear Energy Research Centre (CEN); the Ispra reactor (type CP5), for which it will assume complete responsibility within the next two years; and the Petten reactor (Oak Ridge type reactor, ORR), once the Dutch agreement has been concluded.

All these plants are promising from various points of view but, as is normally the case with installations of this kind, apart from being expensive to run, they cannot become fully operational for several years after startup. The Ispra reactor came into service about a year ago, while the other two are scheduled for startup in 1961.

d. 1) *Graphite-Moderated Reactors*

29. a) *Dragon Project*

It has been a year of intense activity for the project, work on the actual construction of the reactor experiment having started up in April. It is scheduled for completion by the beginning of 1963.

Research work has gone ahead and contracts have been concluded with firms and laboratories in the Dragon signatory countries. The contracts signed to date in the Community relate to fuel element metallurgy, graphite technology and irradiation experiments.

The international complexion of the scheme is exemplified by the presence at Winfrith Heath of scientists and engineers from all the signatory countries ⁽¹⁾ and by the fact that orders for

(1) Several of these hold important positions; there are 39 staff members from the Community, 26 of whom are Euratom personnel.

equipment have been placed in several of these countries following invitations for tenders issued on the international market.

The first annual report on the project's activities, published by the European Nuclear Energy Agency, contains a considerable amount of information on the work carried out at Winfrith Heath under the above-mentioned research and development contracts.

A Dragon-USAEC agreement for the exchange of information on high temperature gas cooled reactors signed in 1960 provides for a useful two-way flow of information between the project and the firm of General Atomics, which is running an HTGR project under contract from the USAEC.

Attention was drawn in the third General Report to the request directed by the Commission to Member States to designate technical correspondents for liaison between the Dragon project and interested circles within the Community. This network of correspondents is now functioning satisfactorily and regular informatory meetings are held. The correspondents have been particularly useful to the project by indicating firms in the Community which might be in a position to supply equipment or carry out research assignments.

30. b) *High Performance Gas Reactor Project (HPGP)*

In view of the value for the Community of the high temperature gas reactor string, the Commission plans to expand the scope of the work being carried out under this heading in connection with the Dragon project by taking part in the development of the French project PGHP. Feelers have already gone out to the French Atomic Energy Commission (CEA) with a view to embarking on a joint study of this reactor string and its possible application to marine propulsion.

The idea of a project of this kind, which might possibly involve the construction at Community level of a special test reactor, would be to assess the technological limitations and to examine the economic feasibility of gas-cooled reactors having a solid moderator and operating on metal-clad fuel.

The re-use of plutonium would also be covered by the programme. The Commission is in contact with the CEA with a view to mapping out the technical ground to be covered by the contract, working out the set-up of the joint team which would be responsible for implementing it and deciding the lines along which the project should be administered.

31. c) *Other Projects*

A further scheme for collaboration in this field has been submitted by a group of Italian institutions.

d. 2) *Heavy Water Moderated Reactors*

32. a) *Halden*

It was pointed out in the third General Report that, if the Halden research programme originally scheduled were to be successfully implemented, the agreement signed under the aegis of the OEEC would have to be extended. By the end of 1959, it had become clear that, failing such extension, it would not be possible for the reactor to go over to power range operation with the second fuel charge as provided for under the programme.

For these reasons, it was decided, in June 1960, to prolong the agreement for one and a half years beyond the three years originally planned.

The first boiling trial run was carried out successfully in October of 1960; details are given in the project reports published by the European Nuclear Energy Agency.

Of the 39 experts working on the project on 1 January 1961, eight were from the Community countries. As in the case of the Dragon project, a network of technical correspondents has been set up to maintain liaison between the Commission and the Member States which it represents on the project.

33. b) *ORGEL Project*

Among the research projects which Euratom is carrying through directly on its own behalf, pride of place is being given to the ORGEL or heavy-water-moderated organic-liquid-cooled reactor string.

Following the preliminary studies made by Euratom in 1960, various firms of industrial designers have now been commissioned to draw up preliminary draft designs for a specific test reactor under the title of ESSOR. This reactor will need to be endowed with an extremely high degree of flexibility, since it will be used to test out not only the fuel, but also the coolant and the structural components to be employed. It will therefore be equipped with several test loops as well as a statistical test zone. The neutrons will be supplied by a conventional feeding zone.

After consultation with ten firms of industrial designers, selected for their special experience in the fields of heavy water, organic liquids or reactor construction, the Commission has entrusted two ad hoc research combines—each of which incorporates two or three prominent designing firms ⁽¹⁾—with the task of drawing up, independently of each other, a preliminary draft design.

Not until after these preliminary draft designs have been completed, at the end of May 1961, and the firms who are to be responsible for establishing the actual draft design have been selected, will the Commission be able to take a final decision as to whether to go ahead with the construction of the test reactor.

34. Satisfactory progress is being made on the research and development programme connected with the project, and work is under way on 15 contracts in various research centres and enterprises within the

(1) These associations, which cement the technical potential of the Community without creating a monopoly, will enable the Commission, which is highly satisfied at the way the scheme is working out, to make use of a wide range of resources both in men and materials without dispersing its own efforts. It also provides further proof that organizations in different countries are able to work together on a team basis once concrete objectives have been established.

Community. Work on the programme is being pursued along a number of different lines.

35. 1) An irradiation programme has been elaborated and an in-pile loop project for fuel rodlet irradiation providing possibilities for destructive testing is being studied.

36. 2) Work on heat transfer is going ahead at Ispra (where two organic loops are currently being installed and a third, very large one is being designed). In addition, two contracts have been concluded : one involves the construction and operation of two loops for fouling studies and one is concerned with burn-out studies.

37. 3) In the field of metallurgy, the ORGEL programme is centred on the study of SAP-clad uranium carbide fuel. The bulk of this programme is being handled by the metallurgy section at Ispra, but several contracts dealing with SAP (sintered aluminium powder) and uranium metal—aluminium cladding diffusion barriers, have also been concluded with specialized firms. Moreover, various short-term contracts have been signed to study such questions as the development of a machine for ultrasonic SAP welding, the preparation of raw materials for examination at the Centre and the non-destructive testing of fuel elements.

38. 4) From the technological angle, the ORGEL programme will be confined, initially, to the study of particular points in connection with pressure tubes and problems associated with fuel assemblies.

39. 5) Chemical problems are also being tackled :

a) *Polyphenyl Technology*

In connection with the research being carried out under this heading, various contracts have been concluded for the construction of in-pile or irradiation loops as well as for the study of corrosion phenomena.

b) *Research on Products with Better Properties than the Polyphenyls*

In order to avoid being side-tracked into expensive projects holding out dubious prospects of success, the Commission is considering only such proposals as can already point to some preliminary results. One contract has, however, been concluded for the development of a project which has already produced some promising results on petroleum derivatives.

c) *The Basic Mechanisms of Radiolysis and Pyrolysis*

This is a very important section of the programme and it is being handled by the Ispra chemistry department, whose task it will be to go on from where the above-mentioned polyphenyl studies leave off.

40. 6) In the field of core physics, following the critical experiments carried out under contract in the CEA's Aquilon reactor, the critical experiment department at Ispra (ECO : ORGEL critical experiment) has embarked on the study of a heavy water critical assembly, which it will be possible to use, among other things, to make a thorough examination of the ORGEL lattices.

A considerable proportion of the facilities of the applied physics and mathematics section at Ispra is taken up by core calculations. A study has also been initiated of the carbide solution, which is of particular interest. These activities are being carried out in close collaboration with the Joint Computer Centre.

Finally, mention should be made of the detailed steam cycle study which is being carried out by a group of Community designers and which will make up part of the overall study undertaken to assess the feasibility of the ORGEL string.

41. d. 3) *Fast Reactors*

Under this heading, a first contract has been concluded with a Belgian firm of industrial designers to establish a possible neutron physics research programme, with particular reference to the construction of fast neutron critical assemblies.

As a result of contacts established with the CEA, the Commission hopes to have the opportunity of keeping track of develop-

ments with the French fast reactor project Rapsodie and to be able to draw up a scheme for association with the CEA in the fast neutron field.

The Karlsruhe group, which has likewise begun to carry out studies in this field, has also been sounded out by the Commission.

42. d. 4) *Homogeneous Reactors*

Work has gone ahead under the contract of association concluded on 1 July 1959 with the N.V. tot Keuring van Electro-technische Materialen (KEMA), Netherlands, for the purpose of constructing a 250 kW homogeneous suspension reactor (SUSPOP project).

Highly satisfactory results have been achieved with the uranium and thorium oxide suspensions destined for use as reactor fuel as well as with the sub-critical reactor model study.

Valuable contacts have also been established with the Saclay Research Centre, the Atomic Energy Research Establishment at Harwell and the Oak Ridge laboratories, as well as with a number of Community firms. The experience gained by these various bodies which are all engaged in similar lines of work should help to broaden the basis of the KEMA project in which, apart from staffing difficulties, the main problem at present is the drawing up of the detailed design for the reactor experiment.

43. d. 5) *Water Reactor Studies*

United States-Euratom Research and Development Programme

The aim of this programme is to improve the reactor strings to be constructed under the US-Euratom Agreement for Cooperation and to develop the plutonium cycle.

Under this heading, 35 research contracts have been concluded in the Community countries and nine in the United States, representing an expenditure of about 7.7 million EMA units of account.

Special mentions should be made of the large-scale programme which has been launched with a view to developing various uranium-oxide based fuel element shaping processes. Carried out in conjunction with a number of research centres and firms in the Community, the programme is aimed at improving the sintering results obtainable in a variety of atmospheres and at determining the part played by the main parameters involved, e.g., the source of the powder, specific surface area, the nature of the binding agents employed, etc. The programme also provides for work on the development of an extrusion process for producing UO_2 rodlets with an apparent density in the region of 95 % of the theoretical density and for an examination of the effect of certain additives (inert oxides) on the thermal conductivity of sintered products.

As the majority of these contracts were only authorized in the course of 1960, the research work covered by them is still only in its beginnings.

Other contracts concluded provide for research on uranium carbide and mononitride.

In the plutonium field, contract work is being carried out or is projected by the Belgian Nuclear Energy Research Centre (CEN), the French Atomic Energy Commission (CEA) and an American firm. The programme of work (mapped out in a meeting lasting several days and attended by experts from the US and the Commission as well as potential contributors from the Member States) is centred on the development of various fuel element fabrication processes, the neutron physics of plutonium-based fuels and boiling water reactor irradiation tests.

Other points of interest in this context are a high temperature exponential experiment which is being carried out as part of a neutron physics study of uranium oxide-based fuels, and a series of investigations currently in progress into the hydrodynamic and thermodynamic aspects of reactor operation under boiling conditions.

More and more evidence is forthcoming on the potential value of water-steam emulsions for coolant purposes, the improvement in the burnout flux is appreciable and corrosion and erosion tests have

revealed no great differences as between water-steam mixtures and boiling water.

Finally, as a result of the coordination of about 30 proposals submitted by the biggest steel and engineering concerns in the Community, the programme mentioned earlier for research and development work on steels for reactor vessels and welding techniques for use on thick sheets has been launched.

The interchange-of-staff principle has been put into practice within the limitations imposed by the difficulty of hiring sufficiently experienced engineers. At the time of writing, 25 Euratom engineers, seven of whom are working in the United States, are engaged in research work under the Joint Programme.

d. 6) *Materials' Testing Reactors*

44. a) *BR 2 Agreement*

At its meeting of 19 July 1960, the Council of Ministers approved a proposal submitted by the Commission with a view to modifying the Community's research programme provided for in Annex V to the Treaty in order to make it possible for the Commission to conclude an agreement for association with the Belgian Nuclear Energy Research Centre (CEN).

The agreement was signed on 20 June 1960 for a duration of 20 years and came into effect on 1 August 1960. It provides for joint operation of the high flux fast neutron reactor BR 2 at Mol and of the facilities required for irradiation studies.

The CEN is contributing the existing facilities to the scheme and is assuming third party liability for the operations carried out in the plant. New investment and the operating budget will be financed by both parties. Revenue will be shared, but an extra share of profits will be allotted to the CEN.

The board of management in charge of the project will administer three technical departments :

- the technology section, in charge of the preparation of irradiation loops;

- the BR 2 section, responsible for reactor operations;
- the hot laboratory section, responsible for the examination of irradiated samples.

All these departments will require a staff of about 200 persons once the reactor becomes operational. The personnel at present amounts to around 140 persons, 38 of whom are from Euratom.

The BR 2 reactor is planned for criticality in the spring of 1961, while the power range operations are to be phased over about six months if the project proceeds according to schedule. Several loops are at present being studied on behalf of various bodies, primarily for the Dragon, Rapsodie and Orgel projects.

45. b) *Coordination of Irradiation Programmes*

Notwithstanding the above-mentioned endeavours made to bring about a measure of coordination in this field, it is clear that the test reactors currently scheduled for commissioning will not be used to full capacity in the initial period of operation, especially since most of the requisite ancillary facilities will not be ready until some time after the reactors themselves have been completed.

Furthermore, the majority of potential users especially on the industrial side are not as yet in a position to plan their irradiation programmes; the BR 2 reactor, for example, can count only on organizations which already have large-scale nuclear commitments.

The Commission will continue its policy of acting as a go-between to enable interested parties to keep in contact with one another and will proffer its good offices wherever such a course of action seems necessary or expedient with a view to making the best and earliest use of the facilities projected.

46. c) *Petten Reactor*

As is pointed out below, the activities of the Petten centre will initially be focussed on the HFR high flux materials' testing reactor, which is scheduled eventually to be taken over by the Community.

E. Computer Centre and Scientific Data Processing

47. 1) *General Set-up*

The Scientific Data Processing Centre (CETIS) was set up at the beginning of 1960 pursuant to the Commission's decision to equip Scientific Data Processing Research Team (GRISA) with a computer centre (CCC) fitted out with large-scale facilities.

Since the publication of the third General Report, new staff have been hired and construction work has been started on the building intended to accommodate them; the first computers delivered have been in use at Ispra since February 1961 and orders have been placed for others.

2) *General and Applied Language Studies*

48. a) The GRISA team has made further progress with its automatic documentation studies. Particular attention should be drawn to the "programme of conflicts" which has been set up under this rubric. This is a programme of automatic grammatical analysis, the operations of which, as in the case of language itself, may be interpreted on the basis of several linguistic viewpoints or precepts simultaneously, thus constituting a type of "language model".

This programme, encompassing the related semantic problems, will make it possible to translate automatically from a normal language into the artificial machine language on which an advanced study is at present being carried out in collaboration with a team at the French Scientific Research Centre, with which a contract has been concluded under this heading.

49. b) As the equipment on order from various Community organizations and in particular the GMELIN Institute (Frankfurt) is installed, the work of the Automatic Documentation Centre (DOCA) will rapidly get under way on the pattern of other highly-mechanized documentation centres, thus making it possible for the results made available by the GRISA team to be put to immediate practical use. In connection with these projects, the DOCA section has been re-

quested by the American National Service Foundation to act as the European clearing-house for liaison work in the field of automatic documentation.

3) *Computer Work*

50. The computer section was set up with the following two basic objectives in view :

- productive work, i.e. the solution of problems set by the various Euratom departments and possibly by outside organizations as well;
- research.

a) Owing to organizational requirements and the need to train the staff of the section in the use of the equipment provided and because of the urgency of the problems passed on to it for solution, the section's activities during the period covered by the present report have been centred mainly on the first item.

Up to the beginning of 1961, when the analogue equipment and the IBM 1620 ordinator came into services at Ispra, outside equipment had to be employed for tasks involving the use of both digital [IBM France, International Business Machines, IBM Belgium, the Ferranti installations at Mol and Saclay and CERN (European Nuclear Research Centre), Geneva] and analogue computation.

Large-scale digital problems will continue to be handled by outside facilities until July 1961, when the IBM 7090 will be installed at Ispra. For this purpose an agreement has been concluded with the CERN arranging for an exchange of working hours on the ordinators at both centres.

51. b) On the research side, the analogue section is working on a detailed study involving a comparison between the finite differences method and the characteristic functions method with a view to arriving at an approximate spatial representation of large-scale nuclear reactors on analogue computers.

In the digital section, the numerical analysis group has made an investigation into the stability conditions involved in the solution of certain partial differential equation systems arising in connection with the controlled fusion studies carried out by the Frascati team.

The integration of the numerical and non-numerical data-processing groups on the digital side and the proximity of the analogue and digital teams illustrate the general philosophy underlying the research programme, which is aimed eventually at welding together these two distinct data-processing techniques.

Note should be taken in this context of certain projects of a fundamental nature undertaken jointly by experts in the two branches:

- study of the possibilities afforded by meshed resistance network computers for solving parabolic partial differential equations and comparison with pure analogue and digital methods;
- study of the automatic programming of analogue computers by means of digital computers (primarily IBM 1620) in connection with the possibilities offered by the ADIOS system.

F. Transplutonium Elements Research Programme

52. Negotiations have been entered into with the Belgian CEN and the French CEA with a view to setting up a joint research programme on the production and study of the transplutonium elements (americium and heavier elements).

Two contracts to be signed very shortly with the CEN provide for the production of transplutonium elements in the BR 2 reactor and the carrying out of a parallel research programme. This latter research contract is intended to serve as a springboard for a basic study programme on a more long-term basis.

The negotiations with the CEA are likewise nearing completion.

The Commission plans to have as many scientists and technicians as possible taking part in this programme in order to boost the number of experts available in this field and to build up a nucleus of trained personnel for the Karlsruhe plant.

The Commission also hopes to be able to interest other organizations in this research and a scheme for collaboration with the US is envisaged.

G. Mineralogy and Geochemistry

53. The research programme to be carried out under this heading will cover the use and development of the latest mineral investigation techniques, and will take into account the interlocking pattern of the various geosciences. It embraces basic studies in geochemistry, petrography and mineralogy as well as the application of modern techniques to ore prospecting or processing.

Until the Ispra laboratories are ready, the members of the team of scientists which is currently being set up are working temporarily in such Community laboratories as are engaged on programmes in line with that of the Joint Centre. These assignments have given rise to a number of publications written both by Euratom personnel and by the staff of the laboratories themselves.

A contract on beryllium distribution in coal has been concluded with the Geochemistry Centre of the Free University in Brussels, and a further contract, to be carried out jointly by the Nuclear Geology Laboratory of the Free University of Brussels and Pisa University and dealing with problems of isotopic geology, is being negotiated. In this connection, use will be made of deep ice core samples taken at the Belgian King Baudouin Antarctic expedition base, which will be examined for rare hydrogen and oxygen isotope distribution, as soon as they arrive in Europe.

H. Nuclear Physics

54. A three-year contract of association was concluded in December 1960 with the Italian Atomic Energy Commission (CNEN) for research on low energy nuclear physics.

This contract, which is being carried out by the Italian laboratories affiliated to the National Nuclear Physics Institute (INFN),

is a good example of the way in which the Commission is able to round off national programmes which are well-conceived and adapted to Community requirements.

In order to implement this contract, the INFN has mobilized the resources of all the various Italian university establishments which have specialized teams at their disposal.

The initial programme, which will supplement the programmes of the Central Nuclear Measurements Bureau and the Ispra neutron physics studies section, embraces the following subjects :

- neutron-induced nuclear reactions;
- nuclear spectroscopy (i.e., investigations on the energy levels of atomic nuclei);
- cross section measurements for polarized neutrons and ions in a range of several MeV;
- in-pile research on the conservation of parity in the case of strong interactions.

As in all contracts of this kind, the project is administered by a board of management, in this case made up of the Commission and CNEN representatives. Arrangements have been made to enable Euratom scientists to be assigned to the project, if so desired.

IV. The Branch Establishments of the Joint Research Centre

A. Ispra

55. The first Euratom teams got down to work as soon as the ratification of the agreement between Euratom and the Italian Government took effect on 1 September 1960.

The situation during the transition period, which has just concluded, was made very much easier by the CNEN's decision to entrust the administration of the Italian part of the centre to the director

appointed by the Commission, thus avoiding a dual command which might have proved a considerable impediment to the solution of the numerous and urgent problems arising while the new plant was being installed. The Commission is glad, once again, to take this opportunity of expressing its appreciation for the cordiality and ready understanding demonstrated by the CNEN.

Thus far, the primary preoccupation of the Ispra staff has been to install and fit out new and existing plant. Some of the buildings already in existence have had to be extended and completed, work has had to be started on the construction of new laboratories, and temporary quarters have had to be found for the personnel, some of whom had already been waiting for some time in Brussels. The general departments, the nucleus of which had already been prepared, had to be fully staffed, while the equipment ordered had to be taken over and supplemented. Finally, ways and means had to be found of tying up with the Italian teams, part of whom are remaining at Ispra for some time under the aegis of the CNEN, while the other part, which will be used to supplement the Euratom staff, will gradually have to dovetail their own work with Euratom activities.

This organizational effort, which is by no means over, has been the main feature of the work carried out to date at Ispra.

56. On 31 March 1961, the total Euratom staff at Ispra amounted to 810 persons, including 250 former CNEN personnel. The above total also includes engineers counted as Ispra staff who are working on various outside assignments.

Apart from these there are still 250 members of the CNEN staff at Ispra.

On the same date, 31 March 1961, the facilities available at Ispra covered an area of 9,500 m², which will have extended to 12,500 m² by 1 May 1961.

57. Side by side with the Italian teams, which have continued to forge ahead with their own programmes, the Euratom staff at Ispra has gradually been getting down to work.

Under the circumstances, it is hardly surprising that the bulk of the research done to date has been carried out by the applied physics and mathematics unit—mentioned earlier in connection with the ORGEL project—the metallurgy department, which is also working on important ORGEL assignments in facilities hired for a two-year period from SORIN at Saluggia (about 100 km from Ispra), and finally, the neutron physics group, which has been engaged for several months past on the preparation of experiments with the Ispra reactor.

Under the agreement on the handing over of the Ispra Centre, the ISPRA I reactor and its ancillary laboratories will remain under Italian management until March 1963. A Joint Board—which is advised in its work by a number of prominent consultants in the Member States—has been set up to deal with all questions arising in connection with the research programme.

The first project of the Euratom experimental neutron physics team has involved the design and construction of a slow chopper, which is due to be put into operation in the very near future.

It will be seen then that the Ispra research centre is still in an inchoate stage and we shall have to wait for the next General Report to give us a firmer outline of the work of the establishment, which, although intended as a general purpose centre, will be primarily concerned with activities connected with the ORGEL project.

B. Central Nuclear Measurements Bureau (CNMB)

58. Pending the conclusion of the negotiations in progress for the formal transformation of the Central Nuclear Measurements Bureau at Mol into a Joint Research Centre establishment, the Bureau is continuing to be equipped in line with the schedule laid down by the Commission and approved by the Scientific and Technical Committee.

In 1961, the CNMB will have at its disposal a neutron source in the form of a 3 MeV van de Graaff accelerator specially equipped

for millimicrosecond pulsation. An electron linear accelerator has been ordered and is almost ready.

So far, the Bureau has been largely concerned with making a thorough study of major items of equipment and measuring devices. In addition, actual measurements are already being carried out and investigations are in progress—partly in collaboration with other Community laboratories—with a view to improving the instruments in use.

On 31 March 1961, the CNMB staff amounted to 59 persons, including 20 engineers or personnel with equivalent qualifications.

59. The CNMB is also in contact with various international organizations.

European-American Nuclear Data Committee

This body, which was set up by the Commission in collaboration with the Member States and the European Nuclear Energy Agency, has now drawn up an inventory of existing facilities. An important meeting was held at Oak Ridge in November 1960 to map out the programmes of work and decide on how activities in connection with neutron parameter measurements can best be divided up.

This meeting, the ground for which was prepared by an internal committee made up of experts from the Community countries, is the first example of a concrete scheme for collaboration which involves the united potential of the whole of the Western world in one small but vital field.

The aid of the Committee has been extremely valuable from the point of view of drawing up the CNMB's measurements programme and for obtaining rare isotope specimens needed for measurement purposes by laboratories throughout the Community.

International Bureau of Weights and Measures

The CNMB is working together with the Consultative Committee on Ionizing Radiations and its various working groups.

International Commission on Radiological Units and Measurements

The CNMB is represented on one of the Commission's working groups currently examining the problem of the techniques employed for the measurement of neutron fluxes and neutron spectra.

C. European Transuranium Institute

60. A contract has now been concluded with the "Gesellschaft für Kernforschung m.b.H." for the setting up of this Institute on the premises of the Karlsruhe Nuclear Research Centre. The contract, signed on 21 December 1960, relates to the design, construction and operation of the Institute and at the same time provides the basis required for routine collaboration between the Karlsruhe Centre and the Euratom Institute.

A parallel contract has been concluded with the Land of Baden-Württemberg investing the Commission with a right of superficies over the site intended for the Institute.

61. A combined Euratom-Gesellschaft für Kernforschung working group was formed some months ago to draw up the plans for the layout of the projected Institute as well as for the laboratories. In this way, everything has been done to enable actual construction work to be started at the earliest possible date.

The German Federal Republic will be contributing a sum in the region of 4.8-5.7 million EMA units of account to the construction costs, the total investment for the initial period being estimated at 12-14 million EMA units of account.

The task of the Institute, which will rank as a branch establishment of the Joint Research Centre, will be to carry out development and experimental work on the application of the transuranium elements for peaceful purposes, and will involve the development of plutonium-based fuel elements.

In view of the rate of scientific and technological progress in the utilization of plutonium, it would be premature to lay down a

detailed programme for the Institute at the present stage, when the laboratories will not be ready for another two or three years. A research programme has, however, been worked out in broad outline and, in carrying it out, Euratom will be able to draw on the results obtained from research in progress at CEN and CEA laboratories, with which the Commission has concluded or is about to conclude plutonium research contracts, as well as on the experience acquired in this field by the United States. The programme will be drawn up with a view to the Community's own requirements, in connection, for example, with such areas of research as the fast reactor programme.

Apart from the Community's programme, the Karlsruhe Institute will also be able to accept contract research work from the Member States.

Meanwhile, full priority is being given to the recruitment and training of the staff for the Institute.

D. Petten Establishment

62. The agreement on the setting up at the Reactor Centrum Nederland (RCN) at Petten (Netherlands) of a fourth joint Research Centre establishment is expected to be signed in the near future.

As has already been pointed out, the activities of this new general-purpose establishment will be centred initially on the operation of the HFR high flux materials testing reactor, which is scheduled to be taken over by the Community.

Work is proceeding rapidly on the construction of the reactor and criticality is scheduled for 1961.

Euratom staff working at Petten is expected to amount to 400 persons in a few years' time. The expenditure envisaged within this period is estimated at around 12 million EMA units of account.

V. Training

A. Euratom Training Facilities

63. Thanks to the cooperation of public and private research centres within the Community, a number of openings have been provided for students with an adequate academic background to attend courses of practical training.

Students are normally assigned to work outside their own countries in order to avoid any clash with similar schemes organized at the national level. These trainee assignments generally last from one to six months, with students participating in the routine work of the permanent staff or engaged on the study of secondary problems.

Student-trainees are reimbursed for their travel expenses and in addition they receive a standard flat-rate grant to cover their living costs. A further sum, in the form of prize money, is awarded at the end of each course of training to the best students, who are selected on the basis of their own written work and of reports provided by the research centres themselves.

These courses were announced for the first time in March 1960 and by the end of the year the situation was as follows :

Number of actual applications (after 40 cancellations)	406 = 100 %
Candidates accepted by Community research centres	181 = 45 %
Applications submitted to research centres but not yet decided	26 = 6 %
Applications rejected through lack of room or inadequate qualifications	182 = 45 %
Applications submitted for future trainee posts	17 = 4 %

The scheme will be continued in 1961-1962.

B. Euratom Certificates

64. An internal working group has been formed to study the possibility of issuing Euratom technical training certificates to students who have passed examinations of a recognized standard. The object of these certificates would be to :

- promote the coordination of existing training systems and thus to facilitate the exchange of technicians between the Member States;
- encourage the setting up of new types of training schemes;
- provide an incentive for young people to study nuclear technology.

An initial study has shown that Euratom certificates of this kind would be particularly valuable for the following subjects :

- radiation hygiene;
- radiochemistry;
- use of radioisotopes;
- reactor operation.

A study has already been initiated of the training possibilities already existing in these areas and various groups of experts have been set up to draft detailed projects for the Euratom certificate examinations.

CHAPTER II

EUROPEAN UNIVERSITY AND THE EUROPEAN SCHOOLS

SETTING UP OF THE EUROPEAN UNIVERSITY — DEVELOPMENT OF SCIENTIFIC AND INTER-UNIVERSITY COOPERATION — FLORENCE AS THE PROVISIONAL LOCATION OF THE UNIVERSITY — ESTABLISHMENT IN 1960 OF TWO NEW EUROPEAN SCHOOLS, AT MOL AND ISPRA

I. European University

65. Pursuant to the recommendations of the European Parliament, the Council of Ministers has entered in the Euratom research budget for 1961 a pro-memoria item under the heading of the European University, but has still not reached the unanimity required for concrete steps to be taken towards the setting up of the University. The question has, however, been taken up by a Commission which has been entrusted by the heads of government to work out proposals for a meeting scheduled for 19 May in Bonn.

In the course of 1960 various concrete proposals were made on the subject of the University; they are listed in the report submitted by the Interim Committee. The decision was taken to adopt Florence provisionally as the site of the new University.

A. Proposals Submitted by the Interim Committee

On April 27, the Interim Committee submitted in Florence a report containing a series of proposals aimed at :

- the establishment of a European University;
- the development of scientific and inter-university cooperation.

1. *The European University*

66. The central and unique feature of the European University—which will be pledged to work for the furtherance of the European cultural heritage—rests in the fact that the teaching staff and the student body will be made up of nationals of the six Member States.

The structure of the University—as adumbrated in the proposals of the Interim Committee—will be different from that of existing universities, at least those of continental Europe. Only selected subjects, on both the arts and the science side, will be taught, and the organization of the University will be on a departmental rather than a faculty basis. Priority will be given to subjects which are of particular interest from the point of view of European integration and which would benefit from close international collaboration, particularly between the Member States. The University will be open to students with three or four years' academic training behind them and will award the degree of Doctor of the European University. Numbers will be limited, so that on the termination of the initial five-year period, the University will be equipped to provide post-graduate causes for about 500 students per year.

2. *The Development of Scientific and Inter-University Cooperation*

67. As part of the general plan to promote research and scientific training in the Member States, arrangements have been made to enable specialized institutes to be granted the status of European institutes for research and higher education. A wide range of institutes will qualify for this European status, the main proviso being that their curricula are significant within the general context of European integration. These institutes will receive certain material advantages and will be expected to agree to comply with a minimum number of conditions, particularly relating to the staffing of the professorial body and the conditions of admittance for students.

Furthermore, certain concrete proposals were put forward to facilitate inter-university exchanges and the movement of teachers and students between the European University and the existing universities. There are also plans for the issue of a European University attendance book to enable students to study in other Community countries during their university careers (for purposes of keeping terms and taking examinations).

These proposals were drawn up by a legal working group in the form of draft statutes and conventions. The group underscores the outward-looking nature of the new institution and suggests maximum flexibility in admitting teaching staff and students from non-member countries; this could be done either by means of full association on the part of the individual non-member states or by the association of a particular university with the European foundation in Florence.

The Interim Committee's proposals have been approved by the European Parliament, which has on several occasions underlined the importance which it attaches to this project.

B. Installation of the University

68. On 20 July 1960, a decision was taken to adopt Florence as the provisional site of the new University. Discussions with the competent Florence authorities, who have placed a 30-hectare site a Marignole at the disposal of the scheme, have shown that all the requisite facilities will be available for the installation of the University. The proposed site is ideally suited for the layout of a single university campus where the students and teachers will be able to live and work in common. Draft plans for the first phase of construction work have already been drawn up.

II. European Schools

69. In the interest of educational continuity for the children of Euratom staff, the Commission has made it a rule to request its co-

contractors to set up European schools for such children at all Joint Research establishments and other places where the number of such staff working and residing on the site on a permanent basis justifies such a measure.

Two new schools were established in this way by the European School Board in 1960, one at Mol and one at Ispra; both are still occupying temporary buildings. Each of the schools covers the complete primary curriculum, instruction being given in four languages at Ispra and three at Mol. The schools also provide classes for the first two years of the secondary course; a further secondary class is to be added at the beginning of each academic year.

The European School in Brussels, set up in 1958, is attended by the children of Euratom and Common Market staff as well as of the personnel belonging to the other Community institutions in Brussels. It has expanded steadily and by 1 January 1961 was attended by about a thousand children divided up between an infant school, a full primary school and a school covering the first four years of the secondary curriculum.

In response to an appeal from the European School Board, the Commission considered that it was its duty to assume the brunt of the financial responsibility for the European Schools. It also decided that it would be in the interest of the Community children to throw the schools open, within reasonable limits, to nationals of the Member States and to other children resident in the same area. Particular reference has been made to the school at Mol, which, it is suggested, should be open to the children of employees of the Belgian Nuclear Energy Company. It is hoped that this will prevent the children of Community staff from being hermetically sealed off from the outside world and enable them to come into contact with the local children.

The Commission is backing up in every way it can the efforts being made in connection with the European schools and is particularly appreciative of the vital role being played by the various governments and institutions concerned in implementing a scheme which constitutes a milestone on the road to European cultural integration.

CHAPTER III

DISSEMINATION OF INFORMATION

BIBLIOGRAPHICAL ORGANIZATION — STUDY AND ESTABLISHMENT OF DOCUMENTATION POOLS — DEVELOPMENT OF A BIBLIOGRAPHICAL INFORMATION SERVICE — DISTRIBUTION OF PUBLISHED RESEARCH RESULTS — DELINEATION OF AN INDUSTRIAL PROPERTY POLICY — UNIFICATION OF INDUSTRIAL PROPERTY RIGHTS IN THE MEMBER STATES

70. One of the instruments available to the Community for the pursuance of the objectives laid down in Article I of the Treaty is the application of an appropriate policy with regard to the dissemination of information, industrial property and documentation.

The Commission's policy in this sphere is designed to provide scientists and technicians with a maximum of up-to-date and general information on the latest developments in the field of technology with a view to avoiding duplication of effort. This involves, first of all, building up as large a body of relevant nuclear data as possible and, secondly, making such data available to the Member States and to persons and enterprises within the Community, insofar as Euratom is at liberty to do so.

For this purpose a Documentation Centre has now been set up which is available to all scientists who may wish to make use of its facilities.

In the field of industrial property, Euratom has elaborated the basic principles of its patents' policy and is taking an active part in the task of creating a European patent.

Finally, a unit has been set up for the purpose of distributing Commission publications as well as technical reports arising out of Euratom and outside contract research work.

I. Documentation

71. The problem involved in arranging for a proper distribution of information is primarily one of organizing an adequate documentation service able to ensure maximum coverage of all available nuclear data.

In 1959, it was decided to establish a Documentation Centre which would be available to all scientists and equipped with the most up-to-date facilities.

The setting up of the Scientific Data-Processing Centre (CETIS), which is dealt with in the chapter on Research, was motivated by the same objective, i.e. to bring about the most efficient and the most rapid possible circulation of the factual material available.

72. It soon became clear, however, that if the idea of a really large-scale scheme for the dissemination of information were to be implemented in line with Treaty requirements, the documentation facilities existing within the Community would be inadequate, even if considerable improvements were made to them.

To cope with this situation, the Commission put forward a proposal, at the documentation conference held in Rome in May 1959, that a number of nuclear documentation pools be set up. This led to a series of negotiations and a basis has now been worked out for apportioning the various specialized tasks involved among the United States Atomic Energy Commission (USAEC), the United Kingdom Atomic Energy Authority (UKAEA) and the Euratom Commission. To round off its own setup in this field, the Commission has also organized a bibliographical information service, which will deal with requests for technical information sent in by Community research workers.

In the course of 1960, considerable progress was made in setting up the various branches of the documentation service listed above. They are dealt with in the following section item by item.

A. Documentation Centre

73. The Documentation Centre consists basically of the library located at Euratom headquarters and the libraries in use at the various branch establishments of the Joint Research Centre.

1. The Libraries

Apart from setting up the main headquarters library, the Commission has also had to organize the libraries located at the various JRC branch establishments (at Ispra, Mol and Karlsruhe). This has involved coordinating all purchases and avoiding unnecessary duplication when ordering books needed by the research staff.

2. Automated Documentation

An automatic system for document classification is being built up and a number of machines are already in operation; these have been employed to carry out an initial classification of patent applications supplied by the Member States in accordance with Article 16 of the Treaty.

B. Documentation Pools

As a result of the negotiations held in 1959 with the USAEC and the UKAEA, plans were made for the creation of three nuclear documentation pools :

1. Information Pool on Translations;
2. Pool of abstracts on the social sciences (economics, law, politics, etc.);

3. Pool of technical and scientific abstracts.

Satisfactory progress was made with all these projects in 1960.

1. *Information Pool on Translations (TRANSATOM)*

74. There is a very pressing need, in the nuclear field, to have some system for making available with the minimum of delay translations of scientific or technical texts published in Slavonic or Oriental languages.

It emerged from discussions with the American and British experts that the efforts being made in this sphere were widely dispersed and that the setting up by the Commission of a department specially designed for this purpose would bridge a most inconvenient gap. It was agreed that this special unit would publish translation lists and that the USAEC and the UKAEA would supply all the information at their disposal.

The purpose of this unit is to provide scientists and technicians both inside and outside the Community with any information they may happen to need on translations, either completed or in preparation, of articles, reports or patents connected with the nuclear field.

To start with, the unit is drawing up a list of translations into Western languages of scientific articles published in Slavonic languages or Japanese or Chinese together with indications as to the source and the means of obtaining copies. This information is being published in the form of a card index accompanied by a bulletin, both of which are already widely circulated not only within the Community but also in non-member countries (Japan, India, South Africa, etc.).

Later on, it is planned to include translations from one Western language into another.

Eventually, the unit also intends to publish translations of non-technical articles connected with nuclear energy.

The first four issues of the Transatom Bulletin have already appeared and the corresponding card-index is now being distributed.

Both the Bulletin and the card-index will continue to appear regularly in 1961. So far, the enterprise has met with a favourable reception.

2. Documentation Pool for the Social Sciences

75. It was agreed with the competent American and British authorities that Euratom might possibly assume responsibility for the collation of the non-technical and non-scientific data relating to nuclear energy and the Commission examined the possibility of publishing a corresponding bulletin of abstracts which would act as a counterpart to Nuclear Science Abstracts.

The department responsible for the editing and distribution of these abstracts is still carrying out preliminary investigations. The preparatory work will probably take some time, since, once the value of such an undertaking has been established, the next stage will be to sift through and analyze a considerable number of reviews, periodicals and various other publications in order to extract the material required for the bulletin.

3. Scientific and Technical Documentation Pool

76. The only journal of scientific and technical abstracts which covers the whole of the nuclear field is Nuclear Science Abstracts, which is put out by the USAEC and which covers most of the literature in question. A permanent staff of around 50 people are permanently employed on the publication of this periodical, which involves the sifting and analysis of a large number of documents and the editing of some 30,000 abstracts per year.

In view of the more limited resources at their disposal, Euratom and the UKAEA have offered to take over part of the work for Nuclear Science Abstracts, with a view to making the whole process more rapid and comprehensive. This scheme would have the advantage of obviating the need for users to refer to two publications instead of one.

Although certain details of this scheme still remain to be fixed, Euratom is going ahead with the sifting of various scientific publications appearing in the six Community countries and not covered by the American periodical.

In a later phase, Euratom would be able to take over all Community literature and, finally, the publications appearing in this field in the whole of Europe.

C. Bibliographical Information Service

77. The Bibliographical Information Service set up in 1960 is currently engaged on the collation, indexing and distribution of technical information with a view to assisting IRC scientists in their work and to making available precise and up-to-the-minute data on the status of developments in particular technological fields when research contracts are placed. It is planned to expand the unit and by 1961 it is hoped that its services will be available to the research centres of the Member States and to individuals and firms within the Community.

The unit's facilities are also being used to assist authors of monographs in other Euratom departments.

II. Industrial Property

78. A clear distinction must be drawn between information (patents, etc.) in the hands of third parties (firms or persons) and information possessed by the Community.

In the first instance, the Commission can do no more than encourage the friendly exchange of information or possibly resort to the procedure provided for under the Treaty for the automatic granting of licenses. In the second case, the Commission is responsible for distributing among individuals and firms in the Member States any relevant information which it may possess or which it may otherwise be free to make available.

a) *Communication of Patent Applications* (Article 16)

79. Article 16, which pledges the Member States to notify the Commission of any patent applications having either a direct or peripheral bearing on nuclear matters, was inserted into the Treaty to make for greater efficiency in the distribution of information. The information thus obtained is supplied to the Commission solely for purposes of documentation and on a confidential basis, i.e. the Commission enjoys no right of use as such.

Notice of patent applications is given by the Member States at regular intervals, so that by 31 December 1960 the Commission had received reports on the contents of 4,230 applications. In the meantime, the French Government, which had been somewhat behind-hand in complying with the requirements, has communicated to the Commission the texts of about 2,000 patents published since the Treaty came into force, thus supplementing the patent applications notified on a routine basis.

b) *Filing of Patents by the Community*

80. As time goes on, the Commission will be filing more patents covering inventions made as a result of its own research and of certain research projects carried out under contract.

In 1960, 22 patent applications were filed for eight inventions made by Euratom personnel.

Applications for patents arising out of research undertaken under contract by third parties on behalf of Euratom are generally filed by the contractor and not by the Commission.

c) *Policy with Regard to Patents*

81. In negotiating research contracts with Community firms, the Commission is faced with a whole series of patent ownership, licensing and sub-licensing problems in connection with its task of ensuring a proper flow of information. There is therefore an obvious need for having a clear-cut set of contract terms and conditions specifying

the respective rights of the Commission and the contractor with regard to the exploitation of the results obtained.

The importance of this question and the need for a solution has been underlined on a number of occasions by the Council of Ministers, and in order to clarify the situation the Commission has now drawn up a set of fundamental principles to be adopted in its policy with regard to patents. Every endeavour has been made to strike an equitable balance, in this particularly sensitive area, between the interests of the Community and of the inventors and firms involved.

82. These principles, set out in a paper submitted during an exchange of views held with the Council of Ministers on 31 January may be outlined as follows :

Any party carrying out research under contract to the Commission has full title, if he so desires, to any patents arising out of such research. In cases, however, where he does not file a patent, the Commission is at liberty to do so instead.

For the purpose of meeting Commission requirements, the Community is entitled to a royalty-free license covering all work, orders, or research undertaken by third parties on behalf of the Commission.

The Commission also has the right to grant sub-licenses insofar as this does not clash with the terms of the Euratom Treaty. These sub-licenses may involve nuclear applications only and may only be granted to Member States or individuals or enterprises within the Community.

The Commission does not award the sub-license without first consulting the contractor and hearing the opinion of the applicant. The Commission's decisions may be challenged before the Court of Justice.

Before coming to any financial arrangements, it is laid down that the Commission should discuss the matter with the contractor (the owner of the patent) and the applicant. In both cases, i.e., the granting of sub-licenses or the assessment of the financial con-

sideration, provision is made for a conciliation procedure in the event of dispute before appeal is made to the Court of Justice.

A final stipulation is that contractors must inform the Commission of any intent to grant a licence in the nuclear field.

83. In drawing up these principles, which were established on the basis of numerous discussions with industrial concerns and experts from the Member States, the aim of the Commission has been to make available to the Community as a whole the results obtained from research contracts concluded by the Commission with third parties under Article 10 of the Euratom Treaty. At the same time, full account has been taken of the general practice adopted in the six countries with regard to industrial property, as well as the justifiable desire of the holders of research contracts to obtain certain industrial rights in exchange for the technical experience which they are putting at the Community's disposal.

This is the policy that will be applied, being adopted where necessary, to the research contracts to be concluded by the Commission henceforth; the outstanding problem is now to lay down a procedure for the granting of licenses or sub-licenses to individuals or firms in the Community.

A certain number of specific points remain to be clarified, in connection, mainly, with :

- the patent procedure applicable in cases where the Commission might place research contracts under Article 6 a of the Euratom Treaty (programmes communicated to the Commission);
- the problem of basic patents;
- the question of know-how.

d) *Standardization of Industrial Property Rights Within the Community*

84. In November 1959, the six Under-Secretaries of State responsible for industrial property matters met in Brussels to study the problem of harmonizing the relevant laws currently in effect in the

Community countries and to examine the possibility of creating a Community patent, trade-mark, design and model and of setting up a European Bureau and a European Court for Industrial Property.

Both the Common Market and Euratom Commissions are working to implement this twofold objective and ultimately, with the introduction of the new types of industrial property registration, to break down the territorial barriers which still exist in this field in six countries.

Two bodies have been set up to bring this about :

- at the top level, a Conference of Under-Secretaries of State, who are responsible for issuing policy directives;
- on the lower level, a Coordinating Committee, whose task it is to put the above directives into effect and to direct and coordinate the work of three working groups, responsible for patents, trade-marks and designs and models respectively.

Reports on these activities will be submitted to the Under-Secretaries of State in the near future with a view to the ultimate establishment of a convention on European industrial property rights.

III. Publications

85. The publications unit set up by the Commission is responsible for publishing, in the form of Euratom technical reports, the results of the research work carried out by the Commission or under the Joint Research and Development Programme (US-Euratom agreement) insofar as they have not already appeared in periodicals or been published by the contractors themselves.

This unit, which is equipped with a workshop able to deal with the preparation of offset plates, page-setting, etc. is also in charge of other publications put out by the Commission.

So far, two reports on health and safety have appeared, in addition to the first four issues of the Transatom Bulletin and the corresponding index cards, mention of which has already been made above in the section on the information pool on translations.

CHAPTER IV

INDUSTRY AND ECONOMY

CREATION OF THE CONDITIONS NECESSARY TO THE DEVELOPMENT OF THE NUCLEAR INDUSTRY — COMMUNITY PARTICIPATION IN THE CONSTRUCTION OF INDUSTRIAL-SCALE POWER REACTORS — JOINT ENTERPRISES — DEVELOPMENT OF NUCLEAR PROPULSION FOR SHIPPING — OTHER USES OF NUCLEAR ENERGY: INDUSTRIAL PRODUCTION AND USE OF RADIOISOTOPES — SETTING UP OF AN INFORMATION BUREAU ON RADIOISOTOPES — COMMISSION'S PROPOSAL ON THE GUARANTEEING OF FREE ACCESS TO QUALIFIED EMPLOYMENT IN THE NUCLEAR FIELD — PROBLEM OF THIRD PARTY LIABILITY AND INSURANCE AGAINST NUCLEAR HAZARDS — OEEC CONVENTION AND WORK ON THE SUPPLEMENTARY CONVENTION CONCERNING THIRD PARTY LIABILITY FOR DAMAGE CAUSED BY NUCLEAR ACCIDENTS

86. The creation of a powerful nuclear industry within the Community is one of the purposes for which Euratom was established.

The future importance of nuclear power as a source of energy is now universally accepted, but it is still much more expensive than conventional energy. For purposes of electricity production, however, which is the most promising of the peaceful applications, nuclear energy is expected to become competitive with conventional power sources within the next few years.

The prospects which are opening up in the nuclear sector are such that every effort should be made, as of now, to encourage the necessary industrial development and to evolve a Community policy aimed at the operation of the most favourable reactor strings.

Research, in order to be fully effective, must go hand in hand with construction, since it is only the completed installations which can enable us to fix on a course of action and then to check the results obtained—the indispensable and mutually complementary requirements of any experimental programme. Thus a certain number of power reactors must be built in order to supply us with reliable data on which to base a judgement as to their economic feasibility: for this purpose, nuclear research and the conventional industrial processes required in nuclear engineering must be fused together into a harmonious and coordinated pattern.

87. Euratom's preoccupation with nuclear energy production, however, must not be allowed to conceal the interest which it has in the immediate uses of nuclear energy, such as the manifold applications to which radioactive isotopes can be put.

In addition, considerable progress was made in the course of 1960 towards the implementation of the various Treaty provisions dealing with the creation of the conditions necessary to the development of a nuclear industry, primarily by means of the elaboration of the Supplementary Convention to the OEEC Convention on nuclear hazards, the drafting of a set of directives concerning free access to qualified employment and the granting of joint enterprise status to the Société d'Énergie nucléaire franco-belge des Ardennes (SENA).

I. The Outlook for Nuclear Energy

88. There would appear to be no need to modify the conclusions reached in the third General Report under this heading: in view of the sharp rise in world energy demands, nuclear power is bound, sooner or later, to be called upon to supplement conventional sources. This will, however, depend primarily upon economic factors, i.e. the correlation between the respective cost of the nuclear and the conventional kWh; there is, at the moment, no reason to revise the Community forecast according to which nuclear power should be in a position to compete with conventional energy sources before 1970.

II. Nuclear Power Plants

A. *The Programmes Now Being Implemented Within the Community*

89. In no country are the programmes now being carried out in line with the forecasts made some years ago, at a time when the fear of an imminent break-down in fuel supplies caused a desperate search for novel sources of energy, so that although the supply of conventional fuels is bound to give out in the course of time, the problem is not now quite so urgent as it once appeared. The authorities in charge of the nuclear programmes in the various countries, torn between the desire to avoid investment today in projects which are of no immediate urgency and the need, on the other hand, to enable their nuclear industries to gain the necessary experience and proficiency in the rôle which they will inevitably be called upon to play, have now adopted a much more cautious attitude: finally, every country is anxious for its industry to gain a foothold in the nuclear market, as soon as it becomes competitive and even before any fuel shortage becomes apparent.

This explains why the programmes now being carried out are much less ambitious than those formerly adopted, although the fact that they are still by no means negligible is evidenced by the 1,200 MWe which the USA will have in service by 1964, and the 1,000 MWe and 5,000 MWe which the Soviet Union and Great Britain respectively are planning to have available by 1968.

With a population similar to that of the US and much less in the way of conventional energy resources than the Soviet Union, the Community's position with regard to nuclear power supplies is as follows:

90. *Germany.* The only power reactor already under operation is the 15 MWe BWR-type reactor built at Kahl for the Versuchssatomkraftwerk Kahl GmbH; other projects, such as the advanced gas-cooled reactor planned by the BBC-Krupp group and a pressurized heavy water reactor, are in the study stage but no definite decision has yet been taken with regard to their construction.

Attention should also be drawn to the 150 MWe power plant projected in Berlin by the Berliner Kraft und Licht Aktiengesell-

schaft (BEWAG), which will probably be based on a PWR-type reactor.

Finally, a company was set up on 21 October 1960 for the development of the organic-moderated reactor design studied by the Arbeitsgemeinschaft Baden-Württemberg zum Studium der Errichtung eines Kernkraftwerkes (AKS). The aim of this new company (Kernkraftwerk Baden-Württemberg Planungsgesellschaft mbH (KBWP) is to set up a detailed design on which to base a decision with regard to the construction of the reactor, which would be organic-liquid-moderated and have a power of 150 MWe net.

91. *Belgium.* Mention must be made here of the PWR-type 10.5 MWe BR 3 reactor built at Mol.

The Belgian electricity producers also have a 50 % share in the capitalization and operation of the Société d'Énergie nucléaire franco-belge des Ardennes (SENA), which, as is pointed out below, is contemplating the construction of a power plant.

92. As for *France*, apart from the Marcoule reactors already in service, having a total power of more than 60 MWe, mention should be made of the following:

— The programme pursued at Chinon by Electricité de France, described in the table below:

Probable commissioning date	Reactor	Net electric power (MWe)	Type envisaged
End of 1961	EDF 1	60	graphite - CO ₂
1962	EDF 2	170	„
1963/64	EDF 3	300	„
No decision to build as yet	EDF 4	In the order of 300—500	„

- The Centrale électrique des Monts d'Arrée (Brittany), working on a 100 MWe heavy water-gas type reactor, scheduled for commissioning in 1965;
- the Chooz plant: for the purpose of constructing this power plant, the Société d'Énergie nucléaire franco-belge des Ardennes (SENA), a limited liability company under French law, was constituted on 24 May 1960 equally by Electricité de France and Centre et Sud, a company incorporating a number of Belgian electricity producers.

A 242 MWe pressurized water reactor will be selected for this installation, which will thus rank among the largest power plants in the world using a reactor of this type.

The decision as to whether to proceed with the construction of the Chooz power plant, which is scheduled for commissioning in 1965, will be subject to Community participation.

93. In *Italy*, the Società Elettronucleare Nazionale (SENN) is going ahead with the construction of the Garigliano nuclear power plant, which is based on a boiling water reactor and is planned to come into industrial operation in 1963. Its initial power of 150 MWe may later be stepped up to 230 MWe.

Secondly, the Società Italiana Meridionale Energia Atomica (SIMEA) is constructing at Latina a 200 MWe plant to operate on a gas-cooled graphite-moderated reactor.

Finally, we can point to the project of the Società Elettro-nucleare Italiana (SELNI) relating to the construction in Northern Italy of a PWR-type reactor with a power of 160 MWe net.

94. In the *Netherlands*, the Samenwerkende Electriciteits Producenten (SEP), incorporating all Dutch electricity producers, has informed the Commission that it is pursuing studies with a view to the construction of a power reactor.

* * *

It should be stressed that a number of the above-mentioned projects will be put into effect only if they are supported by the appropriate action on the part of the Community.

*B. Activities Undertaken by the Community to Promote Power
Reactor Construction*

95. Attention has repeatedly been drawn to the fact that part of the increased energy demand will have to be met from nuclear sources. It will not, however, be possible to set up nuclear power plants on the necessary basis of stability, safety and full economic viability without the appropriate background of industrial potential.

In order, therefore, to develop the requisite industrial machinery and thus to bring the day nearer when nuclear power can be produced on a commercially competitive footing, the Community must do all it can to encourage the setting up of industrial-scale power reactors, since it is only by experiment at the level of technology and industrial adaptation that:

- the firms will be enabled to surmount the problems connected with the manufacture of the various components employed in reactor construction;
- the architects and engineers will gain experience of the problems involved in reactor design and the management of building sites;
- new industries, specializing in nuclear products and services, will grow up and develop;
- the operators of power plants will acquire the necessary proficiency in the starting up and operation of nuclear installations;
- specialist cadres and teams of experts will be built up to cater for the various developments taking place in nuclear technology.

It is only by experimenting with full-size power plants that we can examine the technological problems involved in their true perspective, check the results of previous research, and operate in conditions corresponding to the practical requirements of energy production.

96. In view of the likelihood that, under the present circumstances, the number of plants completed by the unaided efforts of the electricity producers would scarcely do justice to the experimental require-

ments referred to above, and since any initiative taken in this direction by the Community industries would necessarily lack coordination, the Community itself must endeavour, with all the means at its command, to encourage the construction of power reactors. Its aim should be to:

- bring about a reasonable minimum of complete installations in the Community countries;
- gain the interest of the largest possible number of firms and operators by circulating the information obtained;
- promote the construction of diverse technically and economically promising reactor types.

97. As the Commission had made provision in the 1961 preliminary draft research and investment budget for "participation in power reactors", the Council of Ministers, acknowledging the necessity for such action, entered this appropriation as a no-value item in the budget finally passed in December 1960 after approval by the European Parliament.

Seized of three definite requests for participation submitted by SENN (Società Elettronucleare Nazionale), SENA (Société d'Énergie nucléaire franco-belge des Ardennes) and SIMEA (Società Italiana Meridionale Energia Atomica) respectively, the Commission has conveyed to the Council of Ministers concrete proposals in relation to these projects accompanied by a memorandum outlining the basic principles of the policy to be pursued by the Community with regard to power reactors.

In principle, Community participation might be envisaged in any enterprise calculated to further industrial development, the acquisition of knowledge and the setting up of facilities for use in the nuclear field; the principle and scale of such Community partnership will, however, be contingent on the possibilities afforded by such action for obtaining practical experimental results with regard to the design, construction, startup and operation of nuclear power plants.

The main criteria adopted in this context will be as follows:

- the unit volume of the plant, which must be on a true industrial scale;

- the actual contribution made by the project to the development of the Community's nuclear industrial potential, both with respect to the construction of the reactors themselves and the fabrication and reprocessing of fuel elements;
- the data which the project can be expected to provide on the chances of pruning the capital investment as well as production costs, etc.

Various lines of action are open to the Commission; among the possibilities which suggest themselves are:

- Commission contribution towards fuel element fabrication costs;
- contribution to fuel supply;
- share in the fabrication costs of certain reactor components, subject to their manufacture in the Community;
- Commission liability for extra outlay involved in the difficulties of starting up nuclear as opposed to conventional power plants.

C. Joint Enterprise

98. The Treaty provisions relating to joint enterprises were first given effect by the decision of the Council of Ministers of 19 July 1960, granting this status to the Société d'Énergie nucléaire franco-belge des Ardennes (SENA), constituted for the purpose of setting up a project for the construction of the Chooz nuclear power plant (see above).

Under the terms of this decision, which will come into force on the completion of certain formalities, the SENA will in principle benefit from joint enterprise status for a period of 25 years and will be entitled to part of the advantages which are listed under Annex III to the Treaty and which may accrue to joint enterprises by virtue of Article 48. In return for these benefits, the SENA must make available to the Community the experience gained in the construction and operation of the plant by the communication of technical or economic reports which the Commission will then circulate.

III. Marine Propulsion

99. The studies being made under this heading have progressed by leaps and bounds in the last few months, while the projects at present under way within the Community have been brought into much clearer focus. To increase the effectiveness of Euratom's efforts in this sphere, the Council of Ministers adopted the Commission's proposal to include in the Community research and investment budget for 1961 a budgetary commitment of 6 million and a payment authorization of 3 million EMA units of account.

The activities undertaken in 1959 were continued and intensified during the present reporting period. Two areas of activity are involved:

a) at the technical and economic level, the Community has initiated or followed through a large number of specific technological-economic studies: 5 German projects, 1 Belgian project, 1 French project, 1 Dutch project and 1 Italian project.

The Commission has considered taking a share in the financing and in the technological aspects of certain of these projects so that the Community at large could benefit from the information obtained as a result of work carried out on problems of nuclear and ship engineering.

In order to obtain a correct idea of the course of action to be adopted in this field, the Commission intends to set up a Liaison Committee on Marine Propulsion in which national experts would take part. This measure would serve to boost the effectiveness of the various programmes by avoiding possible duplication of effort and by coordinating the activities of the different bodies responsible for carrying out the studies.

100. Four projects concerning nuclear marine propulsion have so far been submitted with a view to obtaining the technical and financial assistance of the Commission, while the possibility of a fifth proposal has also been intimated.

1. "*Gesellschaft für Kernenergieverwertung in Schiffbau und Schiffahrt*" (GKSS), Hamburg

The work undertaken by this group falls into two sections, one for the setting up of a draft design for a nuclear-propelled ship using an organic-liquid-cooled and -moderated reactor, and the other dealing with an allied research and development programme, and should be completed by the end of 1961. The GKSS has placed an order with Interatom (Internationale Atomreaktorbau BmbH, Bensberg-Cologne) for the draft design and for part of the connected research.

On the basis of the group's proposal, the Commission agreed to finance 40 % of the project. Negotiations with the two companies involved have been brought to a conclusion and a contract was signed on 27 January 1961.

2. *French Atomic Energy Commission (CEA)*

The CEA submitted to the Commission a programme relating, on the one hand, to a graphite-moderated and medium-temperature-gas-cooled test pile and, on the other hand, to research and development work in connection with the use of a reactor of this type for marine propulsion. About 25 % of the overall programme relates to marine propulsion.

The Commission is contemplating taking part in the programme and negotiations with the CEA are now in progress (cf. Research).

3. "*Italian Atomic Energy Commission*" (CNEN) - Fiat-Ansaldo

By agreement with the CNEN and with Italian Government support, the Fiat Company, in association with the Ansaldo Shipyards, Genoa, has submitted to the Commission a proposal for the study of nuclear-propelled tanker.

This programme, which is aimed at drawing up first a preliminary and then a final design for a ship driven by a light-water-cooled and -moderated enriched-uranium-powered reactor, also covers research and development work.

4. "Reactor Centrum Nederland" (RCN)

In conjunction with a group of Dutch firms, the RCN has drawn up a draft design for a specific PWR-type reactor which might be used as a drive unit for merchant vessels.

The project would be accompanied by a research programme.

5. *Belgonucléaire*

This Belgian company has apprised the Commission of a study which it is carrying out on a variable-moderator neutron spectrum displacement reactor design. This design, which marks a quite novel departure, involves the use of pressurized water, the moderator consisting of a variable quantity of heavy water.

101. Apart from the specific programmes mentioned above, the Commission is also interested in the general marine propulsion research programme which is at present being conducted by the GKSS group at its Geesthacht centre (Germany). The studies and tests made under this programme would link up with any other programmes in which the Commission might become interested in the future in pursuance of the coordinating functions which it is called upon to exercise within the Community.

The Commission is rounding off the above programme with a more general study intended to provide concrete data on the types of ship and reactor which might constitute the best commercial propositions.

Furthermore, it will encourage the comparison of notes between the various industrial groups engaged in the field via specially appointed experts from the different countries involved and through meetings of the above-mentioned Liaison Committee.

102. b) In the second place, the Commission is studying the various problems with which maritime, harbour, health and nuclear authorities will be confronted in connection with the arrival in the territorial waters and ports of the Community of the first civilian nuclear-propelled ships, and has already organized several meetings of experts to

examine a range of questions dealing with regulations applying to nuclear shipping.

Moreover, it is playing a vigorous part in the working out of international solutions to the problems of third party liability and insurance against nuclear hazards raised by the operation of civilian nuclear vessels. The Commission was also represented by observers at the meetings, held in April and August of 1960, of the team of experts set up by the International Atomic Energy Agency and the International Maritime Committee.

The contributions made by these two bodies served as a basis for the discussions held at the Diplomatic Conference on Maritime Law, which took place in Brussels in April of 1961 under the sponsorship of the Belgian Government and the Vienna Agency.

The fundamental purpose of this conference was to draw up a convention on the third party liability borne by the operators of nuclear ships. The Commission, which as has just been pointed out, was represented at the Conference, will make every effort tending towards the adoption of a unified standpoint on this issue on the part of the Member States.

IV. Activities Relating to the Industrial Uses of Radioisotopes and Radiations

103. The Commission aims to broaden and intensify its activities in this field, with regard to the stepping up of radioisotope production and expanding the range of applications, as well as to the provision of information to users.

For this purpose it has set up an Information Bureau designed, in the common interest, to promote the rapid extension of the industrial uses of radioisotopes and to assist and supplement the activities being carried on in this direction in the individual Member States. The Bureau will act in conjunction with a Consultative Committee made up of representatives of the circles concerned.

To sum up, the Commission's activities are designed:

- to bring home to potential users the advantages afforded by radioisotope techniques. Under Commission auspices, the existing documentation could be rationally and effectively supplemented by means of publications with a particular slant towards application problems;
- to assist in the development of new uses for radioisotopes in industrial practice;
- to gather and circulate all information and documentary material related to the manufacture and uses of radioisotopes;
- to encourage scientific publicity campaigns to expand the available markets for radioisotopes and ancillary equipment.

V. Nuclear Common Market

A. *Free Trade in Nuclear Products*

104. By virtue of the agreements concluded between the Member States on 22 December 1958, the nuclear Common Market provided for under Articles 93 a and 94 of the Treaty has been in existence, for the products given in lists A 1 and A 2 (Annex IV to the Treaty), since 1 January 1959.

The joint external tariff makes provision for virtually no duty for the specifically nuclear products of List A 1—ores, source materials and special fissile materials—and, more often than not, reduced or no duty for List A 2 products. In the latter case, the 10 % duties relating to deuterium and deuterium compounds as well as to nuclear reactors are suspended until 1 January 1962, as of which date they will be applicable unless the suspension period is extended by a decision of the Council of Ministers.

With regard to List B products (products and equipment not specifically nuclear), it has not yet proved necessary to invoke the

terms of Article 95 of the Treaty to speed up the freeing of trade channels for these goods within the Community beyond the rate decided on for the overall Common Market, the rules of which also apply, in principle, to these products.

With respect to the standstill provisions relating to traffic in nuclear products among the OEEC members, the 6 Member States of Euratom have consented to their extension to 1961 or to the date on which the Organization for Economic Cooperation and Development should come into operation.

A similar problem faces the non-Community members of GATT, which is why the Commission of Euratom and the Common Market are taking part in the negotiations in progress with the other contracting parties to GATT concerning the joint external tariff.

On the practical plane, the drastic abolition of customs' and quota restrictions on nuclear products has been reflected in the foreign trade figures by a considerable rise in the traffic in these products both within the Community and with non-member countries.

The statistical systems in use in the individual Member States are now being coordinated to make the market movements easier to follow.

Furthermore, in close cooperation with the competent bodies of the Community and of the Member States, the Commission is actively pursuing the studies previously initiated for the compilation of a set of statistics on the nuclear industry.

B. Mobility of Labour with Regard to Qualified Employment in the Nuclear Field

105. While the Common Market Commission was preparing the ground for increased mobility of labour within the Community, the Euratom Commission has been engaged on working out the directives which it will put forward for the implementation of Article 96 of the Treaty, which enjoins all Member States, as far as employment in qualified nuclear posts is concerned, to remove all barriers against

nationals of the other Member States on sole grounds of nationality, and which provides only for the retention of such restrictions as may arise out of considerations of public safety, health and order.

On 29 July 1960, the Commission's proposal, drawn up in conjunction with experts nominated by the Member States, received the imprimatur of the Economic and Social Committee except for certain changes which would not, however, affect the basic tenor of the draft. The responsible departments of the Common Market Commission and the High Authority of the European Coal and Steel Community have been kept informed of the progress made with these undertakings, while the Council of Ministers, before passing judgment on the draft, first submitted it to the European Parliament for an opinion at the beginning of the year.

These directives contain a general definition of the posts to which Article 96 applies and list a number of examples of jobs covered by the definition. They also provide for a minimum of administrative formalities by insisting solely on the presentation of a work contract.

Generally speaking, the Member States will be required, as soon as the directives come into effect, to take the steps necessary to bring about, with regard to access to qualified employment in the nuclear field, a degree of liberty equivalent to that which will be enjoyed by all Community workers on the termination of the general Common Market transition period, i.e. in a few years' time.

C. Third Party Liability and Insurance Against Nuclear Hazards

106. The Commission has achieved considerable progress in the efforts which it has made over the last year towards finding a solution to the variety of problems arising in connection with this highly complex field.

One milestone was marked in the last months of 1960 by the signing, by 16, including the 6 Community countries, of the 18 Member States, of the OEEC Convention, which will enter into force on ratification by at least 5 signatory states.

The OEEC Convention establishes a system of third party liability for damage caused by nuclear accidents. The system is organized along the following lines:

1. "Objective liability", i.e. irrespective of proof or fault;
2. "Channelling" of liability to the operator of the nuclear installation to the exclusion of any other party;
3. Limitation of liability to an amount set at 15 million EMA units of account. This ceiling may, however, be entirely removed or cut back to 5 million EMA units of account by national legislation;
4. Fixation of a 10-year term of prescription with regard to actions brought against the operator.

107. The adoption of the final text of the OEEC Convention serves the two-fold purpose of providing a basis for the settlement of third party liability and nuclear insurance problems and enabling the Member States of the Community to put the finishing touches to the Supplementary Convention, initiated in 1959 on the basis of a Commission draft, and designed to bridge the gaps left by the OEEC Convention by providing for a system of additional coverage supplied by the Member States.

The draft Supplementary Convention, which will be open to the non-Community signatories of the OEEC Convention, raises the ceiling of the operator's liability by providing for contributions from public funds in cases where private coverage is inadequate. This system thus provides for a first contribution of up to 70 million EMA units of account on the part of the individual Member State on whose territory the installation of the operator in question is located and a further collective contribution of up to 110 or 120 million EMA units of account from the signatories to the convention. Discussions between the Commission and experts from the Member States have now attained a very advanced stage, the most important outstanding point being concerned with the breakdown for the collective contribution.

108. As soon as these two conventions come into effect, they will provide potential plaintiffs with a guarantee of adequate compensation without at the same time imposing a crushing burden on plant operators.

The rapid advances made in the nuclear field render the completion of these conventions a matter of the utmost urgency. For this reason, the Council of Ministers has frequently reiterated its anxiety to see negotiations brought to a successful conclusion as soon as possible. Furthermore, several of the Member States either wish to take inspiration from the Supplementary Convention for purposes of the various provisions which they intend to enact on the national level or have made the implementation within their territory of the OEEC Convention conditional on the conclusion of the Supplementary Convention as well as of similar bilateral agreements arrived at with their non-Community neighbours.

The Commission, however, is doing everything within its power to speed up work on the Supplementary Convention in order to forestall the serious consequences which the uncertainty still prevailing with regard to the prospects for compensation for damage caused in excess of private insurance coverage might have on the construction programmes for certain nuclear plants.

109. The terms of Article 98 of the Treaty empower the Commission to propose directives enjoining the Member States to take the necessary steps to facilitate the conclusion of insurance contracts covering nuclear hazards.

The Commission has seized this weapon mainly to speed up work on the OEEC Convention and the Euratom Supplementary Convention. The draft directives which it has drawn up require the Member States to take all the necessary steps with a view to the rapid conclusion of these conventions and the coordination of their respective laws in line with Article 98.

On 29 June 1960, the Economic and Social Committee issued a favourable opinion on the Commission's proposal, which, in a fresh version embodying the Committee's suggestions, was then brought

before the Council of Ministers, whose task it is to pass judgment after hearing the view of the European Parliament.

The latter body, particularly in the resolution adopted on 24 November 1960, expressed the hope that it would be informed as soon as possible of the results of this undertaking, dictated by Article 98 dealing with insurance against nuclear hazards.

VI. Relations with Industry

110. The relations maintained with the electricity producers and equipment manufacturers, particularly the Union des Industries de la Communauté Européenne (UNICE, Union of European Community Industries) and the Union Internationale des producteurs et distributeurs d'énergie électrique (UNIPEDE, International Electricity Producers' and Distributors' Union) are developing in the most satisfactory manner. The same applies to the links with the workers' federations and unions.

In addition, the meeting arranged by the Commission in Tours on 8 and 9 December 1960 provided a most useful opportunity for an exchange of views between the various firms involved in the development of nuclear energy.

Attention should also be drawn to the setting up of a European Atomic Forum (FORATOM) made up mainly of organizations within the Member States which are engaged in publicity and information activities, of either a technical or a general character, in the nuclear energy field. This departure, the Commission feels, should prove an invaluable aid to collaboration between bodies of this kind.

Finally, the Commission also took a hand in the organization of the conference on "The Common Market and Technical Progress" held in Brussels in December 1960 under the sponsorship of the three European Executives. The conference was attended by representatives of both workers' and employers' organizations as well as by government experts and independent research workers (cf. Chapter on "The Institutions of the Community").

CHAPTER V

SUPPLY

END OF THE TRANSITION PERIOD PROVIDED FOR IN THE TREATY BY THE COMING INTO OPERATION OF THE SUPPLY AGENCY AND THE ADOPTION OF THE RULING ON THE COMPARISON OF OFFERS AND DEMANDS RELATING TO NUCLEAR MATERIALS — APPLICATION TO ORES AND RAW MATERIALS OF A SIMPLIFIED PROCEDURE FULLY ADAPTED TO THE STATE OF THE MARKET AND AT THE SAME TIME DESIGNED TO ENSURE THAT THE BASIC PRINCIPLE OF EQUAL ACCESS TO RESOURCES IS COMPLIED WITH BY MEANS OF THE AGENCY'S EXERCISE OF ITS EXCLUSIVE RIGHT TO CONCLUDE SUPPLY CONTRACTS

111. The Supply Agency, in assuming its functions on 1 June 1960, put an end to the transition period stipulated by Article 222 of the Treaty providing for case by case Commission approval of supply contracts for nuclear materials.

Mindful of the need to make the fullest possible allowance for the present exceptional state of the uranium market, the Commission has worked out a procedure for applying the Treaty provisions designed to leave the widest scope for the free initiative of users and producers.

The Agency's exclusive right to conclude contracts remains untrammelled. The terms governing this prerogative as well as the Agency's right of option are laid down in the regulations on the comparison of offers and demands contained in Article 60 and published in Journal Officiel No. 32 of 11 May 1960.

I. Procedure Governing Ores and Source Materials

112. The regulations provide for two procedures applicable according to the state of the market:

- When the market is steady or unbalanced by the excess of demand over supply, the users and producers are required periodically to notify the Agency of their respective needs and offers. In turn, the Agency must inform all potential users of the offers and the volume of demands which it has received, after which, being in possession of all the orders placed, it can make known the conditions in which they may be filled.
- Conversely, in such market situations as that which obtains at present, characterized by a supply well in excess of demand, the Agency may confine itself to the exercise of its exclusive right to conclude contracts negotiated directly between the parties concerned.

113. The Agency was commissioned to conduct a market survey on which to base the necessary decisions as to which of these procedures should be adopted.

The means of conducting this survey, which clearly shows supply to be well in advance of demand, were specified in No. 48 of the *Journal Officiel*, published on 26 July 1960.

On the basis of the data revealed by the survey, coupled with the opinion of the Consultative Committee, the Commission has accordingly instructed the Supply Agency to apply the simplified procedure laid down in Article 5 of the regulations on the comparison of offer and demands for nuclear materials.

The Agency has thus been enabled to fix the general terms and conditions with which, as of 1 December 1960 (*Journal Officiel*, No. 76, 30 November 1960), supply contracts for ores and source materials should comply.

In observing these general terms and conditions, the producers and users have a free hand to negotiate supply contracts both for transactions within and imports from outside the Community. The

Agency's exclusive right is not thereby infringed, since it may challenge all contracts submitted to it within 8 days of notification, in which time it may check whether they are in line with Treaty requirements and consonant with the general terms and conditions.

These terms and conditions, which specify the type of commercial data which must be reported to the Agency and stipulate a deadline (31 December 1966) by which all contracts concluded in line with the simplified procedure have to be executed, will be adapted to any changes in the market situation revealed by a survey conducted for the ensuing period.

Thus the simplified procedure constitutes a graphic illustration of the way in which the Agency is fulfilling the various tasks imposed on it by the Treaty, without detracting from its main objective of ensuring that the principle of free access to Community resources is observed.

II. Procedure for Special Fissile Materials

114. The Agency has a particular part to play with regard to special fissile materials in that it serves as the instrument for the implementation of the supply clauses laid down in the agreements for cooperation concluded with non-member states, thus acting as intermediary in transactions between Community users and foreign suppliers of special fissile materials.

Furthermore, the Agency hopes to take advantage of the special position which it has under these agreements and which it intends to consolidate with the aid of the Member States to improve the conditions at present obtaining for special fissile materials supplied from outside the Community.

115. Subject to Commission control, the Agency ranks as a legal person in its own right and enjoys full financial autonomy. It operates in accordance with normal commercial practice and has a very small staff, consisting of 6 persons in all.

The head of the Agency is assisted by a Consultative Committee provided for by the Agency statutes. The 24 members of the Committee are appointed by the Council of Ministers on the basis of nominations submitted by the Member States and after consultation with the Commission, and are selected from representatives of users and producers as well as highly qualified experts from the Community countries.

The suggestions and opinions of the Consultative Committee thus enable the Agency to profit from the experience and counsel of the most qualified representatives of the bodies concerned in supply questions.

Since its inauguration two years ago, the Consultative Committee has met 8 times, under the chairmanship of Mr. Ippolito, to discuss a variety of problems relating to the organization and starting up of the Agency. During the first phase of its activities, then, the Committee has given the stamp of its approval to:

- the Agency regulations on the means to be adopted in carrying out the comparison of offers and demands for ores, source materials and special fissile materials;
- the Agency's findings, on the basis of the market survey, that supply was well in excess of demand with respect to ores and source materials;
- the Agency's communication pertaining to the general terms and conditions governing the supply of ores and source materials.

CHAPTER VI

HEALTH AND SAFETY

ENFORCEMENT OF THE BASIC STANDARDS IN THE COMMUNITY — COORDINATION OF THE LAWS OF THE INDIVIDUAL MEMBER STATES ON HEALTH AND SAFETY — A COMPLETE SURVEY OF EXISTING MONITORING INSTALLATIONS — PUBLICATION OF ARTIFICIAL RADIOACTIVITY MEASUREMENTS AS WELL AS METHODS EMPLOYED FOR MONITORING BACKGROUND RADIOACTIVITY — STUDIES AND RESEARCH CARRIED OUT TO DEVISE A STANDARD SOLUTION TO THE MANY PROBLEMS RAISED IN CONNECTION WITH MEDICINE AND SAFETY BY THE INCREASED USE OF ALL FORMS OF NUCLEAR ENERGY

116. The Basic Standards promulgated in 1959 provide a uniform framework for Community safety regulations. They establish the doses of ionizing radiations harmless to the living organism within a given period, lay down the maximum permissible exposures and contaminations and fix the fundamental principles on which medical supervision should be based.

In 1960/61, the Commission took steps to ensure the observance of the Basic Standards by the Member States as well as the coordination of their laws in this field. Also, apart from carrying out the first emendation of the Basic Standards and organizing an international conference on the legal and administrative aspects of health and safety, the Commission has drawn up a complete survey of Community monitoring installations, a large number of which have been inspected. Measurements of both artificial and natural background radiation in the Community countries have been pub-

lished, and the methods employed for such measurements have been standardized. A number of opinions have been given on the safety of certain nuclear reactors. Furthermore, the Commission is carrying on with the research initiated to study the transportation of radioactive substances, the safety of nuclear shipping in harbours, the medical supervision of workers and the problems raised by nuclear accidents and diseases induced by ionizing radiations.

I. Basic Standards and Standardization of National Laws

A. *The observance of the Basic Standards and Standardization of Legislative Practice in the Member States*

117. The publication of the Basic Standards in Journal Officiel No. 11 of 20 February 1959 marked the completion of the first phase in the establishment of a unified set of safety standards for application in the Member States.

The Euratom Standards were favourably received by the competent experts throughout the world, and the Commission was very gratified to note that the OEEC has recommended their adoption by the member countries and that the International Atomic Energy Agency in Vienna (IAEA) is also contemplating taking over a considerable number of the Euratom provisions.

118. If it was the Commission's responsibility to fix the Basic Standards, it is up to the competent authorities of the individual Member States to take all the necessary steps to ensure that they are complied with and observed on the legal, regulatory and administrative planes.

It is by the procedure under which the Member States are required to give notice of the enactments which they propose and by the recommendations which it may then make that the Commission is enabled to fulfil its dual function of ensuring that these provisions are in line with the Basic Standards and in harmony with each other.

119. Following is a list of the texts drafted by the Member States and submitted to the Commission since the entry into force of the Treaty:

Belgium

On 6 March 1958, the text of draft Law No. 385 on the protection of the population against ionizing radiations was submitted to the Commission for its opinion in accordance with the terms of Article 33. The Commission conveyed to the Belgian Government its favourable opinion.

On 29 December 1959, the Commission received a draft Royal Decree regulating the possession and use of radioactive substances for medical purposes, on which it likewise gave a favourable opinion.

Finally, a set of preliminary draft regulations on the protection of the population against ionizing radiations has also been communicated to the Commission for information purposes. This document, a first draft of which was conveyed to the Commission in 1959, was not submitted in accordance with the terms of Article 33 of the Treaty, the intention being to give the Commission an opportunity of carrying out a preliminary examination so that it could later give an opinion on the basis of the final text within the 3-month deadline specified by the Treaty. This draft clings very closely to the Euratom Basic Standards and thus constitutes an interesting example of the attempts being made to adapt national legislation to them.

Germany

On 29 October 1958, the Commission received the Federal Government's draft Atom Law (Atomgesetz). The Commission gave a favourable opinion.

The Federal Government also submitted, on 22 January 1960, the text of the draft Decree on Radiation Protection (Strahlenschutzverordnung).

This Decree, modified in line with the Commission's views, was published in the Federal Law Gazette (Bundesgesetzblatt) of 30 June 1960, and came into force on 1 September 1960.

The German Federal Republic thus becomes the first Member State to possess a specific set of regulations in line with the Basic Standards. In view of the fact, however, that the present text covers only part of the field to which the Standards apply, it will be further supplemented in the near future by the incorporation of new clauses.

France

The Basic Standards are currently being studied with a view to their application by the various ministries concerned. No text has been submitted to the Commission by the French Government to date.

Italy

The same applies to Italy, from which country nothing has been received since the two preliminary draft sets of safety standards for the prevention of hazards arising from ionizing radiations—one drawn up by the Ministry of Health and the other by the Ministry of the Interior which were transmitted to the Commission for information purposes on 12 January 1960, and which are broadly in line with the provisions of the Euratom Basic Standards.

Luxembourg

Nothing has been received from the Luxembourg Government since the text of a preliminary draft law on the protection of the population against the dangers arising from ionizing radiations submitted on 31 March 1958, on which the Commission gave a favourable opinion.

Netherlands

On 5 February 1960, the Commission received the text of the draft nuclear law submitted to the Second Chamber of the States-General. This text has now been examined and the Commission conveyed its favourable opinion to the Dutch Government on 3 May 1960.

120. We can conclude from the above list that the number of texts transmitted to the Commission in the course of the period ending 31 March 1961 is still much too small. The Commission therefore feels that there are hardly any grounds for satisfaction over this state of affairs two years after the publication of the Basic Standards.

Although fully aware of the fact that a thorough-going implementation of the Basic Standards requires an enormous amount of detailed work in the legislative and regulatory field based on a painstaking study of the Standards and demanding considerable efforts in the complex field of standardization, and realizing that those countries which have not yet enacted any laws are nevertheless engaged in the study of drafts which should take final shape in the very near future, the Commission still feels bound, by virtue of the responsibilities which devolve on it in the vital sphere of health and safety, to launch a fresh appeal to the competent authorities of the Member States to lose as little time as possible in giving it the means to fulfil its functions and thus to carry out the express wish of the European Parliament.

B. Revision of the Basic Standards

1. Revision of Annexes 1 and 3

121. Three annexes were attached to the Directives on the Basic Standards. Annex 1 bears on the problem of classifying radionuclides according to radiotoxicity, while Annex 3 gives the maximum permissible concentrations of radioactive nuclides in air inhaled and in drinking water for persons continually exposed to irradiation by virtue of their occupation. Both of these Annexes were provisional.

The need has now become apparent to bring the data contained in the table given in Annex 3 up-to-date on the basis of the fresh scientific information available.

The studies undertaken to this effect in 1959 have crystallized in an original type of proposal which in fact constitutes a simplified version of the recommendations published by the International Commission on Radiological Protection.

This text is in line with the requirements of the health authorities and monitoring services in the Community and makes it possible for the Member States to see that the levels specified by the Annexes for radionuclide concentrations in water and air are observed.

The new versions of Annexes 1 and 3 were submitted for approval to the Economic and Social Committee, which has given a favourable opinion. The other stages of the procedure laid down by Article 31 of the Treaty will be covered in the course of 1961.

2. Revision of Articles 9 and 10 of the Basic Standards

122. A procedure for the emendation of the Basic Standards has been introduced at the instance of the German Federal Government, which requested in 1960 the revision of Articles 9 and 10, relating respectively to the accidental whole body irradiation and the partial irradiation of persons occupationally exposed to ionizing radiations.

The proposed amendments relate, on the one hand, to accidental whole body exposure and, on the other hand, to the inclusion in the Basic Standards of the concept of accidental partial exposure which is at present lacking.

Careful studies of the German proposals have been and are still being carried out by a 12-man group of experts set up by the Scientific and Technical Committee.

It should be possible to bring about the adoption of this solution on a supra-Community level, for which purpose Euratom is in constant liaison with the Vienna Agency, the International Commission on Radiological Protection and the American and British public health authorities.

C. International Symposium on Legal and Administrative Problems of Protection in the Peaceful Uses of Atomic Energy

123. This Symposium, which took place in Brussels from 5 to 8 September, was the first large-scale conference to be organized by

Euratom and at the same time the first undertaking to be made in this field on the international level, and met a real need felt by the various professional circles involved, being designed to facilitate, by the opportunity which it provided for the cross-fertilization of ideas, the study of the new administrative setup and the legal framework which had either to be built up from scratch or completed to cover this field.

The Conference was attended by over 400 delegates, while 40 of those giving papers were from the Member States, non-member countries with which the Community maintains official relations and large international organizations.

The work of the Conference bore on four main themes selected for their current importance and each taking up one day of the proceedings. The four themes were as follows:

- basic legislation on radiation protection;
- workmen's compensation and radiation injuries;
- the licensing of nuclear installations and materials;
- international control of radioactive contamination (water, air, soil).

An outline approach was evolved to be adopted with regard to certain fundamental problems of a legal and administrative nature raised at the Conference. These initial results are highly useful to the Commission from the point of view of its task in coordinating the legal provisions enacted by the Member States in line with the Basic Standards, and, in a more general way, in its function to ensure the protection of the population at large and nuclear workers.

The fact that the heads of the competent national departments took part made it possible, moreover, for the governments of the Member States to profit from the experience gained in this field by the other countries and to compare the programmes and projects evolved by these countries with their own.

As far as personal contacts are concerned, the Conference provided an opportunity for meetings and exchanges of views between

exponents of the various specialties involved: lawyers, scientists, biologists, doctors, administrators.

On the political level, particular interest attaches to the fact that the responsible ministers of each of the six Member States were anxious to accentuate their own keen preoccupation with these problems by appearing at the Conference in person to expound the outlines of the policies being pursued in their respective countries in the field of health and safety.

The proceedings of the Conference, including both the papers presented and the substance of the ensuing discussions, will be published before 1 July 1961.

II. Background Radioactivity Monitoring

A. *Survey of Monitoring Installations*

124. The third General Report heralded the imminent publication of a survey giving the most complete and exact possible picture of the general radioactivity monitoring setup in the six Community countries.

This survey, which was conducted in close collaboration with the responsible authorities of the Member States was used to compile a complete list of all the control facilities referred to under Article 35 of the Treaty in existence as of 31 December 1959.

This document represents the first authoritative list of the artificial radioactivity measuring installations in the Member States. It has been widely circulated in the Community, particularly among the professional and official circles involved.

By the end of 1961, an up-to-date list should be published, on the basis of the numerous changes which have taken place since this document came out, relating to the general administrative organization of the control system in each country as well as to the exact station sites and their respective specialties.

The Commission is also circulating technical questionnaires to be used for keeping the list of control posts and their various features up-to-date. As the competent authorities have signified their agreement on this procedure, standard questionnaires for use in the six countries have been drawn up with the assistance of specialist technicians and forwarded to the Member States.

The data obtained by means of these questionnaires are entered on an index card giving all the technical features of the apparatus, the measuring units and processes employed in each installation. This documentary material has not yet been published for Community consumption, but satisfactory progress would appear to have been made on this project within a year of its initiation.

* * *

The Treaty stipulates that the Commission may detach engineering specialists to inspect the monitoring posts of the Member States to assist in the introduction of measuring methods calculated to produce sufficiently exact and comparable data.

The numerous visits of inspection paid both to nuclear centres and to actual monitoring posts in the course of 1960 have enabled Commission representatives to study the conditions in which background radioactivity monitoring is carried out and, through their contacts with the various highly specialized laboratories concerned, to determine how much progress is being made with the latest monitoring techniques in the Community.

B. Analysis of Measurements

125. In October 1960, in response to the wish of the European Parliament, the Commission published a document entitled "The Results of Artificial Radioactivity Measurements Made in the Community Countries" (*Resultats des mesures de la radio-activité artificielle dans les pays de la Communauté*), covering the period from January 1957 to June 1960. It was distributed as of December 1960.

This is the first Community publication on artificial radio-activity measurements, and will be brought up-to-date periodically in line with the data relating to the preceding period.

As was announced in the third General Report, the procedure specified in Article 34 of the Treaty has been applied to the nuclear test explosions carried out by the French Government in the Sahara. After the tests of February 1960, an increase in atmospheric radio-activity was registered by numerous Community monitoring posts, but it was of very short duration and without any significance from the health standpoint. The Commission has on various occasions approached the French Government for details on the conditions in which the second and third tests were carried out and has expressed its wish to be supplied with the full results of the observations made, particularly from the meteorological standpoint, as well as the reports drawn up by the competent French authorities on the basis of these tests.

C. Technical Studies and Harmonization of Measuring Methods

126. Over the last few years, the Commission has repeatedly called on representatives of the competent national authorities as well as technical specialists on radioactivity measurements to collaborate on an examination of the problem of harmonizing monitoring techniques.

The meetings organized on these occasions have served to pinpoint the divergences between the various methods employed in the Community and to underline the interest which the Member States attach to the task of coordination in this sphere.

The Commission has already made great strides in connection with this task as well as in the direction of greater conformity between the methods employed by the different countries in the presentation of their results and the use of standard units.

This programme, initially confined to general atmospheric monitoring, has now been extended to surface water and food chain

control. A further development involves the study of sea water radioactivity.

The various stages of progress attained in standardizing monitoring techniques have thrown up a certain number of problems relating, *inter alia*, to the technical study of warning systems, the study of radiations given off by short-lived radioelements, the measurement and control of low-intensity radiation, the study of a centre for the comparison of monitoring equipment and processes and the examination of a mobile measuring and decontamination facility which might be put into operation by the beginning of 1962.

Furthermore, studies have been started on the problem of surface contamination, which is not dealt with by the Basic Standards and which is vital from the standpoint of the utilization of radioactive substances, as well as on filters intended for use in atmospheric radioactivity measurements.

All these questions will be tackled at the study seminars organized for technicians from the six countries or with the aid of consultants. Finally, documents will be drawn up on the basis of these activities designed to help in the practical work.

In view of the particular importance attaching to the big international rivers, an examination has been carried out of the technical aspects of water radioactivity measurement. The Commission will shortly be publishing a document outlining the principles of monitoring river basin radioactivity, on the basis of which studies have been initiated on the radioactivity of the Meuse, the Scheldt and the Rhine. With regard to the latter, Euratom has linked up with the International Commission for the Protection of the Rhine Against Pollution to coordinate measurements of and research on radioactivity fluctuations as a function of the non-radioactive contamination.

The Commission has evolved a complete programme of Rhine radioactivity studies which will cover a period of at least two years and call on the services of a number of laboratories in the various countries concerned.

D. Check on Plans for Radioactive Waste Disposal

127. Under Article 37 of the Treaty, each Member State is bound to submit to the Commission any plan for the disposal of any radioactive waste so that the Commission may determine whether the implementation of such a plan is likely to involve the radioactive contamination of the water, soil or airspace of another Member State. After consulting a group of experts, the Commission must then give an opinion within a period of six months.

With a view to the application of Article 37, the Commission forwarded to the Member States on 16 November 1960 a recommendation published in the *Journal Officiel* No. 81 of 21 December 1960 giving a definition of what is to be understood by radioactive waste disposal and what general data must be submitted.

The activities stemming from the application of Article 37 are intensifying; at the present time, a dozen plans for the disposal of radioactive wastes from different installations are under examination. The Commission hopes, however, that the recommendation will induce the Member States to submit their plans in good time.

One of the plans communicated to the Commission relates to the French project for sinking radioactive wastes in the Mediterranean. On the basis of an examination conducted by the Commission with the aid of experts nominated by the Scientific and Technical Committee, the French Government has been given an opinion concluding that the plan presents no hazard to the neighbouring countries.

The Commission is anxious to go into this problem as thoroughly as possible and to find the most appropriate means of solving it. Sea dumping is only one of the possibilities at present resorted to; others involve controlled storage either above-ground or underground.

A special study group has been set up to list the various technical possibilities afforded for radioactive waste disposal.

III. Nuclear Plant Safety and Radiological Protection

A. Nuclear Plant Safety

128. Very careful attention is being paid to the study of the safety features of all nuclear installation projects submitted to the Commission. For this purpose, a Reactor Safety Committee has been set up to examine, in each case, the various angles of this question and to pinpoint the solutions capable of attaining the desired effect in the optimum technical and economic conditions.

This Committee, which may, if necessary, call upon the services of a group of experts, membership of which is not restricted to the Community countries, was requested to give an opinion on the BR 2 reactor at Mol.

This was the second occasion on which the Belgian Government has requested the Commission's opinion on a nuclear plant project, the first being connected with the health and safety angles of the project to install a reactor at the University of Ghent. The Commission would be very glad if other Community countries would follow suit and make more regular use of the Community consultation procedure, which is specially designed to afford every assistance in the assessment of the safety features of nuclear installations.

Apart from BR 2, the Commission has examined several reactors submitted to it by virtue of Articles 41 and 43 of the Treaty.

Furthermore, a study has been made of the safety devices proposed for the nuclear fuel processing plant which Eurochemic is planning to set up at Mol.

B. Transportation of Radioactive Substances

129. This highly complex subject, which is dealt with peripherally by several conventions governing rail, road, sea and air transportation within the general context of the carriage of dangerous goods, is also covered by the Basic Standards.

Under the same heading, in 1960, the Vienna Agency forwarded to all the states a set of recommendations for the carriage of low-activity radioactive substances, intense radioactive sources and fissile products.

The Commission has set about the study of these conventions as well as of the various legal and regulatory provisions in the light of the Basic Standards.

Study sessions attended by the national experts have already taken place and will be continued in 1961 in an attempt to devise a suitable answer to the specific problems raised by the transportation of low- and high-activity radioactive substances. Particular weight will be attached to the carriage of irradiated fuels which, in a few years' time, will be passing across various Community countries on their way to the Eurochemic plant.

C. Marine Propulsion

130. Marine propulsion raises all the snags which are peculiar to the nuclear industry. The Basic Standards apply to nuclear-propelled ships with regard to both the actual workers themselves and the population at large. Furthermore, the presence in harbour installations of nuclear ships makes it essential to find an absolutely foolproof solution to the technical problems involved in the disposal of wastes.

A study of matters affecting health and safety in connection with nuclear marine propulsion was initiated to prepare for the conference held in London in May and June of 1960 by the Intergovernmental Maritime Consultative Organization. The study is still being carried on to examine the reception procedure which should be provided for nuclear vessels entering Community ports.

The Commission is much exercised over this problem in view of its duty to coordinate the regulations governing the entry of nuclear ships so as to avoid any disparity between the procedures adopted by the Six.

IV. Hygiene and Medicine

131. In comparison with the provisions adopted in other branches of industrial medicine, the safeguards employed for the protection of nuclear workers by radiation medicine and hygiene, from both the practical and the regulatory viewpoint, stand out as being particularly effective.

Not only do the Basic Standards specify the maximum irradiation and contamination levels but also contain the first adequate definition of certain principles to be adopted in the organization of workers' health supervision.

The problem extends beyond the compass of the big nuclear industries which are normally quoted and calls for much more complex solutions in the case of workers who are occupationally exposed to radiations under a wide variety of circumstances in medium and small-scale concerns.

The Member States, as far as the setting up of workers' medical services is concerned, have now reached widely varying stages of development, a disparity which requires that Euratom pay particular attention to the coordination of any provisions promulgated governing this matter.

The effectiveness of control depends to a considerable extent on the general organization of workers' supervision, which is why nuclear medicine and hygiene, although designed for specific objectives, cannot afford to be cut off from the mainstream of industrial medicine and hygiene in general. Euratom is working in constant liaison with the other European Executives on all branches of its activity in this field.

A conference was held in May of 1961 at Stresa-Ispra to study the medical criteria which should be applied in pre-employment examinations and in the supervision of workers exposed to radiations. A comparison of the experience gained in this field by the various Community countries provided some highly useful pointers on the working of the medical supervision system and physical radiation control.

V. Social Problems

132. In spite of the fact that the various laws enacted in the six countries describe ionizing radiations as harmful agents, the systems adopted for the awarding of compensation in cases of radiation-induced damage are not identical and do not appear, in every instance, even to be adequate.

It would be advisable to provide the workers involved with standard guarantees both with regard to the prevention of accidents and safe working conditions and to the payment of adequate compensation or damages for injuries sustained.

The Commission is in constant touch with the two other European Executives to ensure that the studies in progress on the standardization of insurance and compensation schemes are conducted in line with a uniform and coordinated master plan. It is also collecting together all data and regulatory provisions having a bearing on those problems which specifically concern it. A complete collection has now been made of all the legal provisions governing the reparation of radiation injuries in force in the Member States and will be used to draw up a consolidated list.

A large number of questions still remain to be solved in this sphere. The Commission's studies bear largely on characteristic radiation symptoms and the problems raised by delayed irradiation effects (carcinogenic effects, shortening of life expectancy, predisposition to sickness, leukemia-inducing and genetic effects).

Particular weight has been attached to the reclassification of data pertaining to accidents occurring in nuclear industries, and good results have already been attained in this intrinsically difficult statistical project.

VI. Documentary and Study Section for Health and Safety Questions

133. Article 39 of the Treaty provides for the setting up of this section as part of the Joint Research Centre. The European Parliament

has on several occasions stressed the importance which it attaches to this section, which has now been installed and will expand in line with the workload it has to handle in connection with the information submitted to the Commission under Articles 33, 36, 37 and 38.

A collection which should prove a considerable help to the Commission in the pursuance of its various duties has been made of all legal texts regulating radiological protection in the Member States supplemented by information supplied by certain non-Community countries.

134. The section is also engaged on collecting as much information as possible on the studies which have been undertaken by the Member States and by the international organizations concerned with standardization in the health and safety field.

These records are intended to help in bringing about better coordination in the efforts made to standardize contamination and irradiation measurements made in the Community as well as in other projects which may be initiated by various international bodies.

In response to the wish of the European Parliament, the Commission has instructed a special group to compile a brochure intended for doctors and health authorities and containing about ten chapters designed to provide a practical and up-to-date description of the latest concepts affecting radiobiology, radiological protection and nuclear hygiene. It is planned to issue a second brochure devoted to the problems encountered by the qualified experts who, under the Basic Standards, are responsible for checking the protective devices employed in installations using ionizing radiations.

135. As a first step in standardizing the procedure for recording the medical case-histories of individual nuclear workers, the nuclear firms in the Community have been sent the irradiation sheet designed by the 12 Commission experts in 1960 and approved by the competent control authorities of the Member States. Work on the standardization of this procedure, which is of vital importance from the Community's point of view, is being actively pursued in the various

establishments existing in the Member States, and the Commission hopes to employ to good effect the results of blood checks carried out on nuclear workers. The problem of diagnosis and the treatment to be prescribed for anomalies in the blood picture is already being studied at the Ispra Centre.

Apart from the maximum doses permitted for nuclear workers on the one hand and for certain particular groups of the population on the other, there is a dose described as a "population dose" which represents the maximum dose of radiation which a given number of people can be allowed to receive over a given period of time.

At the present state of knowledge on the subject, the assessment of this dose is a matter of some delicacy. The main snags are due to the fact that a dose "weighted" in relation to the overall population also includes the doses received by nuclear workers and by the above-mentioned particular groups.

In the second place, we must bear in mind that we have no data at all on previous periods, so that all our calculations in this field are necessarily fraught with a considerable degree of uncertainty. By taking advantage, however, of the results of the studies carried out by the International Commission on Radiological Protection, the World Health Organization and the International Labour Organization, the Commission intends to launch a broadly-based study programme on the theoretical possibilities of keeping a statistical log of the effects produced on whole populations by ionizing radiations.

The Commission has always been sensitive to the psychological reactions liable to be triggered off by any mention of nuclear power and the outcry which is frequently raised to voice unwarranted fears and suspicions.

Like all other activities involving certain specific hazards, the nuclear industry must come to grips with a range of problems of a psychological nature which must be explored and defined to serve as a basis for further investigations. One of the chief issues relates to the cultivation of confidence on the part of the employees and the prevention of hazards and accidents. With the aid of special advisers, the Commission is drawing up a study programme to cover the subject.

136. Another question which has engaged the Commission's attention is concerned with the food chain. The 12 experts who drew up the Basic Standards have repeatedly pointed to the problems raised by the provisions governing this sphere. The only maximum permissible values to be established so far relate to radionuclide concentrations in air inhaled and in drinking water, and are used as references for application to foodstuffs.

It has therefore been decided to launch a study of the maximum levels of radioactive contamination in the food chain by means of contracts with various specialized institutes in the Community. Research of this nature, which would serve to round off the Basic Standards, marks a significant advance in the endeavours which are being made to assess the degree of contamination caused by nuclear industries.

All this documentary and research work, which is bound up with one or other of the many facets of the health and safety question, and which is being carried on in line with Treaty requirements and in accordance with the attitude adopted by the European Parliament towards this most vital subject, provides the Community with an organic, substantial and up-to-date body of material which is already being exploited to the full.

CHAPTER VII

SAFEGUARDS AND CONTROLS

CONSOLIDATION OF THE METHODS AND PROCEDURES ADOPTED ON THE SETTING UP OF THE SAFEGUARDS AND CONTROLS SYSTEM IN 1959 AND 1960 — FULFILMENT OF THE COMMITMENTS UNDERTAKEN UNDER THE AGREEMENTS WITH THE UNITED STATES, GREAT BRITAIN AND CANADA — THE BEGINNINGS OF COOPERATION WITH INTERNATIONAL ORGANIZATIONS CONCERNED WITH CONTROL

137. The Treaty's provision for a system of safeguards and controls was intended as an instrument enabling the Commission to ensure that nuclear materials are not employed for purposes other than those specified by the users and that the clauses relating to supply as well as the outside commitments entered into by the Community in this field are complied with.

As distinct from the practice adopted by certain other international organizations (Vienna Agency, OEEC), the system employed by Euratom is binding on all users and suppliers of nuclear materials within the Community and covers all such materials located on Community territory.

The Commission has three possibilities at its disposal for the exercise of this control: reports from the installations subject to control, materials' accountability and inspections.

Reports from Installations Subject to Control

138. Article 78 of the Treaty requires that declaration be made to the Commission of the basic technical characteristics of all installations

within the Community engaged in the production, separation or use of source materials or special fissile materials or in the processing of irradiated nuclear fuels.

Regulation No. 7 governing the manner of effecting such declaration, was published by the Commission in March 1959 (Journal Officiel, March 12, 1959).

Materials' Accountability

139. Regulation No. 8, established by the Commission to define the scope and nature of the obligations referred to under Article 79 of the Treaty, which requires the operation of nuclear installations to keep accounts of the nuclear materials employed based on the operating records which must be submitted to the Commission, was approved by the Council of Ministers in May 1959 and came into force in June 1959 (Journal Officiel of 29 May 1959). The operating records forwarded to the Commission make it possible for up-to-date accounts to be kept of the stocks possessed by the various enterprises, the location of the materials, movements from one installation to another as well as supplies imported from and exported to non-Community countries.

Inspections

140. By virtue of Article 81, para. 2 of the Treaty, control is entrusted to Commission inspectors who "shall at all times have access to all places and data and to any person who by reason of his occupation deals with materials, equipment or facilities subject to the control provided for in this chapter, to the extent necessary to control ores, sources materials and special fissile materials, and to satisfy themselves concerning the observance of Article 77".

I. Implementation of Regulations 7 and 8

141. A two-way channel of communication has opened up between the Commission and the individual enterprises located in the Member States.

The enterprises submit the technical data and accounts provided for by Articles 78 and 79 and by the corresponding regulations, while the Commission ensures that this material, set out in a sufficiently lucid and complete manner, is forwarded within the prescribed deadline.

Furthermore, the Commission's inspectors pay frequent visits to installations in Belgium, Germany, France, Italy and the Netherlands. Some of these visits are intended to supplement the reports submitted by the enterprises concerned, while others are tours of inspection designed to make an on-the-spot check on the data provided.

Considerable progress was made in 1960 towards the application of Chapter VII, primarily by Regulations 7 and 8 implementing Articles 78 and 79 of the Treaty. All installations coming into operation in the same period have submitted the statements required by the Regulations, while the Commission has received the declarations provided for under Regulation 8 with regard to mining installations since the entry into force of Regulation 9.

142. Number of Installations on which the Declarations Required by Regulations 7 and 8 Have Been Submitted.

	March 1960	March 1961
Regulation No. 7	59	72
Regulation No. 8	56	111

Among a number of declarations which the Commission judged inadequate, some have been duly completed through the administrative efforts of the Euratom departments concerned while the completion of others has been prevented by certain objections which the Commission cannot recognize as warranted.

The Commission is making use of the machinery provided to ensure the observance of Treaty requirements and to uphold the principle that all persons and enterprises within the Community have equal rights and obligations.

As of 1 April, the following picture obtained :

143. 1) *Plans and Basic Technical Characteristics*

Submitted at least 15 days before the bringing into operation of plants or the first reception of materials.

By 31 March 1961, 72 of the declarations specified under Regulation No. 7 ⁽¹⁾ had been submitted. The installations which had communicated basic technical characteristics break down as follows :

	Germany	Belgium	France	Italy	Nether-lands	Com-munity
Manufacture of concentrates	1	1	4	1	—	7
Fuel fabrication	1	1	3	—	—	5
Fuel element fabrication	1	2	3	—	—	6
Reactors ⁽²⁾	11	6	16	7	2	42
Irradiated fuel processing	—	—	1	—	—	1
Laboratories ⁽³⁾	3	1	3	4	—	11
Total	17	11	30	12	2	72

144. 2) *Stocks and Movements (Regulation No. 8)*

— *Ores* [Quarterly report ⁽⁴⁾]

These data were submitted by 10 enterprises for 37 mines.

— *Source materials and special fissile materials* (monthly reports)

38 enterprises incorporating 74 installations submitted 132 statements and inventories.

(1) Mining enterprises are not subject to the terms of Regulation No. 7, since they are not referred to in para 1 of Article 78 of the Treaty.

(2) The term "reactors" covers power and research reactors as well as sub-critical assemblies.

(3) The term "laboratories" includes research centres having no reactor but using source materials or special fissile materials as well as those sections of research centres which are equipped with reactors but which submit to the Commission a separate statement covering all their physics or chemistry laboratories.

(4) The quarterly reports on ore production started in the second quarter of 1960 pursuant to the entry into force of Regulation No. 9 defining the average concentrations of ores. This Regulation was passed by the Council of Ministers on 2 February 1960.

— *Imports and exports* (these data are communicated to the Commission on the very day that the goods are moved into or out of the Community).

211 declarations have been submitted relating to exchanges with non-member countries, 83 dealing with imports and 128 with exports.

The details are given in the following table :

	Imports	Exports
Natural and depleted uranium	36	36
Thorium	19	88
Special fissile materials	28	4
Totals	83	128

The breakdown below shows the geographical distribution, as of 31 March 1961, of the enterprises, establishments and installations concerning which declarations have been submitted in pursuance of Regulation No. 8.

	Germany	Belgium	France	Italy	Nether- lands	Com- munity
Enterprises (1)	12	7	16	7	6	48
Establishments (1)	13	8	53	11	6	91
Installations (1)	15	11	67	11	7	111

The installations on which statements have been submitted by virtue of Regulation No. 8 break down as follows according to the various fields of nuclear activity involved :

(1) It should be pointed out that an enterprise may include several establishments, some of which may themselves contain a number of installations within the meaning of Regulations 7 and 8.

	Germany	Belgium	France	Italy	Nether-lands	Com-munity
Mines	—	1	35	1	—	37
Manufacture of concentrates	1	1	4	1	—	7
Fuel fabrication	1	1	5	—	—	7
Fuel element fabrication	1	2	2	—	—	5
Reactors (1)	9	4	15	6	2	36
Irradiated fuel processing	—	—	1	—	—	1
Laboratories	3	2	5	3	5	18
Totals	15	11	67	11	7	111

II. Inspection

145. The principle of on-the-spot-inspections carried out by persons specially appointed for the purpose is at the heart of all control systems, and this was the main Euratom activity to be initiated under this heading in the course of 1960. Twelve nuclear establishments—research centres or industrial installations in Belgium, France, Germany, Italy and the Netherlands—have been visited by Commission inspectors since May 1960.

Inspections are carried out by the same persons as are responsible for fulfilling the other Euratom control tasks, particularly those covered by the implementation of Regulations 7 and 8. The recruiting policy adopted in line with the requirements of control has hitherto been based on the principle that all persons must be possessed not only of the specialized qualifications entailed but also of the ability to make an appraisal of a given general situation.

146. The on-the-spot checks have been carried out by teams consisting of 3 or 4 inspectors of different nationality; one to verify, on the basis of the materials' accounts kept by the installation, the monthly reports submitted to the Commission; one to check the storage or dispatch of materials by the installation by comparing the

(1) Including 1 sub-critical and 1 critical assembly.

records kept by the installation with the relevant terms and conditions of supply; finally, the third (and if necessary the fourth) inspector is responsible for verifying the accuracy of the inventories forwarded to the Commission by means of physical or chemical checks adapted to the type of installation and the condition of the materials (counting, weighing, sampling, analysis, etc.).

The Commission has been careful to make provision for the right of appeal in its inspection procedure, so that the reports drawn up by the Euratom inspectors on their return from each tour are communicated to the enterprise concerned in order that it may challenge the observations made therein.

This procedure has been evolved to ensure technical accuracy as well as for obvious psychological reasons, and as such is of vital importance, being aimed, in the first place, at the elimination of mistakes or arbitrary judgements, which is a constant source of danger, irrespective of the level of objectivity aimed at, and secondly to create the necessary atmosphere of mutual confidence for relations between the Commission and Community enterprises and installations.

All these inspections were carried out in a routine fashion and every assistance was provided to the Commission's inspectors, who did in fact reveal certain omissions or discrepancies, none of which, however, could be classed as an irregular practice. In the case of some new installations, the inspectors were approached for suggestions as to how materials' accounting should be organized. The inspections so far carried out may therefore, on balance, be considered as satisfactory.

III. Relations with the United States, Great Britain, Canada and the International Organizations

147. By implementing the above provisions, the Commission has put into effect the system which is laid down in the Treaty and the initiation of which had been proclaimed in the United States-Euratom agreement for cooperation.

Furthermore, the Commission has fulfilled its undertaking to organize a procedure for prior authorization covering projects requiring the import of materials or equipment from the United States under the agreement. This procedure enables the Commission to ensure that the project is intended for peaceful purposes and that it is so constituted as to be subject to effective control.

In 1960, the procedure was applied to 8 research contracts and a power plant project.

As distinct from the previous bilateral agreements, the United States-Euratom agreement puts both parties on an equal footing in the field of control.

The exchange visits and consultations which have taken place with various American counterparts to discuss technical questions have made it possible to compare the methods evolved by Euratom and those which the USAEC has been applying for many years past within the US.

Euratom control has also been recognized in the agreement for cooperation concluded with Great Britain and Canada. To put it another way, the European Atomic Energy Community is placed on an equal footing, for control purposes, with these two countries in the same way as with the United States, whereas formerly the supplier country reserved the right to control the use made of the materials and equipment provided on the territory of the importing country.

A conversion arrangement and two orders, one for materials and the other for equipment, placed with Great Britain in 1960, were all carried out in line with this procedure.

As a result of the resolution adopted by the European Parliament last November in which that body expressed the wish that "the establishment of ever closer relations between the European Nuclear Energy Agency and the International Atomic Energy Agency on the one hand and Euratom on the other would help in the creation of a world-wide atomic energy control system", the Commission has held exchanges of views on technical matters with the Vienna Agency.

Finally, cooperation with the OEEC has been focussed on the setting up of the European Agency's Control Bureau, and Euratom has assisted in working out the methods and procedures which it should adopt.

CHAPTER VIII

EXTERNAL RELATIONS

WIDENING OF RELATIONS WITH NON-MEMBER COUNTRIES — DEVELOPMENT OF THE AGREEMENTS FOR COOPERATION CONCLUDED PREVIOUSLY — NEW AGREEMENTS, PARTICULARLY THAT CONCLUDED WITH THE INTERNATIONAL LABOUR ORGANIZATION — PROSPECTS FOR COLLABORATION WITH THE NEWLY DEVELOPING COUNTRIES — EXTENDED COOPERATION WITH INTERNATIONAL ORGANIZATIONS ACTIVE IN THE NUCLEAR FIELD

148. By virtue of the powers invested in and obligations imposed on it by the Treaty, the Commission has continued to expand its relations with the outside world, pursuing the implementation of the agreements for cooperation concluded previously and concluding certain negotiations which have already led or will in the near future lead to the signing of new ones, amplifying its contacts on the basis of visits paid or received, and keeping track, in accordance with the Treaty provisions, of the activities of the Member States as well as of persons and enterprises belonging to the Community in their dealings with non-member countries. Certain problems emerge in connection with the bilateral agreements which were signed with non-member states prior to the entry into force of the Euratom Treaty and which, although providing for the supply of the individual Member States with special fissile materials, do not, practically speaking, permit the free circulation of such materials from one Member State to another, a situation which is at variance with the terms of the chapter on the nuclear common market, and which furthermore perpetuate supplier-country control on Community soil. The transfer

to the Community prescribed by the Treaty, of the rights and obligation subscribed to by the Member States in the bilateral agreements would serve to eliminate this inconvenience for the greater benefit of the persons and enterprises involved within the Community.

With regard to extra-Community relations, the imminent conclusion of an agreement for cooperation with Brazil and the negotiations which have been taken up with Argentina will serve to cement the bonds between Europe and Latin America, a development which the Governments of the six Member States have ever done their utmost to encourage.

The Commission is, moreover, highly interested in the possibility of collaboration with the newly-developing countries, particularly the African nations which were attached to the Community before gaining their independence, and attempts are being made to evolve the appropriate means of establishing Euratom's relations with these countries on a fresh basis.

I. Relations with Non-Community Countries

a) *United States*

149. Alongside the implementation of the agreement for cooperation concluded in the spring of 1958, the Commission has been conducting negotiations with the American authorities leading, on 11 June 1960, to the signing of a rider to the agreement widening its terms of reference and designed to provide for the supply by the United States, and to meet certain immediate requirements on the part of the Commission or the Member States, of special fissile materials which may be employed for research purposes other than those originally specified in the agreement for cooperation, and listed in the rider as follows: utilization in an organic-moderated reactor experiment, in an organic-cooled and heavy-water-moderated reactor experiment and in an experimental installation for chemical processing or special nuclear material fabrication.

b) *United Kingdom*

150. The Continuing Committee for Cooperation consisting, on the British side, of the Minister of Science and the Chairman of the United Kingdom Atomic Energy Authority, Euratom being represented by the President and a member of the Commission, has been engaged in the implementation of the framework agreement signed in February 1959 and bearing in particular on the exchange of information in such fields as power reactors, controlled thermonuclear reactions (fusion) and health and safety.

As far as the exchange of information is concerned, attention should be drawn mainly to the symposium held at Risley on advanced gas-cooled reactors and the conference which took place in Brussels in September 1960 on the legal and administrative problems of protection in the peaceful uses of atomic energy.

With regard to exchanges of personnel, Euratom technicians were provisionally assigned to the Harwell research centre, as of 1960, to study the problems involved in the use of ancillary installations of research reactors, while the UKAEA will send a British team to Mol for the BR 2 reactor start-up period.

As regards supplies provided under the agreement, a research reactor has been delivered to the Netherlands and small quantities of special fissile materials have been provided to the Community for research purposes.

c) *Canada*

151. It emerged from the agreement for cooperation with Canada, which was further implemented in 1960, that certain of the activities covered under the joint research programme carried out by Canada and Euratom would link up with some of the points dealt with under the US-Euratom joint programme.

It would appear desirable to establish closer relations with the United States in this field since, in August of 1960, America and Canada decided to amend their own agreement for cooperation so

as to undertake a joint research programme bearing on heavy water reactors. Thus the cooperation between Euratom and Canada on the one hand and between the US and Canada on the other naturally conduces to a three-cornered programme of collaboration between Canada, Euratom and the US in the field of heavy water reactors.

d) *Brazil*

152. An agreement for cooperation has been drawn up with the United States of Brazil. The Commission has just received the new Brazilian Government's approval on the text of this agreement, which will be signed very shortly.

e) *Argentina*

153. Negotiations will be started soon with a view to the conclusion of an agreement for cooperation with the Argentine Government. The initial contacts designed to prepare the ground for these negotiations were made during the recent visit paid to Brussels by the Chairman of the Argentine Atomic Energy Commission, Admiral Oscar A. Quihillalt.

f) *Other Non-Member States*

154. Apart from those states which have accredited diplomatic missions to the Community, mention should be made of the interest shown in Euratom's activities by certain countries, such as Japan and India, as well as of the visits paid by Mr. Ishikawa, member of the Japanese Commission, and Dr. Bhabha, Chairman of the Indian Atomic Energy Commission. These two countries have a quite special interest in the development of the peaceful applications of nuclear energy.

In response to an invitation extended by the Danish Government, the Commission paid a visit to Denmark in February of 1961,

and was received by the Prime Minister, Mr. Kampmann and the Foreign Minister, Mr. Krag. The Commission also had occasion to inspect the Risø Centre and the Institute of Theoretical Physics founded by Professor Niels Bohr.

With regard to the possibilities of cooperation with the newly-developing countries, attention should be drawn to the fact that, on the initiative of the Euratom Commission, the three European Executives have made a proposal to the Councils of Ministers anent the creation of an "Institute for Research on Development Problems".

This institute, in the work of which the advanced countries and the newly-developing states would take part on an equal footing, would have the task of carrying out basic research as well as overall studies on all problems bound up with development.

Furthermore, the Commission is examining the possibility of inviting a certain number of trainees and technicians from non-member countries with which the Community maintains relations to work in the branch establishments of the Joint Research Centre.

g) Missions Accredited to Euratom

155. Since April 1960, three non-member countries—Austria, Canada and Japan—have accredited diplomatic missions to the Community, which results in the following list of non-Community countries having delegations accredited to Euratom: USA, UK, Sweden, Denmark, Austria, Switzerland, Canada, Israel, Norway and Japan.

h) Permanent Community Missions in London and Washington

156. At the end of 1959, the Common Market and Euratom Commissions referred to the Councils of Ministers the question of setting up joint Community missions (i.e. representing Euratom, the Common Market and the Coal and Steel Community) in London and Washington.

In spite of the fact that the Councils of Ministers, in February 1960, approved this project in principle, a large number of points still remain to be settled in this connection.

This situation constitutes a source of increasing difficulties from Euratom's point of view, in the face of the constantly expanding field of application of the agreements with the US and the UK. The European Parliament passed a resolution in November 1960 calling for the most rapid possible implementation of the decision in principle taken by the Councils of Ministers.

II. Relations with International Organizations

a) *Organization for European Economic Cooperation (OEEC)*

157. The Euratom Commission has been associated with the work carried out in Paris during 1960 to overhaul the Organization for European Economic Cooperation, as a result of which twenty countries (the 18 members of the OEEC, the USA and Canada) signed the Convention on the Organization for Economic Cooperation and Development (OECD) and the additional instruments of the Convention on 14 December 1960.

Supplementary Protocol No. 1 to the Convention stipulates that the European Atomic Energy Community shall be represented in the OECD and that the Euratom Commission shall take part in the work of this organization. As is laid down by the new article 21 of the statute of the European Nuclear Energy Agency (ENEA), the provisions of the above-mentioned protocol will cover Euratom representation in the Agency and in its Steering Committee, as well as the Euratom Commission's participation in the work carried out by the Agency and its Steering Committee. This will put the collaboration already existing between Euratom and the European Nuclear Energy Agency on a normal footing.

158. Substantial progress has been made in the implementation of the Dragon Project agreement, which was signed in Paris on 23 March 1959. Work is being continued on the construction, started in April 1960, of the high-temperature gas-cooled experimental Dragon Reactor at Winfrith Heath (England). The Commission is playing a large part in this project, with regard both to the financial resources and specialized personnel provided.

Finally, it should also be pointed out that Euratom is continuing to take part in the operation of the Halden (Norway) reactor, the agreement for which has been extended. The agreement for the extension of this project for 18 months beyond the original period was signed on 14 June 1960, and provides for an additional expenditure of 2.2 million EMA units of account, thus bringing the total cost of the project to around 6 million EMA units of account, 1.6 million of which is borne by Euratom.

b) *International Atomic Energy Agency (IAEA)*

159. Pursuant to the terms of Article 199 of the Treaty, the Commission has expanded its working contacts with the Agency's Secretariat, particularly with regard to insurance and protection against the hazards arising from ionizing radiations, exchanges of documentary material and participation in the scientific and technical conferences organized by both sides.

As a result of the invitation extended by the Board of Governors, the Commission was represented by an observer at the fourth session of the Agency's Conference General, held in Vienna from 20 September to 1 October 1960.

The normalization of the Community's relations with the Agency, a development which, in the session held in November 1960, the European Parliament expressed its keen desire to see brought about, has so far been prevented by the opposition of certain countries which charge Euratom with indulging in activities of a military nature.

It is hoped that common sense will, in the long run, prevail, and that it will eventually prove possible to establish the Commission's participation in the work of the Agency on a more normal basis.

c) *International Labour Organization*

160. The parleys undertaken with the ILO culminated, on 26 January 1961, in the signing of an agreement for cooperation which entered into force on 28 February 1961. This agreement was reached in accordance with the desire on the part of both sides to link up their efforts in fields in which their interests and terms of reference overlap, particularly with regard to the protection of the general public and of nuclear workers against the dangers arising from ionizing radiations.

To this effect, the agreement provides for the exchange of observers as well as a reciprocal consultation procedure and will enable either side to call upon the other, whenever needed, to provide technical assistance on matters falling within its sphere of competence.

Finally, both parties declare their readiness to pool their efforts with a view to making the best possible use of the data available to them in the legal and statistical fields.

d) *Council of Europe*

161. The details of cooperation between the Commission on the one hand and the Council of Ministers and the Secretary General of the Council of Europe on the other were settled in August of 1959 by means of a correspondence between the President of Euratom and the Secretary General of the Council.

e) *Inter-American Nuclear Energy Commission (IANEC)*

162. Finally, initial contacts have been established with the IANEC, particularly through the invitation extended to Euratom to send an observer to attend the third inter-American symposium on the peaceful uses of nuclear energy (Rio de Janeiro, from 18 to 22 July 1960).

III. The Application of Articles 103 and 104 of the Treaty

163. The French Government has given the Commission prior notice of a draft agreement which it intended to conclude with the Government of the Republic of Vietnam; in view of the relations existing between France and Vietnam, the Commission raised no objection provided that all technical information exchanged under this agreement be made available to the Community.

Under the procedure laid down for prior consultation, the Commission has likewise been apprised of agreements between the French Atomic Energy Commission (CEA) and the Central Administration for the Utilization of Atomic Power under the Council of Ministers of the USSR (Glavatom), between the CEA and the Greek Atomic Energy Commission and between the Italian Atomic Energy Commission (CNEN) and the Yugoslav Federal Atomic Energy Commission.

It was stipulated that all technical information exchanged under these agreements should be made available to the Community.

CHAPTER IX

THE INSTITUTIONS OF THE COMMUNITY

COMMUNITY-WIDE ACTION OF THE INSTITUTIONS — SESSIONS OF THE EUROPEAN PARLIAMENT — DECISIONS OF THE COUNCIL OF MINISTERS — ACTIVITY OF THE COMMISSION — OPINIONS OF THE ECONOMIC AND SOCIAL COMMITTEE — COLLABORATION WITH THE SCIENTIFIC AND TECHNICAL COMMITTEE—ESTABLISHMENT OF CLOSER LINKS BETWEEN THE THREE EXECUTIVES

The European Parliament

164. The main effect of the European Parliament's activities has been to help focus attention on the political facets of the European Communities. In exercising the control and consultation functions conferred upon it by the Treaties of Paris and Rome, it has not confined itself to making a political assessment of the activity of the Executives and to stressing the features which they have in common, but, over and above the strict terms of the Treaties, it has discussed questions of a more general character, thus acting as a political forum for the Community and as the promoter of new moves towards European integration.

The enhanced political role of the European Parliament has been most clearly evidenced in the repeated exchanges of views it has had with the Councils of Ministers and the Executives. These exchanges have taken several forms: general political debates, talks on foreign policy and the merger of the Executives, and discussions arising out of the report which the Councils of Ministers have agreed to submit regularly to the Parliament on the principal activities they have undertaken or plan to undertake.

165. Amongst the results which best illustrate the Parliament's political action, mention should be made of the draft convention on elections to the Parliament by direct universal suffrage. This draft, prepared by a working group under the chairmanship of Mr. Dehousse and commented upon in a series of reports by Messrs. Battista, Dehousse, Faure, Schuijt and Metzger, was discussed and adopted by the Parliament at its *May 1960* session. Equal importance attaches to the resolution on the merger of the Executives of the European Communities. This resolution, adopted on the basis of a report by Mr. Faure at the discussion held with the Councils of Ministers in *November 1960*, invites the Executives, the Governments of Member States and the Councils of Ministers to take the necessary action in order to make possible the merger of the Executives at the end of 1961.

166. In the same political context, we should also mention the resolution on the organization of a parliamentary conference with representatives of the parliaments of newly-independent African states, which was adopted at the *March 1960* session. The first outcome of this resolution was a preparatory meeting, held in Rome in January 1961, at which delegations from 15 African countries and Madagascar as well as delegates from the European Parliament and representatives of the three European Executives, agreed that the conference itself should be held at Strasbourg in June. It was further agreed that the political, economic and cultural problems arising out of cooperation between the African States and Madagascar, on the one hand, and the European Communities, on the other, should be discussed there.

167. The European University question has been tabled for discussion at several of the Parliament's debates. At its *June/July 1960* session, the European Parliament adopted a resolution on the structure of the University, on the basis of a report by Mr. Geiger. After a brief debate in *October 1960*, this resolution was followed up by another in which the Parliament noted with regret that the process of establishing the European University had been held up by the failure on the part of the Councils of Ministers of Euratom and the Common Market to reach unanimous agreement, and gave fresh emphasis to

the vital importance of the contribution which the University would make towards the European unification.

168. In fields affecting more than one of the Communities, the Parliament adopted at its *November 1960* session a resolution on the problems involved in the relations of the Communities with outside countries, in particular the right to diplomatic relations and to flag privileges. In this resolution, based on a report by Mr. van der Goes van Naters, the Parliament expressed the wish that missions of the Communities be established with the governments of several non-Community states, and that priority be given to the accrediting of missions to London and Washington.

In the course of the same session, on the basis of a report by Mr. Schuijt, the Parliament also adopted a resolution on the problem of information in the European Communities.

Lastly, mention should be made of the resolution on the draft statute of service for the Common Market and Euratom personnel, also adopted in *November 1960* on the basis of an interim report by Mrs. De Riemaecker-Legot.

169. Specifically atomic questions were debated by the Parliament at its May, June and November 1960 sessions.

The third General Report on the activities of the Community was submitted by the President of the Commission at the Parliament's session in *March 1960*, and was the subject of a brief general debate.

At its *June 1960* session, the Parliament discussed Mr. Leemans' report on power policy coordination and the economic aspect of nuclear energy, and adopted a resolution in which the need for a joint power policy was re-emphasized.

Problems of health and safety and insurance against nuclear hazards were examined in Mr. Santero's report, which was discussed at the Parliament's session in *November 1960*. In the resolution passed at the close of the debate, the Parliament expressed particular satisfaction with the progress made in the health and safety field.

Problems concerning research and the dissemination of information were dealt with in a report by Mr. Janssens, and were also discussed at the November 1960 session, in connection with the Euratom working and research budget estimates for 1961. At the close of the discussion, the Parliament adopted two resolutions; the first, concerning scientific and technical research, encouraged the Commission to continue and intensify its action in this field: the second modified the budgetary estimates for the 1961 financial year and in particular made provision for the inclusion in the research budget of a token amount for the European University, while a new no-value item under the heading of "missions in London and Washington" was included in the working budget.

The Council of Ministers

170. As part of its task to coordinate the operations of the Member States and by virtue of the powers vested in it by the Treaty, the Council has taken a whole series of important decisions designed to assist the Commission in the pursuance and expansion of its activities.

The Council's role as a Community institution has been thrown into sharp relief in the course of the past year, and some important majority decisions—especially in the budgetary field—have been taken.

The adoption of this procedure and the rationalization of the Council's working methods, which came about at the end of 1960, have already made and will continue to make it possible for discussion to be centred on the really vital issues and for Community-level decisions to be reached more rapidly.

The organizational measures decided upon are aimed in particular at reinforcing by joint agreement the collaboration existing between the Commissions and the Permanent Representatives, and at enabling the Committee of Permanent Representatives to prepare the ground for the Council's deliberations more thoroughly. Moreover, they in no way encroach upon the responsibility of the Council of

Ministers as an institution of the Community, nor upon the institutional balance established by the Treaty.

171. For the purpose of studying questions of a more highly technical nature, the Committee of Permanent Representatives is assisted by a number of permanent working groups composed of Community experts and Commission representatives.

The groups whose activities directly concern Euratom are those dealing with atomic questions, general matters, finance and external relations.

In the same connection, reference should be made here to the "Committee of Budget Experts", for which provision is made in the Regulations for the establishment and implementation of the working budget of the European Atomic Energy Community, and to the responsibility of the pay-commissioners and accountants. The French version of these Regulations was adopted by the Council on 27 September 1960.

At the *January 1961* session, the Council and the Commission agreed to set up a Consultative Committee for the purpose of facilitating the comparison of viewpoints on research programmes and the coordination of nuclear research in the Community.

The nature of this latter Committee—situated midway between the working groups of the Council and the study committees which the Commission is empowered to set up by the terms of Article 135 of the Treaty—makes allowance for the responsibilities attributed in this field to the Member States, the Council of Ministers and the Commission respectively.

The Council has been associated with all the important activities of the Commission, as pointed out on each occasion in the corresponding sections of the present Report.

Only the main questions discussed and the decisions taken by the Council of Ministers will be reported here.

172. At their session of *10-11 May 1960*, the Councils of the Common Market and Euratom received the final report of the Interim

Committee on the European University (see Chapter on "European University and Schools"). Furthermore, the Euratom Council of Ministers conducted an exchange of views with the Commission on the status of relations with the United States, on the basis of which it decided to employ the written procedure for the approval of the rider to the agreement for cooperation negotiated by the Commission. This procedure was successfully completed on 29 July 1960 (see Chapter on "External Relations").

173. At their session on 20-21 *June 1960*, the Councils instructed the Interim Committee on the European University to make the necessary approaches to the Italian authorities concerned with a view to establishing the University in Florence (see Chapter on "European University and Schools"). In close association with the Commissions, they also continued their work of drawing up the statute of service for personnel (see Chapter "Administration").

174. Acting on a proposal by the Commission, the Council agreed on 19-20 *July 1960* to modify the Community's initial research and training programme (see Chapter "Research"). It further decided to recognize the "Société d'Énergie nucléaire franco-belge des Ardennes" as a joint enterprise, and to grant it the majority of the advantages covered by Annex III to the Treaty (see Chapter on "Industry and Economy"). Furthermore, at the same session, the Councils concluded their examination of the question concerning the representation of the European Communities within the Organization for Economic Cooperation and Development (OECD) and agreed that the Executives of the three Communities would participate in the activities of the new organization (see Chapter on "External Relations").

175. At the session of 6-7 *September 1960*, the draft statute of service for the personnel of the European Communities was unanimously established. It was decided that the special provisions for the scientific and technical staff of Euratom, as well as the system applicable to the "other officials" of the Communities would be discussed by the Councils at a later date (see Chapter on "Administration").

176. On 27 September 1960, the Councils unanimously approved the text of the Regulations governing the establishment and implementation of the budget of the Common Market and the working budget of Euratom, and concerning the responsibility of the pay-commissioners and accountants. The Regulations came into effect on 1 January 1961 (see Chapter on "Finance").

177. On 17, 18 and 19 October 1960, the Council agreed to extend the period of Community participation in the joint operation of the Halden boiling-water reactor (see Chapter on "External Relations"). Furthermore, it drew up the draft research and investment budget, as well as the draft working budget for the 1961 financial year (see Chapter on "Finance"). During the same session, the Councils examined the report of the Ad Hoc Committee for aid to developing countries and decided to set up a technical assistance group to coordinate the Member States' activities in this field (see Chapter on "External Relations").

178. In the 14-15 November 1960 session, the Council took note of the study prepared by the Committee of Permanent Representatives on the general principles of a policy for the setting-up of joint enterprises. Furthermore, the Ministers approved a number of provisions designed to speed up the formulation of a draft convention aimed at raising, through a financial contribution on the part of the contracting states, the ceiling of compensation for damage of nuclear origin provided for in the OEEC Convention (see Chapter on "Industry and Economy").

179. On 6-7 December 1960, the Council finally approved the research and investment budget and the working budget of the Community for the 1961 financial year (see Chapter "Finance").

180. At its session on 30-31 January 1961, the Council appointed the new Consultative Committee of the Supply Agency and took note of a communication from the Commission on the patents policy pursued under its research contracts (see Chapter on "Dissemination of Information"). With regard to the execution of the research programme, the Council took note of a statement by the Commission

and, in agreement with the latter body, decided to set up the Consultative Committee referred to above (see also Chapter on "Research").

181. At their 23 February 1961 session, and as part of their work in connection with the drawing up of the statute of service for Community personnel, the Councils signified their agreement with the provisions concerning "other officials", as well as with the special provisions concerning the scientific and technical staff of Euratom (see Chapter on "Administration"). They also agreed in principle to draft regulations on the Community tax.

182. In the 20 March 1961 session, the Council assented to the framework agreement for cooperation in the field of the peaceful uses of nuclear energy which is to be concluded shortly with the United States of Brazil. Furthermore, it instructed the Commission to open negotiations with the Argentine Government with a view to defining the bases for a framework agreement for cooperation. The Council considered this cooperation to be of great value to Euratom, both on the technical level (in view of the possibilities afforded by Argentina) and on the political level, as part of the policy of strengthening the Community's links with the Latin American countries (see Chapter on "External Relations"). In the same session, the representatives of the Governments of the Member States continued their examination of the problems bound up with the scale of contributions towards the financial charges resulting from the collective participation of the contracting parties in the Supplementary Convention on compensation for damage of nuclear origin (see Chapter on "Industry and Economy").

The Court of Justice

183. The Court of Justice, which is the jurisdictional body common to the three Communities, is responsible for ensuring that the Treaty is applied and interpreted in compliance with the law. As no case involving Euratom has yet been referred to the Court, it has not so far been called upon to take action.

It should, however, be mentioned that under the special terms of reference conferred upon the Court by the Treaty, the President of the Court transmitted to the President of the Council of Ministers on 25 March 1960 the Court's proposals for the organization of the Arbitration Committee on the dissemination of information for which provision is made in Article 18, paragraph 2 of the Treaty.

The Economic and Social Committee

184. During the period covered by the present Report, the Economic and Social Committee, which is a joint consultative body for Euratom and the Common Market, held seven plenary sessions, two of which were devoted more particularly to issues affecting Euratom. Although the Treaty makes provision for only a certain number of cases in which it is mandatory to consult the Committee, it has become customary to request the Committee's opinion whenever such consultation would appear to be useful.

The Euratom Commission has frequently manifested the interest which it takes in the work of the Committee by sending representatives to attend its deliberations, both in plenary sessions and in some cases at meetings held by the specialized sections.

At its 10th session, on 28, 29 and 30 June 1960, the Committee issued three opinions on projects submitted to it by the Commission:

- Opinion on the revision of Annex 1 and Annex 3 to the Basic Standards for the protection of the health of the general public and of nuclear workers against the hazards connected with ionizing radiations, in compliance with the provisions of Articles 31 and 32 of the Treaty.
- Opinion concerning the draft directives on free access to specialized employment in the nuclear field, in accordance with the procedure laid down in Article 96 of the Treaty.
- Opinion provided for in Article 98 of the Treaty concerning the draft directives for the conclusion of insurance contracts for nuclear hazard coverage.

At the 13th session of the Committee, held on 29-30 *November 1960*, the Commission submitted a statement, which was followed by a full exchange of views on long-term nuclear energy problems with the members of the Committee.

The Commission intends to inform the Committee at its next session of the broad outline of the Community's research and training programmes, pursuant to Article 7 of the Treaty.

The Scientific and Technical Committee

185. As the activity of the Commission in this field has been described in the preceding chapters, only a brief outline of the work of the Scientific and Technical Committee since the publication of the third General Report will be given here.

In the course of 1960, the Scientific and Technical Committee, which is a consultative body to the Commission, has met five times: *26 January, 12 April, 28 June, 4 October and 13 December*.

It has been kept supplied with regular progress reports on the Community's research programme, in particular with regard to the negotiations concerning the Joint Research Centre establishments at Mol, Petten and Karlsruhe as well as the bringing into operation of the Ispra plant. Problems relating to fusion, radiobiology, radioisotopes, marine propulsion and power reactors have been its main concern, giving rise to various exchanges of views and numerous consultations.

The Commission has several times had occasion to outline to the Committee the basic principles of its patents policy, and has frequently asked for the Committee's opinion on the course of action to be pursued in the health and safety field. The Committee was also consulted on the Commission's main activities in the industry and economy field.

Parallel with the meetings of the Committee, the working group on "Training", set up in 1959, has continued its activities.

The team of scientific experts appointed by the Committee, under the chairmanship of Professor Holthusen, is to formulate opinions on the Basic Standards for health and safety and will be called upon to deal with problems pertaining to radioactive waste disposal.

On 13 December 1960, the Scientific and Technical Committee appointed its new officers: Messrs. Haxel, Chairman, and Angelini, Vice-Chairman, replacing Messrs. Ailleret, Chairman, and Haxel and Cohen, Vice-Chairmen.

**Cooperation with the High Authority
of the European Coal and Steel Community
and the Commission of the European Economic Community**

186. During the period covered by the present Report, the three Executives, in their efforts to develop and improve their cooperation which, although mainly concerned with the joint services and the coordination of power policies, has also been extended to many other fields, have had the strong backing and encouragement of the European Parliament, which has repeatedly emphasized the common denominators in their activities.

I. The Joint Services

A. The Administrative Boards

187. The three Executives, anxious to remedy the practical difficulties encountered in the setting up and functioning of the joint services, agreed to set up three Administrative Boards, each of which is responsible for one of these services (Legal Service, Statistics Office and the Joint Press and Information Service).

This agreement afforded in particular the advantage of guaranteeing a standard practice for the three joint services to be adopted

in planning programmes of activities, in establishing and implementing budgets, and in appointing and promoting personnel.

As a result of this measure, each of the joint services is now administered by a three-man Administrative Board, one for each Executive, and is presided over by the representative of the Executive which is responsible for its administration.

The task of the Administrative Boards is:

- to submit each year to the three Executives for their decision the preliminary draft budget, accompanied by an organization table and a general programme of activities for the year for each of the joint services;
- to take decisions on the recruiting and promotion of personnel, although the actual appointment or promotion is carried out by the Executive to which the official is statutorily attached;
- to keep track of the carrying out of general working programmes and, in so far as joint activities are involved, to give rulings on methods of implementing them.

The decisions of the Administrative Boards are taken unanimously, and they are binding on the three Executives without requiring ratification by them, except in the case of draft budgets, organization tables and programmes of activities.

The administrative and financial management of each of the joint services is carried out by one of the Executives, which is responsible to the other two for the proper running of the service. Thus, the Legal Service comes under the Euratom Commission and the Press and Information Service comes under the Common Market Commission, while the Statistics Office is attached to the High Authority. However, from the point of view of personnel administration, all employees of the joint services continue to be dealt with by the Executive which recruited and appointed them.

188. With a view to a uniform and rational administration of the joint services, administrative rules for these services were drawn up in 1960, and came into effect as from 1 February 1961. They cover:

administration of personnel, preparation of budget for the joint services, establishment of contribution scales, commitments, payment authorizations, settlement, payment and auditing of expenditure, as well as accounting operations and the centralization of records.

In the course of the period covered by the present Report, the Administrative Boards have met several times for the purpose of organizing the joint services, establishing internal and financial regulations designed to ensure their satisfactory operation and drawing up and supervising the execution of the programmes of activity for these services.

B. Legal Service of the European Executives

189. The three branches of the Legal Service work closely together to ensure that the European Treaties are interpreted according to the law and applied in a coherent manner. They consult each other whenever questions dealt with by any one of them are likely to affect the activities of the European Executives responsible for the other two branches. Several members of the Service are assigned to consultation and study duties which may be of equal interest to all three Communities.

For the purposes of the European Atomic Energy Community, the task of the Service is to examine problems arising out of the concrete application of the Treaty and to coordinate the legal aspects of the work of the different departments, in order to ensure that Treaty law evolves in a uniform manner. The draft rules, directives, decisions or recommendations of the Commission are drawn up under its supervision.

As has been reported above, the implementation of the Treaty has not so far given rise to any litigation before the Court of Justice of the European Communities.

C. Joint Press and Information Service

190. The Joint Press and Information Service, which was definitively established in the period from May to September 1960, is composed

of a main department located in Brussels, special sections, the staff of which are split up between Brussels and Luxembourg, and information bureaux established in the other capitals of the Community, as well as in London and Washington.

As from 1 January 1961 the three sections of the Official Spokesman's Office have been detached from the Joint Press and Information Service and attached directly to their respective Executives.

The separation of the Official Spokesman's Office from the Joint Press and Information Service is advantageous in view of the essentially different functions which each of these bodies has to perform. The former is entrusted with the task of issuing, on a short-term basis, a stream of information on the Executives' activities in the technical, economic and political fields, while the objective of the latter body consists primarily in presenting to the public eye the broader issues raised in connection with the three Communities.

The Euratom Official Spokesman's Section directs its action mainly towards the press, keeping it informed about the activities of the Community by means of personal contacts, press releases and background information notes.

It also ensures liaison with the Joint Information Service and the bureaux in Bonn, The Hague, Paris, Rome, London and Washington. These bureaux disseminate and comment upon the information items passed to them by the Official Spokesman's Office.

The details given below relate to the main activities of the Press and Information Service in 1960, and particularly those in which Euratom is more directly concerned.

In all these fields, the activities of the Official Spokesman's Office have been closely coordinated with those of the Joint Information Service.

— *Fairs and Exhibitions*

191. The policy approved by the Administrative Board for "Press and Information" is to try, as far as possible, to group the displays

of the six member states around that of the European Communities in all exhibitions of a general or specialized nature. Furthermore, in certain highly specialized fields, more modest, but frequently effective, exhibits are concentrated on one aspect or another of the activities of a single Executive.

In the course of 1960, the Communities participated in two major exhibitions: the "Grüne Woche" in Berlin (30 January - 7 February) and the "Rassegna nucleare" in Rome (June 1960). Smaller-scale displays were sent to the Lyons International Fair (March 1960), the "Etats-généraux des Communes d'Europe" at Cannes (March 1960), the New York Fair (May 1960), the Paris Fair (May 1960), the Luxembourg Arts and Crafts Exhibition (July 1960) and the exhibition entitled "Mercato del libro e del giornale" held at Naples (December 1960).

Special mention should be made of the permanent exhibition set up in a sphere of the Atomium in Brussels. The aim of this exhibition is to popularize and instruct by presenting a wide picture of atomic problems and of the Community's activities on the European level.

— *Publications*

192. 1) *Periodical Bulletins*—These bulletins, issued in five languages, under the title "European Communities" are distributed in six editions in four Member States, the United Kingdom and the United States. They are also distributed in Belgium, Luxembourg, Switzerland and in French-speaking Africa, as well as in certain Commonwealth countries.

The information bulletins are supplemented by several series of non-periodical publications, dealing more thoroughly with the activity of the Communities and the major problems involved in European integration.

2) *Other publications* — A large number of other information publications were issued in 1960, including "*The Facts*", a publication

intended mainly for non-Community countries, and put out in Dutch, English, French, German and Spanish.

— *Radio - Television - Cinema*

193. In this field, the activities of the Communities have branched out in three distinct directions. Constant collaboration is maintained with the major radio networks for the coverage of events affecting the life of the Communities; television documentaries are likewise prepared, while some radio or television programmes are devoted to more specialized subjects.

With regard to the cinema, reference should be made here to a film which will be widely distributed, under the title of "Europe 235". This film, dealing with nuclear energy problems in Europe, is produced by the Official Spokesman's Office of Euratom.

— *Information Visits*

194. In the course of 1960, some 150 groups, totalling 5,000 people, made information visits to Brussels, Luxembourg or Strasbourg. These figures do not include courses for specialized groups, to which reference is made below.

— *Labour and Trade Union Information Courses*

195. In 1960, 34 information courses for trade union leaders, directly affecting over 1000 persons, have been held in Brussels or Luxembourg. Two of these courses were concerned more particularly with nuclear problems. Twelve specialized information sessions were also organized in the other countries of the European Community.

Furthermore, the Press and Information Service has helped to organize courses on European problems and the activities of the three Communities in trade union schools.

Lastly, a large-scale scheme for training trade union lecturers (International Confederation of Free Trade Unions and International Federation of Christian Trade Unions) and for organizing lectures

on a regional level has been launched. A number of lecturers have received specialized training in the field of nuclear problems.

— *University Information and Educational Activities*

196. The development of the activities undertaken in 1958 and 1959 was hampered by the fact that approval of the 1960 supplementary budgets was delayed.

Contacts with universities, educational establishments and teachers' and students' associations were nevertheless maintained.

The "European Community Prize" founded in 1959 as an award for a doctor's thesis, has helped to stimulate the interest of students and their teachers in the study of European problems.

Several study courses for university professors and students have been organized both in Brussels and Luxembourg, as well as at places other than the provisional headquarters of the Communities.

— *Civics Training for Young People and Adult Education*

197. In conformity with the wish expressed in a resolution adopted by the European Parliament, in June 1960, when the supplementary budgets of the Communities for 1960 were finally approved, a special credit was opened for the purpose of promoting public relations activities and in particular of training young people in the European spirit.

Two agreements in this sphere were concluded as early as July 1960: one with the "Union des Centres d'information et d'éducation européennes", formed by three European extra-mural education organizations, which in turn stemmed from the former "Campagne européenne de la Jeunesse" (Gustav Stresemann Institut, Jeune Europe, Giovane Europa), and the other with the "Centre international de Formation européenne". Other agreements have subsequently been concluded with various international organizations ("Journée européenne des Ecoles", "Association européenne des Enseignants") or national bodies (youth or adult education centres in Germany, France, Italy and the Netherlands).

D. Statistics Office of the European Communities

198. The Statistics Office of the European Communities deals with all statistical questions affecting the three Executives. Its main task is to coordinate statistical methods and concepts in use in the six countries with a view to obtaining comparable data.

To this end, special committees have been set up, and meetings have been organized with the Directors of the Statistics Offices of the six countries, as well as with the Heads of Divisions in the Communities.

Two major surveys were organized in the autumn of 1960: the first concerned the span and distribution of wage-earning activity in the six Community countries, while the second dealt with labour costs on the one hand and the earnings of workers and salaried employees on the other.

199. Of the principal publications of the Office issued in the course of 1960, the two following are especially noteworthy:

- Real Income of Workers' Families in the European Coal and Steel Community, 1956-57;
- Real Incomes in the European Coal and Steel Community, 1954-58.

Furthermore, the series of current publications has been continued, consisting, on the one hand, of "Statistical Information", and on the other, of specialized bulletins dealing with agricultural, industrial, foreign trade and social statistics. A general statistical bulletin is also published every month.

In the field of power statistics, the Office has continued to draw up statements showing the supply and demand position coupled with statistics concerning liquid fuels, electricity and gas, whilst collaborating with national and international bodies with a view to standardization. The annual energy statements give an idea of the structure of the power economy in each of the six countries and in the Community as a whole.

With regard to electricity, the Office has made studies of the utilization period and load conditions of electricity plants in the Community. These studies, which are of interest mainly for the future of nuclear power stations, are now being improved and intensified.

As regards the nuclear industry, preliminary contacts have been established with the competent instances in the Member Countries, while a programme of work, based on a simplified nomenclature, has been elaborated in conjunction with the Euratom departments concerned. It will be possible to implement this programme from 1961 onwards.

Lastly, the Office has taken part in the application and evaluation of the results of the survey carried out by the Euratom Supply Agency on the market situation for ores, source materials and special fissile materials.

II. The Coordination of Energy Policies

200. The three Executives, each of which is responsible for one particular sector of the power economy, set up in March 1959 a permanent inter-executive group, for the purpose of associating as closely and effectively as possible the Commissions of the EEC and Euratom with the High Authority of the ECSC. This latter body is required, by virtue of the Protocol of 8 October 1957, to submit to the Special Council of Ministers of the ECSC proposals for the coordination of power policies in the six Community countries.

From the outset, the Euratom Commission has participated actively in the work carried out to this end, not only because of its responsibilities as a European Executive but also in the light of its own specific terms of reference. The development of nuclear energy is indeed closely linked with the conditions prevailing on the energy market as a whole and depends essentially upon the time it will take for electricity produced by nuclear power stations to become competitive with that produced from fossil fuels. The short-term measures necessitated by the present situation on the power market condition

to a certain extent the longer-term prospects, while their choice is affected by the trends noted in the past and on the medium- or long-term forecasts which are made on the basis of these trends, allowance being made for both the quantity and the price factors.

201. The first result of the work of the inter-executive group was, apart from an energy statement for 1960, the interim note drawn up in March 1960 laying down the general lines of a coordinated power policy, as well as a system for defining its aims and the methods of implementing it.

The interim note, which was intended to allow for discussion with all the interested parties and to facilitate the subsequent preparation of concrete proposals for submission to the ECSC Council of Ministers, gave a broad outline of the existing situation and the prospects for the power market together with the features characterizing the policies pursued in this field by the individual states.

After putting forward the principles which should be adopted in coordinating these policies, the note went on to delineate the various possibilities on which a decision would have to be reached.

The interim note was accompanied, in the form of annexes, by special studies carried out simultaneously by working groups composed of officials of the three Communities. These studies, approved by the inter-executive group during 1960, dealt with 1. statistical and methodological questions in connection with power estimates, 2. the ratios of power products imported at various price levels as compared with Community-produced coal, and 3. problems connected with trade policy.

202. The ECSC Council of Ministers, to which the interim note was submitted in March 1960, passed it for study to the Joint Council of Ministers—High Authority Committee, which has been dealing with power questions ever since 1954. The note was discussed on 25 May 1960 by the Joint Committee and on 14 June 1960 by the Council of Ministers.

These discussions and the previous contacts which the working groups had established with the competent officials of the Member

States brought out the fact that the principles of the interim note were favourably received on the whole, but that thorough-going studies would have to be made and considerable difficulties surmounted before they could be put into practice. Although the energy situation now appears less parlous than in previous years, the fundamental trends remain unchanged and would certainly give rise once again to serious imbalance should the rate of expansion slacken off.

The inter-executive group on power, while continuing the studies undertaken to define the methods for a genuine coordination of power policies, therefore gave priority to the mapping out of a preliminary programme of activities containing concrete proposals aimed at preventing a worsening of the power market situation. This new direction imparted to the activities of the inter-executive group also fell in with the wishes expressed by the European Parliament, especially in the resolution adopted on 30 June 1960 concerning the problems involved in coordinating energy policies.

203. As a result of the work undertaken to draw up a crash programme along these lines, a document entitled "First Steps Proposed for Power Policy Coordination" was adopted on 22 December 1960.

The measures advocated in this document were aimed mainly at keeping energy prices in the Community at the most favourable level, while at the same time guaranteeing a certain security of supply and allowing the coal-mining enterprises and coal-producing countries the necessary time to rationalize mining conditions, find new jobs for labour and to make new arrangements for the areas affected by the closing-down of pits.

The first standardization measures proposed would affect essentially:

- the adaptation of the trade policies adopted by the Member States towards outside countries;
- the alignment of the competitive rules to which the different sources of energy are subject;
- the comparison of taxation and administrative provisions applied in the various countries;

- the adaptation of commitments with regard to coal stocks, atmosphere and water pollution, as well as the other technical and professional requirements entailed in power production;
- help towards nursing the coal industry back to economic health by relieving the collieries of the additional social charges due to the regression.

It was further proposed that the Governments should give an undertaking for the future not to take independently any further steps affecting power policy without having consulted the other Member States and the three European Executives at the Council of Ministers' level. A proposal was also made for periodical examinations by the Council of the trends on the energy market.

Finally, the inter-executive group suggested a procedure designed to make it possible, without delay and in a coordinated fashion, to take the measures necessary to cope with a situation in which a further drop in fuel oil prices or a falling-off in economic activity should lead to serious repercussions on the energy market. To this end, it was proposed that the Governments should lose no time in reaching agreement on :

- the criteria justifying Community-wide action, whereby the existence of such a situation should be recognized by the Councils of Ministers at the request of one Member State or one Executive;
- the course of action to be pursued, which may consist either in limiting the quantities available by a system of import quotas for coal, petroleum and petroleum products, in measures aimed at affecting prices rather than quantities (fixing minimum prices accompanied by an import levy system, introduction of consumer taxes or customs duties), or in granting subsidies to Community-produced coal, without increasing protection for domestic sources.

204. These proposals, which had been submitted on 10 January 1961, were examined at the meeting held by the ECSC Council of Ministers on 7 March 1961 in the presence of members of the inter-executive

group. The Ministers stated their agreement with the diagnosis of the present situation and approved the principle of a coordinated power policy aimed at keeping power prices as low as possible, embodying built-in guarantees for power supplies and at the same time making allowance for certain social factors. They also agreed to the holding of periodical exchanges of views, in the presence of the members of the inter-executive group, on structural developments and market trends in the energy field. As for safeguards, the Governments were divided in their opinion, some being in favour of an ad hoc arrangement whilst others advocated that the measures to be adopted be laid down in advance. Since the Council had not allowed for the taking of decisions, it was agreed that the two-way discussions be carried on and that the Joint Committee be instructed to examine the proposals of the inter-executive group, so that the Council would be in a position to reach conclusions at its next meeting.

III. Cooperation in Other Fields

205. At the departmental level, officials of the Euratom Commission have had a share in work undertaken by the Common Market Commission in the following fields : Community-wide standardization of industrial property rights, free circulation of labour, regional policy, long-term structure and expansion studies, market studies, petroleum questions, negotiations under GATT, and problems of occupational diseases, industrial medicine and prevention of accidents at work.

Euratom has also taken part in certain activities of the High Authority, particularly through the participation of its officials in the "general objectives coal group" and in the Joint "High Authority Council of Ministers" Committee.

206. The other two Executives have helped in the work of the Euratom Commission in the matter of freedom of access to specialized employment in the nuclear field (see chapter "Economy"), the use of the IBM 7090 ordinator of the Joint Computer Centre, and research on steel welding and the recovery of beryllium in coal (see chapter on "Research"). Furthermore, the Transatom documentation

pool, set up by the Commission, has made available to the High Authority technical translations of Russian, Chinese and Japanese originals (see chapter on "Dissemination of Information").

207. The three Executives have likewise worked together in preparing and examining certain questions which have been submitted to the Councils of Ministers and which are of great interest to all the Communities : European University, Statute of Service for personnel, Community representation with non-member countries and with the new organization in Paris (Organization for Economic Cooperation and Development) and aid to the newly-developing countries.

In listing their various combined operations, mention should also be made of the cooperation between the administrations of the three Communities, one of the results of which has been the formulation of administrative and budgetary rules for the running of the joint services.

208. Attention likewise deserves to be drawn to the International Conference on Technical Progress and the Common Market, held in Brussels from 5 to 10 December 1960. This Conference, which was organized jointly by the EEC Commission, the High Authority of the ECSC and the Euratom Commission, aroused keen interest in professional circles in the Community.

The importance of nuclear energy as a means of boosting the rate of technical advance was pointed out by several working groups. They considered that thorough studies should be launched after the conference either by Euratom or by means of a special conference to discuss the economic and social prospects opened up by the vast possibilities afforded for the application of nuclear energy and the new techniques.

Finally the Commission invited the Common Market Commission to assist in a joint study of the problem of the two Communities' own resources. It likewise proposed to the High Authority and to the Common Market Commission that an inter-executive group be formed with the task of roughing out a draft convention on the setting up of a single Executive.

CHAPTER X

ADMINISTRATION

CONTINUED RATIONALIZATION AIMED AT LIMITING RECRUITMENT UNDER THE WORKING BUDGET — RECRUITMENT OF PERSONNEL COMING UNDER THE RESEARCH BUDGET, AS A RESULT OF THE DEVELOPMENT OF THE RESEARCH PROGRAMME AND THE SETTING-UP OF THE FIRST JOINT CENTRE ESTABLISHMENTS — SUBMISSION OF THE DRAFT STATUTE OF SERVICE FOR PERSONNEL AND THE DRAFT COMMUNITY TAX SCHEME TO THE EUROPEAN PARLIAMENT AND THE COURT OF JUSTICE — ESTABLISHMENT OF A SIMPLE AND EFFECTIVE ADMINISTRATIVE STRUCTURE FOR THE ISpra CENTRE

I. Personnel

A. *Size of Staff*

209. In the course of 1960, the Commission has made every effort to limit to the utmost the recruitment of personnel coming under the working budget. As at 31 March 1961, the actual staff totalled only 512, of whom 187 are in grade A, 77 in grade B and 248 in grade C. The corresponding figures for 31 March 1960 were: 182 A, 61 B and 214 C, totalling 457.

In view of the manifold and complex tasks assumed by the Commission, which are being added to with the development of the establishments of the Joint Research Centre, these are very modest figures. Allowance should also be made for the heavy burden

represented by the Language Service which, while absolutely indispensable, alone accounts for 21 % of the personnel in grade A.

This personnel policy is also reflected in the number of posts requested and authorized under the working budget for 1961, totaling 552, only 212 of which are grade A posts, as against 530 in 1960, 231 of which were grade A.

Of the increase of 22 posts between 1960 and 1961, only 10 are to be regarded as really new slots, as the other 12 were necessitated by the transfer to the Euratom Official Spokesman's Office of people who had previously been included in the organization table of the Joint Press and Information Service.

The above figures reveal a rise in the number of grade B and C personnel at the expense of grade A. This trend in the distribution of the personnel over the three grades stems from the Commission's anxiety to organize its departments along more rational lines by making the best use of individual qualifications.

* * *

210. Whilst the recruitment of administrative personnel has been kept within strict limits this year, the development of the Community's research programme and in particular the setting up of the first branch establishments of the Joint Research Centre have, on the other hand, led to an appreciable increase in the personnel coming under the research budget. As at 31 March 1961, 1,098 persons had already taken up their duties, both at headquarters, in the various research establishments of the Community and in the laboratories of institutions under contract to the Commission, while 80 others were in the process of recruitment. The geographical distribution of this personnel is given in the Chapter on "Research".

B. Statute of Service for Personnel

211. The decision taken in principle by the Councils of Ministers of Euratom and the Common Market at their session of 9-10 March 1960 to apply the statute and the new salary scales with effect from

31 July 1960, could not in fact be put into effect at that date owing to certain last-minute differences of opinion which bore particularly on the pensions scheme.

The Councils of Ministers did not approve the draft statute of service for the personnel of the European Communities until their session of 27 September 1960.

This first draft was based to a great extent on the provisions of the Statute of the European Coal and Steel Community, although it entailed a salary level 6 % lower than that obtaining in the ECSC.

The question of the issue of a diplomatic laissez-passer to certain grades of officials gave rise to lengthy discussion by the Councils before being finally settled in the draft statute.

212. Certain provisions which had been left in abeyance required a subsequent decision by the Councils. These provisions affected : pensions scheme, statute of service for the scientific and technical personnel of Euratom, the system applicable to "other officials", provisions for guaranteeing the rate of exchange for a proportion of the salary and the possible adjustment of salaries and pensions to the cost of living.

After the last of the outstanding problems had been cleared up by the Council on 23 February 1961, the provisions adopted were transmitted to the European Parliament and the Court of Justice, to which the draft Statute itself had already been submitted for their opinion.

An agreement in principle was adopted by the Council concerning the Community tax scheme. No decision was, however, taken with regard to the taxation of pensions, since the Council wished first of all to obtain the European Parliament's opinion on the matter.

* * *

213. The initial period during which the ground was prepared for the drafting of the statute was marked, on the Commission's part, with a policy of direct and positive collaboration towards the Council

of Ministers. Whilst never hesitating to propose compromise formulae for devising a reasonable solution to problems at issue, it remained adamant in its opposition to any procedure involving the application of a salary and taxation system unaccompanied by the indispensable statutory safeguards.

The Commission is fully aware that difficulties still exist and in particular that the recruitment of qualified scientific and technical personnel may prove difficult on the basis of the provisions of the new statute. It considers, however, that the implementation of a complete statute should not be postponed any longer and that the uncertain terms of employment in effect at the present time must be clarified at the earliest possible moment.

C. Social Security

214. Parallel with the formulation of the statute, discussions were held with the other institutions of the Community, with the Common Market Commission and the High Authority on the question of setting up a joint health insurance scheme.

Advantage will be taken of the results of these discussions when the definitive regulations are established for the health insurance scheme envisaged in Article 71 of the draft statute.

With regard to accidents and illnesses of nuclear origin, the Commission decided to cover these risks by a self-insurance scheme, extending to personnel the same guarantees as those which protect them in the event of non-nuclear accidents and sickness. This scheme, which came into force on 1 January 1961, is intended to replace the system of private insurance coverage. After re-examining the whole problem, the Commission considered that the risks involved on the one hand and the conditions offered by a private insurance company on the other no longer justified the provisional scheme which had been initially adopted. The Council of Ministers was informed of this decision and of the Commission's intention to avail itself of the credits which had originally been earmarked for the payment of insurance premiums for the possible compensation of personnel having sustained bodily injuries of nuclear origin. The Commission

is still studying this delicate problem and is keeping track of any developments on the insurance market which might lead it to reconsider its position.

D. Personnel Management

215. The Commission has encountered, and still is encountering almost daily, numerous problems in connection with personnel administration, in particular scientific and technical staff, owing to the fact that they are assigned to more than 20 sites in eight different countries, three of which are outside the Community.

Efforts are now being made to establish comparatively flexible rules which can be adapted to all the special situations brought about by numerous staff postings. In these endeavours, the Commission has always aimed mainly at ensuring equality of treatment, from the administrative and salary point of view, for all its staff, whether they are employed at headquarters, in the establishments of the Joint Centre, or in the research laboratories of Member States or non-Community countries.

In the course of 1960, the pre-employment medical examinations of staff have been stepped up. These examinations are compulsory for all members of the Euratom staff. Furthermore, in the Joint Research Centre establishments, the entire staff undergo regular medical inspections in line with the health and safety regulations governing ionizing radiations.

E. Staff Association

216. The Commission's relations with the Staff Association have continued to be both cordial and mutually beneficial. It has had no hesitation in consulting the Association on all problems affecting the social situation of the Community personnel. The Staff Association, in turn, has strongly supported the efforts of personnel to organize leisure activities in common and to widen their technical, linguistic and cultural backgrounds.

A section of the Staff Association has been set up at the Joint Research Centre establishment at Ispra.

The Committee of Permanent Representatives on two occasions met with representatives of the Association in the course of the preparatory work on the statute.

II. Administration

A. *Joint Research Centre*

217. The starting up of the Ispra establishment has made considerable demands on the administrative services, both at headquarters and at Ispra.

Of the initial problems facing the Commission in this connection, priority has been given to the question of housing for the staff at Ispra. The Commission has endeavoured to provide the technical personnel with all the necessary material facilities as soon as they arrive there. Within a space of a few months, it has succeeded in setting up an administrative structure which is simple but adequate, serving as the nucleus for the technical establishments with all their ramifications.

B. *Purchases*

218. Alongside the Purchasing Section of the Administration Division, which deals with all purchases coming under the working budget and some of those coming under the research budget, the Commission has set up, within the Research Division, a special service for all purchases of non-standardized scientific and technical material.

The Purchasing Section of the Administration and Personnel Division operates in line with the financial regulations on the implementation of the working budget, which make provision, *inter alia*, for invitations for tenders.

For large-scale orders, the Commission has set up a Consultative Committee on Purchases and Markets (CCPM), on which all the departments concerned are represented.

The extensive documentary material available to the Purchasing Section enables the Commission to place its orders in the six Community countries in satisfactory conditions.

CHAPTER XI

FINANCES

ESTABLISHMENT OF BUDGETARY SYSTEM AND STRUCTURES ESSENTIAL FOR THE COMMISSION'S ACTIVITIES — DRAWING-UP OF FINANCIAL REGULATIONS ON THE WORKING BUDGET, THE RESEARCH BUDGET AND THE CONTRIBUTIONS OF MEMBER STATES — INSTALLATION OF FINANCIAL DEPARTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE ISPRA ESTABLISHMENT — ADMINISTRATION OF WORKING AND RESEARCH BUDGETS

I. Budgetary Affairs

1) *Budgetary Organization*

219. In the course of 1960, the Commission continued with the task of formulating the financial regulations referred to in Article 183 of the Treaty.

The financial regulations on the rendering and auditing of accounts had already been approved by the Council of Ministers in August 1959 ⁽¹⁾.

The financial regulations concerning the establishment and implementation of the working budget, drawn up in consultation with the other institutions, were approved by the Council of Ministers of the European Atomic Energy Community on 15 November 1960⁽²⁾.

(1) "Journal Officiel" No. 63 of 16 December 1959.

(2) "Journal Officiel" No. 83 of 29 December 1960.

They have now been submitted, in draft form, to the Committee of the four Presidents of the European Coal and Steel Community, which is jointly responsible with the Council of Ministers of the European Atomic Energy Community for laying down those clauses of the regulations which govern the joint institutions.

The methods of putting these regulations into effect are now being examined.

With regard to the methods and procedure whereby the contributions from the Member States are to be made available to the Commission, the Council, acting on a proposal from the Commission, approved the corresponding financial regulations at its meeting of 31 January 1961 ⁽¹⁾. These regulations are, however, applicable only to the payment of contributions due under the working budget. The Commission's proposals with regard to contributions towards the financing of the research budget will be examined in the near future by the Council of Ministers, together with the regulations concerning the administration of this latter budget.

The drawing-up of these latter financial regulations was continued within the course of 1960, particularly in the light of the experience acquired and the problems arising out of the operation of the Joint Research Centre establishments. The Commission recently completed this task and submitted its proposals to the Council on 22 February 1961.

In the very near future, therefore, the Commission will have at its disposal all the financial regulations on which to base its activities in the budgetary and accounting fields.

220. The Commission is continuing its efforts to perfect its organization within this framework, both at headquarters and in the branch establishments of the Joint Research Centre.

With the constant aim of ensuring the greatest possible level of efficiency, the relations between headquarters and the Joint Research Centre branch establishments are aimed at decentralizing to

(1) "Journal Officiel" No. 22 of 30 March 1961.

the widest extent compatible with the needs inherent in the planning and execution of programmes and in financial control and centralization of accounts. A finance control officer, directly responsible to headquarters, has already been detached to Ispra, with the task of exercising prior and subsequent supervision over local expenditure commitments and payments made out of the funds which the Commission places at the establishment's disposal. A similar arrangement will be made in due course for those of the other Joint Centre establishments whose size or distance from headquarters justifies this step. For the time being, financial operations at the Central Nuclear Measurements Bureau at Mol are performed and supervised directly by headquarters for all budgetary and accounting purposes.

A part of the research programme is executed outside the Joint Centre establishments, under contracts placed with specialized bodies. All these contracts contain clauses granting the Commission the necessary means of verifying the accuracy of the amounts paid to the contract-holders.

The rapid development and growing complexity of financial operations make it necessary to rationalize accounting methods so as to improve and speed up the system under which accounts are centralized and submitted both for supervisory and technical administrative purposes and for internal and external audits. This measure should also make it possible to keep the recruitment of new accounting staff to the indispensable minimum.

To this end, the studies which are now being made will be speeded up in the near future by the recruitment of the technicians necessary for the introduction of an analytical method of accounting and for the extension of the punched-card systems already used in certain other sectors.

The Committee of Control

221. The conditions in which the Committee of Control operates are set out in Article 180 of the Treaty and in the financial regulations on the auditing and rendering of accounts. The Community's accounts

and balance sheet for the 1958 financial year, as well as the Committee's report, have been submitted to the European Parliament and the Council of Ministers.

The documents relating to the 1959 financial year will probably be communicated to them in the course of the first half of 1961. In this connection, it should be pointed out that the Committee of Control was not set up until mid-1959.

As a general rule, the budgets and accounts reflecting the activity of the Commission in all fields are drawn up, implemented and audited in conformity with the provisions of the Treaty and the financial regulations. When necessary, and in cases where no corresponding financial regulations were available, the Commission has acted in line with the public accounting principles and practices which are current in the Member States.

2) *Working Budget*

A. *The 1960 Budget*

222. By virtue of the decisions taken by the Council of Ministers on 18 December 1959 and 21 June 1960 ⁽¹⁾, the amount of the credits opened for the Community's working budget for the 1960 financial year were fixed at a total of 444,647,000 B. frs., with the following breakdown amongst the different institutions :

— European Parliament	61,953,667 B. frs.
— Council of Ministers	59,597,500 B. frs.
— Commission	304,187,500 B. frs.
— Court of Justice	18,908,333 B. frs.

In the case of the Commission, the Council authorized the carrying-over of credits totalling 30,759,499 B. frs. from the 1959 to the 1960 financial year.

⁽¹⁾ "Journal Officiel" No. 9 of 16 February 1960 and No. 42 of 5 July 1960.

Of this amount, 28,360,069 B. frs. earmarked for the settlement of expenditure incurred in the course of the 1959 financial year had still to be paid at the close of that year, and the sum of 2,399,430 B. frs. went to swell the credits for the 1960 financial year.

Under the working budget for the 1960 financial year, the Commission therefore had a total credit of 306,586,930 B. frs. available to meet its own expenditure.

At the close of the 1960 financial year, expenditure commitments from these credits amounted to 251,677,691 B. frs. while payments effected amounted to 227,750,414 B. frs.

The major part of the credits available related to personnel expenditure. These "savings" are the result of the Commission's very cautious recruiting policy. Indeed, the Commission has made a point of engaging new staff only as and when the need for them became apparent and of applying stringent selection methods for each post to be filled.

B. *The 1961 Budget*

223. The working budget of the Community for the 1961 financial year, laid down by the Council of Ministers on 7 December 1960 ⁽¹⁾, totals 467,540,300 B. frs. The breakdown of these credits as between the different institutions is as follows :

— European Parliament	77,267,333 B. frs.
— Council of Ministers	66,306,000 B. frs.
— Commission	306,975,300 B. frs.
— Court of Justice	16,991,667 B. frs.

Although the credits opened for the Commission under the working budget concern only the administrative expenses incurred in

⁽¹⁾ "Journal Officiel" No. 9 of 7 February 1961.

its capacity as central administration, their volume is nevertheless directly affected by the development of activities in all sectors of research, in particular by the establishment of the Joint Research Centre at Ispra in the course of the 1960 financial year.

The policy of rationalization adopted by the Commission, bearing particularly on the structure of the headquarters departments, has nevertheless made it possible to impose very strict limits on the increase in credits, a fact which is illustrated in the first of the two graphs annexed to this report, showing for each budgetary year since 1958 :

- the amount of credits opened;
- the amount of payments made for each financial year, i.e., the actual budgets in comparison with the estimates;
- the amount of personnel credits per financial year;
- the amount of personnel expenditure per financial year.

This graph, showing the trends in credits and expenditure, does not however give a complete picture of the effects of the rationalization policy: thus, the distribution among the different grades of personnel underwent far-reaching changes as between the 1960 and 1961 budgets, leading to a cut in the number of grade A staff, despite the fact that the Official Spokesman's Office was incorporated in the new organization table from 1 January 1961 onwards.

3) *Research and Investment Budget* ⁽¹⁾

224. At the time when the research budget for the 1960 financial year was drawn up, the Commission had hoped that the first of the Joint Centre establishments could be brought into operation as early as the end of 1959 or the beginning of 1960, and had accordingly made provision in the budget for the initial credits necessary for its

(¹) 1960 Budget, "Journal Officiel" No. 10 of 18 February 1960.
1961 Budget, "Journal Officiel" No. 10 of 8 February 1961.

installation, as well as for the resources earmarked for the launching of the research programme.

In actual fact, the agreement signed on 22 July 1959 between the Government of the Italian Republic and the Commission did not come into effect, after ratification by the Italian Parliament, until 31 August 1960.

Furthermore, the negotiations with other Member States with a view to the setting up on their territory of other Joint Centre establishments did not require any money to be spent in 1960.

While forcefully pursuing the development of its contract policy, the Commission nevertheless prepared and arranged for the installation of the Ispra Centre as a Joint Centre Establishment in the course of the second half of 1960.

225. This situation is reflected in the results for the 1960 financial year.

Although it was not possible to make a start on the construction work at Ispra until the end of the year, local expenditure commitments had been entered into to the tune of 2,165,442 EMA units of account, while 88,454 EMA units of account had been paid out as at 28 February 1961.

These figures show that the Commission has made every possible endeavour to reduce the time required for the bringing into operation of the establishment by placing numerous orders for the initial equipment of the Ispra Centre, hiring scientific and technical personnel and training in Brussels teams of research workers who are gradually being sent to take up the duties for which they were hired.

The amount of the budgetary commitments for which provision was made in the 1960 research and investment budget had been fixed at 50.38 million EMA units of account.

The expenditure for which commitments were undertaken in the 1960 budget amounted to about 30.7 million EMA units of account, with the following breakdown :

	EMA u.a.
1. Personnel expenditure	3,320,366.58
2. Infrastructure, laboratories and minor equipment for the Joint Centre (the establishments themselves and associated establishments)	10,163,840.50
3. Contracts placed in the Community countries	6,389,117.70
4. Agreements and contracts entered into with non-Community countries, international organizations or nationals of non-Community countries	9,967,545.28
5. Documentation expenditure	651,384.56
6. Training expenditure	223,453.90
7. Miscellaneous expenditure	20,454.62
	30,736,163.14

226. In line with the provisions of the Treaty, the Commission intends to carry forward, unless the Council of Ministers decides otherwise, the credits necessary for meeting the regular commitments, as well as a part of the payment authorizations not yet used up.

It also intends to avail itself of an unused sum of 4,250,000 EMA units of account which was appropriated for 1960. This commitment was originally earmarked for activities which were intended for 1960, but for which no credits were called up in 1961.

A second graph appended to the Report as well as showing the trends in budgetary commitments and payment authorizations and the personnel structure to date, also outlines the developments planned and authorized for 1961.

From the more general angle, it should be stressed that the amounts needed to carry out activities already embarked upon, bearing in mind the target dates envisaged in each case, total about 165 million units of account.

II. Financial Operations

a) *Payment of Contributions by Member States*

227. In the course of 1960, the Commission noted some delays in the remittance of contributions by certain Member States. While this situation did not give rise to any actual difficulties, owing to the fact that certain budgetary expenditure had been postponed, it might in future lead to serious disturbances in the functioning of the various departments.

In order to remedy these shortcomings, the Commission's proposed financial regulations on the payment of contributions included the setting up of a reserve fund. The text finally approved by the Council of Ministers on 31 January 1961, in agreement with the Commission, no longer incorporates this clause for operations under the working budget, while the provisions applicable to the research budget are for the moment being held in abeyance. On the other hand, the financial regulations make provision for a procedure which the Commission considers to be both necessary and satisfactory, provided that the time-table for the payment of contributions is faithfully observed.

b) *The Unit of Account*

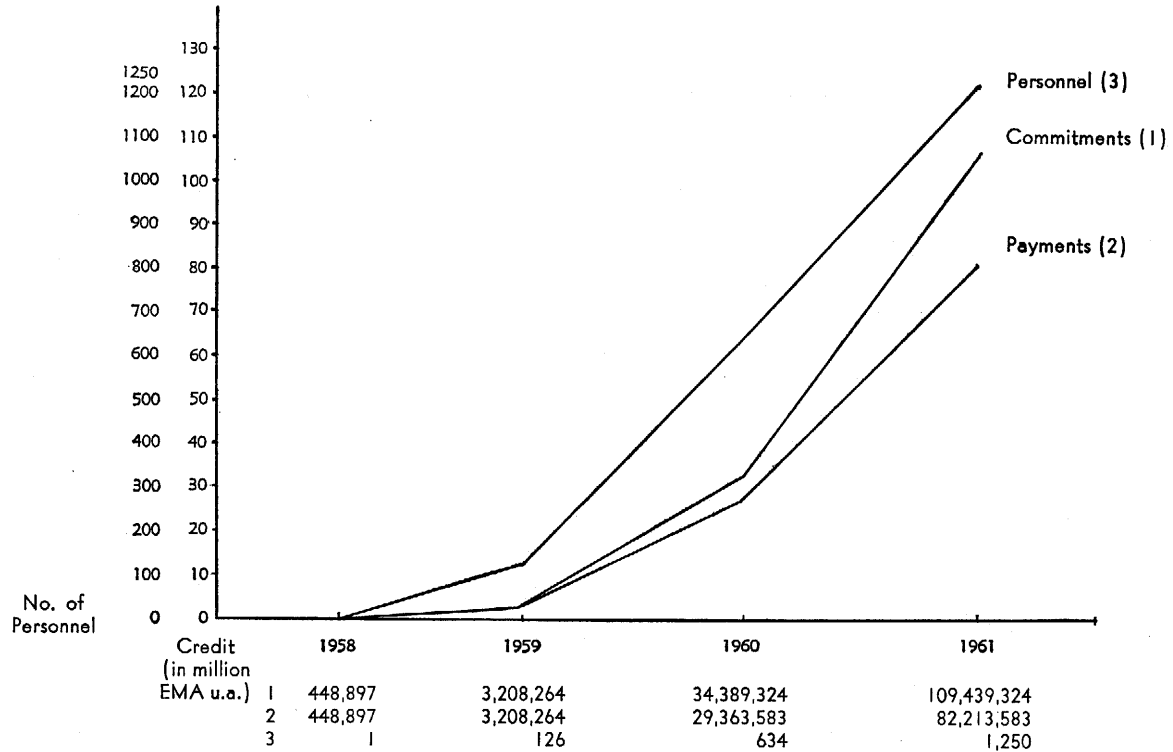
228. The financial regulations recently adopted by the Council of Ministers specify that the Community's working budget shall henceforth be drawn up in a unit of account, the value of which is laid down as 0.88867088 grammes of fine gold. In the case of a change in parity of one or several currencies in the Community in relation to this unit of account, the income and expenditure laid down in the budget and expressed in units of account are not automatically revalued, but the Commission shall submit to the Council of Ministers, within the two months following the change in parity, a preliminary draft amended budget for the purpose of readjusting the credits expressed in units of account, so as to maintain unchanged the volume of contributions provided for.

A similar provision is included in the proposed financial regulations for the implementation of the research budget recently submitted to the Council of Ministers.

This procedure which, on the technical level, acknowledges the need for ensuring the continuity of the activities for which provision is made in the budget in the case of currency fluctuations, signifies on the more general plane an attempt to unify the financial structure of the three Communities.

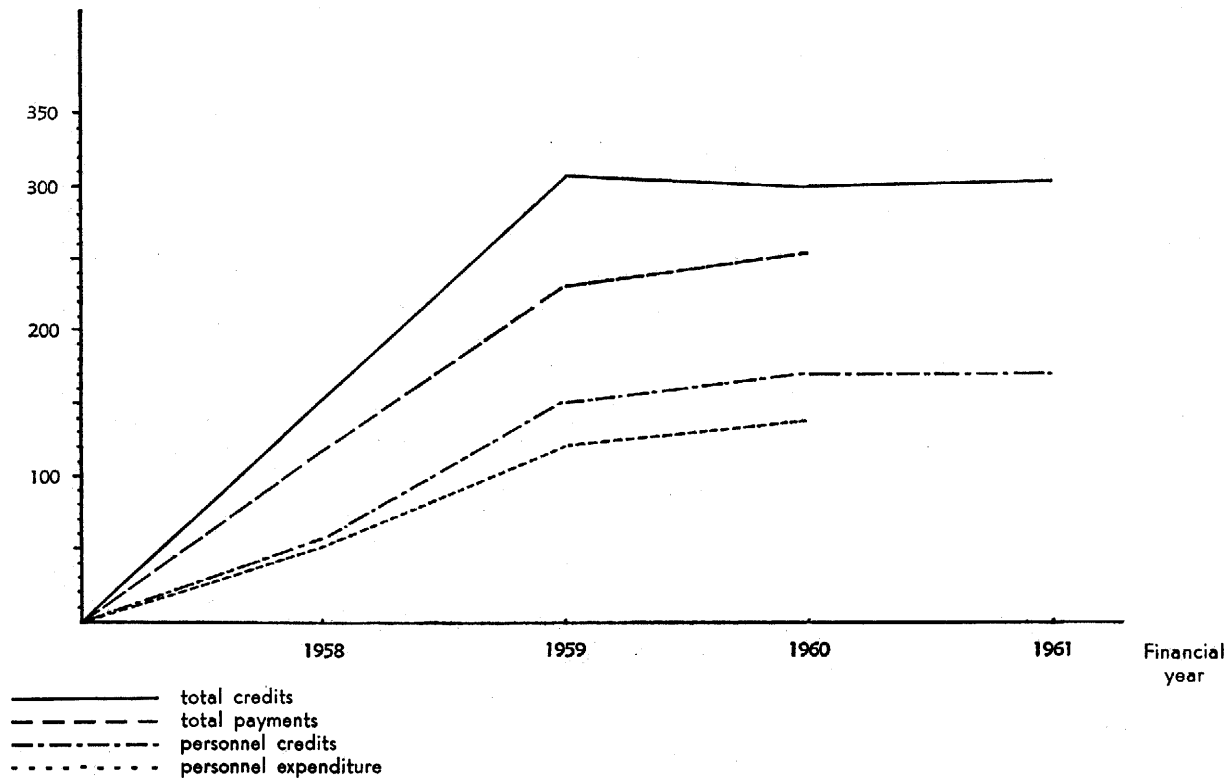
The recent revaluations of the Deutsche Mark and the Dutch guilder will provide an opportunity for ascertaining the effectiveness of the machinery described.

RESEARCH BUDGET



B. frs.
(millions)

WORKING BUDGET - SECTION III - COMMISSION



PUBLICATIONS DEPARTMENT OF THE EUROPEAN COMMUNITIES
2723/5/61/6