THE EUROPEAN COMMUNITY

PRESS RELEASE

EUROPEAN ECONOMIC COMMUNITY • EUROPEAN COAL AND STEEL COMMUNITY • EUROPEAN ATOMIC ENERGY COMMUNITY

Information Service Washington Office: Suite 808, The Farragut Building, Washington DC, 20006 • Telephone: 296-5131, Area Code 202 • Cable: EUROCOM • Telex: WN-065

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FOR IMMEDIATE RELEASE

EURATOM PUBLISHES TENTH ANNUAL REPORT
PROGRESS NOTED DESPITE BUDGETARY UNCERTAINTIES

WASHINGTON, D.C., June 28, 1967 -- The European Atomic Energy Community has definitely enriched Europe's technological knowledge in the "limited but important" nuclear sector, despite its budgetary uncertainties, according to Euratom Commission President Pierre Chatenet.

Mr. Chatenet and Euratom Commission Vice-President Antonio Carrelli presented Euratom's tenth annual report to the European Parliament on June 20. Mr. Chatenet praised Euratom's employees for their dedication to European ideals and thanked the Parliament for lending its influence and support to Euratom's work.

Euratom regulates the common market for fissile materials and nuclear instruments, while the European Economic Community controls petroleum and the European Coal and Steel Community supervises the common market for coal. This split of energy policy and the delay since 1965 in merging the executive branches of the three Communities imposed limitations on Euratom's work. Despite these difficulties and budgetary uncertainties, the Euratom Commission President said, Euratom has been able to report progress. "So many things could have divided us and did divide us, but our joint work was stronger. I once called that phenomenon the Community alchemy, since it is difficult to

find the juridical language to explain the complicated workings of our committees which are almost incomprehensable for anyone who has not lived through it on the inside."

Now, on the eve of the merger of the three executive branches, some employees will leave the Community, Mr. Chatenet continued, "taking much of this unique experience home with them. Because it will stay with them, they will continue working to build Europe. . . All of us have had the chance of a lifetime," he concluded. "We were there when a great event began."

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SUMMARY OF EURATOM'S TENTH ANNUAL REPORT

The need to secure access to new energy sources, vital throughout the world and particularly in the Community, led the Euratom Commission to foster and support the projects undertaken by enterprises and national bodies, without losing sight of the obligations imposed by international collaboration. These moves have assisted Europe to move into the nuclear industrial age under appropriate conditions.

The Euratom Commission based its policy on the assumption that nuclear energy would soon reach the industrial stage. The Commission:

- developed a vast research network;
- took pains to ensure full compliance with the special health and safety measures necessitated by nuclear activities;
- promoted the creation of a system of risk insurance compatible with the large-scale development of the nuclear industry;
- laid the foundations of a common supply policy and made the efficient services of the Supply Agency available to Community users;
- encouraged the development of activities having a technological bearing on reactor operation, especially by:
  - participating in power reactor projects which are still uncompetitive, thus giving the entire Community access to know-how acquired from experiments in the Community;
  - creating Joint Enterprises;
  - furnishing guarantees concerning the reactor fuel cycle;
  - studying the transportation of irradiated products and the processing and storage of radioactive waste;
  - disseminating scientific and technical information for the benefit of the Community, and introducing a semi-automatic documentation system;
  - concluding international agreements for the Community;
  - acting to supply natural uranium and special fissile materials; and
  - establishing the "nuclear" common market.

Despite these endeavors, much remains to be done, particularly in the area of technology proper, where it is essential to attain the full potential of fission energy.

On the eve of the merger of the Euratom Commission with the executive branches of the European Economic Community and the Coal and Steel Community, it is important to point out the Community's action (particularly the complete abolition of customs duties and quantitative restrictions on nuclear products since 1959) has not proved adequate to achieve the necessary concentration of industrial potential and specialization of industries. It has not modified the widely differing structures of these industries in the member states which are subject in varying degrees to the influence of the public authorities.

The Community's activities must be channeled towards this objective, bearing in mind that the nuclear field is not a separate sector but is intimately linked with conventional industry and especially with the large-scale electrical equipment manufacturing industry. All these industrial problems have been under study for some months now, with a view to amplifying both the March 1966 target program and the proposals submitted to the Council of Ministers in February 1967.

Concerning research, the Second Five-Year Program expires at the end of 1967. The Commission spent the second half of 1966 preparing its proposals for activities after January 1, 1968:

- to continue certain current lines of action, either in the same form and by similar means, or by other means and procedures;
- to modify the distribution of effort among the national and Community bodies responsible;
- to launch new activities commensurate with the evolving economic and institutional situation.

The Commission stresses that the Community's future tasks must be selected before the methods appropriate for executing them can be chosen. Any Community action program, it assumes, would retain the capital investments in the teams, laboratories, and equipment of the Joint Research Center as well as reinforce Community activities in the industrial field.

The nuclear sector has provided the first model for a joint research organization. Now there is a growing awareness that these efforts must be extended to other advanced technological areas to protect the Community's position as one of the world's industrial powers. The European Parliament shares this conviction.

Euratom's present situation is characterized by questions about industrial structure, nuclear research in the future, and the extension of its activities into other areas of advanced technology. As the Commission has emphasized in its earlier reports, the new unified Community institutions will offer the only means of tackling this difficult but essential task for the economic construction of Europe.

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THE DEVELOPMENT OF THE COMMUNITY'S NUCLEAR POWER INDUSTRY

More than 8,300 MWe[(1)] of nuclear capacity is now in service, under construction, or at the design stage. Of this total, nuclear power stations already in operation represent 2106 MWe and those under construction 2205 MWe. These figures show that the "Target Program's" objective of 4,000 MWe in 1970 easily will be attained. In addition, the plants under design represent a capacity of at least 4,020 MWe. The following table summarizes the position in MWe by country and degree of completion:

	Belgium	West Germany	France	Italy	Neth.	Community
Power Stations in Service	143	317	1039	607	-	2106
Construction Stage	-	618	1535	-	50	2203
Design Stage	1200	1520	700	600	-	4020
Total	1543	2455	3274	1207	50	8329

The Community total of 8,329 MWe can be compared with the 45,000 MWe capacity generally assumed for the world total nuclear power plants in the operating, construction or design stage. Apart from the growth planned for Great Britain, the upswing is particularly impressive in the United States, where the orders placed in 1966 were for 21,000 MWe and the total nuclear capacity will be close to 30,000 MWe in 1971-72. This trend will presumably call for a revision of the American long-term estimates.

As regards prospects established, Euratom's first target program, published in 1966, suggested a minimum of 40,000 MWe of nuclear power for 1980. The situation has developed so swiftly that this cautious assessment is likely to be exceeded. Indeed, in the light of the latest estimates issued by the national authorities, the 1980 nuclear capacity should be as follows:

	Belgium	West Germany	France	Italy	Neth.	Community
Mwe	4,000	25,000	17,000	12,000	2,000	60,000

A reasonable minimum estimate for 1980 can therefore be put at 60,000 MWe.

In spite of changes in circumstances since the target program was prepared, the Commission considers the respective roles to be played by the three generations of reactors (proven-type, advanced converter and fast reactors) still valid.

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(1) 1 MWe = 1,000 kW

The reactor construction industry is at present going through a period of regrouping and adjustment, which is tending to concentrate effort more satisfactorily but which is still not enough to reduce excessive dispersion, produce a wiser coordination of investments and overcome the fragmented market system. In order to demonstrate the industrial and economic viability of new reactor types, it is imperative to build a certain number of prototypes with the aid of the public arm -- whether national authorities or the Community.

Nuclear Research and the Joint Program

Future Policy

In February 1967, the Commission submitted to the Council proposals for Community activities when the second five-year program expires at the end of this year. These proposals take into account the technical progress, marked by the passage of certain reactor types into the industrial stage, and of the future development prospects for nuclear energy as outlined above. The program proposed for a five-year period (subject to revision during the third year) comprises:

1. Direct action, based on a joint program financed by the member countries as a whole, and carried out mainly by the Euratom Joint Research Center. This program includes, as regards the Ispra establishment, work for completion of the Orgel Project, the construction of a pulsed reactor (SORA), and research on the direct conversion of nuclear energy into electric power. As to the Center's other establishments, their present program should be continued.

2. Participation in certain national projects, consisting of financial aid or the making available of personnel or material.

3. The creation of an industrial promotion fund, ways and means for which are now under study.

The Research Program

Joint Research Center

Ispra — The Essor test reactor, constructed under the Orgel program, first went critical on March 19, 1967, under excellent conditions. Certain items of work in the Essor complex are now being completed. The physical chemistry laboratories are finished. In addition, the preliminary design for the Sora fast-pulsed reactor has been completed. As regards direct conversion, a converter built in association with the firm of Brown-Boveri/Krupp has been successfully tested in the Ispra I reactor.

Petten — The HFR reactor has been in normal operation, and has irradiated a large number of specimens on behalf of member countries. To improve its irradiation capacities, the power has been raised from 20 to 30 MWe.

Geel — The Central Nuclear Measurements Bureau, whose two accelerators (linear and van de Graaff) are in excellent working order, has continued its program of neutron data measurements, as recommended by the European-American Nuclear Data Committee.

Karlsruhe — The Transuranium Institute's work in the fast reactor field has included the manufacture of the composite fuel assemblies to be irradiated in the Enrico Fermi reactor, as also the elements for the Masurca critical experiment. The hot laboratory, shielded against gamma radiation and leaktight to alpha contamination, has recently been brought into service and will constitute one of the Institute's major tools.

Principal Research Projects

1. Orgel and heavy water reactors

The potentialities of a variant of the Orgel reactor with high specific power led the Commission to direct work in 1966 towards the problems that the construction of such a reactor would entail. A 250 MWe capacity reactor was chosen, i.e. approximating to a competitive first-of-its-line nuclear plant. The Commission has invited tenders from Community concerns for a detailed preliminary design along with firm offers to construct such a prototype, this invitation was published in the Official Journal.

2. High-temperature gas reactors

This category of advanced reactors has taken some notable steps forward in the past year. The Dragon reactor, having reached full power in April 1966, operated for several months with a temperature of 830°C at the core outlet. At the beginning of January 1967, the reactor started up at full power with its second charge, and the behavior of this second charge has so far proved very satisfactory. As for the THTR program, the first fuel elements for the AVR reactor at Jülich, delivered in 1966, enabled it to go critical in August 1966.

3. Fast reactors

While work went ahead most satisfactorily, the Commission was faced with difficult financing and organization problems. The rise in program costs that ensued after the revision of the Second Five-Year Program in the summer of 1965 raised problems which have not yet been solved. No decision has been taken on a new proposal for revision of the program submitted to the Council. Furthermore, it has proved

impossible to reach timely decisions in negotiations with certain contract partners. Thus the association contract with the Italian CNEN could not be extended when it expired on June 30, 1966. Though the financial ceiling for the association contract with the GfK (Karlsruhe) was raised to meet its needs, this was not possible as regards the association with the French CEA, which expired at the end of 1966 without any decision to continue it into 1967 -- although this did not prevent the mixed team at Cadarache from continuing their work.

As to the actual work, at Cadarache the Harmonie source reactor has been operating normally since the beginning of 1966, the Masurca critical assembly went critical on November 15, 1966, and the Rapsodie reactor went critical on January 28, 1967. At Karlsruhe, the Sneak critical assembly went critical on the same day as Masurca (November 15, 1966).

4. Thermonuclear reactions

The Commission's activities in the field of plasma physics and fusion continued normally under the association contracts with the CEA, CNEN, IPP, FOM and KFA. At a meeting at München-Garching, the liaison group linking these associations reported that the Community's position is satisfactory in comparison with the work outside the Community, and particularly with that in the United States. The group recommended a continuance of the projects on the present basis, and stressed the negative effect that any slackening of Euratom's effort would have on Community programs in this sector as a whole.

5. Biology

With the main pillars of the Community program firmly established, a special effort was made to develop a network to carry a greater flow of information towards the "applied" parts of the program, and thus bring the contractors into a real community of radiobiological knowledge. In this way, the individual potentialities of each laboratory were raised as was also their overall productivity.

6. Some statistics

In 1966, the Commission or its contractors or associates produced and published 502 scientific and technical reports, and published or presented at conferences 589 communications. They also filed 1,019 patent applications (51 of them initial applications in Euratom's name) and were granted 251 patents for invention.

Industrial promotion activities

Nuclear Power Plants

Most of the five power stations included in the Euratom-United States power program and in Euratom's participation program are now in operation. These

are the stations at Garigliano and Latina (Italy), Chooz (France-Belgium) and Gundremmingen (Germany). Construction work on the Dodewaard (Holland) power station is going forward normally. The power stations set up as Joint Enterprises -- Chooz, Gundremmingen and Lingen (Germany) -- have been joined by one at Obrigheim (Germany), the two last-named being under construction.

It should be noted that as part of its power reactor participation program, the Commission, in exchange for its financial participation, receives a regular flow of information and has thus been able to build up a "thesaurus" of technical data on the construction, testing and operation of the five power stations in question. This information is subsequently circulated by the Commission in the form of documents and at information meetings. Industrial circles display an ever-growing interest in the latter; and the information meeting held in 1966, on the single subject of Chooz, brought together 260 participants, representing 108 firms and organizations of the Community.

Industrial Use of Radioisotopes

In 1966, the Commission, through the Eurisotop Bureau, developed its network of contacts with a large number of laboratories, firms and industrial organizations. Among the very many industrial sectors concerned, we may take two by way of example. The iron and steel industry, owing to its special working conditions -- high temperatures and employment of large amounts of material -- is obliged to use delicate and complicated measuring and regulating methods. The use of radioisotopes has proved readily adaptable to these demands. For instance, it is a very good way of determining the oxygen content in steels. An activation analysis unit for this type of assay has been installed on the converter floor of a steel-works. In the textile industry, too, a major course of action has been embarked upon; some hundred practical radioisotope applications have been worked out, and will be submitted to industrialists at two public meetings.

Lastly, a scheme of broader scope, embracing chemical and pharmaceutical products, foodstuffs, wood-plastic combinations, etc., has been put into action. In this context, a mobile 175,000-curie irradiation source is to tour the Community countries this year, to demonstrate the value of irradiation methods in the most widely assorted industrial fields.

Dissemination of Information

In 1966, the Information and Documentation Center (CID) opened its semi-automatic documentation service to research workers at the Euratom Joint Research Center and, as its main customers, the principal nuclear documentation centers of the six countries. In order to realize the value of this service, one need only recall that the world volume of knowledge available on nuclear matters today is estimated at some 500,000 "data units" (articles, reports, books, etc.), and that this mass is growing by over 100,000 units a year. All this information has been stored in a computer memory, and is available to clients who wish to have access to it. With this "electronic library," the only one in the world, they can obtain the specific information required in an extremely short time and

in the form of complete reference lists. After an experimental period of a few months, it is intended to throw the semi-automatic documentation service open to all persons and enterprises within, and later outside, the Community.

Safeguards and Controls

As nuclear industrial activities have continued to expand, the apparatus and field of action of the Safeguards and Controls department have had to be extended correspondingly.

The bilateral agreements concluded by Belgium and France with the United States, and by Belgium and Germany with the United Kingdom, were not renewed when they expired; the substances imported by these countries will henceforth be covered by the Community system of external guarantees. As a result, Euratom has extended its control to these materials (those imported from the United States amount to over 7,500 kg. of enriched uranium and 400 kg. of plutonium).

Supply

The year 1966 saw a change in the trend of the natural uranium market. This market, which has been narrow for some years, showed a tendency towards growth, owing notably to the amending of the nuclear power plant installation estimates. In the United States and Canada there was a marked revival of prospecting and development of available resources; in the latter country, prospecting companies incorporating foreign interests have been set up for the first time. In South Africa, there are signs of a reversal of the trend; for whereas uranium was traditionally a by-product of gold, one firm has started mine prospecting in a region where gold would yield place to uranium.

As to the Community, the Commission observed with satisfaction that the prospecting effort recommended by it has undergone a marked expansion in Italy, France and Germany. Moreover, French enterprises are engaged in prospecting, more particularly in Equatorial Africa.

As regards enriched uranium, following the drawing up of standard contracts, the USAEC supply terms have been defined. It should thus be easier for Community users to obtain long-term supplies on reasonable terms. The Commission, for its part, has already prepared negotiations with the USAEC with a view to obtaining substantial additional tonnages from the American Congress.

Studies carried out by the Commission have shown that in the interests of assured energy supplies and of a nuclear industrial policy, the Community ought to have a large capacity isotope-separation plant at its disposal towards 1980.

Health and Safety

The Basic Standards have been more intensively and extensively applied in the member states as legislation on radiation protection has developed. With the broad volume of rules and regulations that have gradually been built up in the six countries, the situation is already on the whole satisfactory. Even so, the Commission is determined to discover any remaining gaps and, with this intent, it invited the Italian, Luxembourg, Dutch and Belgian governments to perfect their regulations.

Foreign Relations

Relations with the United States and the United Kingdom, in the context of the agreements for cooperation concluded with those countries, developed along regular and satisfactory lines.

As regards cooperation with the European Nuclear Energy Agency, it should be mentioned that the second extension of the Dragon agreement, up to the end of 1967, has come into force; a fresh extension to March 31, 1970 is at present before the Council.

Following upon the establishing of numerous technical contacts with the departments of the International Atomic Energy Agency, the Commission indicated that it would be glad to see these contacts placed upon a more official footing, having in mind a cooperation agreement which, inter alia, might bring a solution to the problems of control.

At the outset of 1967, the Commission was consulted by the Government of the United States on certain aspects of the draft treaty on the non-proliferation of nuclear armaments. The Commission immediately informed the Council and, in addition, pursued its contacts with the American authorities. In this context, two essential points should be made clear. First, the question of control of the fissile materials delivered to Euratom by the American government is explicitly regulated the Euratom-USA agreements; recognition of Euratom's power of control, as also the value and efficacity thereof, are matters of contract which cannot be amended otherwise than by contract. Secondly, the control thus recognized, since it is a Community control, cannot be modified except in accordance with the terms of the Euratom Treaty. This control is based on the principle of equality of rights, which is the very foundation of the European Communities, and applies to the peaceful use of fissile materials within the territory of the member states, whether or not these states possess nuclear armaments. This constitutes an application of the essential principle of non-discrimination. Consequently, any signature of a non-proliferation treaty by certain member states must not introduce factors of discrimination or diversion inside the Community through the wording of the control clauses in such a treaty.

This in no way rules out the possibility of concluding an agreement on technical cooperation between Euratom and the IAEA, by which the efficiency of control could be verified by scientific methods mutually agreed upon.

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