COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 11.11.1999
COM(1999)578 final

99/0232 (CNS)

Proposal for a

COUNCIL DECISION

adopting a supplementary research programme to be implemented by the Joint Research Centre for the European Atomic Energy Community

(presented by the Commission)

EXPLANATORY MEMORANDUM

1. On 27 June 1996, the Council adopted a four-year supplementary research programme to be implemented by the Joint Research Centre for the European Atomic Energy Community (1996 - 1999) concerning the operation of the High Flux Reactor (HFR) of Petten. This programme is therefore due to expire on 31 December 1999.

2. The present proposal for a decision presents a new four-year programme (2000-2003).

3. The High Flux Reactor (HFR) of Petten is operated by the Commission in accordance with the Euratom / Netherlands agreement of 25 July 1961. Under this agreement, on behalf of the Community, the Commission has committed itself to build the necessary facilities and to provide additional equipment in order to make "optimum use " of these facilities (including the HFR). This agreement was signed for a period of 99 years. In order to execute it, the two parties concluded a long lease for 99 years conferring a right *in rem* (bail emphyotéotique) on 31 October 1962.

4. HFR plays an important role, in the European Union, in medical research and applications, in materials research and in support to safe nuclear technologies.

   - The reactor produces isotopes necessary for more than 60% of the 10 million of medical diagnoses executed each year in Europe. Its qualities and reliability make it an indispensable device for all the European pharmaceutical companies in this field. Moreover, through its location in Europe, the reactor's production is rapidly directed to the European medical centres. This is essential for the most currently used short-life isotopes.

   - The closure of the HFR reactor could quickly lead to the monopolistic situation of a non European company. This fact would have major technical and financial consequences for the European Union: a reduced guarantee for the provisioning of short-life isotopes and a price increase that had to be supported by the social systems of the Member- States.

   - HFR is also used by an association of European centres working on a new treatment for encephalic cancers by using the BNCT (Boron Neutron Capture Therapy) techniques. This disease causes about 15,000 deaths a year in Europe. Only Japan, the United States and Finland have developed installations of the BNCT type.

   - The HFR reactor also supports other research: production of new isotopes, development of other technical BNCT-applications, research on new alpha-immuno-therapy products, studies on the materials for medical prothesis…

- Fundamental research makes use of neutron beams for the study of the material's structure. This activity is under permanent development and even leads to the construction of new reactors such as FRM II in Germany. In this frame, a unique European device for measuring the residual stresses in industrial structural components of up to one Ton was assembled in the reactor in 1998.

- Despite the decrease in R&D resources in the nuclear field, HFR remains very active in the safety of the existing reactors as well as for the development of future safer reactors. HFR contributes to the following programmes: reactors' ageing and life management, transmutation of nuclear waste in view of a better safety of waste storage, improvement of the fuel efficiency and safety.

- Fuel containing plutonium (Mixed oxides of U and Pu and high temperature reactor fuel) are studied in view of the elimination of military grade plutonium.

- The design and realisation of the future safer reactors are conditioned by the performance of several materials. These materials are tested in the HFR reactor.

5. Under the present supplementary programme that is drawing to a close, the HFR activities were essentially conducted through a co-operation between three partners: the Netherlands, Germany and France, which guaranteed its financing. Additional financing, which has steadily increased, came from external contracts and from its participation in Community programmes. The work programme was planned, therefore, to meet the requirements expressed under the terms of this co-operation.

   In the minutes of the Council meeting of 27 June 1996, the Commission declared that it confirms that the expression "participation in Community programmes" means that the HFR can contribute, on the basis of adequate financing, to the execution of Community programmes, whether or not in the context of the Framework Programmes. This participation will take place either on a competitive basis or by means of sale of irradiation services to JRC Institutes during the implementation of their respective activities.

6. In view of the new HFR programme, the Commission has engaged an assessment of the reduction of the operational costs of the reactor on the basis of a study involving all partners and supported by specialised companies. This has resulted in a series of internal reforms aimed at increasing the HFR's competitiveness without damaging either its safety, or its reliability.

7. In its financial statement, the appended proposal for the new supplementary programme mentions only the contribution to come from the three participating Member States. The establishment of formal contracts, to be drawn up with external partners, cannot take place until a legal basis exists. The Council's decision will constitute this legal basis.

This contribution from the three participating Member States for the new programme is of about 38.97 Mio€. This amount includes the contribution to the future decommissioning of the reactor.

8. A "HFR Users' Group" exists since 1998. The group is chaired by the Head of the HFR Unit and is made of experts nominated by the Dutch, German and French members of the JRC Board of Governors. It advises the Commission on the operation of the reactor and on the development of its future use.

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THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 7 thereof,

Having regard to the proposal from the Commission[1] submitted after consultation of the Scientific and Technical Committee,

Having regard to the opinion of the European Parliament[2],

Whereas:

(1) The development of nuclear medicine within the European Union contributes to the target of ensuring human health protection which the Union sets itself and which necessitates an increased use of Testing Reactors for medical purposes.

(2) Within the framework of the common policy relating to the field of science and technology, the supplementary research programme involving the high flux reactor (HFR) is one of the principal means available to the EURATOM RTDT fifth frame-work programme to contribute to the support and testing of medical diagnostic and therapeutic methodologies, to the development of materials sciences and to problems solving in the field of nuclear energy.

(3) The financial contributions to this supplementary programme will come directly from the Netherlands, Germany and France.

(4) In addition to these contributions, the HFR will receive funds from contracts with third parties and from its participation in the Community programmes on a competitive basis.

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HAS ADOPTED THIS DECISION:

Article 1

The supplementary programme on the operation of HFR, hereinafter referred to as "the programme", the objectives of which are set out in Annex I, is hereby adopted for a period of four years, starting on 1 January 2000.

Article 2

The financial contributions estimated as necessary for the execution of the programme amount to about 38.97 Mio€. The breakdown of this amount is given in Annex II. It includes the contribution to the future decommissioning of the reactor.

Article 3

The Commission shall be responsible for carrying out the programme through its Joint Research Centre. The Board of Governors of the Joint Research Centre will be kept informed about the implementation of the programme.

Article 4

The Commission shall each year, before 15 April, submit to the European Parliament, the Council, and the Economic and Social Committee a report on the implementation of this Decision.

Article 5

This decision is addressed to the Member States.

Done at Brussels,

For the Council
The President

ANNEX I

SCIENTIFIC AND TECHNICAL OBJECTIVES

The programmes' aims are primarily:

1. The safe and reliable operation of the high flux reactor (HFR) at Petten; this activity involves the normal use of the installation for more than 250 days a year, the management of the fuel cycle under the safety and quality controls.

2. The rational use of this reactor will be developed in a broad range of disciplines: the major Research and Development themes involving the use of HFR are illustrated by the following examples: the study of materials, the support of R&D work for the safety of the nuclear fuel cycle, the possibility to develop nuclear fuel devoted to weapon grade plutonium utilisation, the development of medical isotopes to answer the questions of medical research, the testing of medical therapeutic techniques.

ANNEX II

BREAKDOWN OF THE CONTRIBUTIONS

The contributions to this supplementary programme will come from the Netherlands, Germany and France.

The breakdown of these contributions is as follows:

The Netherlands:	34	Mio€
Germany:	3.77	Mio€
France:	1.20	Mio€
Total:	38.97	Mio€

FINANCIAL STATEMENT

1. TITLE OF OPERATION

Supplementary programme for the operation of the High Flux Reactor (HFR).

2. BUDGET HEADINGS INVOLVED

6221: Revenue from the operation of the HFR to be used to provide additional appropriations.

B6-443: Joint Research Centre - Operation of the HFR;[3]

B6-111: Joint Research Centre - Persons associated with the Institution (part);

B6-121: Joint Research Centre - Resources (part).

3. LEGAL BASIS

– Financial Regulation, Article 96(1)

– Proposal for a Council Decision adopting a supplementary research programme to be carried out by the Joint Research Centre (JRC) for the European Atomic Energy Community (2000-03).

4. DESCRIPTION OF OPERATION

4.1 General objective

The proposed supplementary programme concerns the operation of the HFR, facility at the Joint Research Centre in Petten, for the benefit of research projects in the Netherlands, Germany and France.

The essential aims of the programme are:

– Safe operation of the HFR; this activity involves the normal use of the facility for more than 250 days a year, the management of the fuel cycle, and safety and quality controls.

– Rational use of this reactor in a broad range of disciplines, including the production of isotopes and associated work; experimental irradiation of materials intended for fission reactors and future fusion reactors, application of neutrons in research on the physics of solids and materials science, neutron radiography as a non-destructive testing method and the treatment of certain forms of cancer using neutrons (BNCT) and associated research.

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[3] Heading proposed for the 2000 budget.

4.2 Period covered and arrangements for renewal or extension

The proposed programme is planned to last four years from 1 January 2000. Operation after that period will be the subject of a new proposal for an operation programme or the shutdown of the facility.

5. CLASSIFICATION OF EXPENDITURE OR REVENUE

5.1 Non-compulsory expenditure

5.2 Differentiated appropriations

5.3 Type of revenue involved

Revenue from services provided by the Joint Research Centre to outside bodies against payment.

6. TYPE OF EXPENDITURE OR REVENUE

Earmarked revenue from the Member States concerned will be entered, during 2000-03, under heading 6221 of the statement of revenue. This revenue will enable additional appropriations to be opened to cover expenditure on staff, resources and operational appropriations (ordinary operation, investments and contracts).

7. FINANCIAL IMPACT

7.1 Method of calculating total cost of operation (link between unit and total costs)

The total cost of the proposed operation was assessed taking account of:

- estimated staff costs based on the forecast mid-term economic trends in the host Member States of the JRC establishments, notably the Netherlands;
- estimated expenditure on resources (scientific and technical support and share of cost of general services);
- estimated trend of operational appropriations needed to carry out the planned programme (direct expenditure for operation, equipment and contracts).

As for previous supplementary programmes, no Community funds will be requested for the execution of this programme.

The three Member States concerned will contribute to the funding of this supplementary programme, either directly or via agreements with research bodies.

The indicative breakdown of contributions to the total cost is as follows:

– Netherlands €34 million

– Germany €3.77 million

– France €1.2 million

Total €38.97 million

7.2 Itemised breakdown of cost

EC (million euros, current prices)

Breakdown	2000	2001	2002	2003	2004 and thereafter	Total	
Staff	0.32	0.32	0.33	0.34	p.m.	1.31	
Support appropriations	9.00	9.27	9.55	9.84	p.m.	37.66	
of which:							
– operation of HFR	8.74	9.00	9.27	9.55	p.m.	36.56	
– other administrative and technical support	0.26	0.27	0.28	0.29	p.m.	1.10	
Total	9.32	9.59	9.88	10.18	p.m.	38.97	(1)

(1) This is the financial statement for the share linked to the participating Member States' contributions. Additional resources estimated at €31.8 million will be raised by providing services to third parties.

7.3 Schedule of commitment/payment appropriations

EC (million euros)

	2000	2001	2002	2003	2004 and following	Total
Commitment appropriations	9.32	9.59	9.88	10.18	p.m.	38.97
Payment appropriations						
2000	8.85					8.85
2001	0.39	9.11				9.50
2002	0.07	0.40	9.39			9.86
2003		0.08	0.42	9.67		10.17
2004 and thereafter			0.08	0.51	p.m.	0.59
Total	9.31	9.59	9.89	10.18	p.m.	38.97

8. PLANNED FRAUD PREVENTION MEASURES

Audit and internal control programme by Joint Research Centre officers, covering the scientific and budgetary aspects, internal audit by Financial Control, local inspection and audit by Financial Control and Court of Auditors. Control of the circulation of fissile materials is covered by Euratom and the IAEA.

9. ELEMENTS OF COST-EFFECTIVENESS ANALYSIS

9.1 Specific and quantified objectives; target population

The specific objectives of the programme are summarised in point 4.1 above (General objective).

The target population is the European scientific and industrial personnel involved, in particular, in energy research, reactor safety and the nuclear fuel cycle, and in the use of the HFR for medical purposes.

9.2 Grounds for the operation

– Need for Community financial aid

The Petten High Flux Reactor is operated by the Commission, under the Euratom-Netherlands agreement of 25 July 1961. This agreement, valid for 99 years, has no termination clause (in this type of contract, the consequences of termination are negotiated, on a case-by-case basis, by the contracting parties).

– Under this agreement, the Dutch, German and French authorities use the reactor to carry out their own research programme. A supplementary programme - funded mainly by the Netherlands - has proved to be the only appropriate legal means of covering this.

9.3 Monitoring and evaluation of the operation

The nature and frequency of the internal assessment process should enable the Commission to satisfy its obligations.

The quantitative and qualitative indicators and criteria used to assess the results of the programme will be determined for each project: the results will be reported to the members of the JRC Board of Governors and published in an annual report where possible.

In addition to an annual report devoted solely to the HFR (EUR 18714 EN, 1988), the Joint Research Centre publishes an "Annual Report" approved by its Board of Governors. The references of the 1998 report are COM (1999) 222 final and EUR 18704 EN.

10. ADMINISTRATIVE EXPENDITURE (PART A OF SECTION III OF THE BUDGET)

Not applicable.