II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DECISION

of 14 May 1973

adopting a research and training programme for the European Atomic Energy Community

(73/124/Euratom)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

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, submitted after consultation with the Scientific and Technical Committee;

Having regard to the Council Resolution of 17 December 1970 on the detailed rules for the adoption of research and education programmes;

Whereas in the context of the common policy in science and technology the multi-annual research and training programme is one of the principal means whereby the Community can contribute to the rapid formation and expansion of nuclear industries and also to the acquisition and dissemination of knowledge in the nuclear field;

Whereas the Community research and training programme is defined taking account of the undertaking of the Italian Government to take over, for the period from 1 March 1973 to 31 December 1976, the ESSOR complex, made available to it by the Commission under an agreement to be concluded between the interested parties in accordance with Article 6 (c) of the Treaty establishing the European Atomic Energy Community in order to carry out a research programme;

Whereas the Community research and training programme is defined taking account also of the undertaking of the Belgian Government to take over, for the period from 1 March 1973 to 31 December 1976, the cost of the Euratom staff made available to it for the BR 2 reactor under Article 6 (c) of the Treaty establishing the European Atomic Energy Community;

HAS DECIDED AS FOLLOWS:

Article 1

A research and training programme, composed of a joint programme and supplementary programmes, as indicated in Annexes I, II and III, is hereby adopted for a period of four years from 1 January 1973. The Annexes form an integral part of this Decision.

Article 2

The maximum expenditure and staff necessary for carrying out this programme shall be 137·75 million units of account and 1 226 staff for the duration of the programme.

The allocation of funds and staff, and the establishment of the scales of financial contributions from the Member States for supplementary programmes, are shown in Annexes II and III respectively.

The unit of account is defined in the Financial Regulation on the establishment and implementation of the budget of the European Communities and the responsibility of authorising officers and accounting officers.

Article 3

The programme defined in Annex I shall be subject to review at the beginning of the second year, in accordance with the appropriate procedures, and in the light of the decisions of the Paris Summit Conference.

Done at Brussels, 14 May 1973.

For the Council
The President
R. VAN ELSLANDE

ANNEX I

JOINT MULTI-ANNUAL RESEARCH AND TRAINING PROGRAMME AND SUPPLEMENTARY MULTI-ANNUAL PROGRAMMES

DIRECT PROJECTS

1. Handling and disposal of waste

Joint programme

A maximum of 6·9 million units of account shall be allocated to this objective, the number of staff being fixed at 75 (including a programme staff of 40).

The objectives shall include:

— basic studies on the separation of fission products from irradiated fuel by the 'Saltex' process;

— feasibility studies on a system of self-burying capsules for the disposal of radioactive waste;

— studies and research on the chemical separation of actinides from high-level radioactive waste;

— studies of physical measurements to determine the neutronic properties of actinides;

— theoretical studies to reduce actinide concentration in irradiated fuel by optimising reactor operation.

These activities will be conducted for the most part by the Ispra establishment.

2. Plutonium and Transplutonium elements

(a) *Joint programme*

A maximum of 13 million units of account shall be allocated to this objective, the number of staff being fixed at 126 (including a programme staff of 63). The research constituting the programme based on plutonium and its compounds shall deal with the following:

— phase diagrams, thermodynamic properties and structures of ceramic compounds of plutonium (carbides, nitrides and their combinations);

— energy transport processes (thermal conductivity and diffusibility);

— mechanical properties of ceramic compounds in their microscopic aspects and the effect of irradiation on these properties;

— processes and kinetics of material transport phenomena and the effect of irradiation thereon.

The irradiation required for these basic studies will take place in instrumented capsules.

In addition, certain studies will be carried out on determining the physical properties of certain very high purity actinides and their compounds.

(b) *Supplementary programme*

A maximum of 8·65 million units of account shall be allocated to this objective, the number of staff being fixed at 84 (including a programme staff of 42). Research for the programme of applied studies will deal with the following:

— the study of the behaviour of advanced fuels in a fast reactor;

— the development of the manufacture of samples of materials of this kind for irradiation;

— the analysis of irradiated materials and fuels in existing power plants;

— work required by the projects.

These activities will be conducted at the European Institute for Transuranium Elements in Karlsruhe.

3. **Material science**

Joint programme

A maximum of 8·5 million units of account shall be allocated for this objective, the number of staff being fixed at 89 (including a programme staff of 50).

The objective shall include:

— studies of lattice defects;

— studies of surface reactions (particle-surface interaction);

— studies of mechanical behaviour, fractures of metals and compound materials (mechanical properties and structure, physical properties, plastic deformation and fracture);

— studies of the physical properties of materials at high temperatures (solid and liquid).

These activities will be conducted by the Ispra Establishment.

4. **Reactor safety**

Joint programme

A maximum of 21·1 million units of account shall be allocated to this objective, the number of staff being fixed at 232 (including a programme staff of 115).

The objective shall include:

— engineering research connected with serious accidents and their prevention;

— research on thermohydraulic phenomena in the coolant associated with accidents;

— early failure detection;

— reliability studies;

— reactor dynamics.

These activities are to be conducted by the Ispra Establishment.

5. **Applied data-processing**

Joint programme

A maximum of 6·05 million units of account shall be allocated to this objective, the number of staff being fixed at 51 (including a programme staff of 31).

The objective shall include:

— computer programme library activities for the Community (collection, testing and analysis of computer programmes, consultation on their use);

— studies of an integrated system of documentation and automatic translation;

— assistance in computer systems and methods (Caronte modular system, special programming language for experimental mathematics).

These activities will be conducted by the Ispra Establishment.

6. **Information Analysis Centre**

Joint programme

A maximum of 5·10 million units of account shall be allocated to this objective, the number of staff being fixed at 51 (including a programme staff of 27).

The objective shall include: three units for the compilation, analysis and distribution of scientific and technical information in the following fields:

— shielding of nuclear reactors (ESIS);

— integrated nuclear data (INDAC);

— structural mechanics connected with reactor technology (ESMIS).

These activities will be conducted by the Ispra Establishment.

7. **Central Bureau for Nuclear Measurements (CBNM)**

Joint programme

A maximum of 20·35 million units of account shall be allocated to this objective, the number of staff being fixed at 170 (including a programme staff of 92).

The objective shall include:

— determining basic neutron data;

— continuation of work in the field of nuclear metrology (measurements of radioactive elements, measurements of the isotopic composition of elements by mass spectrometry, calibration and standardization of methods of dosimetry);

— the preparation and definition of standard specimens and nuclear reference materials.

These activities will be the task of the Central Bureau for Nuclear Measurements at Geel.

8. **Technical assistance to nuclear power plant operators**

Joint programme

A maximum of 6·1 million units of account shall be allocated for this objective, the number of staff being fixed at 60 (including a programme staff of 23).

The objective is to consist of technical support in the following fields:

— water chemistry;

— in-pile inspection and operations;

— post-irradiation examination of fuel elements;

— methods of quality control for materials and components in stations, establishment of standard techniques, training of operators' personnel.

These activities will be undertaken by the Ispra Establishment.

9. **Training**

Joint programme

A maximum of 1·45 million units of account shall be allocated for this objective, the number of staff being fixed at 15 (including a programme staff of 10).

This objective includes three courses, at technical standard post-graduate courses and advanced specialized courses.

10. **Safeguards and management of fissile materials**

Supplementary programme

A maximum of 5·4 million units of account shall be allocated for this objective, the number of staff being fixed at 57 (including a programme staff of 27).

This objective includes:

— systems analysis;

— development of destructive and non-destructive techniques;

— study of fool-proof sealing and identification techniques.

These activities will be carried out mainly by the Ispra Establishment, in cooperation with establishments in the Member States.

11. **Contract research**

Joint programme

A maximum of 1·85 million units of account shall be allocated for this objective, the number of staff being fixed at 17 per man year (including a programme staff of 5 men per year).

This objective is intended to help make facilities or techniques available to outside parties for payment.

The staff carrying out these activities will be assigned to the Ispra Establishment.

12. **Management and coordination**

Joint programme

A maximum of 8·1 million units of account shall be allocated for these activities, the number of staff being fixed at 79 (55 of these being for the management itself).

This item covers activities of general management, coordination and management of the Joint Research Centre programmes, and certain investments of a general nature.

13. **Operation of the HFR reactor**

Supplementary programme

A maximum of 23 million units of account shall be allocated for this objective, the number of staff being fixed at 95.

It covers operation of the reactor and the planning, execution and supervision of experiments for the benefit of the programmes of the participating States. Surplus capacity can be made available to outside parties for payment.

This objective will be carried out at the Petten Establishment.

14. **Use of the Ispra I reactor**

Joint programme

A maximum amount of 2·2 million units of account shall be allocated for this objective, the number of staff being fixed at 25 (including a programme staff of 15).

It covers operation of the reactor and its use for programmes to be carried out by the Ispra Establishment (in particular: handling and disposal of waste, information analysis centres, environmental protection, standards and reference substances).

ANNEX II

TABLE OF STAFF AND MAXIMUM EXPENDITURE

Objectives	Joint programme		Supplementary programme			Total (in millions of u.a.)
	Amount (in millions of u.a.)	Staff	Amount (in millions of u.a.)	Staff	Partici-pating countries	
DIRECT PROJECTS (JRC)						
Nuclear projects						
Handling and disposal of waste	6·900	75				6·900
Plutonium and transplutonium elements	13·000	126	8·650	84	B/G/F/L/ N/Irl/ D/UK	21·650
Material science	8·500	89				8·500
Reactor safety	21·100	232				21·100
Applied data processing	6·050	51				6·050
Information analysis centres	5·100	51				5·100
Central Bureau for Nuclear Measurements (CBNM)	20·350 (1)	170				20·350 (1)
Technical assistance to nuclear power plant operators	6·100	60				6·100
Training	1·450	15				1·450
Safeguards and management of fissile materials			5·400	57	B/G/I/L/ N/Irl/ D/UK	5·400
Contract research	1·850	17				1·850
Management and coordination	8·100 (1)	79				8·100 (1)
Operation of the HFR reactor			23·000	95	B/G/N	23·000
Use of Ispra I reactor	2·200	25				2·200
Total	100·700	990	37·050	236		137·750
Total joint programme + supplementary programmes	137·750	1 226				

(1) Including certain investments.

ANNEX III

DEFINITION OF THE SCALES FOR FINANCIAL CONTRIBUTIONS FROM MEMBER STATES FOR THE SUPPLEMENTARY RESEARCH PROGRAMMES AND EURATOM INVESTMENT

I. Scales based on 'relative shares'

— Plutonium and transplutonium elements — Safeguards and management of fissile materials	The scale applied corresponds, for each financial year, to the scale resulting from the 'relative shares' of the participating Member States being increased in proportion to the 'relative share' of the Member State (or States) which does (or do) not participate in the programme in question, except that for the new Member States the reduction coefficients provided for in Article 130 of the Accession Treaty are to be applied

II. Flat-rate scale (1)

— Petten (HFR)	Belgium Germany Netherlands	100%

(1) The details of participation in this project, particularly the scale of contributions and the duration of participation, must be adopted before 30 April 1973.