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# European Communities

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## EUROPEAN PARLIAMENT

# Working Documents

### 1978 - 1979

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8 December 1978

DOCUMENT 493/78

## Report

drawn up on behalf of the Committee on Energy and Research

on the proposal from the Commission of the European Communities to the Council (Doc. 355/78) for a decision adopting a research programme for the European Atomic Energy Community on codes and standards for fast breeder reactors (structural integrity of components)

Rapporteur: Mr P. VERONESI

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PE 55.942/fin.



By letter of 4 October 1978 the Council of the European Communities requested the European Parliament to deliver an opinion on the proposal from the Commission of the European Communities to the Council for a decision adopting a research programme for the European Atomic Energy Community on codes and standards for fast breeder reactors (structural integrity of components).

On 10 October 1978 the President of the European Parliament referred this proposal to the Committee on Energy and Research as the committee responsible and to the Committee on Budgets for its opinion.

On 18 September 1978 the Committee on Energy and Research had appointed Mr Veronesi rapporteur.

At its meeting of 29 November 1978 the committee considered the proposal and unanimously adopted the motion for a resolution and explanatory statement.

Present: Mr Normanton, vice-chairman and acting chairman; Mr Veronesi, vice-chairman and rapporteur; Mr Ansquer, Mr Brown, Mr Dalyell, Mr Edwards, Mr Fioret, Mr Fitch, Mr Fuchs, Mr Granet, Mr Lamberts, Mr Mitchell, Mr Hans-Werner Müller, Mrs Walz (chairman of the committee) and Mr Zywietz.

The opinion of the Committee on Budgets is attached.

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The Committee on Energy and Research hereby submits to the European Parliament the following motion for a resolution, together with explanatory statement:

MOTION FOR A RESOLUTION

embodying the opinion of the European Parliament on the proposal from the Commission of the European Communities to the Council for a decision adopting a research programme for the European Atomic Energy Community on codes and standards for fast breeder reactors (structural integrity of components)

The European Parliament,

- having regard to the proposal from the Commission of the European Communities to the Council<sup>1</sup>,
  - having been consulted by the Council (Doc. 355/78),
  - having regard to the report of the Committee on Energy and Research and the opinion of the Committee on Budgets (Doc. 493/78),
  - having regard to Article 7 of the EAEC Treaty,
  - recalling the Council resolution of 22 July 1975<sup>2</sup> on the technological problems of nuclear safety,
  - having regard to the agreement of April 1970 under which the Council set up the Fast Reactor Coordinating Committee (FRCC),
  - having regard to the decision of that committee setting up, in 1974, a Working Group 'Codes and Standards' (WGCS),
  - recalling its resolution of 17 February 1978 (Doc. 519/77) on the fast breeder option in the Community context - justification, achievements, problems, and action perspectives (rapporteur Mr Noe'), particularly paragraph 15 of that resolution,
1. Agrees that the objective of progressive harmonization at Community level of codes and standards ensuring the structural integrity of components of fast breeder reactors (LMFBR) is of considerable political and economic importance;
  2. Recognizes the validity of the Commission's approach which is principally aimed at laying firm technical foundations for the subsequent pursuit of the objective of harmonization;

<sup>1</sup>OJ No C233, 3.10.1978, p.4

<sup>2</sup>OJ No C 185 14.8.1975, p. 1.

3. Recommends that the indirect action programme should be systematically linked to action undertaken at national level;
4. Calls for the widest possible exchange of information within the Community on the progress and results of the programme;
5. Approves the role proposed by the Commission for the Fast Reactor Coordinating Committee, which would also act as Advisory Committee for the management of the programme;
6. Considers that studies of the problem should continue after the expiry of the period fixed for the programme, and that the implementation of the programme itself should be subject to annual scrutiny;
7. Approves the Commission proposal subject to the inclusion of the following amendment, pursuant to the second paragraph of Article 119 of the EAEC Treaty, and requests the Council to adopt the programme as soon as possible, so that it can be introduced from 1 January 1979.

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Proposal for a Council decision adopting a research programme for the European Atomic Energy Community on codes and standards for fast breeder reactors (structural integrity of components)

Preamble, recitals and Article 1 : unchanged

Article 2

The expenditure commitments required for the implementation of the programme are estimated at 5,825,000 EUA and the members of staff to be assigned to this project by the Commission is set at three.

Article 2

The upper limit on the expenditure required for the implementation of this programme is estimated at 5,825,000 EUA, in accordance with Article 10 of the Financial Regulation of 21 December 1977, and the members of staff to be assigned to this project by the Commission is set at three. These figures are purely indicative.

Article 3: unchanged

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<sup>1</sup>For complete text see OJ No. C 233, 3.10.1978, p.4

<sup>2</sup>OJ No. C 356, 31.12.1977, p.1

EXPLANATORY STATEMENTI. INTRODUCTION

1. On 12 September 1978 the Commission of the European Communities submitted to the Council a proposal for an indirect research programme on codes and standards for fast reactors (structural integrity of components).

The research programme covers a five-year period from 1 January 1979.

2. The proposed decision submitted for Parliament's consideration is designed to promote Community action aimed at harmonizing codes and standards governing the design, calculation, manufacturing and quality control of specific components for fast reactors on the basis of a classification, also to be harmonized, of these components according to their relative significance as regards safety.

3. This programme is in line with the Council resolution of 22 July 1975<sup>1</sup> on the technological problems of nuclear safety. Point 2 of that resolution is particularly relevant, as it refers specifically to the 'progressive harmonization of safety requirements and criteria in order to provide an equivalent and satisfactory degree of protection of the population and of the environment ..... and at the same time to assist the development of trade'.

4. The programme is also in line with the package of measures advocated by the Commission in its communication to the Council on the fast breeder option in the Community context - justification, achievements, problems and action perspectives (COM(77) 361 final) (Doc. 519/77, rapporteur Mr Noè).

The European Parliament was consulted on this communication and expressed approval of its broad lines in a resolution adopted on 17 February 1978.

Paragraph 15 of that resolution refers specifically to efforts towards harmonization at Community level of design, construction and safety standards.

5. As has been frequently pointed out, fast breeder reactors can extract 50 to 70 times more energy from natural uranium than traditional thermal reactors.

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<sup>1</sup> OJ No. C 185, 14.8.1975, p.1

This factor not only extends the lifetime of such energy resources almost indefinitely, but also represents a significant guarantee of independence, despite the limited available resources of uranium.

Clearly, all this presupposes that the power stations concerned will possess suitable technology for fast reactors, the reprocessing of fuel and the safe management of waste.

6. In the resolutions which it has adopted in support of the Commission's proposals in this sector, the European Parliament has explicitly expressed its political will that studies and research should be undertaken concerning the construction and operation of high-capacity fast reactors which are economically viable, and the equipment of reprocessing plants capable of supplying additional nuclear fuel (plutonium).

7. The system which various countries in Europe and elsewhere are working on is the LMFBR (Liquid Metal Fast Breeder Reactor), which today seems generally to be considered the most suitable in the light of knowledge already acquired and the guarantees of safety which it offers.

8. Numerous public and private companies are working on this system in the Community countries, sometimes in fruitful international cooperation under bilateral or trilateral agreements, etc.

9. A particularly important issue in economic and practical terms and at the level of plant safety is that of the codes and standards governing the design, construction, control etc. of the various components used.

These standards and codes must ensure the best possible conditions for the structural integrity of plants and their sound economic management.

10. Partly in order to attain these objectives, in April 1970 the Council set up the Fast Reactor Coordinating Committee (FRCC), which was divided into various working groups including the Working Group 'Codes and Standards' (WGCS).

The latter's terms of reference included:

- (a) drawing up a list of the codes and standards applied in the Community Member States;
- (b) defining the points of similarity and dissimilarity;
- (c) defining the fields in which additional theoretical or experimental data were required.

The purpose of this work is to define the technical basis for standards valid in all the Community countries.

11. The WGCS has concluded its work with the formulation, on the basis of the abovementioned study, of certain practical proposals which make up the research programme for 1979 - 1983, which the Commission has submitted to the Council in expectation of its rapid adoption.

12. This programme principally concerns the following areas:

- (i) manufacturing standards and quality control
- (ii) structural analysis and design calculations
- (iii) materials
- (iv) classification of components,

Its aim is to ensure, through the progressive adoption of unified codes valid for all Community countries, that

- (a) a component accepted by the standards authority of an individual State is accepted by all the other States;
- (b) a component used by an electricity board in an individual State is used by electricity boards in all the other States.

This would provide a wider choice of national and foreign manufacturing companies for the placing of orders for components.

## II. ASSESSMENT OF THE RESEARCH PROGRAMME

13. The programme proposed by the Commission and submitted for our consideration is based on the work of the Working Group 'Codes and Standards' of the Fast Reactor Coordinating Committee. The objective of the programme is to 'establish a firm technical basis upon which a progressive elimination of dissimilarities on codes and standards for components which are specific to liquid metal fast breeder reactors can take place'. This objective is undoubtedly valid and positive, in view of the fact that the fast breeder option has already been adopted.

14. The breakdown of the areas concerned (points (i), (ii), (iii) and (iv) of paragraph 12) is also acceptable, although the precise areas covered should be defined more clearly.

Short-term action under the programme providing for the engagement of highly qualified experts, and future action on experimental tests, concern important technical problems (which also affect the economic and public sector - see below).

However, in the light of the present situation in Europe, the four areas of study would appear to be of varying significance in determining the extent of intervention.

15. Consideration of the document prompts us to make the following observations:

in principle, the field of standards (Section I) possibly provides the most effective scope for Community action, given the European dimension of the fast reactor system.

Three conditions must be fulfilled if this action is to be completed satisfactorily and have practical results:

- a realistic selection must be made of the sectors involved;
- the Member States must make an effective contribution;
- provision must be made for a suitable technical and organizational system at Community level.

The concentration of European systems companies makes it essential that European firms capable of producing semimanufactured products and components (and, possibly, subsystems) should be enabled to do so on the basis of common standards for the manufacturing of such components, quality control and tests. In this way we can ensure that the fast breeder system is sufficiently competitive and promote, in the various countries, lines of specialized products which can be marketed throughout Europe. It is only natural

that a Community body should be responsible for work on standards governing components in fast breeder systems. Provided that the Member States cooperate fully, it may be possible to go further than the compiling of lists and comparison of different standards, with a view to drawing up practical proposals for the elimination of dissimilarities.

16. The work done under Section I is naturally closely linked with that under Section III. A European market for components and semi-manufactured products also requires a common set of standards in respect of materials (composition, chemical, physical and mechanical properties, etc.).

17. It is important to pursue the stipulated objectives with determination. It is not easy to predict the results of the action concerning 'structural analysis' (Section II). One thing is certain: the establishment and ratification of calculation codes for structural analysis and design calculations represent an essential part of the activities of a systems company or, at least, the development activities of such companies. Ownership of know-how may be an obstacle to cooperation. The Community, through its executive organs, should do its utmost to extend the field of cooperation.

18. Action under section IV should (probably) be entrusted to the Working Group on Safety.

19. A final consideration concerns the qualifications and number of staff required: the job of coordinating and synthesizing standards does not call for a large staff (although it does require more than the three persons proposed); however, it must be undertaken by qualified experts. We must ensure that the staff which the Community proposes consists of competent technicians and not of officials with no qualifications in this field.

### III. OBJECTIVES OF THE RESEARCH PROGRAMME

20. The progressive elimination of dissimilarities in codes and standards for specific components of sodium cooled fast breeder reactors will be a long process which, in practice, will last until these reactors are first placed on the market. The timely harmonization of codes and standards, with a view to the marketing of components, will remove a potentially serious obstacle to intra-Community trade in components and exchanges of technicians specialized in their manufacture.

21. The technical assessment of the dissimilarities to be eliminated should therefore commence forthwith, although we must be particularly careful not to 'freeze' codes and standards too soon, as the technology of sodium cooled fast reactors will continue to evolve and progress for several years to come.
22. The Commission proposal concerns itself with highly technical problems and points out that the legal consequences in the various countries will only become clear following the assessment and comparison of the technical bases employed.
23. The abovementioned objectives imply a certain level of technical harmonization without, however, imposing any kind of obligations, which would be premature in the present context.
24. The Commission proposes that the programme should be implemented mainly through contracts with industry (reactor design and construction companies, component and materials manufacturers, and electric utilities).
25. The total cost of the programme, which is to last five years, is estimated at 5.825 m EUA.

The Commission proposes that the Fast Reactor Coordinating Committee should act as Advisory Committee for the implementation of the programme. It should be pointed out that this programme covers a field which has never, neither directly nor indirectly, been the subject of a Community programme.

#### IV. CONCLUSIONS

26. The action proposed is important and must be backed up and properly managed. Sections I and III appear to offer by far the best chance of immediate, positive cooperation. Effective means must be concentrated in these areas without delay, in order to facilitate the creation of a European market for semimanufactured products and components for fast reactors.
27. We must establish that the Member States wish to proceed in this direction and, moreover, that the resources granted by the Community in this sector are sufficient.
28. A project which provides for the expenditure of approximately 6 m EUA over five years may be judged in two ways:
  - (a) it is either excessive for a superficial action,
  - (b) or it is a suitable amount which, however, will have to be progressively increased, specifically with a view to harmonizing standards governing the manufacture, control and testing of semimanufactured products and components for the European fast reactor system.

29. As fast reactor technology is at a stage of rapid development (above all as regards the construction of high capacity reactors), the study of codes and standards must continue well beyond the period stipulated in the programme. There is therefore a need for a strict annual check on its implementation and ways of bringing it up to date.

30. In conclusion, the research programme proposed by the Commission meets real Community objectives as regards both the harmonization of standards and the opening of the components market.

31. Despite the modest financial resources involved, the programme is important and represents a new departure. This is the first time that the Commission has proposed a research programme aimed at harmonizing components for nuclear power stations.

32. In the specific field of fast reactors, the fruit of a technology in which various Member States are world leaders, the Commission proposal appears particularly opportune and far-sighted.

33. It has to be recognized that the programme proposed by the Commission is designed to supplement a sound basis for action formed by effective contributions by the Member States. This explains the relatively modest financial resources required for this Community programme.

34. In view of the above considerations, our committee recommends the approval of the research programme and the proposed decision submitted by the Commission, subject to the inclusion of the amendments to Article 2 of the proposed decision, pursuant to the second paragraph of Article 119 of the EAEC Treaty.

OPINION OF THE COMMITTEE ON BUDGETS

Letter from the chairman of the committee to Mrs WALZ, chairman of the Committee on Energy and Research

Brussels, 30 November 1978

Subject: Proposal for a Council decision adopting a research programme for the European Atomic Energy Community on codes and standards for fast breeder reactors (structural integrity of components) (Doc. 355/78)

Dear Mrs Walz,

At its meeting of 29/30 November 1978<sup>1</sup> the Committee on Budgets considered the abovementioned proposal for a decision, which aims at establishing a technical basis for the progressive elimination of disparities in codes and standards for fast breeder reactors.

This research programme forms part of the measures being taken to promote the nuclear industry and ensure the greater safety of nuclear plants. The cost of this programme, which is to be carried out over the five-year period from 1979 to 1983, is estimated at 5,825,000 EUA, of which 446,000 would be imparted to the 1979 budget. As far as its objectives and costs are concerned, this programme would have readily met with the approval of the Committee on Budgets, if the following facts had not emerged from a study of the accompanying financial statement:

- the relevant budget line cannot be item 3366 as indicated in the financial statement, since in the 1979 budget this item relates to 'climatology';
- there is no mention of a research programme on codes and standards for fast breeder reactors either in the 1979 draft budget or in the preliminary draft submitted by the Commission.

When the secretariat of the Committee on Budgets made inquiries to the relevant Commission departments it learned that

- the relevant budget line was a new budget item 3367;
- this item had not, however, been entered, since the draft decision had still to be finalized at a stage when the preliminary draft budget had already been drawn up and submitted;

- with regard to the financing of the programme for 1979, it is proposed to await a favourable decision from the Council before asking for the new item to be entered in a letter of amendment or supplementary budget.

In these circumstances the Committee on Budgets can only deplore the Commission's attitude, point to the lack of care in drawing up the preliminary draft budget and stress yet again how totally dependent the Commission is on the Council's decisions.

Since, at least for the present, the committee has received no request for the financing of the programme, it will defer delivering its opinion until such time as an amending or supplementary budget is actually submitted. It is, however, extremely regrettable that just as the budget is being adopted, amendments to it are already being contemplated in the form of supplementary budgets which run counter to the principles of completeness and budgetary transparency constantly being advocated by the Commission itself.

Furthermore, since the proposal for a Council decision includes an Article 2 referring to the expenditure commitments required for the implementation of the programme, it would in any case be essential, if a favourable opinion is to be delivered, for the Commission to delete this article or amend it to read as follows:

'The upper limit on the expenditure required for the implementation of this programme is estimated at 5,825,000 EUA, in accordance with Article 10 of the Financial Regulation of 21 December 1977, and the number of staff is set at three. These figures are purely indicative.'

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(sgd.) Martin Bangemann  
Acting chairman

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<sup>1</sup>Present: Mr Bangemann, vice-chairman and acting chairman; Mr Croze, Mrs Dahlerup, Mr Dalyell, Mr Dankert, Mr Hamilton, Mr Nielsen, Mr Radoux, Mr Schreiber, Mr Scott-Hopkins, Mr Shaw and Mr Würtz.