

# research and technology

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\*\* THE FUTURE OF EURATOM AND MORE GENERALLY OF EUROPEAN RESEARCH was the subject of a wide-ranging and sometimes emotionally charged debate in the European Parliament at Strasbourg on 26 November 1969. When two oral questions were put by the Committee for Finance and Budgets and the Committee on Research and Atomic Problems respectively, ten members representing almost all the political groups in the European Parliament condemned the absence of any decision as to Euratom's future activities, a factor which for many months has been responsible for a climate of uncertainty about the future of the Joint Research Centre, the focal point of Europe's necessary nuclear, scientific and technological development.

Replying to the various speakers on behalf of the Commission of the European Communities, Mr Hellwig, Vice President, and Mr Coppé, Member of the Commission, laid particular stress on the political nature of the necessary decisions, which is why they will probably be raised at the summit meeting at The Hague on 1 and 2 December 1969, prior to the meeting of the Council of Ministers on research, scheduled for 6 December 1969.

The European Parliament passed a resolution stating that in its view the Commission's proposed multi-annual programme (see "Research and Technology" No. 15)

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constitutes a minimum programme anything less than which would be dangerous and consequently that no delay should be brooked in taking a decision on the subject.

- \*\* SIX EUROPEAN COUNTRIES have already replied to the Community's proposals for technological cooperation (see "Research and Technology" No. 30), namely, the United Kingdom, Switzerland, Norway, Denmark, Sweden and Spain, who have thus expressed their interest in principle in the scheme.

In the meantime, the Community Working Group on Scientific and Technical Research Policy ("Aigrain Group") is continuing its activities, not only in the fields of scientific documentation and researcher training and mobility, but also in the very important field of comparison of the Community countries' research plans and programmes.

- \*\* 2,054 SCIENTIFIC REPORTS for free circulation;  
690 SCIENTIFIC DOCUMENTS reporting research results which can be directly exploited by industry and whose distribution is therefore confined to the Members States and persons and firms in the Community;  
393 PATENTS taken out on inventions made by Commission research workers;

this was the sum of the activity of the Commission of the European Communities in the field of "dissemination of nuclear information" as at 31 July 1969.

- \*\* EUROPE MUST ADAPT ITS POLITICAL STRUCTURES TO A SITUATION WHICH HAS BEEN REVOLUTIONIZED BY THE INFLUENCE OF TECHNOLOGY, said Professor Michaelis, Director-General for Research and Technology in the Commission of the European Communities, during a symposium

("System 69") recently held at Munich with the theme of "Research in the Future". The development of research and technology in Europe is shackled by the inadequate size of the European states. Awareness of this fact has in recent years given rise to initiatives aimed at cooperation in particularly high-cost sectors (high-energy physics, nuclear energy, space, aeronautics, etc.), and some successes have been achieved in these sectors. But the limits to such cooperation in the absence of long-term agreements have soon become apparent; above and beyond sectorial activities, concluded Professor Michaelis, Europe must now work out an overall policy for technological research and development.

\*\* By way of preparation for the establishment of the next TARGET PROGRAMME FOR THE DEVELOPMENT OF ELECTRICITY OF NUCLEAR ORIGIN within the Community, the Commission of the European Communities has developed a number of instruments, including computer codes, which are briefly described IN AN ANNEX to the present issue.

\*\* THE SCIENTIFIC, TECHNICAL, HUMAN AND SOCIAL ASPECTS OF RADIATION PROTECTION (and in particular the application of the Basic Standards laid down by Euratom on this subject) will form the theme of a meeting, sponsored by the Commission of the European Communities, to be held in Brussels on 16-18 December 1969. This meeting will be attended by representatives of the principal sectors concerned - persons responsible for medical and physical safeguards in the chief nuclear installations in the Community, representatives of the control authorities, persons responsible for personnel training, industrial psychologists, ergonomics experts, representatives of employers and trade unions, etc.

\*\* CELL AND PLANT TISSUE CULTURES and their usefulness in radiogenetics and experimental mutagenesis formed the subject of a meeting of experts from the European Community, organized by the competent departments of the Commission. This meeting provided the opportunity for assessing the state of research in the field concerned, which could be applied in particular to speeding up considerably the agricultural selection process.

\*\* The Commission of the European Communities has recently published the following scientific reports in the Euratom Reports series:

- Second International Conference on Thermionic Electrical Power Generation (Stresa, Italy, 27-31 May, 1968), 1440p, EUR 4210, price BF 1,000
- Proceedings of the Meeting on Special Techniques and Materials for Semiconductor Detectors (Ispra, Italy, 1-2 October, 1968), 296p, EUR 4269, price BF 320
- Symposium on Two Phase Flow Dynamics (Eindhoven, Holland, 4-9 September, 1967), Vol. I: 1126p, Vol. II: 740p, EUR 4288, Vol. I + Vol. II: BF 1,500
- Ispra Nuclear Electronics Symposium (Ispra, Italy, 6-9 May, 1969), 402p, EUR 4289, price BF 600
- Panel Discussion on Future Trends in Physical Measurements and Nuclear Instrumentation (Ispra, Italy, 9 May, 1969), 64p, EUR 4290, price BF 85.

These reports may be obtained from the Publications Department of the European Communities, 37 rue Glesener, Luxembourg.

## Preparatory Work on the Next Target Programme for Nuclear Energy Development in the Community

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One of the measures designed to stimulate the development of the nuclear industry in the Community - in accordance with the latter's avowed aim (see "Research and Technology" No. 21) - consists in determining, for the benefit of industrial firms and utilities, the probable percentage of the foreseeable total electrical energy production accounted for by nuclear power plants.

For this purpose, the Commission is required by the provisions of the Euratom Treaty to publish "target programmes" for the development of energy of nuclear origin, taking into account a number of relevant factors which only a computer can combine quantitatively. For example, it is necessary:

- (i) to determine the contribution of the various types of conventional and nuclear power plants to the total electricity output in 1985, and even in 2000, taking into consideration the overall minimum cost and the optimum use of the fissile material and of the investments to be made;
- (ii) having done this, to determine the investments needed for the various types of conventional and nuclear power plants and for their components, and the investments relating to fuel and the various industries concerned, with due allowance for public R & D expenditure aimed at the development of new reactor types;
- (iii) to assess the sensitivity of future power plant construction (e.g., to variations in the specific capital costs of nuclear power plants or the fuel cycle, oil prices, the price of uranium oxide, separative work unit costs, etc.), with due allowance for the rate of conversion to present worth and for the technical and economic characteristics of the various reactors.

These various aspects of a problem which is clearly of a highly complex nature have formed the subject-matter of several study contracts awarded by the Commission of the European

Communities to different specialized bodies. The thing now is to put the instruments thus fashioned to practical use in drawing up the second "target programme" which the Commission is preparing concerning the estimated trend of the share which will be taken by nuclear energy in the Community's total energy output in the years ahead.