

‘The European nuclear crisis’ from L’Europe en formation (January 1969)


Caption: In January 1969, in L’Europe en formation, French leader-writer Francis Gérard describes the crisis dogging Euratom and analyses the reasons that led to the relative failure of plans for a European Atomic Community.

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The European nuclear research crisis

by Francis Gérard

Twelve years after its creation, are we about to say goodbye to Euratom and abandon European cooperation in research and technology?

At its meeting on 20 December the Council of Ministers of the European Communities reached a compromise that will keep Euratom in existence for the moment, but the serious crisis of recent years has not been resolved, and the Community's future, even in the short term, is still uncertain.

The EAEC was in difficulty right from the outset, but in the last three years it has become a serious bone of contention in Community circles and between the governments of the Six. Since 1965, member countries have had serious differences regarding the next Euratom budget. When the second five-year plan came to an end in 1967, the Council of Ministers was unable to reach agreement on the next five-year plan and managed only to adopt a one-year interim research budget.

On 28 November 1968 the Ministers of the Six, still unable to reach a decision on the future of Euratom, instructed an ad hoc committee of senior officials to work out a compromise and report back to them on 20 December. The compromise proposed in Brussels on that date appeared unacceptable to certain Member States. After a long and laborious discussion, and a determined intervention by Jean Rey, President of the Commission of the Communities, the Ministers of the Six responsible for science policy finally agreed on a stop-gap solution in the night of 20 to 21 December: in 1969, Euratom will have a research budget of 120 million francs for a joint programme; there will also be a supplementary programme — again with a budget of 120 million francs — for bilateral and multilateral research projects of interest to the five Member States taking part. (Only France will not be participating in the supplementary programme.)

The Council of Ministers has given itself until 1 July 1969 to adopt a new multi-annual research programme and to define the principles for coordinating industrial policy in the nuclear field. Europe thus has six months to determine whether it is capable of pursuing a joint endeavour in an advanced sector of technology or whether it will have to make do with a simple customs union limited to conventional agricultural and industrial products.

Why an atomic community?

Ten years ago, Euratom — established by the Treaty of Rome in 1957 at the same time as the Common Market — was considered a necessity. Since nuclear science and technology require close international cooperation, and since extensive resources are essential for research and development in this sector, most European countries were not in a position to engage in them on their own.

Moreover, since 1954, the European Organisation for Nuclear Research (CERN) has shown that nuclear research by international teams is perfectly feasible and yields excellent results. It has already built huge machines for research on fundamental particles and is planning a 300 GeV accelerator with a radius of over a kilometre. No European country could possibly find the necessary resources on its own.

Rather similar conditions exist in other fields of nuclear research, particularly thermonuclear fusion, where France and Britain have each made serious efforts on their own. International cooperation in this sector is now proving to be essential, and Euratom has concluded partnership contracts with national research institutes.

Other fields of nuclear research, where there is not such an urgent need for cooperation, are nevertheless proving more efficient when they engage in it. Work on transuranic elements is a case in point, as is research and development of organic-cooled heavy-water-moderated power reactors. The latter are the main focus of work at Euratom's joint research centre in Ispra, Italy, where international teams of scientists, engineers and technicians are proving remarkably cohesive. Fast reactors (particularly the Rapsodie reactor) are being

studied in cooperation with the French Atomic Energy Commission at Cadarache.

But research is not the only activity assigned to the European Atomic Energy Community under the Treaty of Rome. The EAEC is responsible for matters as varied as nuclear measurement and calibration (for the study of which it has set up an experimental facility in Belgium that is proving extremely efficient and valuable), radiation protection (where it has drawn up regulations in agreement with other international organisations), and the construction and joint operation of nuclear power plants. Euratom has helped to build several power plants, including one at Chooz on the Franco-Belgian border and two in Germany. Thanks to its close relations with the United States, it has been able to take an interest in reactor systems, particularly light-water cooled and moderated reactors, which have undergone relatively little testing in Europe, save in some partnerships between American and European companies. The Treaty of Brussels further assigned Euratom the role of supplying fissile material, and thus the task of ensuring that such material was not diverted for military purposes.

All of these activities, and others of less importance, require considerable financial means, which are contributed by the six Member States according to a scale that differs only slightly from the scale laid down for their contributions to the EEC. Because such activities need to be scheduled carefully over several years, five-year research plans were drawn up. The first, in the amount of 1 075 million francs, covered the period 1958–1962. The second, in the amount of 2 274 million francs, ended in 1967.

Table I. – Funds allocated to research and development in 1967 by the ‘Six’ (national programmes only), Great Britain and the United States.

Table

No common doctrine

As mentioned at the beginning of this article, there was lively discussion well before the 1967 deadline as to whether the Member States wished to continue this joint endeavour and provide Euratom with the financial means necessary to complete the projects under way and make a start on new ones. Various parties, especially the French authorities, have criticised Euratom for spreading itself too widely, not making rational use of its funds, and getting involved in matters that do not concern the Community and should be left to the Member States or their industrial firms.

Others accept the need for a certain amount of international cooperation but fear the establishment of an inefficient bureaucracy and the trend towards supranational authority. That trend is almost inherent in any activity based on joint research centres or jointly operated power stations, and certainly in the function of controlling the use of fissile material.

At its meetings in the summer and autumn of 1968, the Council of Ministers of the European Atomic Energy Community — which, since the merger of the executives, is no longer dealing with a specialised commission, but a single commission common to the three Communities (EEC, EAEC and ECSC) in which nuclear experts are drowned, as it were, in a sea of commissioners with more general economic or political knowledge — consequently adopted a rather sceptical attitude towards the future of Euratom. The communiqué issued after the 28 November meeting of Council, which had instructed the committee of senior officials referred to at the beginning of this article to discuss and propose an alternative programme, gave the committee the following brief:

- a) to ensure optimum use of the capacities of the joint nuclear research centre by means of joint programmes;
- b) to examine the possibility of using it for supplementary programmes, the costs of which would be borne by the countries involved;
- c) to make suggestions on using the existing facilities for new research and technology tasks.

At this meeting the French Minister for Scientific Research, Robert Galley, submitted a proposal restricting the future activity of the Atomic Energy Community to the following sectors:

- fast reactors, to be worked on at Cadarache and Karlsruhe, but not at Ispra;
- heavy-water reactors, especially the Orgel programme;
- high-temperature reactors, with continuing Euratom participation in the Dragon project;
- transuranic elements, especially plutonium;
- nuclear measurement and calibration;
- controlled thermonuclear fusion;
- biology and health protection;
- teaching and dissemination of knowledge

France said it was willing to continue supporting all these activities, but stressed that they would require only 35 % to 40 % of the current personnel of the Euratom research centres. The 20 December compromise does not propose a solution to this problem. Some concentration may be justified; but to determine whether it can produce the desired results, we need to look at the reasons for the relative failure of the European Atomic Energy Community.

Reasons for failure

To the best of our knowledge, this failure is due to the following factors:

1. The common market in nuclear materials and equipment has produced very limited results. In many cases, both public and private enterprises have preferred to use national products and facilities. (The OECD joint undertakings Dragon, Halden and Eurochemic are interesting exceptions, but they go beyond the scope of Euratom.) In other cases, firms have concluded agreements with American or British companies that supply most of the material and equipment. Conglomerates have been built up around General Electric and Westinghouse that dominate the European market and divide the Six's market in light-water reactors into two fiercely competing sectors.
2. Despite all the efforts to produce one, there is no common European energy policy, i.e. a common policy giving nuclear development in the six countries a place in an overall plan that takes account of the role of other energy sources. Yet a common energy policy is essential to the future of European industry, both nuclear and non-nuclear. An energy policy restricted to the atom makes as little sense as a common agricultural policy restricted to meat or cereals and totally divorced from the measures to be taken for milk or dairy products. Clearly, a multidisciplinary approach is required.

The Comprehensive report on Community nuclear policy, presented by the Commission to the Council of Ministers on 9 October 1968, expressly stated: 'The lack of an energy policy is one of the factors contributing to the slow development of nuclear energy. It is regrettable that nuclear power programmes are uncoordinated, since coordination would underline the contribution of nuclear power to the production of electricity. The resulting lack of cross-border cooperation among all the public and private sectors has impeded the creation of a genuine Community-wide market.'

3. With regard to personnel, supporters of Euratom complain that certain Member States, jealous of their sovereignty and their national interests, do not make a sufficient number of valuable researchers, engineers or technicians available to the joint centres and are thus contributing, consciously or unconsciously, to the

failure of the European Atomic Energy Community. The fact is that European nuclear cooperation is intergovernmental rather than supranational, so it continues to depend, in this area as in others, on the good faith of the national governments.

This remark does not directly address the issue raised by the French Minister during the meeting of the Council of Ministers on 28 November, namely the allegation that Euratom has spread itself too widely and is consequently overstaffed. But is it really so clear that confining Euratom to the tasks France is willing to leave to it would justify a reduction in staff?

In fact, there is still an enormous amount of work to be done if we wish to:

- a) build power stations equipped with cost-effective breeder reactors by the mid-seventies, with all the fuel and equipment development this entails;
- b) tackle the problem of controlled thermonuclear fusion seriously;
- c) decide quickly whether organic-cooled heavy water moderated reactors are economically viable.

Faced with these tasks, if we cut back on Euratom's scientific, engineering and technical staff, we simply run the risk of delaying the completion of these major projects, bearing in mind the need to update skills at all levels and retrain certain categories of workers and employees. Rather than reduce personnel, it would be better to increase the potential and performance of existing staff.

Besides, Jean Rey has stated that the Commission is against any lay-offs until such time as the Council adopts a multi-annual programme. So the issue is pending, at least until July 1969.

New tasks

In the light of these considerations, the three instructions given to the experts with a view to their report to the Council of Ministers on 20 December call for the following comments:

1. Optimum use of the joint centre's facilities is obviously desirable, but the criteria for judging what constitutes optimum use have yet to be decided.

Table

2. The 'supplementary programmes', whose cost is to be borne by the countries involved, could be of some use to the Community and the Member States in question, but only if they are part of an overall plan decided under a common energy policy.
3. The use of existing facilities for new research and development tasks suggests even greater dispersal, to the detriment of the requirements of a common energy policy (unless these are tasks, such as MHD, thermionic energy, industrial use of solar energy, and geothermic energy, that fall within that policy).

But is that the main issue? Euratom's importance was more economic and political than scientific and technical, although, of course, the latter aspects are far from insignificant. The organisation of the Six in the nuclear sector was intended to play an important part in:

- a) the supply of nuclear-generated electric power to Europe (such supply being integrated in the bodies responsible for implementing the common market in the EEC);
- b) the provision of teaching at a European university;
- c) the procurement of special fissile material (Pu, U-235, U-233) to the Member States in the framework of the common market;

d) the control of fissile material with a view to preventing its diversion for military purposes.

But none of that is mentioned in the new tasks entrusted to Euratom. If Euratom has never played an important part in the supply of electric power to Europe in the past, it will not do so in the future either. The creation of a European university — a project included in the Treaty of Rome and reaffirmed on many occasions (notably at the last summit meeting of Heads of State or Government in Rome in May 1967) — has not been undertaken, and seems unlikely to be undertaken in the near future. As for the procurement of fissile material, Euratom has been able to play only a minor role, since the Community as such does not own plutonium-producing reactors or uranium isotope separation plants. At most, Euratom has served as an intermediary between the United States and certain EEC Member States in ensuring the supply of plutonium and enriched uranium for industrial purposes, but the Council of Ministers does not seem keen to strengthen, or even maintain, this role.

As for the control of fissile material, some parties, particularly in Germany and the Netherlands, had thought that Euratom could play an important role with respect to the Treaty on the Non-Proliferation of Nuclear Weapons. Proposals to this effect had been made during the deliberations on the ratification of the Treaty in several countries, both signatories and non-signatories.

As we know, Germany has not yet ratified the Treaty, whose importance as a step towards controlled disarmament should not be underestimated, and France does not intend to sign it. The other Community countries are prepared to ratify it and seem willing to accept the sole control of the International Atomic Energy Agency in Vienna.

It is possible that the plans to have Euratom participate in the control function provided for in the Treaty of Non-Proliferation would have received more support from other governments if the Member States had presented a common front on this issue, and above all if the Community as such had conducted the negotiations, as it did for tariff levels in the Kennedy Round. Once again, the lack of a truly supranational structure has been detrimental to the European Community.

Bombs at rock bottom prices...

This lack of unity within the Community nuclear institution was blatantly obvious on 25 November, when it emerged in The Hague that Germany, the Netherlands and Britain had joined forces to develop uranium isotope separation — and thus enrichment to uranium-235 — using a centrifuge, at the very time when interested circles in Italy were advocating the creation of a gaseous diffusion separation plant, and in France they were studying the possibility of supplementing the Pierrelatte facilities by building a uranium enrichment plant for industrial purposes, also using gaseous diffusion.

So there is no common ground among the Six on major issues. What is more, some Member States prefer to join forces with countries outside the Community against other Member States and, without seeking authorisation from Euratom, award contracts to major industrial firms that do not belong to the Community and are only interested in exploiting certain industrial procedures. It is difficult to find more flagrant proof of the inadequacy of intergovernmental cooperation between States that retain their full sovereignty, and consequently, the freedom to act against the interests of the Community of which they are members. Those who opposed the supranational nature of the European Community are now suffering the backlash of their own policy.

The issue at the heart of the conflict is extremely important. The development of isotope separation using a centrifuge will not only make the more expensive separation procedure based on gaseous diffusion obsolete; it will have serious political consequences, because it will enable any country possessing uranium ore to manufacture uranium-235, and thus atomic bombs, at a much lower cost than if it were to use current plutonium or uranium-235 production processes.

The United States recognised very early on that the risk of the proliferation of atomic weapons would increase with the development of uranium enrichment by centrifuge. So it did everything possible to slow this development, even to the detriment of technical progress that could have proved beneficial in the production of uranium-enriched nuclear fuel.

The promoters of the group that will be exploiting the process are so aware of the risk of proliferation that the Netherlands Minister for Economic Affairs, L. de Block, declared after the 25 November meeting in The Hague that ‘the situation would be easier if the Treaty on Non-Proliferation entered into force in the near future’. The opposite is to be feared if anybody can easily manufacture or buy cheaply the atomic explosive known as uranium-235.

In short, given that no one is bound by the Euratom Treaty to pursue a common industrial development policy, and that large firms like Royal Dutch and Philips, who are among the leaders of the group in question, have almost unrestricted freedom of action in this field, the chances of achieving controlled nuclear disarmament are slimmer than ever. A European Atomic Energy Community with real powers could have had the opposite effect.

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