european community BACKGROUND INFORMATION

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BACKGROUND NOTE

EUROPE PLANS ITS NUCLEAR FUTURE

By 1985, the nuclear capacity of the original six members of the European Community should total at least 100,000 megawatts of energy. This will supply 33 per cent of the total electricity used in Belgium, France, Germany, Italy, Luxembourg, and the Netherlands. Nuclear energy would then cover ten per cent of the Community's total primary energy needs.

Ten per cent is the minimum objective proposed by the European Commission in its recently published Second Illustrative Nuclear Program for the Community.

The Community's energy policy is to provide reliable, adequate resources which are cheap and non-polluting. Nuclear energy satisfies all these conditions, the Program says.

Uranium deposits are plentiful and widely distributed throughout the world. Resources are to a large extent located in the Community, or under the control of Community undertakings. All stages in the processing of nuclear fuels can be carried out in the Community if the latter provides itself with a sufficient uranium enrichment capacity. Nuclear fuel also raises less difficult transport and storage problems than fossil fuels, the Program notes.

Competitive costs

The gap between the overall costs of electricity production in conventional and nuclear power plants has steadily diminished, until now the trend has actually been reversed -- firstly through the adoption of higher unit powers, secondly through the rise in the price of fossil fuels, which seems likely to continue.

Since it was first used for peaceful applications, nuclear energy has been subject to ever stricter regulations to protect man and his environment against radiation and radioactive contamination. The problem of the final storage of radioactive wastes is still the subject of depth study, as is that of thermal pollution by cooling water (which arises to a lesser degree where conventional power plants are concerned).

The medium-term task of these increasingly reliable and powerful nuclear power plants is to cover electricity needs demanding a high utilization factor at stable and even potentially decreasing costs. From this standpoint the nuclear capacity of the Six might be expected to exceed 150,000 MWe in 1985, the Program notes, adding that the European Commission has, however, preferred to fix the lower objective of 100,000 MWe.

Efforts required

The Program recommends that efforts must be made simultaneously in several directions, with the following main objectives:

1. Creation of a genuine common market in electrical engineering equipment for nuclear purposes.
2. Harmonization of criteria, particularly safety standards.
3. Re-organization of the electrical engineering and nuclear industries so as to form a few powerful transnational units.

4. Stimulation of the market by investment aid and the organization of demand at Community level.
5. Achievement of secure and stable nuclear fuel supplies.
6. Provision of detailed and frank information on the subject of nuclear energy to the general public.

At present the most technically and commercially developed type of reactor is the light-water enriched-uranium type, in its boiling water (BWR) and pressurized water (PWR) variants. A massive contribution to electricity production by high-temperature and fast reactors cannot be expected until after 1985, the Program says.

British entry

The Second Illustrative Program was designed for the Six. Community enlargement ought not, in the medium term, to modify the present Community's objectives as regards the production of electricity from nuclear sources, the Program says. But enlargement to nine countries will involve major changes of policy, due mainly to the "remarkable technological and industrial potential possessed by the United Kingdom."

Speaking on European nuclear policy to the British Nuclear Energy Society in London, recently, European Commission Member Altiero Spinelli said:

"Britain has been one of the pioneers of the nuclear industry in Europe. The enlargement of the Community now offers the opportunity for pooling British skills and experience with those acquired on the Continent as a means of achieving greater industrial success.

"In recent years a large number of joint projects have been launched in Europe. However, if the Community really wants the enormous expenditure on the nuclear industry to be effective, it must set up a very small number of trans-national industrial consortia.

"The European Commission at first tended to favor the formation of at least two large European nuclear companies, both including an important British stake. Since these companies would not be identified with nation states, competition on the European market would not be distorted by political pressures; it would be easier to liberalize public contracts.

"This remains true, but the European Commission appreciates the reasons which have prompted the British Government to encourage the formation of a single nuclear industrial grouping in the United Kingdom. The question is: whether it is advisable to stop at that. At least one powerful European group should be created, based on existing cooperative ties."

New reactors

Mr. Spinelli said that a "great step forward has already been taken in the field of fast reactors. When the fast reactor becomes a commercial proposition it should benefit from the impact of Europe's entire technical and industrial potential.

"Another vital project that would benefit from increased industrial cooperation is the high temperature gas reactor (HTR). It is time to plan the construction of one or more 1000 MWe reactors. However, a long-term view must be taken of this. The Commission would certainly not seek to deprive European industry of American know-how, especially if the major customers wished to avail themselves of it. Nevertheless, as in other fields, it would be a disaster if special bilateral agreements with American groups were to preclude European companies from cooperating among themselves. This would increase Europe's dependence and reduce its chances of improving its exports.

"The time is thus ripe for setting up a powerful industrial group linking the major companies which have acquired know-how in the HTR field. This could make bids to the electricity utilities (including the Central Electricity Generating Board), and could form a single European industrial partner for the United States.

"The Commission cannot alone decide to set up such a group. It can, however, offer its services as a mediator. Furthermore, the Commission feels that its proposals concerning the granting of financial aid from the Community for pre-commercial reactors would prove particularly suited to the construction of a 1000 MWe HTR."

Euratom

The Commissioner said that "given a new start, a reconstituted Euratom would be able to contribute effectively towards the success of the nuclear industry in the enlarged Community. The Euratom thermonuclear fusion program in which Britain has participated has proved fruitful, enabling coordination of the research activities of the member countries in this area. Over the next ten years the integration of these research activities will become more important as costs rise and fusion-reactor technology advances.

"The Joint Research Center (JRC) in common with the national research centers, has suffered from the decline in nuclear research requirements and the take-over by industry of reactor development. The Commission has proposed the reorganization of the JRC. It has also called for a halt to reactor development and the adoption of new programs in certain fields, such as the environment and material research.

"It will also be necessary to adopt a common policy towards environmental problems, especially on the control and elimination of radio-active waste and on the siting and design of nuclear power plants so that they do not cause pollution.

"A further important task of the Community will be to help ensure supplies of nuclear fuel. With regard to fuel enrichment, the Commission has proposed the formation of a joint undertaking. This would enable the industry to examine existing processes in all their various aspects (economic, technological, and political) before building a joint enrichment facility for the Community."