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- \*\* The Commission of the European Communities is alarmed at the advancing degradation of the ENVIRONMENT. It also recognizes the deep popular desire for the more pleasant living conditions that might go with a higher standard of living. These are the opening words of the chapter devoted to the environment in the general report on the activities of the Community in 1971 just published by the Commission. Extracts from this chapter are given in ANNEX 1.
- \*\* Thirteen years after the creation, in accordance with the terms of the Euratom Treaty, of basic standards for the PROTECTION of the HEALTH of workers and of the general public in the Community AGAINST THE DANGERS ARISING FROM IONIZING RADIATION, the principles necessary to ensure sufficient protection have been given legal form in all Community countries. This fact is noted by the Commission of the European Communities in a recently published summary of radiation protection legislation in force in the Member States of the Community. A short note on basic standards will be found in ANNEX 2.

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*The information and articles published in this Bulletin concern European scientific cooperation and industrial development in Europe. Hence they are not simply confined to reports on the decisions or views of the Commission of the European Communities, but cover the whole field of questions discussed in the different circles concerned.*

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\*\* The Commission of the European Communities considers that isolated national measures of ENVIRONMENTAL PROTECTION can only prejudice the attainment of the Community's aims, since they are liable not only to impede the free circulation of goods between Member States but also to increase the difficulties of reaching a joint environmental policy. This was recently restated in a reply to a written question from Mr Vredeling and Mr Seefeld, members of the European Parliament, concerning the LOWERING OF THE MAXIMUM CONCENTRATION OF LEAD PERMISSIBLE IN PETROL. Extensive extracts from the Commission's reply will be found in ANNEX 3.

\*\* In 1971 THE PRODUCTION OF ELECTRICAL ENERGY FROM NUCLEAR SOURCES IN THE COMMUNITY ROSE BY 25% as compared with 1970, totalling almost 18 thousand million kWh net, or 3% of the total energy production.

The mean utilization factor for the Community's nuclear power plants rose to 5,400 hours, a marked increase over previous years. A comparison of the operating results for different types of reactor shows a higher availability for light-water reactors. While the figure for natural uranium reactors (GCR) was 40-60% in 1971, it was 60-90% for enriched uranium reactors (BWR and PWR). At the end of 1971 a total of 21 power plants were in operation in the Community. Their total electrical output amounts to 3620 MWe net and represents 20% of the world's nuclear capacity. While natural uranium reactors still account for more than half the existing Community capacity, almost all the plants under construction will be equipped with light-water reactors, mainly of the PWR type, of which 22% will be units of more than 1000 MW.

The capacity due to be commissioned in 1972 will be large, totalling about 1900 MWe. Large units such as Stade (630 MWe), Würgassen (640 MWe) and Bugey 1 (540 MWe) will be connected to the grid. The net power at the end of 1972 will then be 5550 MWe, an increase of more than 50% as compared with the end of 1971.

\*\* The Commission of the European Communities is about to organize a study on COMMUNITY RESEARCH AND DEVELOPMENT PROJECTS ON SOFTWARE which might be carried out in the next few years. The work on software in the Working Parties on Scientific and Technical Research Policy (PREST) and Scientific and Technical Cooperation (COST) is at present limited to particular fields, such as medicine (medical supervision of the seriously and chronically ill), an experimental data-transmitting network and a program library. Although these projects have important software aspects, they fail to cover many of the problems raised by the increasing use of computers in various fields. It is therefore important to examine the main possible projects on basic software with a view to preparing a provisional programme of scientific and technical cooperation.

\*\* In connection with the medium-term programme for aid to coal research, NINE PROJECTS FOR TECHNICAL RESEARCH ON COAL were chosen by the Commission of the European Communities as suitable for Community financial aid. The Commission has just forwarded to the Council and to the Consultative Committee of the European Coal and Steel Community (ECSC) six memoranda on these projects, which relate to the following matters:

1. Conventional methods of driving roadways.
2. The control of the seepage of fire-damp.
3. The prediction and mastery of deformations in mine workings.
4. The reliability of winding ropes in high-output pits.
5. Tests of new refractory materials in coke furnaces with a view to increasing the capacity of coking plants.
6. The effect of the combined charging of dry and preheated coal on the coking plant market and the quality of cokes.
7. The upgrading of deads.
8. New methods of obtaining industrial chemical compounds from byproducts of the new coking processes.
9. The new products obtained by the fermentation of byproducts of coke manufacture.

The total figure for the aid proposed for these nine projects is 3,279,820 units of account.

\*\* The Commission of the European Communities has just arranged for a preliminary study on the ANTI-POLLUTION MEASURES IN THE RHINE BASIN, which will include an examination of the origin of the main pollutants and of the available information on their concentration and effects, together with an inventory and survey of current and planned national and international projects to combat the pollution of the Rhine and its tributaries.

\*\* General economic development, industrialization and technical progress, together with a rise in the standard of living, have led in the last twenty years to a RAPID GROWTH OF ENERGY NEEDS within the Community. This was pointed out by Mr Spaak, Director-General of the Directorate for Energy and Safety Control of the Commission of the European Communities, in a speech to the French National Economic and Social Committee (See "Industry, Research and Technology" No. 132).

The annual growth rate was 5.4% in 1950-55, 3.6% in 1955-60, 5.9% in 1960-65 and 6.4% in 1965-70, giving a mean for the whole period of 5.3%.

The gross internal energy consumption almost trebled over the same period, rising from 300 to 850 million tce.

At the same time the demand structure underwent radical changes, including the following:

1. A drop in the proportion of energy consumed at the primary stage to the benefit of transformed energy, which accounted for 92% of the gross internal consumption in 1970.
2. Varying growth rates in the different demand sectors: transport and industry are growing at a less than average rate, as opposed to the domestic sector, where consumption rose from 31 to 39% of the overall total.

\*\* In accordance with Article 41 of the Euratom Treaty, the Commission of the European Communities has just published its opinion of the project for the construction of a SNR FAST NEUTRON PROTOTYPE NUCLEAR POWER PLANT AT KALKAR (West Germany), which had been submitted to it by the "Projektgesellschaft Schneller Brüter GbR".

The SNR power plant will be the first large fast neutron power plant of the external-loop type, the other prototypes of the same generation - PFR (United Kingdom) and Phénix (France) being of the integrated type (see "Industry, Research and Technology" No. 30). Its net electrical power will be about 280 MW. The constructor and operator is the Kernkraftwerk Kalkar GmbH (KKK) Essen, whose shareholders are the electricity producers RWE, West Germany (70%), SEP, Netherlands (15%), and Synatom, Belgium (15%). Its industrial architect is the Consortium SNR-Bensberg-Köln, whose partners are Interatom, West Germany (70%), Belgonucléaire, Belgium (15%), and Neratoom, Netherlands (15%), with which is associated Luxatome, Luxembourg (1%).

\*\* The Commission of the European Communities has just ordered a study on the STANDARDIZATION OF GAS, PRESSURE AND LIGHT ENGINEERING APPARATUS in France and West Germany. It has been entrusted to the Commissariat français à la normalisation (Paris) and the Deutsche Normenausschuss (Berlin).

A similar study will probably be made during the year by the other Member States. The aim is to obtain a detailed knowledge of the existing situation in the various states, in order to be in a better position to assess the value of the reference to systems of standards prepared or harmonized at Community level.

\*\* The departments of the Commission of the European Communities are organizing a symposium on "The Radiation Pasteurization of Shrimps" in Ostend on 18 and 19 April 1972. It will be attended by the national fisheries authorities and the industrial bodies concerned. The reports presented will include the results of an intensive study at Community level on the technical and economic prospects of the use of radiation in the pasteurization of shrimps.

\*\* A CATALOGUE OF THE PUBLICATIONS OF THE EUROPEAN COMMUNITIES (Volume 1)

has just been published by the Office of Official Publications of the European Communities (Postbox 1003, Luxembourg 1).

ANNEX 1 p.1ENVIRONMENTAL PROBLEMS IN THE COMMUNITY

(extract from the Fifth General Report on the Activities of the Community, 1971)

The Commission is alarmed at the advancing degradation of the environment. It also recognizes the deep popular desire for the more pleasant living conditions that ought to go with a higher standard of living. Because of this the Commission took several steps in 1971 which merit brief mention.

First of all, the Commission decided that the work of its own departments concerned with protecting and improving the environment must be closely coordinated.

The Commission considered that protection of the environment should not be confined to suppressing the harmful effects of technical progress and, more generally, of economic and social activities, but should also aim at conserving the natural resources - which have already become, or will shortly be, rarities - and at the proper use of land, more especially to counter the harmful consequences of the increasing concentration of population in the towns, and, lastly, should guide future progress to meet, not simply in quantity but also in quality, the true needs of human beings.

An initial report on the Community's environment policy was drafted and was approved by the Commission by 22 July 1971 (see "Industry, Research and Technology; No. 109).



ANNEX 1 p.2

That report summarizes the Commission's reasons for intervening in the matter of environmental protection, states the aims of a Community policy on ecology, lists the legal and financial means by which the Commission can realize its aims and proposes a limited number of priority projects which, in the Commission's view, ought to be undertaken at once in order to arrest the spoliation.

The report was sent out to the competent government departments and the various business and professional circles concerned, both in the Member States and in the countries seeking membership, in order to elicit appropriate comments and suggestions. It was also sent for information to the European Parliament, the Council and the Economic and Social Committee.

In the course of these consultations it has already emerged that, whilst they agree that decisions concerning the environment should be taken at Community level, certain governments wanted to ensure that the necessarily lengthy process of establishing a Community policy in this field would not have the effect of delaying the adoption at national level of legal or administrative measures designed to protect the environment.

The Commission, whilst aware of the national authorities' legitimate concern to take certain protective measures without delay, is also anxious that the adoption of such measures at the national level should not make the delicate task of implementing a Community environment policy even more difficult and, in certain cases, jeopardize the aims of the Community.

ANNEX 1 p.3

In November 1971 the Commission therefore sent a letter to the Member States in which it expressed its wish to be informed by them of any measures they proposed to take regarding protection of the environment as soon as these are envisaged, and to be notified of the drafts of such measures. In the Commission's view this procedure, where it does not already exist, would allow it time to make any suggestion likely to speed up the preparation of joint solutions to the problem in question and in any case to prevent the introduction of measures likely to jeopardize the attainment of the Community's objectives.

In the light of the information and suggestions it receives during the consultations it is holding with the competent government authorities and the business and professional circles concerned, the Commission will submit specific proposals to the Council for the achievement of the objectives set out in its initial report.

The Commission will insist that all measures adopted for the protection and improvement of the environment must be based on the same criteria, keeping to the same principles and, where necessary, the same structures, regardless of the level at which they are applied, whether local, regional, national or Community. Within this common framework for reflection, judgment or action, the public authorities will be able to adopt and implement the necessary measures at the most appropriate level without any insurmountable difficulties and without stirring up conflict.



ANNEX 2 p.1THE PROTECTION OF THE HEALTH OF WORKERS AND OF THE GENERAL PUBLIC IN THE COMMUNITY AGAINST THE DANGERS ARISING FROM IONIZING RADIATIONS

Under the Euratom Treaty the Community was given the task of establishing uniform safety standards for the protection of the health of workers and of the general public against the dangers arising from ionizing radiation, and of ensuring their implementation. Having received the advice of a group of experts, the Commission of the European Communities has therefore prepared basic standards, which were laid down by the Council in its directive of 2 February 1959. They refer to the following matters:

1. The maximum permissible doses compatible with adequate safety requirements.
2. The maximum permissible exposures and contamination.
3. The basic principles underlying the medical supervision of workers.

These basic standards cover practically all aspects of the peaceful use of nuclear energy, and apply to the production, processing, handling, utilization, holding, storage, transportation and disposal of natural and artificial radioactive substances, together with any other activity which entails danger from ionizing radiation. They have their scientific basis in the recommendations of the International Commission for Radiation Protection (ICRP).

Since the basic standards are not directly applicable in every Member State and are not as effective as a mandatory directive in achieving the desired result, it has been left to each Member State to draw up adequate laws and administrative regulations

ANNEX 2 p.2

to ensure the observation of these standards. Following the establishment of basic standards, the Member States, while respecting uniform values and principles, first of all drafted the basic fundamental laws and then the decree necessary for their application. If the basic standards are effectively and permanently to fulfil their function as a compromise between the increasing use of nuclear energy and satisfactory protection of the health of workers and the general public, they will have to be periodically modified in order to keep pace with the progress of knowledge.

In order to strengthen protective safeguards, the basic standards have already been revised in 1962 and 1966, and a third revision is now in progress in the light of the practical experience acquired in the last thirteen years and of the latest scientific discoveries concerning radiation protection and radiobiology.

Since the use of nuclear energy for medical and industrial purposes is increasingly passing from the state to private enterprise, it is necessary to guarantee the future maintenance of the present very high level of safety.

The result of the laying down of uniform principles for effective protection against radiation in the basic Euratom standards at the beginning of a period of growing use of nuclear energy, and before the enactment of independent laws on these matters in the various Member States, has been that from the beginning there has been a measure of underlying uniformity in the national laws, even if their formal drafting has been affected by differences in administrative practice. In addition, the Euratom Treaty ensures an extensive harmonization of the

ANNEX 2 p.3

radiation protection regulations applying in the various Member States, which are required to communicate to the Commission the provisions concerning radiation protection which were applicable at the time the Treaty came into force, together with any subsequent projects. The Commission verifies that they incorporate its radiation protection principles, and at the same time formulates all the recommendations necessary in order to ensure harmonization of the existing provisions in the Member States.

Thanks to the provisions of the Euratom Treaty and to the above activities of the Commission, laws on radiation protection are now extensively harmonized. The basic Euratom standards are thus an example of the specific regulation of one form of environmental nuisance at supranational level.

Today, thirteen years after the creation of the basic standards, the radiation protection principles necessary to ensure sufficient health protection can be seen to be anchored in the laws of all the Community countries.



THE LOWERING OF THE MAXIMUM LEAD CONCENTRATION PERMISSIBLE IN PETROL

(extracts from a reply by the Commission of the European Communities to a written question from Mr Vredeling and Mr Seefeld, members of the European Parliament)

In the Commission's opinion, the provisions of the West German law concerning the maximum permissible concentration of lead in motor vehicle fuels, as laid down within a purely national framework, may have unfavourable effects on free trade within the Community in the products concerned.

In particular, the article of this law prescribing a limitation of the lead concentration to 0.15 grams per litre by 1 January 1976 appears in the present state of knowledge and in the light of the information at present available to the Commission to be liable to constitute an obstacle to the free circulation of goods in the sense of Article 30 et seq. of the Treaty.

The effect will be that both the oil and automobile industries of the other Member States will have to create special production lines for fuels and motor vehicles for the West German market in order to comply with this limitation. The cost of adaptation would be a heavier burden on the industries of the other Member States than on those of West Germany, since they would be able to distribute these costs only over the part of their production destined for the West German market.

The Commission considers that the protection and improvement of the environment are a vital objective for the Community as a whole. It is therefore essential that the measures to be taken should be appropriate to the objective.



The differences of opinion between experts show that at present there is only limited agreement concerning the noxious properties of lead and of the aromatic compounds with which it can be replaced.

In order to establish a fully rational policy in this matter, therefore, the necessary conservation measures should be taken jointly by the Member States so as to avoid creating legal and administrative disparities liable to affect the operation of the Common Market, and at the same time so as to fill in the gaps in our knowledge as rapidly as possible.

At all events, and independently of the position of the West German action with respect to the Treaty, the Commission thinks that such national and isolated initiatives can only jeopardize the attainment of the Community's aims, since they tend not only to impede the free circulation of goods between Member States but also to increase the difficulties of reaching a joint policy on the protection and improvement of the environment. The Commission is fully aware of the extreme importance of the pursuit of such a vital objective as the protection and improvement of the environment, which is one of the major preoccupations of all the industrial countries and a matter in which public opinion is demanding urgent and efficacious measures. It therefore intends to use every resource at its disposal in order to ensure that complete and efficacious measures are adopted at Community level as speedily as possible.

The programme (already under way) which the Commission proposes to carry out in this field, and more particularly on the reduction and ultimate elimination of the pollutants emitted by motor vehicles (a programme communicated to the West German Government), is as follows:

1. To examine the data on the concentrations of the various pollutants emitted in the exhaust gases of motor vehicles present in the atmosphere of the Community's major cities, to harmonize where necessary the sampling and measurement methods and to supplement these data if necessary.



2. To examine the noxious effects on the human organism and on the surroundings of these pollutants in the concentrations observed in large cities. To harmonize and supplement the available data where necessary and to propose indexes with a view to the establishment of Community standards of concentration.
3. To develop the most appropriate technical processes for reducing the rates of emission of the pollutants contained in motor vehicle exhaust gases.

On the basis of the results obtained, it will be necessary to establish Community criteria for pollutant emissions. With the aid of the competent experts, the Commission will then work out the technical procedures for vehicle control, put forward the necessary proposals for the adaptation of existing directives and/or propose new directives.