THE EUROPEAN COMMUNITY

PRESS RELEASE

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## EUROPEAN COMMISSION CORRECTS PRESS REPORT

WASHINGTON, D.C., September 11, 1967 -- The European Commission issued the following statement today in Brussels to correct a report published yesterday by the Washington Post concerning work being done by the European Atomic Energy Community (Euratom).

"The attention of the European Commission has been drawn to an article published in the United States' press asserting that the work on controlled thermonuclear research, on which the Commission is engaged in association with Italian CNEN (Italian Nuclear Energy Commission), could have military aims.

"The Commission formally states that the work being performed at Frascati has exclusively peaceful purposes. It emphasizes that the details of the course and results of this work have always heen made freely available and that the laboratories concerned have been and remain open to scientific visitors of all nationalities. In this connection, a world conference attended by scientists from the USA, the USSR and many other countries was held at Frascati in September 1965 at which full information on all the work carried out at Frascati in this field to-date has been made available. Indeed results of all the research work at Frascati are regularly published.

"The attached annex gives details of the research programme being carried out at Frascati on thermonuclear reactions and very high magnetic fields. More detailed information can be obtained from Euratom's annual reports, as well as the report on the Frascati conference mentioned above (Doc. EUR/C/2750 of 1965).

"The Commission regrets that an article giving a totally erroneous impression of the nature of Euratom's work should have been published."

ANNEX

The programme directed by Dr. Linhart is being carried out at Frascati under the contract of association between Euratom and the CNEN (Italian Nuclear Energy Commission) for research into controlled fusion. This is one of the five associations set up by Euratom in the various Community countries for the development of the programme in question. As is well known, it is necessary, for practical and peaceful application of fusion for the production of electrical energy, that a hot plasma (temperature of the order of several 100 million degrees) be kept isolated by material walls for a time T the minimum value of which is conditioned by the density N (number of ions per CM3) of the same plasma. Such confinement is obtained by means of magnetic fields the intensity of which must be commensurate with the plasma pressure. More precisely, the product of this density, for the lifetime of the plasma, must be greater than a certain value which in the most favourable conditions is estimated at around 10 at the 14th sec per CM3. The consequence is that, using relatively low densities, e.g., 10 at the 15th, confinement times are needed which are slightly less than 1 second, that is to say very long times. Major obstacles consisting of plasma instabilities have been encountered in all the experiments carried out in the United States, USSR, United Kingdom and Europe and the times obtained are still appreciably below those required. This is still the main line of research everywhere in the world, and in the Community, too, Euratom and its partners in association are devoting the bulk of their efforts to it. However, it is deemed advisable to carry out concurrently a relatively very modest project (of the order of a few percent) in the reverse direction also, i.e., high densities, with consequent reduction of the minimum confinement time.

Work along these lines is being carried out as part of the programme of research into the peaceful uses of fusion not only at Frascati but also in the United States (e.g. Los Alamos), USSR, etc.

High densities call for very high magnetic fields (of the order of 100 volts more intense than those obtainable by conventional methods), the work at Frascati has been geared to the production and measurement of such fields. The method employed is that of compressing magnetic fields produced by conventional methods by means of very small quantities (at most a few kilograms) of conventional chemical explosives. This research was started at Colleferro (near Frascati) around 1962. An American physicist cooperated in it for a certain time. Similar research is being performed in many other laboratories in the world. Hitherto it has been possible at Frascati, as in other laboratories to produce magnetic fields of several million gauss.

The group which is engaged in this research consisted, in the period of its greatest expansion, of two senior physicists, one engineer and two or three students or new graduates. A theorist lent his assistance on a part-time basis. At the present time, the group consists of one senior physicist only.

Its annual budget, which is part of that of the association, does not exceed 0.2-0.3 million dollars inclusive of salaries, leasing expenses, overheads, costs of materials instruments, etc.

The laboratory has been visited on a number of occasions by European, American, and Russian physicists and may be visited without any special formalities by any interested scientist.

All the results achieved have been promptly published and communicated at international conferences. The laboratory programmes are the subject of public discussion. In order to publicize these relatively new techniques and to set up effective international collaboration, the laboratory organized in 1965 an international meeting on the production and use of high magnetic fields. In addition to a large number of European researchers, this meeting was attended by American (11) and Russian physicists and a representative of the IAEA, Vienna. In the conference proceedings, which were published by Euratom and disseminated on a large scale (EUR-2750 E), may be found on page 387 a lucid outline of the activities and projects of the small Frascati group. For more than a year now, the Frascati laboratory has been directing its efforts to making available to universities and to industry its installations for the production of high magnetic fields for scientific and technical research.

Negotiations with this in view have been in progress for several months.

Apart from the declared intentions of Euratom and the CNEN, the modest scale of the scientific personnel and the financial resources employed and the absence of any trace of secrecy should suffice to dispel any foolish ideas that may be entertained as regards hypothetical - and certainly by no means simple - military applications.