

management of radioactive wastes

Successful experience in managing low and intermediate level radioactive wastes from nuclear operations was reported at a symposium organized jointly by the IAEA and the European Nuclear Energy Agency of the Organization for Economic Co-operation and Development. It was held at Aix-en-Provence, France in September at the invitation of the French Government and in co-operation with the French Commissariat à l'Energie Atomique.

There were 179 participants from 29 countries at the week's meetings which discussed developments in the management of low and intermediate level radioactive wastes. The purpose was to consider the role of waste management in the light of the increasing and widespread uses of nuclear energy for peaceful applications, as well as the responsibilities for establishing safe waste management policies.

Wastes under discussion included those of nuclear power production, research establishments and from the many uses of radioisotopes in

medicine, agriculture and industry. A previous symposium, also jointly organized by the two Agencies, was held in 1965 in Vienna on the treatment of low and intermediate level wastes. This year's symposium was extended to all waste management aspects and dealt with the three major subjects: national policies, operational experience and site policies and, finally, research and developments.

Countries with well developed nuclear programmes gave comprehensive accounts of their experience in waste management. Several countries which have recently entered the nuclear field presented papers for the first time on the work they are doing or planning in this field.

From the reports and the discussions which followed it was shown that radioactive waste management operations have been successful in minimizing the release of radionuclides to the environment. A wide variety of well established techniques is now available for treatment, disposal and storage of low and intermediate level wastes, thus assisting the safe and economic development of nuclear energy. It was particularly emphasized by a number of speakers that an increase in the uses of nuclear energy does not necessarily mean an increase in radioactive waste releases; in many cases the improvement of the techniques has led to a reduction in the volume and activity of waste.

Several participants suggested that international co-operation should continue or be encouraged particularly in sea disposal, international burial grounds and use of international rivers for cooling and release purposes. These problems and others, such as long term prospects of concentrating waste into bitumen or concrete, providing information to the public, etc. were dealt with during a panel discussion which took place at the end of the week. The panel members made it clear that the management of low and intermediate level wastes will be of increasing importance in the future, that technologies exist to cover any foreseeable environmental needs, and that international co-operation will be necessary to assist in finding the safest and most economic solutions to the problems.

High Activity Waste

High level nuclear wastes contain more than 99% of the radioactivity from which the public has to be protected. A special meeting of consultants called together by the Agency preceded the Aix-en-Provence symposium and problems connected with this aspect of waste management were examined in detail. In handling high level wastes the main objective is to ensure that they are kept from contact with all living organisms. In general it was felt the cost of safe management is not considered a burden on the generation of nuclear power but there are varying ideas of the best way to prepare for future developments. Present systems of tank storage for liquid waste, regarded as satisfactory but temporary, are expected to be succeeded by solidification methods in order to ease tasks of maintenance and surveillance. Firm plans are being prepared in the Fed. Rep. of Germany and the USA and experimental programmes are in progress in France, USSR, and UK. A suggestion was made that the Agency should support the production of a technical report on the planning of high level radioactive waste for the aid of countries embarking on nuclear fuel cycle programmes.