Co-operation among the CMEA member countries in radiation protection matters

by A. Panasenkov, W. Stregober, and A. Bilbao*

The Council for Mutual Economic Assistance (CMEA) – an international economic, scientific, and technical organization which comprises ten socialist countries (Bulgaria, Cuba, Czechoslovakia, German Democratic Republic, Hungary, Mongolia, Poland, Romania, the Soviet Union, and Viet Nam) – will complete 35 years of activity in January 1984.

The fruitful co-operation of the CMEA member states is based on a comprehensive programme for integration of the socialist economies and on specific long-term co-operative programmes for resolving the principal problems of development in the areas of power generation, fuel and raw materials, heavy engineering, agro-industrial complexes, consumer goods, and transport.

One of the most important joint socio-economic programmes within the framework of the CMEA is the general extended programme of co-operation between CMEA member countries in matters of environmental protection and improvement and in the use of natural resources. Its purpose is to create favourable conditions for the labour and recreation of working people and for the life and health of the population as a whole.

Problem No.IX of this programme is "Radiation Safety". It covers a broad range of subjects associated with radiation safety and the protection of personnel, the population, and the environment against radiation during the operation of nuclear power plants; research reactors and charged-particle accelerators; and the use of radioisotopes and other sources of ionizing radiation in the various areas of the national economy, science, technology, and medicine. With the increasing scale of nuclear power development in the CMEA member countries, utmost importance is attached to co-operation in the problems of operational safety of nuclear power plants.

For this purpose, a permanent body, called the Scientific and Technical Council for Radiation Safety, has been established under the CMEA Standing Committee on Co-operation in the Peaceful Uses of Atomic Energy.

The co-operation programme approved by the Standing Committee includes the following subjects:

I. Personnel dosimetry

1. Comparison of methods and instruments for personnel dosimetry, with emphasis on verifying and improving the reliability of measurements.

2. Requirements and recommendations for standardization of methods for personnel dosimetry.

II. Radiation monitoring of the environment

1. Study of radioactivity in the Danube River in connection with siting nuclear power plants in its basin.

2. Study of radioactivity in the Baltic Sea in connection with construction of nuclear power plants in the coastal regions.

3. Requirements for an automatic system of environmental radioactivity monitoring using remote measuring techniques in the health-protection and supervised zones around nuclear power plants.

4. Comparative measurements of low doses and dose-rates of ionizing radiation in the environment with a view to the improvement of monitoring methods.

III. Documents on standards and methodology, dealing with the radiation safety of nuclear power plants, nuclear district-heating plants, and dual-purpose nuclear heating and power plants

1. Formulation of standardized criteria, concepts and approaches for ensuring radiation protection of the population, in connection with operation of nuclear power and heating plants.

2. Criteria relating to the levels of radioactive releases from nuclear power plants into the environment that require notification of other CMEA member countries.

3. Detailed classification of emergency situations at nuclear power plants, giving guidance on classification and evaluation of the radiological consequences of the different classes of accidents.

* Messrs Panasenkov, Stregober, and Bilbao are members of the Secretariat of the Council for Mutual Economic Assistance (CMEA).

4. Requirements related to improvement of the radiation situation and reduction of personnel exposure during repair and refuelling operations at nuclear power plants with WWER reactors.

5. Standardized criteria (parameters) for CMEA countries to use in evaluating the status of radiation safety at nuclear power plants.

6. Analysis of the state of repair and the efficiency of the equipment used at nuclear power plants for the protection of personnel.

In addition, the international economic association, Interatomenergo, is now engaged in drafting, on the basis of documents from the member countries, a series of unified technical standards for the CMEA member countries and Yugoslavia in matters relating to nuclear power. This will involve the preparation of a number of documents: rules for radiation safety during nuclear power plant operation, health protection rules for use in the design of nuclear power plants, and methods for evaluating the dispersion of radioactive substances released from nuclear power plants and calculating the exposure of the public.

Of the various types of co-operation among the CMEA member countries in radiation safety matters, the following scientific and technical activities should be mentioned in particular: a joint expedition of specialists from the Danubian member states of the CMEA (August–September 1978); a scientific and technical conference on the problems of radiation safety during nuclear power plant operation (Ústí nad Labem, Czechoslovakia, September 1975); a symposium on new methods of personnel dosimetry (Hradec Králové, Czechoslovakia, May 1977); and the second conference of the CMEA member countries on radiation safety during nuclear power plant operation (Vilnius, USSR, May 1982)*. These activities provided opportunities for extensive exchanges of experience and information between specialists, and for identifying and defining new lines of co-operation among the CMEA member countries in this field.

In view of the rapid growth in the nuclear power capacities of the CMEA member countries during the current decade, particular attention will continue to be paid to co-operation in matters relating to nuclear power plant safety, with due regard for the activities of Interatomenergo and of the Standing Committees dealing with co-operation in the peaceful uses of atomic energy and with electric power.

* The proceedings of these conferences and the report of the expedition were sent to the IAEA in the form of input for INIS.