(2) *Monitoring – isotope and geochemical measurements at regular time intervals in the already known geothermal fields;*

(3) *Laboratory investigation – experimental determination and collection of basic data, such as the determination of isotopic fractionation factors and of exchange kinetics in compounds, under conditions generally encountered in geothermal fields.*

ADVISORY GROUP MEETING, VIENNA 8–12 SEPTEMBER 1975

"The Monitoring of Radioactive Gaseous and Liquid Effluents at Nuclear Facilities" was discussed by 20 participants from 12 countries and 2 international organizations.

Airborne and Liquid Radioactive Contaminants

The International Atomic Energy Agency, along with other national and international bodies, has been devoting much attention in recent years to achieving agreement on procedures for establishing limits on the amounts of radioactive material that can be released to the environment during the operation of nuclear facilities.

When setting the actual release limits, usually referred to as the authorized discharge limits, for a particular facility, it must be ensured that the dose limits for the critical groups of the population are complied with, that the doses received are as low as is reasonably achievable taking into account social and economic conditions, and that due consideration is given to other present facilities and to facilities that may be constructed in the future. The procedures for setting such limits are discussed in a document[1] prepared by a group of experts convened by the Agency in June 1974.

It is the responsibility of the person in charge of each facility, usually referred to as the operator, to provide assurance that the actual releases to the environment during normal operation of the facility do not exceed these authorized limits and to notify the appropriate authorities and to take the necessary actions in the event of any accidental releases. To provide such assurance the operator must monitor the airborne and liquid releases from his facility to show that the amounts released are within the authorized limits and, in the case of accidental releases, to give early warning of the nature and extent of the release.

The design of effective effluent monitoring systems, that is systems for monitoring the airborne and liquid releases dose to the points of discharge, is thus a matter of great importance for the operators.

In order to help define the objectives of effluent monitoring programmes for planned and unplanned releases and to provide guidance on the design and operation of adequate

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[1] Procedures for establishing limits for the release of radioactive material into the environment, – Report of a panel of experts which met from 17 to 21 June 1974 (in preparation).

monitoring systems for different types of facilities, the Agency convened an advisory group at its Headquarters in Vienna from 8–12 September 1975, under the Chairmanship of Dr. J. Schwibach (Fed. Rep. of Germany). This group comprized designated experts from twelve Member States, together with six observers from Member States and representatives of two international organizations.

Starting from a working paper prepared within the Secretariat, the advisory group prepared the first draft of the manual. This draft includes the following sections: Introduction; Requirements for effluent monitoring; Sampling and measurement methods; Recording and reporting of effluent monitoring results. The manual will also contain a number of technical annexes, still to be prepared, covering such topics as: Examples of regulatory limits on discharges to the environment; Typical compositions of effluents from various nuclear facilities; Selected examples of specific monitoring procedures; Examples of reporting systems.

It is planned at present to convene a second meeting of the advisory group in 1976 to complete the manual by reviewing and if necessary expanding the material already produced and by preparing and incorporating the supplementary technical material.

INTERNATIONAL SYMPOSIUM ON THE SAFEGUARDING OF NUCLEAR MATERIALS, VIENNA, 20–24 OCTOBER 1975

The meeting was attended by 225 participants and 50 observers representing *34 countries and 3 international organizations.*

Safeguarding Nuclear Materials

The Agency and many of its Member States have constantly worked toward the development of effective and acceptable international safeguards systems, procedures, and equipment. The year 1975 marks both the fifth anniversary of the coming into force of the Non-Proliferation Treaty, which gave international safeguards a major thrust, and the fifth year since the last general symposium on Safeguards Techniques.

In the intervening years numerous panel meetings, consultants meetings, and working group meetings were held, and countless technical papers were written by safeguards experts throughout the world, but no broad-base Symposia were scheduled.

Now, five years later, the full extent of the world-wide development effort became apparent in this International Symposium on the Safeguarding of Nuclear Materials. Papers were invited on three broad topics:

Accounting for and Control of Nuclear Materials
Verification Procedures
Methods, Techniques and Instrumentation

More than a hundred papers were proposed, and 95 were finally included.