

# RADIOACTIVE WASTE SAFETY

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### PROGRAMME OBJECTIVE

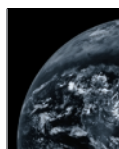
To promote the safe management of radioactive waste, including the safety of disposable, dischargeable and residual waste, through the establishment of relevant safety standards, the application of these standards, as well as the support and service, as required, of relevant international agreements.

### OBJECTIVE

The programme on radioactive waste safety focused on the establishment of a comprehensive set of internationally agreed safety standards with the active involvement of Member States and under the supervision of an international advisory committee. A Safety Requirements publication and a Safety Guide on the near surface disposal of radioactive waste were issued, as were two Safety Guides on decommissioning. Several other safety standards, including guidance on the control of discharges, were close to completion. An international symposium was held in Arlington, USA, to address the issue of residual wastes. Advice on specific waste management issues was provided to a number of States, notably those that do not have nuclear power plants and have little infrastructure for managing waste, but need to manage other types of residues, such as those from uranium mining and milling.

### SAFETY OF DISPOSABLE WASTE

Pressure has continued for international rules to be agreed to facilitate the release of materials from nuclear facilities. The issue is becoming more urgent with the increasing number of nuclear facilities undergoing decommissioning and with the developing trade in materials for recycling, such as metals and concrete. The Agency is in the process of revising its guidance on the governing principles and criteria for release from regulatory control. In a related development, there has been a reaction from steel manufacturers to the threat of radioactively contaminated scrap metal entering the international



steel pool. The Agency co-sponsored a workshop with the United Nations Economic Commission for Europe on this subject, involving representatives of industry. The workshop resulted in a plan to develop a code of practice to govern and control radioactive contamination in steel scrap.

With the issue in 1999 of a Safety Requirements publication on near surface disposal and its supporting Safety Guide on safety assessment, the attention of the Agency's Waste Safety Standards Advisory Committee turned to the development of safety guidance

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on the geological disposal of high level radioactive wastes. In its preliminary review of the subject, the areas of existing international consensus were identified, as well as those areas in which expert opinion has not yet converged. One issue currently under study concerns the safety implications of providing for the possibility of future retrieval of wastes from underground repositories. An assessment of this question is currently under way by the Agency and preliminary results were reported at a workshop on the subject of retrievability, held in October near Stockholm and co-sponsored by the Agency. The workshop presented an opportunity for an exchange of views between experts and members of the public on the ethical, safety, safeguards and economic aspects of national policies currently being developed that are aimed at the possible future retrieval of wastes from a repository.

The relevance of the Y2K computer problem for waste management facilities was evaluated and the results were summarized in a guidance document. A workshop was also held to exchange information on the safety measures related to Y2K issues at radioactive

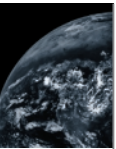
waste management and nuclear fuel cycle facilities, focusing on the experience gained, prioritization of activities, 'work-around' strategies and contingency plans. The guidance document and the results of the workshop were distributed to all States and made available on the Agency's Internet home page (<http://www.iaea.org>).

The Agency was requested by the Brazilian regulatory organization to assist in the licensing of a bituminization facility for operational waste at the Angra-2 nuclear power plant. Through its technical co-operation programme, the Agency despatched an expert team that reviewed the facility and made recommendations to the Brazilian counterpart, especially with regard to the need for a commissioning plan for qualifying the facility and for more extensive planning, giving due consideration to the issue of the eventual disposal of the wastes.

## **SAFETY OF DISCHARGEABLE WASTE**

In response to a request from the Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (London Convention, 1972), a report summarizing the history of worldwide disposals of radioactive waste in the oceans was provided to the 21st Meeting of Contracting Parties to the Convention. The report is an update of a previous survey and includes information on the disposals of the former Soviet Union in the Arctic Seas area. It was developed as part of an information system that will eventually include records of all discharges of radioactive materials into the environment, as well as of solid disposals, and of accidents and losses of radioactive materials at sea.

A set of safety documents which establishes internationally agreed policy and methods for the control of radioactive discharges of radionuclides into the environment is nearing completion. The lead document is a Safety Guide which sets out regulatory principles for the control of discharges; it is supported by a Safety Report which sets out a recommended



methodology for assessing the radiological impact of the releases of radioactive materials to the atmosphere and to surface waters. The two can be used together to develop quantitative release limits which satisfy current international radiological protection principles. Compliance with these limits should be demonstrated by appropriate source and environmental monitoring programmes, as described in another Safety Guide which is also nearing completion.

The current guidance on release control is aimed at achieving adequate protection for human beings living in the environment affected by the discharge. However, there are increasing concerns for the environment itself and for protecting non-human species. As a first step towards developing policy in this area, a discussion document on protection of the environment from the effects of ionizing radiation was issued.

## **SAFETY OF RESIDUAL WASTE**

International policies for guiding the rehabilitation of areas and sites affected by radioactive residues are just beginning to emerge. In order to facilitate the development of a consensus on principles and criteria in this area and to disseminate information on national and international experience, the Agency organized a symposium in Arlington, Virginia, USA. Discussions at the symposium revealed, as expected, that diverse policies are being adopted in various countries at the present time. The meeting helped in starting the first exchanges on the reasons for these differences in approach. It was noted that although the principles of the International Commission for Radiological Protection for

intervention are normally the appropriate basis for dealing with contaminated environments, the criteria being adopted in many countries were more like those associated with practices. The symposium stressed the need for continuing efforts by the international community to provide clear advice that is based on scientific principles and sound professional judgement.

In a continuation of its programme of assessments of the radiological conditions at sites affected by nuclear weapons testing, the Agency began work on the examination of locations in Algeria where weapons were tested by France in the 1960s.

In April, the Government of Kazakhstan decided to permanently shut down the BN-350 fast reactor at Aktau. The Agency was asked to assist in the co-ordination of the decommissioning project and provide technical assistance for the planning effort. In August, the Agency hosted a co-ordination meeting to identify concerns associated with preparing the facility for long term storage, leading to a clearer understanding of the problems involved and the identification of assistance that is already being provided through bilateral agreements.

A fact finding mission to Tajikistan made a preliminary assessment of the radiological situation in that country. In particular, the mission team focused on evaluating the safety and security of radiation sources in the context of the existing regulatory system, and the safe handling of radioactive residues from the extensive uranium ore mining and processing activities that took place in the country. The regulatory infrastructure and requirements, and technical capabilities were also reviewed.

