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NUCLEAR SAFETY, RADIOLOGICAL PROTECTION AND RADIOACTIVE WASTE MANAGEMENT

(b) MEASURES TO RESOLVE INTERNATIONAL RADIOACTIVE WASTE MANAGEMENT ISSUES

1. Last year, in resolution GC(XXXVII)/RES/614, the General Conference reaffirmed "the importance to the international community of ensuring that sound practices are implemented, or planned, for the safe management and disposal of all categories of radioactive waste".

2. Also in that resolution, the General Conference invited the Board of Governors and the Director General to maintain the emphasis given to radioactive waste management, especially with regard to the Agency's Radioactive Waste Safety Standards (RADWASS), and to consider what measures should be taken to enhance international co-operation activities in the radioactive waste management field.

3. In addition, the General Conference requested the Board and the Director General to report to it in 1994 on the implementation of resolution GC(XXXVII)/RES/614. The paper in the Attachments, prepared in response to that request, is an updated version of a paper which the Board of Governors - on 8 June 1994 - authorized the Director General to submit to the General Conference for its consideration.

PROGRESS AND STATUS OF THE RADIOACTIVE WASTE SAFETY STANDARDS (RADWASS) PROGRAMME

Introduction

1. The Agency's Radioactive Waste Safety Standards (RADWASS) programme was established in 1991 in response to requests by Member States that the Agency demonstrate that a harmonized approach to the safe management of radioactive waste existed at the international level. RADWASS will constitute a hierarchy of documents headed by a Safety Fundamentals document; the programme covers six subject areas for each of which there is to be a Safety Standards document: "Planning", "Pre-disposal", "Near-surface disposal", "Geological disposal", "Uranium mining and milling waste" and "Decommissioning". The present status of and the near-term schedule for the RADWASS programme, which was described briefly last year in Attachment 1 to document GOV/INF/706-GC(XXXVII)/INF/320, are outlined below.

Programme Status

2. Phase I of the RADWASS programme, which involves the preparation of 12 documents, was scheduled to be completed by the end of 1994, with Phase II starting in 1995. In practice, however, Phase I activities will extend into 1995 and work on several Phase II documents has been initiated already in 1994.

3. The Secretariat circulated the latest draft of the Safety Fundamentals document "The Principles of Radioactive Waste Management" to Member States for comment in February, and the final draft is being submitted to the Board of Governors for approval in September. The four Safety Standards documents due to be completed during Phase I (covering the subject areas "Planning", "Pre-disposal", "Near-surface disposal" and "Decommissioning") have been circulated to Member States for comment.

4. Of the five Safety Guides due to be completed during Phase I, two (on the "Classification of Radioactive Waste" and the "Siting of Geological Disposal Facilities") have

been published (in May 1994). The Safety Guide on the "Siting of Near-Surface Disposal Facilities" is in the final stage of preparation and those on "Clearance Levels for Radionuclides in Solid Materials: Application of Exemption Principles" and the "Pre-disposal Management of Radioactive Waste from Medicine, Industry and Research" are in an advanced stage of preparation.

5. Work on a Safety Practices document on the "Application of Exemption Principles to Materials Resulting from the Use of Radionuclides in Medicine, Industry and Research" (a companion to the first Safety Practices document, on the "Application of Exemption Principles to the Recycle and Reuse of Materials from Nuclear Facilities", published in 1992) will be completed after finalization of the aforementioned Safety Guide on "Clearance Levels for Radionuclides in Solid Materials: Application of Exemption Principles".

Convention on the Safety of Waste Management

6. Last year, in resolution GC(XXXVII)/RES/615, the General Conference requested the Director General "to initiate preparations for a convention on the safety of waste management as soon as the ongoing process of developing waste management safety fundamentals has resulted in broad international agreement".

7. With Board approval of the aforementioned Safety Fundamentals document "The Principles of Radioactive Waste Management", the planning process for activities leading to the drafting of a Convention on the safety of waste management could start.

8. An international meeting on "Requirements for the Safe Management of Radioactive Waste" planned for August 1995 (and announced by a circular letter dated 26 May 1994 to all Member States) should provide a useful perspective on the relevant technical issues.

Future Activities

9. It is intended to complete most of the work on Phase I RADWASS programme documents in 1994. The first part of Phase II involves the preparation of 13 documents: two Safety Standards documents, ten Safety Guides and one Safety Practices document. Work on most of these documents will start in the latter part of 1994 and the first half of 1995. Under the present RADWASS programme plan, documents prepared under the first part of Phase II should be completed by 1997.

MATTERS RELATED TO THE SEA DISPOSAL OF RADIOACTIVE WASTES

Introduction

1. The purpose of this paper is to inform Member States about recent developments regarding the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention 1972) and specifically about: (i) the recent decision to prohibit the sea dumping of all types of radioactive wastes and its implications for the Agency; and (ii) progress in efforts to assess the impact of radioactive waste disposal in the Arctic Seas and the Japan Sea.

(i) PROHIBITION OF THE SEA DUMPING OF RADIOACTIVE WASTES

Background

2. With regard to the Agency's role under the London Convention 1972 (the text of which is contained in document INFCIRC/205), paragraph 6 of Annex I to the Convention provided for the Agency to define high-level radioactive wastes or other high-level radioactive matter as unsuitable for dumping at sea and Section D of Annex II provided for it to make recommendations which the Contracting Parties to the Convention should take fully into account in issuing permits for the dumping at sea of radioactive wastes or other radioactive matter "not included in Annex I".

3. The text of the "Provisional Definition and Recommendations Concerning Radioactive Wastes and Other Radioactive Matter Referred to in Annexes I and II to the Convention" is contained in document INFCIRC/205/Add.1, and that of "The IAEA Revised Definition and Recommendations of 1978 Concerning Radioactive Wastes and Other Radioactive Matter Referred to in Annexes I and II to the Convention" is contained in document INFCIRC/205/Add.1/Rev.1. The second revised Definition and Recommendations, established in 1985, were issued in 1986 as Safety Series document No. 78.

Historical Account

4. The entry into force of the Convention, in 1975, meant in effect the prohibition of the sea dumping by the Contracting Parties of high-level radioactive wastes.

5. A voluntary moratorium on the sea dumping by the Contracting Parties of low-level radioactive wastes was introduced in 1983 by a resolution adopted at the 7th Consultative Meeting of the Contracting Parties. The moratorium was extended in 1985 pending the final report of an Inter-governmental Panel of Experts on Radioactive Waste Disposal at Sea (IGPRAD) established by the Contracting Parties for the purpose of examining the wider scientific, political, legal, economic and social aspects of the sea dumping of radioactive wastes.

6. IGPRAD, which was assisted in the scientific part of its work by the Agency's Secretariat, produced its final report last year, and the Contracting Parties considered it at their 16th Consultative Meeting, held in November 1993.

7. At that Consultative Meeting, the Contracting Parties adopted, by a majority vote, a draft resolution which - referring to "the conclusions and the options on disposal at sea of radioactive waste as contained in the final report of the Inter-governmental Panel of Experts on Radioactive Waste Disposal at Sea" - provides for the amendment of Annexes I and II to the London Convention 1972 and thereby effectively prohibits the sea dumping of all types of radioactive waste.

8. In accordance with the relevant provisions of the Convention, the amendments providing for the prohibition of all radioactive waste dumping at sea entered into force on 20 February 1994 for all Contracting Parties except those which made a declaration before that date of non-acceptance of the prohibition. The only Contracting Party to make a declaration of non-acceptance was the Russian Federation - which stated, however, that "it will continue its endeavours to ensure that the sea is not polluted by the dumping of wastes and other matter" (note dated 18 February 1994 addressed to the Secretary-General of the International Maritime Organization (IMO)). For it, the Annexes to the Convention will remain valid unamended, and the second revised Definition and Recommendations will therefore continue to apply.

9. It should be noted that, during a decade of discussions, in the context of the London Convention 1972, on the issue of the sea dumping of radioactive wastes, no evidence was presented to suggest that the controlled disposal of low-level radioactive wastes in accordance with the IAEA Recommendations had caused or would cause harm to human health. IGPRAD failed to reach a consensus on the issue, but its final report referred to *"the growing awareness within the national and international communities that new and more effective measures are needed to protect the global marine environment, as evidenced by the results of the 1992 U.N. Conference on Environment and Development (UNCED) and spelt out in Agenda 21"* and also contained the following passage: *"From a legal standpoint, it was generally acknowledged by the Panel that there has been sustained development of international law in the past 20 years, with a trend towards, first, restricting and controlling, second, prohibiting sea disposal of radioactive wastes on a regional basis, and later challenging the legitimacy of states' use of the high seas and the oceans' floors beyond their national jurisdiction for activities that might result in the pollution of the marine environment."*

Implications for the Agency

10. Following the amendment of the Annexes to the London Convention 1972, the Agency's responsibilities under the Convention are limited to defining radioactivity levels below which material may be considered "non-radioactive" for the purposes of the Convention (so-called "de-minimis" or "exempt" levels). The Agency's programme will be adjusted in the light of the change in responsibilities.

(ii) ASSESSMENT OF THE IMPACT OF RADIOACTIVE WASTE DISPOSAL IN THE ARCTIC SEAS AND THE JAPAN SEA

11. The Agency is continuing with certain other activities in support of the London Convention 1972, especially the administration of the International Arctic Seas Assessment Project (IASAP) - the aim of which is to evaluate the health and environmental risks posed by the dumping of radioactive wastes in the Arctic Seas. Good progress has been made since the inception of IASAP, in 1993, with the acquisition of better data on the nature and state of the dumped wastes through expert meetings, contracts with Russian institutes and investigatory cruises organized by the Norwegian and Russian Governments to the dumping

sites. A report on the results of the IASAP is to be submitted to Contracting Parties to the London Convention in 1996.

12. In March 1994, an investigatory cruise to the sites of radioactive waste dumping in the Japan Sea was organized by the Governments of Japan, the Republic of Korea and the Russian Federation. At the request of these Governments, an expert from the Agency's Monaco Laboratory participated in the cruise. Water and sediment samples taken during the cruise were divided for analysis between Japan, the Republic of Korea, the Russian Federation and the Agency. The final joint report on the findings of the cruise is to be completed by March 1995.

13. The Agency has offered to the three Governments concerned assistance - if required - in assessing the impact of waste dumping in the Japan Sea.

REGIONAL/INTERNATIONAL WASTE DISPOSAL REPOSITORIES

Introduction

1. Although countries planning and implementing nuclear energy programmes should assume full responsibility for the safe management and final disposal of radioactive wastes, in some parts of the world the concept of regional radioactive waste disposal repositories makes good sense from the safety, technical and economic standpoints. Accordingly, the Director General has expressed the view that regional solutions to radioactive waste disposal should be considered by Member States.

2. There are a number of Member States with only very limited resources which have small nuclear energy programmes and share common regional interests, and the regional repository concept was accordingly referred to by several Member States in their comments to the Agency's Medium Term Plan for 1995-2000. It therefore seems logical that the Agency should launch a programme to promote regional waste disposal solutions.

Background

3. It is believed that with the regional repository concept suitable sites would be easier to find as site selection areas would be larger - and suitable sites may well not be available at all within the national boundaries of some Member States.

4. It is also believed that regional repositories would be of benefit to countries whose radioactive waste volumes do not justify a national repository and/or which do not have the resources to dedicate to a national repository project. In particular, with one regional repository as opposed to several smaller national repositories:

- the total demand for resources (manpower, technical expertise, funding, etc.) would be considerably less;

- radiological and non-radiological risks would be minimized;

- repository surveillance could be more efficient.

5. Factors militating against the regional repository concept are: a lack of political preparedness; legal and institutional barriers; and the ability to find suitable host countries. The advantages, disadvantages and practicability of regional repositories have not yet been fully assessed from the scientific/technical, economic, safety and ethical points of view.

Activities Planned/in Progress

6. The Secretariat plans to foster international awareness and dialogue regarding the potential of regional repositories in certain parts of the world by hosting meetings and preparing reports on repository safety, surveillance and economics. For the near term (1994-95), meetings are planned on the siting of regional near-surface radioactive waste disposal facilities and on technical, institutional, economic, safety and ethical factors important to the development of regional repositories for sealed spent radioactive sources.

7. In 1993 the Secretariat began to assess the feasibility of applying the regional repository concept in Africa, focussing on the disposal of spent radium sources.

8. To site, design, construct, operate and close such a disposal facility requires considerable technical resources, expertise and financial resources, which most African countries do not have. The Secretariat is therefore endeavouring to identify a suitable African country that is willing to make a significant contribution to radiological safety in Africa and possesses the waste management infrastructure necessary for the development and operation of a deep geological repository.

9. Discussions with African Member States interested in co-operating in the project will be conducted within the framework of the African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA), and it is hoped that success in Africa will stimulate interest in other regions.