



EIGHTH CONSULTATIVE MEETING OF  
CONTRACTING PARTIES TO THE  
CONVENTION ON THE PREVENTION  
OF MARINE POLLUTION BY DUMPING  
OF WASTES AND OTHER MATTER  
20-24 February 1984

IMO

Agenda item 10

REPORT OF THE EIGHTH CONSULTATIVE MEETING

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## 1 INTRODUCTION

Opening of the Meeting

1.1 The Eighth Consultative Meeting of Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, convened in accordance with Article XIV(3)(a) of the Convention, was held at IMO Headquarters, London, from 20-24 February 1984.

1.2 The Meeting was attended by delegations from the following Contracting Parties to the Convention:

AFGHANISTAN	MOROCCO
ARGENTINA	NÁURU
BRAZIL	NETHERLANDS
CANADA	NEW ZEALAND
CHILE	NIGERIA
CUBA	NORWAY
DENMARK	PANAMA
DOMINICAN REPUBLIC	PAPUA NEW GUINEA
FINLAND	PHILIPPINES
FRANCE	POLAND
GABON	PORTUGAL
GERMAN DEMOCRATIC REPUBLIC	SOUTH AFRICA
GERMANY, FEDERAL REPUBLIC OF	SPAIN
GREECE	SWEDEN
ICELAND	SWITZERLAND
IRELAND	USSR
JAPAN	UNITED KINGDOM
MEXICO	UNITED STATES

by observers from the following States, not being Contracting Parties to the Convention:

AUSTRALIA	FIJI
BELGIUM	ITALY
CHINA	LIBERIA
COLOMBIA	URUGUAY

by observers from the following United Nations organizations:

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)  
INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

and by observers from the following inter-governmental and non-governmental organizations:

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT/NUCLEAR  
ENERGY AGENCY (OECD/NEA)  
COMMISSION OF THE EUROPEAN COMMUNITIES (EEC)  
OSLO COMMISSION  
PARIS COMMISSION  
INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)  
EUROPEAN COUNCIL OF CHEMICAL MANUFACTURERS' FEDERATIONS (CEFIC)  
GREENPEACE INTERNATIONAL  
FRIENDS OF THE EARTH INTERNATIONAL (FOEI)  
INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES (IUCN)  
PERMANENT INTERNATIONAL ASSOCIATION OF NAVIGATION CONGRESSES (PIANC)  
ENGINEERING COMMITTEE ON OCEANIC RESOURCES (ECOR)

1.3 At the opening of the Meeting, Prof. Dr. A. Engström (Sweden) was unanimously re-elected Chairman and Mr. G.L. Holland (Canada) was unanimously re-elected First Vice-Chairman for this meeting. Dr. F.S. Terziev (USSR) was unanimously elected Second Vice-Chairman for this meeting. (See also paragraph 9.5 below).

1.4 When opening the Meeting, the Secretary-General of the International Maritime Organization summarized the principal activities in the field of marine pollution in which the Organization had been involved since the Seventh Consultative Meeting, referring also to work of interest to the Meeting carried out by other international organizations during the intersessional period.

1.5 In noting the intensification of activities taking place under the London Dumping Convention, in part deriving from the concern over the disposal of radioactive waste at sea, and the increasing demands that this might place upon the Secretariat, the Secretary-General expressed the readiness of IMO to take all possible steps to provide the necessary Secretariat support for the work of Consultative Meetings.

#### Adoption of the Agenda

1.6 The Agenda for the Meeting, as adopted, is shown at Annex 1. This included, under each item, a list of documents that were considered. The Meeting also agreed on a timetable and work schedule for the Meeting (LDC 8/1/2/Corr.1).

#### Observer status of international non-governmental organizations

1.7 The Meeting noted that the Secretariat, after consultation with the Chairman and the two Vice-Chairmen in accordance with the procedures for the participation of non-governmental organizations in Consultative Meetings adopted by the Sixth



Consultative Meeting (LDC VI/12, paragraph 1.8), had invited the Permanent International Association of Navigation Congresses (PIANC) and the Engineering Committee on Oceanic Resources (ECOR) to be represented at the Eighth Consultative Meeting.

1.8 The Meeting agreed that invitations to the Ninth Consultative Meeting should be sent to the International Association of Ports and Harbors (IAPH), the European Council of Chemical Manufacturers' Federations (CEFIC), Greenpeace International, Friends of the Earth International (FOEI), the International Union for Conservation of Nature and Natural Resources (IUCN), the European Atomic Forum (FORATOM), the European Nuclear Society (ENS), the Permanent International Association of Navigation Congresses (PIANC) and the Engineering Committee on Oceanic Resources (ECOR).

#### Submission of documents

1.9 The Secretary reminded the Meeting that the Seventh Consultative Meeting had agreed to follow the same procedures as IMO technical bodies in submitting documents for consideration at Consultative Meetings (LDC 7/12, paragraph 11.1). This required that bulky documents and documents that required action or decision should be received by the Secretariat not later than three months before the opening of the Meeting. Other non-bulky documents should be received by the Secretariat not later than two months before the opening day of the Meeting, and non-bulky documents containing comments on basic documents and purely informative documents may be accepted, provided that they were received by the Secretariat not later than one month before the opening of the Meeting.

1.10 The Secretary appealed to delegations to conform with the above rules in submitting documents to future Consultative Meetings.

1.11 During the Meeting the Secretariat received a number of documents from delegations and observers for circulation. In view of the above-mentioned rules, these late submissions were not handled as official documents, but circulated to the Meeting without symbols on an informal basis.

## 2 STATUS OF THE LONDON DUMPING CONVENTION

2.1 The Meeting took note of the report of the Secretary-General on the current status of the London Dumping Convention and the progress being made in the acceptances of the 1978 and 1980 amendments thereto (LDC 8/2) and noted that as at 1 January 1984, 53 States had ratified or acceded to the Convention.



2.2 Recalling that the Seventh Consultative Meeting had adopted a resolution concerning action to be taken to increase the number of Contracting Parties (resolution LDC 13(7)), the Meeting noted that the Secretary-General had invited the Executive Director of UNEP and the Director-General of UNESCO to draw the attention of their Member States to the value of the London Dumping Convention as a global basis for the control of waste disposal at sea. Replies from the Executive Director of UNEP and the Director-General of UNESCO had subsequently confirmed that the attention of their governing bodies had been drawn to the content of resolution LDC 13(7).

2.3 The United States delegation extended its thanks to the Secretary-General for his efforts to obtain wider acceptance of the London Dumping Convention and expressed the hope that continued efforts would be made in this regard. The delegation also expressed the view that the 1978 amendments to the Convention concerning Procedures for the Settlement of Disputes would, upon entry into force, make a significant contribution to the effectiveness of the Convention and, noting that no instrument of acceptance had been deposited in this regard since October 1980, urged Contracting States to accept the amendments.

2.4 The Meeting noted the statement by the Belgian observer that legislation giving effect to the London Dumping Convention had now been placed before Parliament and that Belgium would therefore most probably attend the next Consultative Meeting as a Contracting Party.

2.5 The Meeting welcomed a statement by the observer of China drawing the Meeting's attention to the first attendance of China as an observer to a Consultative Meeting. The Meeting noted the importance that China attached to regulatory actions to prevent marine pollution caused by dumping and that the Government was in the process of initiating study of the Convention with a view to its eventual acceptance.

2.6 The observer from Italy informed the Meeting that the parliamentary procedure that would give effect to the London Dumping Convention was in its final stages and that the instrument of acceptance would be deposited in the near future.

### 3 REPORT OF THE SCIENTIFIC GROUP ON DUMPING

3.1 The report of the Scientific Group on Dumping (LDC 8/3) was introduced by its Chairman, Mr. R. Boelens (Ireland). The Meeting approved the report in general and took the following action in relation to the matters considered under this agenda item.

The position of lead and lead compounds in the Annexes to the Convention

3.2 The Meeting noted that at the seventh meeting of the Scientific Group a number of delegations had supported the Canadian proposal to include lead and lead compounds in Annex I, emphasizing that the dissemination of lead from all sources needed controlling and reducing because of their hazards to human health and that the disposal of lead into the marine environment through ocean dumping should be a component of such reduction. The Scientific Group, however, could not reach a consensus on the inclusion of lead and lead compounds in Annex I because some delegations felt that:

- .1 the toxicity and bioaccumulative properties of lead are closely comparable with other Annex II substances rather than with Annex I substances;
- .2 there was no significant human health risk associated with the consumption of fish containing lead in currently found concentrations; and
- .3 little effect on the overall flux of lead into the marine environment would be achieved by assigning lead to Annex I.

3.3 The Scientific Group further felt that future considerations on this matter would be facilitated by the outcome of current discussions regarding criteria for the allocation of substances to Annexes I and II. The Group nevertheless recommended that Contracting Parties should be urged to reduce inputs of lead and lead compounds into the marine environment, in particular by controlling the use of lead in petrol.

3.4 The Canadian delegation re-emphasized its original position regarding the need to reduce lead inputs to the environment and indicated that its proposal would be tabled again, following the review of annex assignment criteria and upon completion of toxicological studies currently underway in Canada.

3.5 The Meeting, in concurrence with the views of the Scientific Group, urged all Contracting Parties to reduce the input of lead and lead compounds into the marine environment from all sources. In this connexion, a number of delegations reported progress with their efforts to reduce the use of lead in petrol.

3.6 Several delegations supported the Canadian proposal as it now stood, while others felt that there was insufficient evidence that lead introduced into the

sea through dumping at sea had harmed the marine environment or human health. It was also pointed out that the use of "special care" as prescribed for Annex II substances, should provide adequate regulatory control so that harmful effects would not result from disposal at sea of lead and lead compounds. The Meeting noted that there were still divergent views on this matter which could hopefully be solved after the development of criteria for assigning substances to Annexes I and II.

#### Status of organosilicons in Annex II

3.7 The Meeting noted that the Scientific Group did not recommend the removal of organosilicon compounds from the list of substances contained in Annex II in the light of the views expressed by several delegations at the Scientific Group meeting that the low degradability of these compounds would merit their retention in Annex II. It was further noted that the Scientific Group would reconsider the proposal to remove organosilicon compounds from Annex II when criteria for the allocation of substances to the Annexes have been developed. At that time, the results of a comprehensive evaluation by GESAMP on the environmental effects of organosilicons would be available.

3.8 The Meeting was informed that CEFIC had requested the Eighth Consultative Meeting to consider the deletion of organosilicon compounds from Annex II (LDC 8/3/3). However, it was agreed that this matter should be considered at a later stage when the Scientific Group on Dumping had completed its deliberations on criteria for the allocation of substances in, and between, the Annexes.

#### Criteria for the allocation of substances in Annexes I and II

3.9 In view of the problems met by the Scientific Group when considering the position of substances in the Annexes to the Convention as mentioned above, the Meeting agreed that major efforts should be made in the development of criteria for the allocation of substances to Annexes I and II. It was further agreed that as a first step towards the development of such criteria, the purpose and concepts of the Annexes should be clarified. The Scientific Group should then consider as a matter of high priority:

- .1 practical and technical criteria for determining the appropriate assignment of substances to the Annexes; and
- .2 the nature of "special care" techniques for the disposal of Annex II substances.



3.10 The Meeting agreed that a meeting of a small intersessional group of experts should be convened to prepare a discussion paper on this matter for consideration at the eighth Scientific Group meeting. The Meeting adopted the terms of reference and arrangements for convening such an intersessional experts group on the basis of a proposal prepared by a drafting group (LDC 8/WP.2) as described in the following paragraphs.

3.11 The intersessional ad hoc working group should be convened with the following terms of reference:

- .1 to derive from the text of the Convention and from discussions and decisions of Contracting Parties, the concepts and purposes underlying the Annexes to the Convention;
- .2 based on the above, to develop a scientific rationale to support these purposes, including identification of relevant characteristics and properties of substances which might be included in the Annexes;
- .3 to examine the extent to which this list of characteristics and properties could be used to allocate substances to the Annexes and to suggest methods by which this could be achieved; and
- .4 to report, in the first instance, to the Scientific Group on Dumping.

3.12 All Contracting Parties were invited to submit papers specifically addressing the above terms of reference. These papers should be received by the Secretariat no later than 15 June 1984.

3.13 The Secretariat would convene a meeting of governmental experts at IMO headquarters, London, from 18-20 July 1984. Experts would be invited on the basis of submissions received by the Secretariat in consultation with the Chairman of the Scientific Group on Dumping.

3.14 Copies of all submissions would be circulated to the invited governmental experts prior to the meeting.

3.15 The Meeting took note of the submissions by the United States (LDC 8/3/1) and IAPH (LDC 8/3/2, LDC 8/3/2/Add.1) concerning the purpose and concepts of Annexes I and II. The Meeting also noted the view of the IAPH observer, that improved scientific knowledge regarding the effects of disposal at sea of dredged material gained since the preparation of the text of the Convention had shown that Annex I substances contained in dredged material are tightly bound and not readily available to organisms. Therefore they would not lead to harmful effects in the marine environment provided that they were regulated under the provisions of Annex II to the Convention.

3.16 The Meeting agreed that the United States and the IAPH submissions on this matter should be relayed to the meeting of the intersessional working group mentioned in paragraph 3.10 above for consideration as appropriate.

Interpretation of the term "trace contaminants"

3.17 The Meeting noted that the Scientific Group on Dumping had agreed that for the time being no further attempt should be made to define the term "trace contaminants" on the basis of numerical standards. This was due to the fact that experience with numerical standards gained by some Contracting Parties had shown them to be of limited value when applied to wastes containing Annex I substances introduced into the sea. However, the Scientific Group in its future discussions, would continue to pursue a practical definition of the term "trace contaminants" to improve the present interpretation to facilitate the implementation of Annex I.

Interpretation of the term "significant amounts"

3.18 The Consultative Meeting considered the proposed revision of the definition of the term "significant amounts" for "lead and lead compounds" and for "pesticides and their by-products not covered by Annex I". On the basis of recommendations put forward by the Scientific Group, these two groups of substances should be considered as present in significant amounts when contained in wastes at concentrations of 0.05% or more by weight. All other substances listed in Annex II, paragraph A, would continue to be regarded as present in significant amounts at concentrations of 0.1% or more.

3.19 The Meeting noted that this proposal was based on the overall concern of some Contracting Parties regarding the potential effects of lead and certain categories of pesticides when introduced into the marine environment rather than on scientific grounds. The Meeting therefore adopted the recommendation as an interim measure, recognizing that a final solution would have to be found at a later stage, in particular when criteria for the allocation of substances to Annexes I and II had been developed.

Guidelines for the application of Annex III

3.20 The Meeting considered the draft Guidelines for the Implementation and Uniform Interpretation of Annex III together with a draft resolution for their adoption. The delegation of France commented that the draft resolution gave the impression that the Guidelines were mandatory and that this could present difficulties particularly with regard to dredged materials.

3.21 In other respects, the French delegation expressed some doubts about the applicability of all of the Guidelines to dredged materials and suggested that, for judging their applicability, concrete cases be studied. It has also expressed the opinion that a distinction should be made between dredged materials which are dumped close to the dredge site and which have a composition very similar to the sediments of the site where they are dumped and, on the other hand those dredged materials which are dumped far away from the dredge site and which could present characteristics very different from those of the sediment at the disposal site. The delegation of the Federal Republic of Germany expressed the view that the Guidelines should include a proviso to the effect that "if practical land-based alternatives to sea disposal were available, a licence should not be issued".

3.22 A number of delegations expressed the view that the Guidelines should be adopted as prepared by the Scientific Group on Dumping. Others preferred the inclusion of the additional guidelines proposed by the Federal Republic of Germany together with an addition proposed by Finland to the effect that all alternatives should be technically feasible and environmentally sound.

3.23 The representative of IAPH supported the view that the Guidelines should not be applicable to clean dredged material and that the Scientific Group on Dumping, at its next meeting, should consider the preparation of specific guidelines on the application of Annex III to certain types of dredged material. IAPH offered, subject to receiving appropriate authority and funding, to assist the Scientific Group in the preparation of such specific guidelines. The Meeting agreed that this matter should be considered by the Scientific Group on Dumping, pending the submission of relevant papers.

3.24 The representative of PIANC informed the Meeting that a report on the application of the Annexes to the disposal at sea of dredged material will be submitted to the next meeting of the Scientific Group for consideration.

3.25 The Japanese delegation expressed its view that the applicability of the Guidelines to dredged material would need additional consideration of the scientific and technical points of view, and therefore no reference to dredged material should be included in the resolution.

3.26 The Meeting set up a drafting group under the chairmanship of Mr. R. Boelens (Ireland) to consider the proposed changes. The Meeting, having considered proposed amendments to the draft resolution on Guidance for the Application of Annex III prepared by the drafting group (LDC 8/WP.3, LDC 8/WP.4), adopted resolution LDC 17(8), together with the Guidelines as set out at Annex 2.



### Incineration at sea

3.27 The Meeting adopted an amendment to the Technical Guidelines' on Incineration at Sea proposed by the Scientific Group regarding the setting of automatic shut-off temperatures at 1100°C rather than 1200°C. This recommendation was based on experiences gained on board incineration vessels showing that wall temperatures were about 150°C lower than flame temperatures and, therefore, activation of shut-off mechanisms at a wall temperature of 1100°C would be more consistent with the mandatory requirement than minimum flame temperature for incineration at sea by 1200°C (Regulation 5 of Addendum to Annex I).

3.28 The Meeting was informed that the Scientific Group had considered the need for governmental control of cleaning and repairs of incineration vessels in particular when these were carried out at sea. The Scientific Group recommended that some form of mandatory supervision of such activities should be considered by the Consultative Meeting. The delegation of the Netherlands, in endorsing the recommendation of the Scientific Group, undertook to prepare in co-operation with other delegations involved in matters concerning incineration at sea a draft proposal for the Meeting. The Meeting noted that a number of scientific and technical aspects would have to be taken into account and therefore agreed that the text prepared by the Netherlands and other delegations be evaluated by the Scientific Group on Dumping at its next session before making any decision on this matter.

3.29 The Meeting, noting that automatic recording devices for monitoring parameters listed in Regulation 6 of the Regulations for the Control of Incineration of Wastes and Other Matter at Sea (Addendum to Annex I) had been developed, recommended the use of such devices by Contracting Parties especially where they can be operated independently of the permittee.

### Problems associated with the implementation of Annex I

3.30 The Meeting concurred with the view expressed by the Scientific Group that Contracting Parties which have not yet submitted documentation on the control of cadmium in their countries, including descriptions of its sources and emissions, as well as on legislative and administrative measures for the prevention of marine pollution by cadmium, should be urged to provide such information to the Scientific Group. It was also noted that the Secretariat would provide a summary paper reflecting the discussions of the Scientific Group on this matter, including a list of documents received since the fifth meeting of the Scientific Group on Dumping.

3.31 With regard to the capping of dredged material contaminated with Annex I substances, the Meeting noted that the Scientific Group in its interim evaluation had concluded that capping had shown to be technically and scientifically feasible and was a useful mitigative measure that showed promise as part of long-term management strategy. The Meeting agreed that capping should continue on an experimental basis under certain circumstances, such as in low-energy environments, but also that it may not be applicable in some situations.

#### Review of reporting procedures

3.32 The Meeting noted that the Scientific Group, in reviewing the current notification procedures, had concluded that there was no need to change the procedures or the notification formats. The incomplete picture of dumping and incineration activities, as well as results of monitoring studies received so far, was due to the failure of many Contracting Parties to meet the requirements of the Convention rather than to the procedures developed by the Consultative Meeting.

3.33 The Secretariat in a note (LDC 8/3/4) also drew attention to the existing procedures and formats and reminded Contracting Parties that any special permit for dumping and incineration at sea should be notified immediately after they have been issued and that annual records of all permits issued in a calendar year should be submitted to the Secretariat by 1 August of the following year. Attention was also drawn to the requirement that the Secretariat should be notified of actual amounts dumped or incinerated per calendar year and of the monitoring of dump sites (LDC 8/3/4, Annexes 3 and 4).

3.34 The Consultative Meeting noted with regret that there were a considerable number of Contracting Parties which in spite of their obligations under the London Dumping Convention had not submitted reports on permits for dumping and incineration at sea. The meeting urged them to submit reports in the future.

3.35 The Irish delegation proposed that the Secretariat should make direct contact with national administrations responsible for dumping at sea with a view to urging them to provide the necessary material. Contracting Parties and non-Contracting Parties were requested to submit to the Secretariat the names and addresses of administrations responsible for the control of dumping and incineration at sea.

3.36 The Meeting also recognized that there was a good record of dumping, incineration and monitoring activities from Contracting Parties to the Oslo Convention submitted to the Secretariat by the Oslo Commission Secretariat in accordance with Article VI(4) of the Convention. However, no detailed and complete information has been received so far from the administrative bodies of other regional conventions on the prevention and control of marine pollution by dumping, such as the Helsinki Convention and the Barcelona Dumping Protocol. The Meeting further recognized that the submission of 'NIL reports' by Contracting Parties not engaged with dumping at sea was an important and necessary part of the recording procedure.

#### Future work of the Scientific Group on Dumping

3.37 The Meeting reviewed the work programme recommended for future meetings of the Scientific Group and tentatively approved the programme, subject to changes that might be appropriate based on decisions made in the course of this Consultative Meeting. A list of substantive items to be included in the agenda of the eighth meeting of the Scientific Group on Dumping, as considered under item 8 of the Agenda, is shown at Annex 6.

3.38 The Meeting expressed its thanks to the ex-Chairman of the Scientific Group on Dumping, Mr. T.A. Wastler (United States) for his excellent endeavours and also expressed the hope that Mr. Wastler would in future continue to actively participate in the work of that Group.

#### 4 REPORT OF THE TASK TEAM 2000 ON A LONG-RANGE STRATEGY FOR THE CONVENTION

4.1 The Chairman of Task Team 2000, Mr. G.L. Holland (Canada) introduced the Report of the Task Team (LDC 8/4). He pointed out that the Report had been revised from the draft report presented to the Seventh Consultative Meeting (LDC 7/4) and that the bases for the revision were comments made by Contracting Parties on the draft report. The Task Team 2000 had considered these comments and revised the Report at a meeting of the Task Team held from 29 September to 1 October 1983. The Meeting's attention was particularly drawn to the specific recommendations of the Task Team (LDC 8/4, paragraphs 4.1-4.10).

4.2 Many delegations expressed their appreciation for the work of the Task Team and agreed in general with the content, conclusions and recommendations of the Report. Several delegations made specific comments.

4.3 The United States delegation introduced document LDC 8/4/1, in which particular attention was drawn to the need for a definition of the term "comprehensive total waste management strategy", and a definition based on the



Annex III Guidelines developed by the Scientific Group on Dumping was suggested. That delegation noted that the first goal in any effort to protect the environment should be to reduce the quantity of waste for which a means of disposal must be found. This should be achieved by improvements in industrial processes, reducing waste outputs and by recycling and reusing wastes to the extent possible.

4.4 The delegation of Mexico introduced LDC 8/4/2 on activities of Mexico within the framework of the Convention and also commented on the Task Team 2000 Report. That delegation stressed the need for an exchange of scientific and technical information on marine pollution and related waste management technologies not only among Contracting Parties but among all nations. This was particularly important in regard to alternatives to ocean disposal in view of the increasing pressure on the oceans caused by various sources of pollution. The delegation supported the proposal for symposia on waste management issues, but felt there should be some mechanism for a subsidy to be provided to developing countries to permit their participation in such meetings. In the view of Mexico the report should also have emphasized the importance of and need for co-ordination with other international organizations, especially UNEP. With respect to consideration of alternatives to sea disposal of radioactive wastes, the countries most directly affected by the proposed disposal should be consulted. With regard to the United Nations Convention on the Law of the Sea, future Consultative Meetings should consider jurisdictional issues, including the role of the International Seabed Authority.

4.5 The delegation of the USSR introduced and summarized his country's comments on the Report (LDC 8/INF.7). The USSR supported the view of the Task Team 2000 that the Annexes to the Convention should be kept under continuing review and that the list of substances contained in the Annexes should be extended in the light of new scientific and technological data on disposal methods and effects on the marine environment.

4.6 The delegation of the USSR supported the conclusion of the Task Team 2000 that the London Dumping Convention is the basis for both planned and existing regional conventions dealing with ocean dumping, and emphasized the importance of regional conventions not adopting provisions which would weaken the provisions of the London Dumping Convention. The delegation pointed out that there is a continuing need for the exchange of scientific and technological information and that there should be better co-ordination of such activities. In this regard a larger number of international organizations should be involved, especially the specialized agencies of the United Nations.

4.7 The delegation of the United Kingdom pointed out that the Report was prepared by the individuals of the Task Team and it was not intended that the Report should be approved as a final document by the Consultative Meeting. It should however be considered as a guideline to be kept under consideration when developing the future work programme for the Consultative Meeting and its subsidiary bodies. The delegation noted that in-depth discussion of the recommendations of the Report would require a considerable length of time and suggested that individual recommendations could be considered at future Consultative Meetings as appropriate.

4.8 The delegation of France felt that the activities of UNEP were over-emphasized and that reference should be made to other organizations, such as FAO, WHO, OECD and the Oslo and Paris Commissions. In the view of the French delegation, some of the recommendations of the Report could be expensive to implement, such as development of a data bank and much increased travel to other meetings. Full consideration of the relationship to regional agreements had not been given, particularly in regard to monitoring of dumping sites which in that delegation's view would be done primarily under such agreements.

4.9 The delegation of Norway noted that the Report referred to a total waste management strategy. In his view it was even more important to have a strategy concentrating on the disposal of waste into marine waters and the Report should emphasize this. Another aspect of the report that required to be stressed was the need for improved surveillance of the marine pollution situation in general. More specific proposals concerning the role, in this regard, of the mechanisms under the London Dumping Convention were needed. The Norwegian delegation also pointed out that more effective national control efforts may well be required to ensure that regulatory measures are fully implemented.

4.10 The delegation of Spain emphasized that the best alternative for the disposal of radioactive waste was for the producers of the waste to dispose of it within their national boundaries and urged that the Report should point this out. The delegation also noted that, while the London Dumping Convention was an umbrella convention with regard to waste disposal at sea, the Law of the Sea Convention was a much broader agreement, and the London Dumping Convention should be amended if necessary to conform to it.

4.11 The delegation of the USSR pointed out that the London Dumping Convention is an ocean dumping convention and its concerns should be with that matter only.

4.12 In responding to the USSR delegation's query in respect of the recommendation of the Task Team that the Consultative Meeting should at a future meeting consider "the surveillance of international waters in relation to activities liable to cause harm to the marine environment" (LDC 8/4, paragraph 4.9.5), the Chairman of the Task Team 2000 stated that not all nations are Contracting Parties to the London Dumping Convention, and the concern expressed was that dumping by such nations in international waters would not be under the supervision of any national or international authority. He further noted that this recommendation was only presented as a possible issue for discussion at a future Consultative Meeting.

4.13 The delegation of the USSR expressed satisfaction with this response, but noted that the term "surveillance" should be replaced by the term "monitoring for the purposes of the Convention".

4.14 The observer from UNEP welcomed the recommendations of the Report, in particular those addressed to UNEP, and emphasized the continuing excellent co-operation with IMO in all their regional seas and global activities. UNEP fully supported the principle of co-sponsoring a seminar on waste management issues and would give the matter its full consideration, should a formal project document for convening such a seminar be submitted to UNEP by IMO. The UNEP observer further pointed out that UNEP had a broad mandate to convene regular meetings of secretariats dealing with all of the various aspects of marine environmental management and that UNEP planned to convene an intersecretariat meeting on this subject during 1984.

4.15 The Chairman of the Task Team 2000 drew the attention of the Meeting to the proposed new Terms of Reference for the Scientific Group on Dumping included in the Report. The Meeting adopted resolution LDC 18(8) including these Terms of Reference as set out at Annex 3.

4.16 With regard to the recommendation of the Task Team that the Secretary-General of IMO should be requested to ensure that adequate Secretariat support is made available to carry out additional tasks outlined by the Task Team (LDC 8/4, paragraph 4.10), the Consultative Meeting recalled the Secretary-General's assurance in his opening statement that every effort would be made, within the resources available to it, to provide Secretariat functions necessary for the effective functioning of Consultative Meetings.

4.17 The Meeting expressed its appreciation to the Secretary-General for his efforts and its confidence that the Secretariat would be able to continue to provide its efficient support at the increased level of activity.



4.18 The delegation of the United States stated that any increased Secretariat support for the work relating to the London Dumping Convention should be achieved within the existing budgetary limit of IMO and that no additional budgetary contributions from IMO Member States should be sought. The delegations of France and Japan concurred with this view.

4.19 The Meeting also expressed its appreciation to the members of the Task Team 2000, took note of the Report and its recommendations, and agreed to use the Report and its recommendations in planning its future work programme.

## 5 THE DUMPING OF RADIOACTIVE WASTES AT SEA

### 5.1 Status report of intersessional work relating to the dumping of radioactive wastes

#### Interagency meeting

5.1.1 The Consultative Meeting noted that, pursuant to its request at the Seventh Meeting, an Interagency Meeting had been organized by the IAEA to prepare bibliographical data for a review of the scientific and technical considerations related to the dumping at sea of radioactive wastes (LDC 8/5/1). The Interagency Meeting was held in Vienna from 19-23 September 1983 and was attended by experts nominated by IAEA, IMO, UNEP, IOC, UNSCEAR and OECD/NEA. Invitations were also sent to WHO, FAO and ICES but they were unable to participate. It was also noted that, in response to requests for material made by IMO and the IAEA, contributions of relevant information from a number of countries were referred to the Interagency Meeting.

5.1.2 The Consultative Meeting noted with appreciation the extensive bibliography prepared by the Interagency Meeting (LDC 8/5/1/Add.1 and LDC 8/INF.4). In Part I of the bibliography (LDC 8/5/1/Add.1), the material was assigned to one of the following four categories.

#### .1 Category 1

Literature on basic data on radiation effects and risks;  
basic radiation protection philosophy and goals; international  
criteria and standards; guidelines and recommendations for  
achieving these standards;

#### .2 Category 2

Reviews of basic information and the status of knowledge in  
relevant areas and critical assessments carried out by  
international organizations or groups of experts called together  
by these organizations;

.3 Category 3

A selection of reviews of information in relevant areas carried out by national bodies and individual experts; and a selection of textbooks;

.4 Category 4

A selection of articles that, in the judgement of the meeting, are authoritative and representative of the scientific literature relevant to carrying out a review of the scientific and technical aspects of dumping of low-level radioactive waste.

The references in the four categories were also identified by major areas (geochemistry, monitoring, etc.). Part II of the bibliography (LDC 8/INF.4) contained all the materials of categories 1 to 4 as well as other material obtained in the course of the preparation of Part I of the bibliography.

5.1.3 The Consultative Meeting agreed that the bibliography would provide a useful data base for the review of the scientific and technical considerations related to the dumping at sea of radioactive wastes.

Meeting of Experts

5.1.4 With regard to the mechanism for the preparation of an expert meeting (LDC 7/12, Annex 6), to review the scientific and technical considerations relevant to the proposals for the amendment of the Annexes to the Convention related to the dumping of radioactive wastes submitted by Kiribati/Nauru and the Nordic States, the Consultative Meeting received documents submitted by Canada (LDC 8/5/2 and LDC 8/INF.5), the United States (LDC 8/5/4) and the United Kingdom (LDC 8/INF.6). Additional papers from Denmark, Nauru, Portugal, Spain and Greenpeace International were distributed on an informal basis.

5.1.5 After introduction of the written submissions and general discussion thereof, the Consultative Meeting agreed to convene a working group under the Chairmanship of Mr. G. Holland (Canada) to consider, in the light of the written submissions and discussion on this matter in the Plenary, the following:

- .1 mechanism and timetable of the review;
- .2 composition of the small expert panel;
- .3 terms of reference of the expert panel; and
- .4 other matters relevant to the review.

5.1.6 Delegations of the Federal Republic of Germany, Finland, France, Ireland, Japan, Portugal, Spain, Switzerland, the USSR, the United Kingdom and the United States and observers from the IAEA and Greenpeace International participated in the Working Group.

5.1.7 The Consultative Meeting considered the report of the Working Group (LDC 8/WP.5). The delegations of Nauru and New Zealand expressed concern over the proposed composition of the panel of experts, favouring the involvement of experts appointed directly by Contracting Parties, on the basis employed in constituting the Task Team 2000, in order that regional and other concerns might be taken into account. Concern was also expressed over the adequacy of the time-frame for completion of the review process. The delegation of Mexico and the Australian observer associated themselves with the comments of Nauru and New Zealand on the composition of the panel of experts. After discussion of these concerns, the Meeting agreed on the procedure for the review as summarized below.

Mechanism and timetable of the review

5.1.8 The Consultative Meeting agreed that the review should be carried out in two stages. The first stage would be a small panel of experts nominated by the International Atomic Energy Agency (IAEA) and the International Council of Scientific Unions (ICSU). The report of the expert panel would be circulated to the Contracting Parties and countries and organizations having observer status, for their scientific and technical comments. These comments would be returned to the IMO Secretariat who should then convene a second meeting. The second meeting would be expanded from the expert panel to include Contracting Parties and observers who may wish to send technical experts to debate their substantive scientific or technical comments with the expert panel. The final report would be prepared at the meeting on the strength of this debate and submitted as an official document to the Ninth Consultative Meeting.

5.1.9 The Consultative Meeting agreed on a timetable for the above process as follows:

- |   |                                                                             |                      |
|---|-----------------------------------------------------------------------------|----------------------|
| 1 | Nomination of experts                                                       | by 13 April 1984     |
| 2 | Meeting and preparation of the report<br>by expert panel                    | by 31 October 1984   |
| 3 | Circulation of the report                                                   | by 30 November 1984  |
| 4 | Submission of scientific and<br>technical comments to Secretariat           | by 29 March 1985     |
| 5 | Expanded meeting and preparation<br>of the final report at IMO Headquarters | by 30 April 1985     |
| 6 | Circulation of final report                                                 | by 28 June 1985      |
| 7 | Ninth Consultative Meeting                                                  | by 30 September 1985 |

5.1.10 The above timetable showed an intersessional period of 18 months before the Ninth Consultative Meeting, because of the onerous review process (It was noted however that this did not imply that Contracting Parties were reverting to the old procedure of having a Consultative Meeting every 18 months). The Consultative Meeting recognized that even with this extension, the timetable is still tight and that time lost due to prolongation of any step in the process was unlikely to be recovered in the latter stages. The full co-operation of the Secretariat, the IAEA, ICSU and the Contracting Parties was therefore essential in achieving the result of the review.

#### Nomination and composition of the expert panel

5.1.11 The Consultative Meeting endorsed the view of the Working Group that the experts chosen to participate in the panel should be respected and distinguished scientists in disciplines related to the task in hand and covering:

- .1 radiological protection
- .2 radiation biology
- .3 radioecology
- .4 radioactive waste management
- .5 modelling
- .6 marine biology
- .7 physical oceanography
- .8 marine geochemistry
- .9 marine ecology
- .10 marine geology



5.1.12 The Consultative Meeting agreed that the IAEA be requested to nominate, in consultation with WHO and UNSCEAR, 5 to 10 experts in the radiological field and modelling (i.e. sub-paragraphs .1 - .5 of paragraph 5.1.11 above) and ICSU to nominate 5 to 10 experts covering the oceanographic field (i.e. sub-paragraphs .5 - .10), both taking into account the geographical distribution of experts insofar as possible. Furthermore in order to accommodate the request of Nauru, New Zealand, Mexico and Australia mentioned in paragraph 5.1.7 above, Prof. Dr. A. Engström undertook to communicate with the IAEA and ICSU to ensure that the experts are chosen from various regions of the world representative of Contracting Parties, in the manner of the previously agreed representation adopted for Task Team 2000.

5.1.13 The Meeting agreed that the mechanism outlined above would ensure the provision of impartial and balanced scientific basis for the review, and would also secure adequate input from Contracting Parties and observers.

5.1.14 The Meeting noted that the Working Group considered that it would be highly desirable if the Consultative Meeting could nominate a Chairman of the expert panel. However, the Consultative Meeting found it impossible to do so within the short time available and therefore decided to leave it to the expert panel to elect its own Chairman at its first meeting.

#### Terms of reference of the expert panel

5.1.15 The Consultative Meeting agreed that the basic terms of reference of the expert panel should be expressed in the general terms agreed at the last session of the Consultative Meeting and supported by specific questions asked by Parties as shown in the submissions of USA (LDC 8/5/4), Denmark, Nauru, Spain and Greenpeace International (informal papers) and any other additional questions which may be submitted later. The expert panel should comment at least on all questions posed and may add its own questions as appropriate. The terms of reference adopted by the Consultative Meeting, including the specific questions, are set out at Annex 4.

#### Finance of the review process

5.1.16 The Consultative Meeting hoped that language difficulties should not be an impediment to the review process and therefore that appropriate interpretation or translation assistance would be available when and if required. The Consultative Meeting was also aware that the IAEA and ICSU would not be in a position to defray the costs of the review process. As far as possible, therefore, it would be necessary for the Contracting Parties to support the

costs of nominated experts. For those experts for whom national support could not be provided, funds would have to be found. In this connexion the Secretary-General stated that IMO would take all possible steps to overcome this problem within the limited resources available.

#### Resolution LDC.14(7)

5.1.17 In the course of the discussion of the review process, the Spanish delegation recalled resolution LDC.14(7) which called for the suspension of all dumping at sea of radioactive materials pending the presentation to the Contracting Parties of the final report of the expert meeting on radioactive matters related to the London Dumping Convention. The Consultative Meeting affirmed that the action taken by the present Consultative Meeting had not affected the status of that resolution.

5.1.18 Consistent with the position taken by Ireland in support of resolution LDC.14(7) last year, the Irish delegation expressed opposition in principle to the dumping of radioactive materials at sea. Ireland welcomed the establishment of this review process on the basis that the evaluation would be objective and impartial.

#### 5.2 Disposal into the sea-bed of high-level radioactive wastes

5.2.1 The Chairman of the Ad Hoc Group of Legal Experts on Dumping, Mr. A. Bos (Netherlands), introduced the report of the meeting (LDC 8/5/3) held at IMO Headquarters from 12 to 14 December 1983 in accordance with a decision taken by the Seventh Consultative Meeting. In his introduction, the Chairman summarized the questions and problems encountered by the Group as well as the results achieved. Before dealing with the legal implications of sea-bed disposal of wastes, the Group had been informed of previous and current work related to scientific and technical aspects of sea-bed disposal, in particular in the OECD/NEA Seabed Working Group and had taken note of the phased programme developed in that Working Group for research and development concluding at some point between the years 2005 and 2010.

5.2.2 The Chairman of the Ad Hoc Group informed the Consultative Meeting that although the Group had been requested inter alia to consider disposal of hazardous wastes other than high-level radioactive wastes, it had been able in the time available to deal only with the legal implications of disposal of high-level radioactive wastes. In so doing, it was clear that a division of opinion existed in the Group as to whether the London Dumping Convention was intended to apply to sub-seabed emplacement of wastes. Some experts considered that this form of disposal did not feature in the discussions in 1972 and therefore was not

covered by the Convention, but in the opinion of others disposal into the seabed of high-level radioactive wastes was incompatible with the obligations under the Convention. There was however a consensus that the Consultative Meeting of Contracting Parties to the London Dumping Convention was the appropriate forum in which to address the question of seabed disposal in particular of high-level radioactive wastes including the question of the compatibility of this type of disposal with the provisions of the London Dumping Convention. Some of these experts considered that if disposal into the sea-bed of such wastes proved to be technically feasible and environmentally sound, the Contracting Parties to the Convention should consider the adoption of amendments to provide for new measures of regulation within its provisions.

5.2.3 Draft resolutions incorporating these and other opinions were considered by the Ad Hoc Group of legal experts and an effort was made to merge them into a single agreed text, but this objective proved impossible to achieve. Two of these draft resolutions were however annexed to the report (LDC 8/5/3). The first of these had been tabled by the experts of Denmark, Finland, Norway and Sweden (LDC 8/5/3, Annex 2) and the second was submitted by the United States (LDC 8/5/3, Annex 3).

5.2.4 The Ad Hoc Group of Legal Experts on Dumping recommended that in order to avoid possible confusion arising from the use of different terminologies the term "disposal into the sea-bed" of high-level radioactive wastes should be used in the future to describe the activity in question.

5.2.5 A general discussion of the report of the Ad Hoc Group followed the Chairman's introduction.

5.2.6 The delegation of Norway introduced the draft resolution (LDC 8/5/3/Add.1) originally proposed by Denmark, Finland, Norway and Sweden at the meeting of the Ad Hoc Group of Legal Experts in December 1983, but also now supported by Iceland. The proponents of this draft resolution were convinced that, consistent with the object and purpose of the Convention and in order to ensure its effective implementation, the term "disposal at sea" covered disposal into the sea-bed. Consequently, each disposal of Annex I substances was currently incompatible with the provisions of the Convention.

5.2.7 Several delegations were convinced that means of disposal should be found within the borders of the States where the wastes were generated or by bilateral agreement in the territory of other States rather than resorting to disposal in areas not under national jurisdiction.

5.2.8 The French delegation submitted a draft resolution (LDC 8/WP.1) together with a statement of the principles on which it had based the text of its draft.

In its view, only scientific and legal considerations should influence the positions of the delegations. The decisions to be reached were long-term in nature and since no plan presently existed for sub-seabed emplacement there was no urgency in reaching such decisions. Nonetheless, the radioactive and other dangerous wastes were in existence and means of dealing with them called for an international agreement based on scientific research and the avoidance of any irresponsible operations.

5.2.9 The Ad Hoc Group of Legal Experts on Dumping was informed in December 1983 that a status report on Sea-bed Disposal of High-Level Radioactive Wastes was being prepared by OECD/NEA. This status report (LDC 8/INF.3) was not yet in final printed form when the Consultative Meeting convened, but a limited number of photocopies were made available to the meeting.

5.2.10 The observer of OECD/NEA, in introducing the above report, stated that ten OECD/NEA member countries and the Commission of European Communities were in the course of examining the feasibility of disposal into the sea-bed as an alternative to deep geologic disposal on land. Disposal on land of high-level radioactive waste was a more advanced concept which was favoured by many countries. However, research is continuing, notably with regard to long-term safety aspects and to the investigation of other disposal alternatives such as disposal into the sea-bed. The present OECD/NEA research programme was focused on the assessment of engineering feasibility and safety aspects of disposal into the sea-bed. No decision with regard to the implementation of such a concept could be taken before these studies had been completed, most probably well into the next century.

5.2.11 The IAPH observer sought clarification as to whether the resolution (LDC 8/5/3, Annex 2), was intended to apply to Annex I substances rather than to high-level radioactive wastes (as indicated in the last paragraph of that text), in view of the decision of the Ad Hoc Group of Legal Experts that the question of the disposal of other hazardous substances into the sea-bed was being left in abeyance for the time being (LDC 8/5/3, paragraph 3.44). The IAPH observer also expressed the view that any reference to the Annex I prohibition and to the incompatibility with the Convention should include appropriate reference to the exceptions set out in Annex I, paragraphs 8 and 9. In this connection the delegate from Norway explained that the resolution submitted by Nordic countries was not intended to apply to non-radioactive wastes.

5.2.12 In introducing document LDC 8/INF.10 the IUCN observer expressed agreement that the London Dumping Convention would be the proper framework for the form of disposal of high-level radioactive wastes under consideration. The



IUCN was a scientific body with a strong interest in the sound management of natural resources and in protection of the marine environment. It welcomed the concept of isolation from the biosphere contained in the draft resolution submitted by the Nordic States. IUCN felt that both present and future research and feasibility studies could be conducted in accordance with international law, as they represented the scientific research forming one of the freedoms of the high seas under the Geneva Convention on the High Seas. It would, however, be necessary to create a regulatory framework within which the technology would develop and eventually be deployed. When and if it became clear that a disposal technique would not adversely affect the marine environment or other resources, the London Dumping Convention permit system, or a derivative thereof, could be initiated to regulate the activity.

5.2.13 Other recommendations made by IUCN in document LDC 8/INF.10 included interpretation of the definition of "dumping" to include disposal of matter into the sea-bed; certain amendments to the Annexes to the London Dumping Convention; and, the introduction into any new disposal régime of safeguards including retrievability and accident control measures as well as monitoring of disposal sites.

5.2.14 The delegate of Nauru expressed the view that although the express prohibition by international law of the disposal of high-level radioactive wastes was not a position on which all delegations presently agreed, the Nauru position was that both treaty and customary law - including the United Nations Convention on the Law of the Sea and newly-emerging fundamental principles of international law - pointed to such a prohibition of disposal of high-level radioactive wastes into the sea-bed. The Nauru delegation elaborated this point by submitting its written comments on this issue to the meeting.

5.2.15 The delegations of Ireland and the Federal Republic of Germany expressed support for the draft resolution of the Nordic States. The delegation of the Federal Republic of Germany observed that the London Dumping Convention could be amended if at any future time it was established scientifically that sub-seabed disposal was safe.

5.2.16 The delegation of Portugal expressed general support for the original draft resolution of the Nordic States in line with the conclusion that the provisions of the London Dumping Convention prohibit any deliberate disposal at sea of waste and other matter listed in Annex I from vessels, aircraft, platforms or other man-made structures at sea. That delegation considered further that the provisions of the Convention should be subject to appropriate amendments based on

scientific and technical evidence of universal acceptance only. The delegation of Portugal suggested that countries and international organizations involved in research on disposal into the sea-bed of wastes and other matter listed in Annex I, namely high-level radioactive wastes, keep the Contracting Parties as well as coastal States informed as to the progress of such research. Finally, the delegation of Portugal supported all effective ways attained through consensus in order to achieve the aims of protecting the marine environment within the framework of the London Dumping Convention.

5.2.17 The delegation of the United States in introducing its draft resolution (LDC 8/WP.8) emphasized that it was intended as a compromise proposal that could be adopted without prejudice to the question of whether or not disposal of high-level radioactive wastes into the sea-bed was included within the Article III definition of dumping. The United States, for its part, considered that the obligation under the Convention to protect the marine environment included an obligation not to engage in disposal of high-level radioactive waste into the sea-bed unless and until it could be done in an environmentally acceptable manner and in accordance with a regulatory mechanism elaborated under the London Dumping Convention. The United States delegation emphasized the need for continued research so that a determination could be made at the appropriate time as to the technical feasibility and environmental acceptability of this possible disposal alternative. The delegation emphasized that the United States was opposed to any action which would have the practical effect of halting that research. The delegation added that even if the alternative of disposal into the sea-bed was determined to be feasible and environmentally acceptable, no such activity was anticipated before the end of the century. In view of this, there appeared to that delegation to be ample time for agreement on the appropriate regulatory mechanism. What was needed at this time, the delegation stated, was agreement in principle that research should continue and that any operational activity should be regulated under the Convention. This would ensure compliance with rigorous criteria, consistent with the obligation under the Convention to protect the marine environment.

5.2.18 The Japanese delegation expressed the view that the object and purpose of the Convention was the protection of the marine environment; at the same time under the Convention's provisions safe disposal of wastes was not prohibited as long as disposal was carried out in a way that protected the marine environment. In the view of the Japanese delegation it was quite premature and not meaningful to decide on the definite legal interpretation of this problem, until the

Contracting Parties could have sufficient knowledge of the scientific and technical backgrounds as to the disposal of high-level radioactive wastes into the sub-seabed. Therefore the Japanese delegation fully supported the proposal presented by the United States. Finally the Japanese delegation pointed out that an adoption of any resolution should be based on consensus in order to preserve the integrity of the Convention.

5.2.19 The United Kingdom delegation emphasized a need for due regard to the widespread opinion that international control of the disposal of radioactive wastes would be indispensable. In pursuit of this eventuality, the Consultative Meeting was, however, confronted with the disagreement as to whether sea-bed disposal of high-level radioactive wastes was or was not already covered by the London Dumping Convention. In the view of that delegation, the Consultative Meeting would not be empowered to resolve any ambiguity it might perceive and thereby determine the scope of the treaty. In view of this, the task of the Meeting would be to determine the means by which international control could be ensured if and when the essential scientific research was completed and the feasibility of such disposal established.

5.2.20 In the view of the Canadian delegation, the practical implications of agreeing that the definition of "dumping" in the London Dumping Convention does not cover disposal into the sea-bed are that in order to ensure that such disposal was covered it would be necessary to amend the text of the Convention itself, in accordance with the provisions of Article XV(1) thereof. This procedure would require explicit acceptance by Contracting Parties for the entry into force of such an amendment. If, however, it were agreed that the definition of "dumping" covers this kind of disposal the prohibition in Annex I would apply for the time being and, in due time, Annex I, paragraph 6 might be amended by the easier procedure provided for in Article XV(2) with respect to amendment of Annexes to the Convention, if scientific and technical considerations led to the conclusion that this form of disposal could safely be carried out. The procedure in the latter case would be the same as that used on an earlier occasion to allow the incineration at sea of Annex I substances. Canada supported the OECD/NEA Coordinated Research Programme and stressed the importance of exploring not only the technical feasibility of disposal into the sea-bed but also its environmental acceptability. The Canadian delegation did not believe that a declaration by the Contracting Parties to the London Dumping Convention with the effect that this kind of disposal is currently covered and prohibited by the Convention need prejudice the future of this Research Programme and intended to ensure that such a declaration would not have such an undesirable effect.

5.2.21 In the view of the delegation of the USSR it would be unreasonable and arbitrary to expand the scope of the London Dumping Convention by interpretation. This delegation could find no legal basis for extending the commitments of sovereign States beyond those which they had assumed. In any case, the matter required no decision at the present Meeting and might be postponed to a later time.

5.2.22 The Spanish delegation believed that sea-bed disposal is covered and prohibited by the London Dumping Convention because it falls within the definition of "dumping at sea". Spain is opposed to research on this matter, and in the event that some other countries undertake this research, those investigations must not include the disposal of any high-level radioactive matter. Any future sea-bed disposal must be done in a manner that ensures permanent isolation from the biosphere. The protection of the marine environment must be total and absolute.

5.2.23 Statements were made by the observers from Greenpeace International and Friends of the Earth International. In the view of the latter, scientific investigation was desirable but the consideration of the problem of sub-seabed disposal should not be reduced to the purely technical dimension. Other considerations were also very important. In the Canary Islands, there was deep concern about the consequences of waste disposal in the marine environment. Greenpeace International considered that "disposal at sea" should be interpreted to include disposal of high-level radioactive wastes into the sea-bed and was accordingly prohibited under Annex I. States were under a responsibility to take all necessary measures to protect the marine environment from such highly toxic and persistent substances. Any consideration of the issue should also take account of the United Nations Convention on the Law of the Sea. The Greenpeace observer could not agree that general principles of international law did not allow the interpretation of Conventions by the Parties thereto. He cited Article 31 of the Vienna Convention on the Law of Treaties and pointed out that authoritative interpretation was resorted to in many bodies, including IMO.

5.2.24 The delegation of Morocco reaffirmed the wish that all Contracting Parties would reach a consensus on this subject. He urged the Contracting Parties to exercise the greatest possible prudence before any disposal into the sea-bed, pending further information from the OECD/NEA Research Programme. He supported the Nordic draft resolution (LDC 8/5/3, Annex 2) which was the closest to the position of Morocco and he did not rule out the possibility of subscribing to it in due course when all the implications of the text had been grasped.



5.2.25 Written proposals by a number of delegations were considered by the Consultative Meeting and consultations undertaken with a view to preparing a draft resolution on sub-seabed disposal of high-level radioactive wastes. Included in the written submissions were a draft resolution by France (LDC 8/WP.1), another by the United States (LDC 8/WP.8) and a draft resolution (LDC 8/WP.6/Rev.1) submitted by eleven States participating in the Meeting.

5.2.26 An informal Working Group, established by the Meeting to merge the proposals set out in the above-mentioned Working Papers made, in the view of many delegations, substantial progress in narrowing the gap between the proposed draft resolution but reported that there was insufficient time to make a specific recommendation to the Plenary.

5.2.27 The delegation of the United Kingdom explained that it could not accept a resolution implying that sub-seabed disposal of high-level radioactive wastes were covered by the London Dumping Convention. It could, however, accept the French draft resolution (LDC 8/WP.1) and, with minor modifications, the United States draft resolution (LDC 8/WP.8). In its view, the stage had not been reached - and would not be reached for an appreciable time - at which clear-cut decisions would have to be taken about the treaty régime appropriate to this form of disposal. The only major commitment required at this stage, which the United Kingdom would be ready to give, was to ensure that no State proceeded to disposal into the sea-bed of dangerous wastes until it was proved feasible and environmentally acceptable. This view was also expressed by the Netherlands.

5.2.28 The delegation of Switzerland took note of the contention, which could not be reconciled about whether disposal into the sea-bed was covered or not by the London Dumping Convention, and it proposed that the Meeting should take no decision on that question. That delegation acknowledged the division of opinion on the legal aspects and noted the general agreement to defer any consideration covering disposal into the sea-bed. In due time it might be appropriate to invite IAEA to set safety standards as proposed by several Contracting Parties.

5.2.29 The delegations of Argentina, Brazil, Chile, Cuba and Panama declined to accept the wording of any resolution which implied an agreed interpretation of the London Dumping Convention.

5.2.30 In the aftermath of consultations among the participating delegations and modification of the draft resolution originally submitted by the Nordic States (LDC 8/5/3, Annex 2) delegations supported the draft resolution set out in

LDC 8/WP.6. Six more delegations became co-sponsors of a revised version of that draft resolution (LDC 8/WP.6/Rev.2). These delegations were Argentina, Brazil, Canada, Chile, Cuba and Panama. Mexico joined these delegations in the course of the debate (LDC 8/WP.6/Rev.3).

5.2.31 The delegation of France suggested that all that was possible at this stage was to recognize that there were two different legal opinions as to whether sea-bed disposal constituted dumping under the London Dumping Convention, and to reflect this fact in a resolution and proceed to agree on the substantive issues contained in the operative paragraph of (for example) the resolution submitted by France (LDC 8/WP.1).

5.2.32 The delegation of New Zealand reiterated its position that sea-bed disposal was, at the least, contrary to the spirit of the Convention. However, it recognized that there were legal arguments in support of each point of view. In these circumstances, it expressed reservations about any resolution which sought at this meeting to make a legal determination. It considered that the Convention was the appropriate forum to discuss and decide how to deal with the question of sea-bed disposal and went on to say that it was important that Contracting Parties should try and obtain a consensus on how to do so. It concluded by saying that New Zealand would be opposed to any suggestion that sea-bed disposal was consistent with the London Dumping Convention or with customary international law.

5.2.33 The delegation of the Netherlands felt that substantial progress had been made and that certain elements of agreement had emerged from the consultations, although there was no agreement on a single text of a resolution. Therefore he recommended that the Meeting should reflect in the report those elements of agreement which had been achieved. On this point the delegation of Finland expressed its agreement and added that if the disagreement as to legal interpretation could be set aside it should be possible to record important elements of agreement on technical matters.

5.2.34 The United States, in introducing LDC 8/WP.8/Rev.2 stated that it was intended to serve as a basis for consensus which sets aside the differing interpretations of the Convention that the Contracting Parties have both with respect to the definition of dumping and to the relevance of the obligation under the Convention to protect the marine environment from potential disposal into the sea-bed of high-level radioactive waste.

5.2.35 The United States while prepared to set aside those differences of interpretation as part of a consensus resolution, still maintained the view that the obligation under the Convention to protect the marine environment included an obligation not to engage in disposal into the sea-bed of high-level radioactive waste unless and until it has been determined that the activity was technically feasible and could be undertaken in compliance with rigorous criteria, ensuring protection of the marine environment.

5.2.36 In order to avoid possible confusion which might arise from the use of different terminologies, the Consultative Meeting decided that the term "disposal into the sea-bed" of high-level radioactive wastes should be used in future discussions on the same subject.

5.2.37 In concluding its discussion of this item, the Consultative Meeting agreed that the draft resolution submitted by France, Japan, the Netherlands, Switzerland, United Kingdom and United States (LDC 8/WP.8/Rev.2), and the draft resolution submitted by Argentina, Brazil, Canada, Chile, Cuba, Denmark, Dominican Republic, Finland, Federal Republic of Germany, Iceland, Ireland, Mexico, Nauru, Norway, Panama, Spain and Sweden (LDC 8/WP.6/Rev.3) should be annexed to the report and that Contracting Parties should be invited to consider them in the intersessional period with a view to reaching a consensus at the next Consultative Meeting. Both draft resolutions are set out at Annex 5.

5.2.38 Without prejudice to the question of the applicability of the London Dumping Convention to disposal of high-level radioactive wastes or other high-level radioactive matter into the sea-bed, the Consultative Meeting arrived at a consensus on the following:

- .1 The Consultative Meeting of the Contracting Parties to the London Dumping Convention is the appropriate international forum to address the question of the disposal of high-level radioactive wastes and matter into the sea-bed, including the question of the compatibility of this type of disposal with the provisions of the London Dumping Convention;
- .2 no such disposal should take place unless and until it is proved to be technically feasible and environmentally acceptable, including a determination that such wastes and matter can be effectively isolated from the marine environment, and a regulatory mechanism is elaborated under the London Dumping Convention to govern the disposal into the sea-bed of such radioactive wastes and matter.

### 5.3 Other activities related to the sea disposal of radioactive wastes

5.3.1 The Meeting noted that the following submissions had been distributed under this agenda item:

- .1 LDC 8/5 - France: Critical studies and comments to the Report "Evaluation of Oceanic Radioactive Dumping Programmes" (LDC 7/INF.2);
- .2 LDC 8/INF.2 - IAEA: Environmental Assessment Methodologies for Sea Dumping of Radioactive Wastes;
- .3 LDC 8/INF.8 - OECD/NEA: Co-ordinated Research and Environmental Surveillance Programme to Sea Disposal of Radioactive Waste (Progress Report 1983); and
- .4 LDC 8/INF.11 - IAEA: Activities of IAEA related to its responsibilities for sea disposal of radioactive matter.

5.3.2 The Meeting, welcoming the information provided in the above documents, agreed that the documents mentioned in sub-paragraphs .1 and .3 above should be considered in detail by the scientific review group on the sea disposal of radioactive wastes (see paragraph 5.1.8 above).

5.3.3 The observer of OECD/NEA informed the Meeting that the suitability of the North-East Atlantic dumping site for the dumping of low-level radioactive waste was currently being reviewed by his Agency and that a report on the review would be available in early 1985.

5.3.4 The Meeting appreciated the efforts made by the IAEA in producing the report on "Environmental Assessment Methodologies for the Dumping of Radioactive Wastes" which reflected the results of the Joint IAEA/IMO Technical Committee Meeting convened in co-operation with UNEP in Summer 1982 at the request of the Fifth Consultative Meeting (LDC V/12, paragraph 6.10). Delegations were invited to submit written comments to the IAEA for review of the report prior to the publishing of this document as an IAEA Technical Report. The Meeting realized that many aspects in the report were very valuable for the consideration of land/sea disposal operations for many non-radioactive wastes and therefore agreed that the report be evaluated by the Scientific Group on Dumping when considering the selection of land- or sea-based alternatives for the disposal of wastes.



5.3.5 The Meeting further noted the work carried out by the IAEA on the disposal of radioactive wastes at sea. The work completed on this matter consisted of the report on the Control of Radioactive Waste Disposal into the Marine Environment (IAEA Safety Series No.61), the work related to De Minimis Quantities of Radioactive Waste Exempted from Special Permits under the London Dumping Convention (IAEA-TECDOC to be published in 1984) and the Oceanographic and Radiological Bases for the Definition of High-Level Radioactive Waste Unsuitable for Dumping at Sea (IAEA Safety Series to be published in 1984/1985).

5.3.6 The IAEA observer also informed the Meeting that a review of the IAEA Revised Definition and Recommendations is expected to be completed in 1984 and recommendations to revise the document will be submitted to the IAEA's Board of Governors in 1985.

5.3.7 The Meeting expressed its thanks to the observers of IAEA and OECD/NEA for the information provided.

## 6 PROMOTION OF TECHNICAL ASSISTANCE

### Technical assistance activities of the Organization

6.1 In introducing LDC 8/6, the Secretary pointed out that this document covered only those aspects of IMO's programme that were directly relevant to the London Dumping Convention. Comprehensive reports on IMO's technical assistance activities in the marine pollution field had been distributed to the nineteenth session of the Marine Environment Protection Committee (MEPC 19/10, MEPC 19/10/1, MEPC 19/10/2) and these were available for information to the Consultative Meeting.

6.2 The Meeting was informed that the Secretariat had recently received several requests from developing countries for advisory services concerning the formulation of national legislation to implement international conventions for which IMO was responsible, including MARPOL 73/78 and the Civil Liability (1969) and Fund (1971) Conventions. Advice had also been requested on the preparation of legislation to give effect to the London Dumping Convention, as well as technical and administrative implications arising therefrom.

6.3 The Secretary stated that it would be appreciated if Contracting Parties could provide the Secretariat with the names of experts who would be available to undertake such advisory missions. In this connexion it was pointed out that funds available from IMO's programme would cover only travel and subsistence costs associated with such missions.

Fifth International Ocean Disposal Symposium, Oregon, U.S.A.

6.4 The Meeting noted that IMO would be providing support for the above symposium, which would be held at Oregon State University, Corvallis, from 10 - 14 September 1984 (LDC 8/6, paragraph 4).

Film on waste disposal at sea

6.5 In taking note of information provided by the Secretariat on plans of the Marine Science Research Center of the State University of New York to produce a film on waste disposal at sea (LDC 8/6, paragraphs 5 - 7), in particular that the planners "expected that such an undertaking would be favoured by United States administrations provided that there was additional support elsewhere", the Meeting was informed by the United States delegation that it had so far not been informed of such an undertaking and therefore could not comment on this matter before detailed information had been made available to it.

Seminars

6.6 The Meeting noted that IMO was currently negotiating with UNEP on a possible project for the organization of a seminar on waste disposal at sea in the Pacific region.

6.7 The Spanish delegation expressed the view that efforts by the Organization to obtain support for the conduct of such seminars should be encouraged by Contracting Parties to the London Dumping Convention. In this connexion, the Spanish delegation intimated the willingness of its Government to host a seminar if such opportunity should arise.

7 RELATIONS WITH OTHER ORGANIZATIONS

IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP)

7.1 The Secretary drew the Meeting's attention to the outcome of a UNEP initiative at the thirteenth session of GESAMP (28 February - 4 March 1983) which had resulted in the establishment of a new Working Group on the Methodology and Guidelines for the Assessment of the Impact of Pollutants on the Marine Environment (LDC 8/7, paragraphs 3.1 to 3.5). Bearing in mind the relevance of the Group's work to the applications of the London Dumping Convention, the Secretary suggested that the Consultative Meeting might wish to request through the IMO Technical Secretary of GESAMP that the Working Group take particular account of the impact and assessment of dumping at sea in its work.



7.2 The UNEP observer explained to the Meeting that the Working Group had been proposed to GESAMP with two objects in mind: firstly, to allow full discussion of the concept of waste receiving capacity of the marine environment which, if found to be acceptable as a philosophy, could lead to the development of guidelines for assessing that capacity; secondly, on the basis of these guidelines, it was envisaged that guidance could be prepared on the assessment of environmental impact of pollutants from various sources or activities. The UNEP observer expressed the hope that IMO would consider joining FAO, WHO and IAEA as a sponsoring agency on this study and would make sure that expertise on dumping will be provided at future meetings.

7.3 Referring to the proposal to the Seventh Consultative Meeting that an intersessional meeting be held to prepare guidelines for both the preparation and evaluation of environmental impact assessments in relation to proposals for the dumping of wastes (LDC 7/12, paragraph 6.5), the New Zealand delegation suggested that the Consultative Meeting should delay convening an intersessional meeting of experts on this subject until the final report of the GESAMP Working Group was available. That delegation further proposed that the Organization should nominate one or two dumping experts to participate in the Working Group. The Meeting concurred with this proposal.

7.4 The Secretary informed the Meeting that IMO would take the necessary steps to respond to the wish of the Contracting Parties in supporting the work of the GESAMP Working Group within the available resources.

#### United Nations Environment Programme (UNEP)

7.5 The Meeting noted that the draft Protocol dealing with Prevention of Pollution by Dumping had been considered by the second meeting of experts on a Draft Convention for the Protection and Development of the Natural Resources and Environment of the South Pacific Region held in Noumea, New Caledonia, 7-16 November 1983 (LDC 8/7, paragraphs 1.1 to 1.6) and that a member from both the IMO and IAEA Secretariats had assisted the meeting in its deliberations.

7.6 Some additional background to the above meeting, which formed part of the South Pacific Regional Environmental Programme (SPREP), was provided by the UNEP observer.

7.7 The Meeting also took note of a number of points arising from the first session of the Ad Hoc Working Group of Experts on the Protection of the Marine Environment against Pollution from Land-based Sources, Geneva, 28 November - 2 December 1983 (LDC 8/7, paragraphs 2.1 - 2.2).

7.8 The United States delegation drew the attention of the Consultative Meeting to the first session of the Ad Hoc Working Group of Experts on the Environmentally Sound Management of Hazardous Wastes which was to take place in Munich, Federal Republic of Germany, 28 February - 5 March 1984, and which formed part of the programme being pursued by UNEP in accordance with the outcome of the Ad Hoc Meeting of Senior Government Officials in Environmental Law, Montevideo, 28 October - 6 November 1981. The Secretariat was requested to monitor this activity and to report the outcome to the Ninth Consultative Meeting.

#### Oslo Commission

7.9 The Consultative Meeting took note of a report submitted by the Oslo Commission Secretariat on the outcome of the Ninth Meeting of the Oslo Commission (LDC 8/7/1). The observer of the Oslo Commission informed the Meeting in particular on the progress that had been achieved by the Oslo Convention Contracting Parties in reducing the number of permits issued for the disposal at sea of dredged material with unlimited periods of validity and on the stricter controls being exercised over the licensing of the dumping of such matter. The observer further reported that the Oslo Commission had adopted a revised and more restrictive Prior Consultation Procedure for the dumping of wastes containing Annex I substances. Concerning incineration at sea, the Oslo Commission observer informed the Consultative Meeting of the progress being made in three countries which are Parties to the Oslo Convention to strengthen the regulatory controls over incineration operations at sea.

7.10 The observer then recalled that 1984 marked the tenth anniversary both of the entry into force of the Oslo Convention and the signing of the Paris Convention. To celebrate the occasion the two Commissions had agreed that a book be published in the latter part of the year describing the history and achievements during the last 10 years and containing also a series of chapters describing the waste management policies of each of the Contracting Parties to these Conventions with the aim of placing the disposal at sea option in context. The Commissions would also be taking the opportunity to discuss together their future policy and working methods for the next 10 years.

#### 8 FUTURE WORK PROGRAMME AND DATE OF NEXT SESSION

8.1 The Meeting took note of the updated Action Plan for the Consultative Meeting prepared by the Secretariat (LDC 8/8) and requested the Secretariat to revise the Action Plan in the light of the progress made at the present Meeting. Contracting Parties were invited to submit comments on LDC 8/8 to the Secretariat for incorporation in the revised version.



8.2 The Consultative Meeting, in the light of its Action Plan and the work accomplished during the current meeting, agreed on substantive items to be included in the Provisional Agenda for the Ninth Consultative Meeting and the eighth meeting of the Scientific Group on Dumping, as shown in Annex 6.

8.3 The Meeting noted that the intersessional ad hoc working group on the Annexes to the Convention referred to in paragraph 3.11 above would meet from 18 to 20 July 1984.

8.4 The Consultative Meeting further noted that the review of the scientific and technical considerations related to the proposals for amending the Annexes to the Convention in regard to dumping of radioactive wastes at sea would be carried out during the intersessional period as shown on the timetable in paragraph 5.1.9 above. Recognizing that the review process should be commenced as soon as possible, the first meeting of the panel of experts should if possible be held by October 1984.

8.5 The Consultative Meeting agreed to hold its ninth meeting from 23 to 27 September 1985. These dates are tentative as they relate to the expected date of receipt of the report of the review of the scientific and technical considerations referred to in paragraph 8.4 above. The eighth meeting of the Scientific Group on Dumping will be held in February 1985.

## 9 OTHER BUSINESS

### Problems of persistent plastics

9.1 The Consultative Meeting was informed by the United States delegation that it would host in Honolulu, Hawaii, an International Scientific and Technical Workshop on Entanglement in Abandoned Fishing Nets and Other Marine Debris from 30 October to 2 November 1984. This workshop would be held in view of the growing problems concerning the loss or disposal at sea of plastic fishing nets and lines which are evidenced in a substantial increase in mortality of marine mammals, fish and sea birds and some damage to vessels, caused by this debris. Although a significant part of plastic debris might have resulted from activities which cannot be classified as dumping, it might at the same time require more attention in future.

9.2 The delegations of Spain and Iceland expressed their concern on the matter raised by the United States, noting special problems in marine and coastal areas adjacent to their coasts. These delegations requested that problems related to loss or disposal at sea of fishing nets and other marine debris be addressed in detail at the Ninth Consultative Meeting.

9.3 The observers from Greenpeace and Friends of the Earth also commented on the seriousness of the problem of entanglement in marine debris. Greenpeace provided informal documentation on this subject at the meeting, and the observer from Friends of the Earth indicated that his organization would submit information on this matter in the near future.

9.4 The meeting agreed that hazards caused by loss or disposal at sea of fishing nets and other marine debris be considered at the Ninth Consultative Meeting. The United States delegation undertook to prepare additional information for consideration by the Ninth Consultative Meeting.

Election of the Chairman and Vice-Chairmen for the intersessional period and the Ninth Consultative Meeting

9.5 The Consultative Meeting noted and concurred with the suggestion that, in line with the practice of other IMO technical bodies, the Chairman and the Vice-Chairmen should be elected at the closure of Meetings and hold office during the intersessional period and at the next session. Accordingly the Meeting unanimously elected Mr. G.L. Holland (Canada) as Chairman, and Dr. F.S. Terziev (USSR), and Admiral A. Cruz, Junior (Portugal) as first Vice-Chairman and second Vice-Chairman respectively for the intersessional period and the Ninth Consultative Meeting.

9.6 Recalling that the retiring Chairman, Prof. Dr. A. Engström had held office for four years, which was the maximum period allowed by its Rules of Procedure, the Meeting recorded its deep appreciation for the valuable contribution that Prof. Engström had made during his long association with the Convention. The Meeting was unanimous in its desire that Prof. Engström should continue to contribute to its work to the fullest possible extent.

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ANNEX 1

## AGENDA FOR THE EIGHTH CONSULTATIVE MEETING

- 1 Adoption of the Agenda
  - LDC 8/1 - Secretariat
  - LDC 8/1/1 - Secretariat
  - LDC 8/1/2 - Secretariat
  - LDC 8/1/2/Corr.1 - Secretariat
- 2 Status of the London Dumping Convention
  - LDC 8/2 - Secretariat
  - LDC 8/2/1 - Secretariat
- 3 Report of the Scientific Group on Dumping
  - LDC 8/3 - Secretariat
  - LDC 8/3/1 - United States
  - LDC 8/3/2 - IAPH
  - LDC 8/3/2/Add.1 - IAPH
  - LDC 8/3/3 - Secretariat
  - LDC 8/3/4 - Secretariat
  - LDC 8/WP.2 - Drafting Group
  - LDC 8/WP.3 - Drafting Group
  - LDC 8/WP.4 - Drafting Group
- 4 Report of the Task Team 2000 on a long-range strategy for the Convention
  - LDC 8/4 - Secretariat
  - LDC 8/4/1 - United States
  - LDC 8/4/2 - Mexico
  - LDC 8/INF.7 - USSR
- 5 The dumping of radio-active wastes at sea
  - LDC 8/5 - France
  - LDC 8/5/Corr.1 - France
  - LDC 8/5/1 - IAEA
  - LDC 8/5/1/Add.1 - IAEA
  - LDC 8/5/2 - Secretariat
  - LDC 8/5/3 - Report of the Ad Hoc Group of Legal Experts on Dumping
  - LDC 8/5/3/Add.1 - Secretariat
  - LDC 8/5/4 - United States
  - LDC 8/INF.2 - Secretariat (IAEA)
  - LDC 8/INF.3 - Secretariat (OECD/NEA)

LDC 8/INF.4	-	IAEA
LDC 8/INF.5	-	Canada
LDC 8/INF.6	-	United Kingdom
LDC 8/INF.8	-	OECD/NEA
LDC 8/INF.9	-	France
LDC 8/INF.10	-	IUCN
LDC 8/INF.11	-	IAEA
LDC 8/INF.12	-	Chile
LDC 8/WP.1	-	France
LDC 8/WP.5	-	Working Group
LDC 8/WP.6/Rev.3	-	Argentina, Brazil, Canada, Chile, Cuba, Denmark, Dominican Republic, Finland, Federal Republic of Germany, Iceland, Ireland, Mexico, Norway, Panama, Spain and Sweden
LDC 8/WP.7/Rev.1	-	Canada and Finland
LDC 8/WP.8/Rev.2	-	France, Japan, the Netherlands, Switzerland, the United Kingdom and the United States

6 Promotion of technical assistance

LDC 8/6	-	Secretariat
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7 Relations with other organizations

LDC 8/7	-	Secretariat
LDC 8/7/1	-	Oslo Commission

8 Future work programme and date of next session

LDC 8/8	-	Secretariat
LDC 8/8/1	-	Secretariat

9 Any other business

No documents

10 Consideration and adoption of the report

LDC 8/WP.9	-	Secretariat
LDC 8/WP.9/Add.1	-	Secretariat
LDC 8/WP.9/Add.2	-	Secretariat
LDC 8/WP.9/Add.3	-	Secretariat
LDC 8/WP.9/Add.4	-	Secretariat
LDC 8/WP.9/Add.5	-	Secretariat
LDC 8/WP.9/Add.6	-	Secretariat
LDC 8/WP.9/Add.7	-	Secretariat
LDC 8/10	-	Report

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ANNEX 2

RESOLUTION LDC.17(8)

GUIDANCE FOR THE APPLICATION OF ANNEX III

THE EIGHTH CONSULTATIVE MEETING,

RECALLING Article 1 of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, which provides that Contracting Parties shall individually and collectively promote the effective control of all sources of pollution of the marine environment,

NOTING the discussion which took place within the Scientific Group on Dumping on the need for Contracting Parties, when establishing criteria governing the issue of permits for the dumping of matter at sea, to be guided in their application of the provisions of Annex III to the Convention,

HAVING CONSIDERED the draft Guidelines for the Application of Annex III to the Convention prepared by the Scientific Group on Dumping,

NOTING that, subject to Articles IV(2) and VI(3) of the Convention, the factors listed in Annex III may not be relevant to all materials to be dumped and thus, in certain cases such as with some clean dredged material, not all of the factors and corresponding interpretations may be applicable,

1 ADOPTS the Guidelines for the Application of Annex III to the Convention as set out at Annex,

2 RESOLVES that Contracting Parties to the Convention shall take full account of the Guidelines for the Application of Annex III in considering the factors set forth in that Annex prior to the issue of any permit for the dumping of matter at sea,

3 RECOMMENDS that in the application of those guidelines referring to the characteristics of dumping site and method of deposit the content and conclusions of the GESAMP Reports and Studies No.16 on Scientific Criteria for the Selection of Waste Disposal Sites should be taken into account.

ANNEX

GUIDELINES FOR THE APPLICATION  
OF ANNEX III\* TO THE LONDON  
DUMPING CONVENTION

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Article IV(2): Any permit shall be issued only after careful consideration of all the factors set forth in Annex III, including prior studies of the characteristics of the dumping site, as set forth in Sections B and C of that Annex.

ANNEX III: Provisions to be considered in establishing criteria governing the issue of permits for the dumping of matter at sea, taking into account Article IV(2), include:

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Interpretation:

Each authority or authorities designated in accordance with Article VI for the issue of general and special permits for the disposal of wastes and other matter at sea shall, when considering a permit application, carefully study all the factors set out in Annex III. This includes the establishment of procedures and criteria for:

- 1 deciding whether an application for sea disposal should be pursued in the light of the availability of land-based disposal or treatment methods;
- 2 selecting a sea disposal site, including the choice and collection of relevant scientific data to assess the potential hazards to human health, harm to living resources and marine life, damage to amenities or interference with other legitimate uses of the sea;
- 3 choosing appropriate disposal methods and conditions;
- 4 developing an appropriate monitoring programme.

The above mentioned criteria should enable permit applications to be effectively assessed and likely environmental hazards to be evaluated.

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\* For the disposal at sea of radioactive wastes additional requirements recommended by the IAEA have to be taken into account (INFCIRC/205/Add.1/Rev.1). For the control of incineration of wastes at sea specific site selection criteria have been established (Regulation 8 of Addendum to Annex I).

## A - CHARACTERISTICS AND COMPOSITION OF THE MATTER

- 
- 1 Total amount and average composition of matter dumped (e.g. per year).
  - 2 Form, e.g. solid, sludge, liquid, or gaseous.
  - 3 Properties: physical (e.g. solubility and density), chemical and biochemical (e.g. oxygen demand, nutrients) and biological (e.g. presence of viruses, bacteria, yeasts, parasites).
- 

### Interpretation:

In order to assess environmental transport and fate, including potential effects on water quality and biota, the total amount of wastes proposed to be dumped within a time period, and the physical, chemical and biological composition of the waste should be known. The first step for the characterization of a waste or other matter proposed for dumping at a site should be the collection of existing data on the waste composition or a waste analysis.

This should not mean that every waste should be subjected to exhaustive chemical analysis to establish the concentrations of a standard wide-ranging list of chemical elements or compounds. Knowledge of the raw materials and production processes used may often provide a key to the probable composition of the waste. A selective analysis may then be sufficient for a preliminary assessment. As a minimum, it should be established whether any Annex I or Annex II materials are present.

The analysis should include appropriate measurements of the composition of major components. In cases where anthropogenic chemicals of high toxicity are known or suspected to be involved, those minor components which are reasonably identifiable should be measured.

In addition data should, as appropriate, be obtained on physical, chemical and biological properties of the waste or other matter, such as:

- Solubility
- Percent solids
- Density (specific gravity) of bulk matter, its liquid and particle phases
- Grain size fractions of total solid phase (e.g. clay-silt/sand-gravel fractions of dredged material)
- pH
- Biochemical oxygen demand (BOD)
- Chemical oxygen demand (COD)
- Nutrients
- Microbiological components.

- 
- 4 Toxicity.
  - 5 Persistence: physical, chemical and biological.
  - 6 Accumulation and biotransformation in biological materials or sediments.
- 

#### Interpretation:

If the chemical analysis of the wastes shows the presence of substances whose biological effects are not well known, or if there is any doubt as to the exact composition or properties of the waste, it may be necessary to carry out suitable test procedures for toxicity, persistence and bioaccumulation, which may include the following:

- 1 acute toxicity tests on phytoplankton, crustaceans or molluscs, fish, or other such organisms as may be appropriate;
- 2 chronic toxicity tests capable of evaluating long-term sublethal effects, such as bioassays covering an entire life cycle;
- 3 tests to determine the potential for bioaccumulation of the substances contained in the waste and, if appropriate, the potential for eventual elimination. The test organisms should be those most likely to bioaccumulate the substances concerned; and



- 4 tests for determining the persistence of substances contained in the waste. The potential for degradability of these substances should be determined using bacteria and water typical of the proposed dumping site. The tests should attempt to reflect the conditions at the proposed dumping site.

If appropriate, the test procedures described above should be carried out separately with the solid, suspended and/or liquid phases of wastes proposed for sea disposal.

A number of substances, when entering the marine environment, are known to be altered by biological processes to more toxic substances. This should be taken into particular account when the various tests mentioned above are performed.

- 
- 7 Susceptibility to physical, chemical and biochemical changes and interaction in the aquatic environment with other dissolved organic and inorganic materials
- 

Interpretation:

Substances introduced into the sea may be rapidly rendered harmless by physical, chemical and biochemical processes but others may be changed to products with more hazardous properties than those of the original substances. In these latter cases, it may be appropriate to carry out the tests outlined in paragraph A6 above with the anticipated products.

- 
- 8 Probability of production of taints or other changes reducing marketability of resources (fish, shellfish, etc.)
- 

Interpretation:

In evaluating the possible effects of the waste concerned on marine biota, particular attention should be paid to those substances which are known to accumulate in marine organisms with the result that seafood is tainted and rendered unpalatable. In many cases there might be a suspicion about the tainting property of a substance without the availability of firm data. In these cases a taste panel will have to determine threshold limits, if any, of the tainting properties of the substance concerned.

"Other changes reducing the marketability of resources" referred to in paragraph 8 of Section A include discolouration of fish flesh, and fish diseases such as fin rot and tumours.

#### B - CHARACTERISTICS OF DUMPING SITE AND METHOD OF DEPOSIT

Matters relating to dump site selection criteria are addressed in greater detail in a study prepared by GESAMP\* (Reports and Studies No.16: Scientific Criteria for the Selection of Waste Disposal Sites at Sea, IMO 1982) which should be considered in conjunction with these guidelines.

- 
- 1 Location (e.g. co-ordinates of the dumping area, depth and distance from the coast), location in relation to other areas (e.g. amenity areas, spawning, nursery and fishing areas and exploitable resources).
- 

#### Interpretation:

Basic site characterization information to be considered by national authorities at a very early stage of assessment of a new site should include the co-ordinates of the dumping area (latitude, longitude), as well as its location with regard to:

- distance to nearest coastline
- recreational areas
- spawning and nursery areas
- known migration routes of fish or marine mammals
- sport and commercial fishing areas
- areas of natural beauty or significant cultural or historical importance
- areas of special scientific or biological importance (marine sanctuaries)
- shipping lanes
- military exclusion zones
- engineering uses of seafloor (e.g. potential or ongoing seabed mining, undersea cables, desalination or energy conversion sites).

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\* IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Pollution.

- 
- 2 Rate of disposal per specific period (e.g. quantity per day, per week, per month).
- 

Interpretation:

Although the amounts of matter to be dumped (e.g. per year) are considered under paragraph A1 above, many operations, e.g. those related to dredging, are of shorter periods. In order to assess the capacity of the area for receiving a given type of material the anticipated loading rates (e.g. per day) or in the case of existing sites, the actual loading rates (frequency of operations and quantities of wastes or other matter disposed of at each operation per time period) should be taken into consideration.

- 
- 3 Methods of packaging and containment, if any.
- 4 Initial dilution achieved by proposed method of release.
- 

Interpretation:

The data to be considered under this item should include information on:

- type, size and form of packaging and containment units
- presence of any Annex I or Annex II substances as packaging material or in any matrix that might be used
- marking and labelling of packages
- disposal method (e.g. jettisoning over ship's side; discharge of liquids and sludges through pipes, pumping rates, number and location of discharge pipe outlets (under or above waterline, water depth), etc.). In this connexion the length and speed of the vessel when discharging wastes or other matter should be used to establish the initial dilution.

- 
- 5 Dispersal characteristics (e.g. effects of currents, tides and wind on horizontal transport and vertical mixing).
  - 6 Water characteristics (e.g. temperature, pH, salinity, stratification, oxygen indices of pollution - dissolved oxygen (DO), chemical oxygen demand (COD), biochemical oxygen demand (BOD) - nitrogen present in organic and mineral form including ammonia, suspended matter, other nutrients and productivity).
- 

Interpretation:

For the evaluation of dispersal characteristics data should be obtained on the following:

- water depths (maximum, minimum, mean)
- water stratification in various seasons and weather conditions (depth and seasonal variation of pycnocline)
- tidal period, orientation of tidal ellipse, velocities of minor and major axis
- mean surface drift (net): direction, velocity
- mean bottom drift (net): direction, velocity
- storm (wave) induced bottom currents (velocities)
- wind and wave characteristics, average number of storm days per year
- concentration and composition of suspended solids.

Where the chemical composition of the waste warrants, it may be appropriate to evaluate pH, suspended solids, persistent organic chemicals, metals, nutrients and microbiological components. BOD and COD or organic carbon determinations in the suspended or dissolved phase, together with oxygen measurements, may also be appropriate where organic wastes or nutrients are concerned.

- 
- 7 Bottom characteristics (e.g. topography, geochemical and geological characteristics and biological productivity).
- 

Interpretation:

Maps and bathymetric charts should be consulted and specific topographic features which may affect the dispersal of wastes (e.g. marine canyons) should be identified.



The geochemical observations of sediments in and around the disposal site should be related to the type of waste(s) involved. The range of chemical constituents should be the same as that provided for the characterization of the waste or other matter, with the minimum range of data set out in paragraph A1 above.

In areas where wastes may reach the bottom, sediment structure (i.e. the distribution of gravel, sand, silt and clay) as well as benthic and epibenthic community characteristics should be considered for the site area.

Mobility of sediments due to waves, tides or other currents should be considered in any waste disposal site assessments. The possibility of seismic activities in the area under consideration should be investigated, in particular when hazardous wastes in packaged form are concerned. The distribution of sediment types in an area provides basic information as to whether dumped solids with certain characteristics will accumulate at a site or be dispersed.

Sorption/desorption processes under the range of dump site redox and pH conditions, with particular reference to exchanges between dissolved and fine particulate phases, are relevant to the evaluation of the accumulative properties of the area for the components of the waste proposed for dumping and for their potential release to overlying waters.

- 
- 8 Existence and effects of other dumpings which have been made in the dumping area (e.g. heavy metal background reading and organic carbon content).
- 

#### Interpretation:

The basic assessment to be carried out of a site, either a new or an existing one, shall include the consideration of possible effects that might arise by the increase of certain waste constituents or by interaction (e.g. synergistic effects) with other substances introduced in the area, either by other dumpings or by river input and discharges from coastal areas, by exploitation areas, and maritime transport as well as through the atmosphere. The existing stress on biological communities as a result of such activities should be evaluated before any new or additional disposal operations are

established. The possible future uses of the sea area should be kept under consideration.

Information from baseline and monitoring studies at already established dumping sites will be important in this evaluation of any new dumping activity at the same site or nearby.

- 
- 9 In issuing a permit for dumping, Contracting Parties should consider whether an adequate scientific basis exists for assessing the consequences of such dumping, as outlined in this Annex, taking into account seasonal variations.
- 

Interpretation:

When a given location is first under consideration as a candidate disposal site, the existing data basis should be evaluated with a view to establishing whether the main characteristics are known in sufficient detail or accurately enough for reliable modelling of waste effects. Many parameters are so variable in space and time that a comprehensive series of observation have to be designed to quantify the key properties of an area over the various seasons.

If at any time, monitoring studies demonstrate that existing disposal sites do not satisfy these criteria, alternative disposal sites or methods should be considered.

C - GENERAL CONSIDERATIONS AND CONDITIONS

- 
- 1 Possible effects on amenities (e.g. presence of floating or stranded material, turbidity, objectionable odour, discolouration and foaming).
- 2 Possible effects on marine life, fish and shellfish culture, fish stocks and fisheries, seaweed harvesting and culture.
- 

Interpretation:

Particular attention should be given to those waste constituents which float on the surface or which, in reaction with sea water may lead to floating substances and which, because they are confined to a two-dimensional rather than a three-dimensional medium, disperse very slowly. The possibility of reaccumulation of such substances caused by the presence of surface

convergences which may lead to interferences with amenities as well as with fisheries and shipping should be investigated.

Information on the nature and extent of commercial and recreational fishery resources and activities should be gathered.

Body burdens of persistent toxic substances (and, in the case of shellfish, pathogens) in selected marine life and, in particular, commercial food species from the dumping area should be established.

Certain grounds although not in use for fishing may be important to fish stocks as spawning, nursery or feeding areas, and the effects of sea disposal on these grounds should be considered.

The effects which waste disposal in certain areas could have on the habitats of rare, vulnerable or endangered species should be recognized.

Besides toxicological and bioaccumulation effects of waste constituents other potential impacts on marine life, such as nutrient enrichment, oxygen depletion, turbidity, modification of the sediment composition and blanketing of the sea floor, should be addressed.

It should also be taken into account that disposal at sea of certain substances may disrupt the physiological processes used by fish for detection and may mask natural characteristics of sea water or tributary streams, thus confusing migratory species which consequently lose their direction, go unspawned or fail to find food.

- 
- 3 Possible effects on other uses of the sea (e.g. impairment of water quality for industrial use, underwater corrosion of structures, interference with ship operations from floating materials, interference with fishing or navigation through deposit of waste or solid objects on the sea floor and protection of areas of special importance for scientific or conservation purposes).
- 

#### Interpretation:

Consideration of possible effects on the uses of the sea as outlined in paragraph C3 should include interferences with fishing, such as the damaging or fouling of fishing gear. Any possibility of excluding the future uses of the sea dumping area for other resources, such as water use for industrial purposes, navigation, erection of structures, mining, etc., should be taken fully into account.

Areas of special importance include those of interest for scientific research or conservation areas and distinctive habitats of limited distribution (such as seabird rookeries, kelp beds or coral reefs); information should also be provided on all distinctive habitats in the vicinity of the proposed site which might be affected by the material to be dumped. Attention should also be given to geological and physiographical formations of outstanding universal value from the point of view of science, conservation or natural beauty.

- 
- 4 The practical availability of alternative land-based methods of treatment, disposal or elimination, or of treatment to render the matter less harmful for dumping at sea.
- 

Interpretation:

Before considering the dumping of matter at sea every effort should be made to determine the practical availability, including technical feasibility and environmental soundness, of alternative land-based methods of treatment, disposal or elimination, or of treatment to render the matter less harmful for dumping at sea.

Other means of disposal should be considered in the light of a comparative assessment of:

- Human health risks
- Environmental costs
- Hazards (including accidents) associated with treatment, packaging, transport and disposal
- Economics (including energy costs)
- Exclusion of future uses of disposal areas,

for both sea disposal and the alternatives.

If the foregoing analysis shows the land alternative to be more practical, a licence for sea disposal should not be given.



ANNEX 3

RESOLUTION LDC.18(8)

TERMS OF REFERENCE FOR THE SCIENTIFIC GROUP ON DUMPING

THE EIGHTH CONSULTATIVE MEETING,

REAFFIRMING that international action to control the pollution of the sea by the disposal of wastes at sea can and must be taken without delay,

NOTING Article XIV(4)(b) of the London Dumping Convention concerning the role of scientific bodies,

RECOGNIZING the need for continuing scientific and technical review of issues considered by the Consultative Meeting,

FURTHER RECOGNIZING the need for the Consultative Meeting to be kept informed of scientific developments relative to the disposal of wastes at sea,

CONSIDERING therefore that there is a continuing requirement for deliberations of the Scientific Group on Dumping,

NOTING FURTHER Resolution 7(IV) by which the Fourth Consultative Meeting adopted the terms of reference of the Ad Hoc Scientific Group on Dumping,

TAKING INTO ACCOUNT the recommendations of Task Team 2000 (LDC 8/4) established by the Sixth Consultative Meeting of Contracting Parties,

ADOPTS the terms of reference for this Group as set out in the Annex to this Resolution to supersede those contained in Resolution 7(IV).

ANNEX

TERMS OF REFERENCE FOR THE SCIENTIFIC GROUP ON DUMPING

The Scientific Group on Dumping is established to provide timely advice to the Consultative Meeting on scientific and technical matters related to the implementation of the Convention. The Scientific Group shall meet at least once in each intersessional period. The Chairman of the Scientific Group shall report on its activities at each Consultative Meeting and bring forward for consideration any recommendations the Group may have.

In accomplishing its overall mission the Scientific Group is required to do the following:

- .1 respond to specific requests from the Consultative Meeting for scientific advice on matters related to the Convention;
- .2 keep under continuing review the provisions of the Annexes to the Convention and recommend to the Consultative Meeting such changes as may be appropriate from an examination of available scientific and technical information and prepare, as needed, guidance on the interpretation and implementation of the Annexes to the Convention;
- .3 review relevant scientific information, particularly that arising from new scientific and technological developments (with respect to newly synthesized compounds, newly discovered hazards of existing substances and new techniques for waste treatment and disposal) and prepare for distribution by the Secretariat reports on such matters as may be relevant to the Contracting Parties in implementing the Convention;
- .4 prepare and maintain a list of hazardous substances or groups of substances to which particular attention should be paid, and, when sufficient scientific evidence has accumulated to warrant amendments to the Annexes to the Convention, to prepare recommendations for such amendments and submit them to the Consultative Meeting for action;
- .5 develop guidelines for planning monitoring programmes to assess the health of the oceans to encourage the development of monitoring programmes by Contracting Parties either acting individually or in co-operation;
- .6 maintain an awareness of the impacts on the marine environment of inputs from all waste sources and draw to the attention of the Consultative Meeting any emerging or worsening problems; and
- .7 recommend to the Consultative Meeting the calling of special scientific conferences or symposia to review specific wastes or waste treatment and disposal technologies.

ANNEX 4

TERMS OF REFERENCE FOR THE REVIEW OF SCIENTIFIC AND  
TECHNICAL CONSIDERATIONS RELATED TO THE PROPOSALS  
FOR AMENDING THE ANNEXES TO THE CONVENTION IN  
REGARD TO DUMPING RADIOACTIVE WASTES AT SEA

1 The purpose of this review is to assess the scientific and technical considerations relevant to the proposals for the amendment of the Annexes of the Convention related to the dumping of radioactive wastes submitted by Kiribati/Nauru (LDC 7/7) and the Nordic States (LDC 7/7/3).

2 The desired result of the review is a report presenting a thorough and objective assessment of the impact of past ocean dumping of radioactive waste and the impact that any future dumping may have on man and the marine environment. The assessment should cover all scientific issues and questions that are judged pertinent to an adequate assessment. Overall conclusions should be drawn concerning the scientific basis of proposals for amending the Convention to prohibit ocean dumping of low-level radioactive wastes.

3 The extensive bibliography of relevant scientific documents (LDC 8/5/1/Add.1 of 16 December 1983) that was compiled by the IAEA in co-operation with IMO, UNEP, UNSCEAR, IOC and OECD should form the basis for the review, as well as other documents that have been suggested by Contracting Parties or that the experts themselves may have.

4 To assist in this assessment, the following questions have been compiled by Contracting Parties and non-governmental organizations for consideration. Other specific questions may also be forwarded. The expert panel should at least comment on all questions posed and may add its own questions as appropriate.

Questions to be considered by the expert panel

A Submitted by the United States (LDC 8/5/4)

1 In regard to past ocean dumping of radioactive wastes:

- 1.1 How much radioactive waste has been dumped at sea in the past?
- 1.2 Have studies of past dumping been adequate to detect effects if any exist? If so, is there evidence that there have been adverse effects on human health and the marine environment?
- 1.3 If past studies have been inadequate, is it possible to design and implement studies that are adequate for this purpose?

2 In regard to any future ocean dumping of radioactive waste:

- 2.1 How are the impacts of ocean dumping predicted?
- 2.2 How valid are the methods of prediction, and by what means have they been verified?
- 2.3 By what pathways can radioactive waste disposal affect human health and to what extent is the movement of radionuclides along these pathways predictable?
- 2.4 What forms and concentrations of radioactive waste can be dumped in the ocean without adverse impact on the oceans or unreasonable risk to human health?
- 2.5 How can dumping of radioactive waste be controlled and monitored so as to minimize the chance of adverse effects occurring without detection?

3 Overall conclusions

- 3.1 Is there scientific evidence that past dumping of radioactive waste has had adverse effects on the marine environment or human health?
- 3.2 Can the effects of ocean dumping of radioactive wastes be accurately predicted and controlled?
- 3.3 Can monitoring programmes be designed and implemented to assure that any adverse impacts of ocean dumping of radioactive wastes are detected at an early stage?



B Submitted by Denmark

1 To what extent have studies of land-based alternatives to dumping at sea of radioactive wastes been carried out, what results have been found and how have these results been assessed in relation to studies of effects of dumping at sea of similar types of waste?

2 In order to be able to see the question of dumping of radioactive wastes in a comprehensive total waste management strategy, what impacts on the environment and human health have been found in connexion with land-based storage of radioactive wastes of the kind now being dumped and what future effects are to be expected?

C Submitted by Nauru

1 Have scientific studies of past oceanic radioactive dumpsites furnished evidence of radioactive leakage into the marine (including benthic) environment?

2 Have scientific studies on the behaviour of radionuclides released into the marine environment supported the assumption that these radionuclides adhere to bottom sediment instead of being dispersed as assumed in the "ocean diffusion model"?

3 Are ocean currents, including eddies and rings, sufficiently well-understood to fully predict their impact on the distribution of radionuclides in the oceans?

4 Do existing models of radionuclide movement in the sea permit confident prediction of the biological impacts of radioactive waste dumping at sea?

5 Can the safety of radioactive waste dumping at sea be guaranteed by modelling studies?

6 Is there evidence in the scientific literature that radionuclides from ocean dumpsites have entered the oceanic food chain?

7 Is there evidence in the scientific literature that radionuclides from ocean dumpsites have entered edible fish?

- 8 Is there scientific evidence that oceanic radioactive dumpsites serve as an attractant to ocean life?
- 9 Is there evidence in the scientific literature that the deep seas support significant biological activity?
- 10 Do biological and/or physical mechanisms exist for the possible vertical transport of radionuclides from deep ocean waters to the surface?
- 11 Is there agreement in the scientific literature regarding the short-term and long-term health hazards of low-level radioactivity?
- 12 Is there recent scientific evidence that the Hiroshima data, on which the estimates of health impacts of low-level radioactivity are based, underestimate the health hazards of low-level radioactivity?
- 13 Is it possible or practicable to construct an accurate register of all radionuclides deposited at sea, in order to guarantee compliance with the terms of the London Dumping Convention?
- 14 In the event of miscalculation, can radioactive wastes dumped at sea be practically retrieved?
- 15 Can low-level radioactive wastes be stored on land?
- 16 Are there any other questions relevant to this issue that should be examined? If so, what are the findings and/or recommendations of the review panel on these issues?

Note: With reference to paragraph 3 of the terms of reference, Nauru suggests that all literature references cited in the document entitled "Evaluation of Oceanic Radioactive Dumping Programmes" (LDC 7/INF.2) be included in the bibliography LDC 8/5/1/Add.1.

D Submitted by Spain

- 1 What are the characteristics and properties of medium- and low-level radioactive substances with specific regard to their toxicity, persistence and bioaccumulation?
- 2 Compare those characteristics identified in 1 above with those of non-radioactive substances listed in Annex I.

3 Can medium- and low-level radioactive substances be transformed rapidly in the sea into harmless substances through the operation of physical, chemical or biological processes?

4 Can medium- and low-level radioactive substances in the quantities currently being dumped be covered by paragraph 9 of Annex I, in other words, as wastes which contain these contaminants as "traces"?

5 Which radioactive substances that do not exist in the natural environment are being dumped.

E Submitted by Greenpeace International

1 In regard to the safety of past ocean disposal of radioactive wastes:

1.1 How much radioactive waste has been dumped in the sea in the past?

1.2 What is the total inventory of all forms of radioactive wastes and other radioactive matter that have entered the marine environment through human activities? (It is essential that any assessment of the risks and impacts of ocean disposal takes into account the incremental and cumulative effects from all sources.)

1.3 Have theoretical models been adequate to predict effects and has the data base been sufficient to provide a reliable test of these models? (Models must provide a balanced consideration of physical, biological and chemical components. Their site specificity is grossly inadequate, and there are serious questions concerning the reliability of dose calculations.)

1.4 Has monitoring of disposal operations provided adequate information to make sound assessments concerning the movement and impact of radioactivity in the marine environment with respect to the following areas of concern, among others: currents and water movements, sediment characteristics, chemical and biological interactions of sediment/water interface, bio-turbation by organisms in various layers in the water column and the quantity and extent of vertical and horizontal transfer mechanisms? (For example, in the last three years, new evidence has come to light on the properties and movement of

plutonium in the marine environment which has led to radically revised discharge patterns from the Windscale reprocessing plant in the United Kingdom.)

1.5 Have existing radiation protection exposure risk standards as established by the ICRP been adequate to make sound assessments of impacts? (ICRP has been criticised for its conservative estimates of dose/effect consequences and it should be pointed out that ICRP incorporates in its assessments social and economic factors along with scientific judgements when arriving at "acceptable" levels of exposure.)

1.6 Have the longevity and quality of forms of waste containment been adequate to ensure protection of the marine environment? (Very few studies have assessed disposal impact survival or corrosion. Very few canisters have been recovered.)

1.7 Have land-based alternative assessments been adequate to support justification of ocean dumping? (The risks of ocean disposal must be assessed in the context of a total waste management programme in which comparisons can be made between all available options.)

1.8 Has authoritative evidence been produced in relation to the concerns addressed in questions 1 to 7 above which proves the safety of past disposal activities? (Have national and international regulatory bodies given adequate regard to evidence and studies which do not support their analyses?)

2 In regard to any future disposal of radioactive wastes:

2.1 What are the estimated quantities and forms of radioactive wastes that countries are interested in disposing of in the future.

2.2 What is the expected future inventory of radioactive wastes and other radioactive matter which countries expect to enter the marine environment through human activity? (With respect to questions 1 and 2 above, some time-frame (e.g., the year 2000) should be formulated. As with past disposal operations, any assessment of the risks and impacts of proposed future disposal must take into account the incremental and cumulative effects from all sources.)



2.3 How valid are the methods of prediction and by what means will they be verified? (This question is directly related to the concerns addressed in questions A.3 and A.4 above.)

2.4 By what pathways can radioactive waste disposal affect human health and by what extent is the movement of radionuclides along these pathways predictable? (This concern with food chain pathways is directly related to the issues addressed in A.4 above.)

2.5 Can radioactive waste disposal be controlled and monitored in a way that excludes adverse effects occurring without detection? If adverse effects are detected, what technology exists to ensure the retrievability of the waste and the reversability of the adverse environmental effects?

3 Overall conclusions:

3.1 Can it be conclusively shown that past disposal operations or proposed future operations have not and will not result in harm to the marine environment or human health?

3.2 Can the effects of ocean dumping of radioactive wastes be accurately predicted and controlled?

3.3 Can monitoring programmes be designed and implemented which will guarantee that any adverse effects on the marine environment or human health can be detected at an early stage?

3.4 Can containment systems, the technology for retrievability of packages and the reversability of adverse effects, if detected, be developed to ensure the protection of the marine environment.

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ANNEX 5DRAFT RESOLUTIONS ON THE DISPOSAL INTO THE SEA-BED  
OF HIGH-LEVEL RADIOACTIVE WASTES

- 1 Draft resolution proposed by Argentina, Brazil, Canada, Chile, Cuba, Denmark, Dominican Republic, Finland, Federal Republic of Germany, Iceland, Ireland, Mexico, Nauru, Norway, Panama, Spain and Sweden  
(LDC 8/WP.6/Rev.3)

## THE EIGHTH CONSULTATIVE MEETING,

RECOGNIZING that the marine environment and the living resources of the sea are of vital importance to all nations,

RECOGNIZING FURTHER that the disposal at sea of high-level radioactive wastes or other high-level radioactive matter, as defined by paragraph 6, Annex I, of the Convention on the Prevention of Pollution by Dumping of Wastes and Other Matter (hereinafter referred to as high-level radioactive wastes), is prohibited by Article IV of the Convention,

RECALLING that the intersessional group of experts convened as a result of resolution LDC.15(7) recommended that the Consultative Meeting of the Contracting Parties to the London Dumping Convention is the appropriate international forum to address the question of disposal of high-level radioactive wastes into the sea-bed,

NOTING that studies are in progress concerning the technical feasibility and environmental effects of emplacement into the sea-bed of high-level radioactive wastes and that several Contracting Parties continue these studies in order to determine the feasibility of such emplacement as a possible future waste disposal alternative,

NOTING FURTHER that other international instruments support the view that the Contracting Parties to the London Dumping Convention should interpret broadly their responsibilities to take all necessary measures to protect the marine environment from pollution by substances that are as highly toxic and persistent as high-level radioactive wastes,

CONSIDERING that consistent with the object and purpose of the London Dumping Convention and in order to ensure its effective implementation, the term "disposal at sea" in its definition of "dumping" should include emplacement into the sea-bed,

CONCLUDES that:

- any deliberate disposal of high-level radioactive wastes from vessels, aircraft, platforms or other man-made structures at sea, into the marine environment, including the sea-bed, is currently incompatible with the provisions of the Convention;
- high-level radioactive wastes shall not be emplaced into the sea-bed as part of any experimental operations;
- should future technological developments provide methods of emplacement into the sea-bed that secure the isolation from the biosphere of high-level radioactive wastes, the Contracting Parties shall consider appropriate amendments to the Annexes to the Convention. The competent international body in this field, at present the International Atomic Energy Agency, will be consulted as to whether any method of emplacement into the sea-bed secures isolation.

2 Draft resolution proposed by France, Japan, the Netherlands,  
Switzerland, United Kingdom and the United States  
(LDC 8/WP.8/Rev.2)

THE EIGHTH CONSULTATIVE MEETING,

RECOGNIZING that the disposal at sea of high-level radioactive wastes, as defined in Annex I of the Convention on the Prevention of Pollution by Dumping of Wastes and Other Matter, is prohibited by Article IV of the Convention,

RECALLING that the intersessional group of experts convened as a result of resolution LDC.15(7) recommended that the Consultative Meeting of the Contracting Parties to the London Dumping Convention is the appropriate international forum to address the question of disposal of high-level radioactive waste into the sea-bed,

RECOGNIZING FURTHER that the marine environment and the living resources of the sea are of vital importance to all nations,

BELIEVING that the Contracting Parties to the London Dumping Convention should interpret broadly their responsibility to take all practicable steps to protect the marine environment,

RECOGNIZING that there is a divergence of views among Contracting Parties as to whether the Convention as drafted presently precludes disposal of high-level radioactive waste into the sea-bed,

CONVINCED, however, that Contracting Parties, in pursuit of their responsibilities to protect the marine environment, should not engage in disposal of high-level radioactive waste into the sea-bed unless and until such activity can be undertaken in an environmentally acceptable manner,

NOTING that studies are in progress concerning the technical feasibility and environmental effects of deep geological disposal on land as well as disposal into the sea-bed and that these studies must continue in order to determine their potential as future waste disposal alternatives,

NOTING FURTHER that the research will not be sufficiently advanced to make a determination whether or not high-level radioactive waste can be effectively isolated from the marine environment before the next decade at the earliest, and that operational activity, if any, is not foreseen before the year 2000,



REQUESTS countries and international organizations involved in research on disposal into the sea-bed to keep the Contracting Parties informed as to the progress of such research,

CONCLUDES that no Contracting Party should proceed with an operational activity for the disposal of high-level radioactive waste into the sea-bed unless and until:

- 1 research permits a finding that such disposal is technically feasible and environmentally acceptable, including a determination that such waste can be effectively isolated from the marine environment; and
- 2 a regulatory mechanism is elaborated under the London Dumping Convention to govern the disposal into the sea-bed of such radioactive wastes.

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ANNEX 6SUBSTANTIVE ITEMS TO BE INCLUDED IN THE AGENDA FOR THE  
NINTH CONSULTATIVE MEETING AND FOR THE  
EIGHTH MEETING OF THE SCIENTIFIC GROUP ON DUMPINGNinth Consultative Meeting

- Report of the Scientific Group on Dumping.
- Report of intersessional activities relating to the disposal of radioactive wastes at sea, including the final report of the scientific review.
- Disposal into the sea-bed of high-level radioactive wastes and matter.
- Problems relating to the import/export of wastes for disposal at sea.
- Environmental hazards caused by the loss or disposal at sea of fishing nets and other marine debris.
- Promotion of technical assistance.
- Relations with other organizations.
- Future work programme and date of next session.

Eighth Meeting of the Scientific Group on Dumping

- Report of the Ad Hoc Intersessional Group of Experts on Criteria for the Allocation of Substances to the Annexes:
  - .1 purpose and concepts of the Annexes;
  - .2 practical and technical criteria for determining assignment to the Annexes;
  - .3 interpretation of additional (Annex III) "special care" techniques for Annex II substances.
- Detailed technical discussion of particular problems associated with the interpretation of the Convention:
  - .1 cadmium;
  - .2 relationship between laboratory toxicity tests and field studies assessments;
  - .3 consideration of the need for guidelines for dredged material disposal.

- Consideration of new responsibilities for the Scientific Group as mandated by the Consultative Meeting.
  - Disposal of wastes at sea and land-based alternatives:
    - .1 discussion of mechanisms for acquiring information on land-based disposal technologies relative to materials dumped at sea;
    - .2 environmental assessment of land/sea disposal operations.
  - Incineration at sea.
  - Monitoring for the purposes of the London Dumping Convention.
  - Consideration of reports on dumping.
-