INTERNATIONAL MARITIME ORGANIZATION

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MARINE ENVIRONMENT PROTECTION COMMITTEE
63rd session
Agenda item 23

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REPORT OF THE MARINE ENVIRONMENT PROTECTION COMMITTEE ON ITS SIXTY-THIRD SESSION

LIST OF ANNEXES

1 INTRODUCTION

1.1 The sixty-third session of the Marine Environment Protection Committee was held at IMO Headquarters from 27 February to 2 March 2012 under the chairmanship of Mr. Andreas Chrysostomou (Cyprus). The Vice-Chairman of the Committee, Mr. Arsenio Dominguez (Panama), was also present.

1.2 The session was attended by delegations from the following Members of IMO:

ALGERIA
ANGOLA
ANTIGUA AND BARBUDA
ARGENTINA
AUSTRALIA
AZERBAIJAN
BAHAMAS
BANGLADESH
BARBADOS
BELGIUM
BELIZE
BOLIVIA (PLURINATIONAL STATE OF)
BRAZIL
BULGARIA
CAMEROON
CANADA
CHILE
CHINA
COLOMBIA
COOK ISLANDS
CROATIA
CUBA
CYPRUS
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA
DENMARK
DOMINICAN REPUBLIC
ECUADOR
EGYPT
EL SALVADOR
ESTONIA
FINLAND
FRANCE
GABON
GERMANY
GHANA
GREECE
GRENADA
GUATEMALA
HONDURAS
ICELAND
INDIA
INDONESIA
IRAN (ISLAMIC REPUBLIC OF)
IRAQ
IRELAND
ISRAEL
ITALY
JAMAICA
JAPAN
KENYA
KIRIBATI
KUWAIT
LATVIA
LIBERIA
LIBYA
LITHUANIA
LUXEMBOURG
MALAYSIA
MALTA
MARSHALL ISLANDS
MEXICO
MONACO
MOROCCO
NETHERLANDS
NEW ZEALAND
NIGERIA
NORWAY
OMAN
PANAMA
PERU
PHILIPPINES
POLAND
PORTUGAL
QATAR
REPUBLIC OF KOREA
ROMANIA
RUSSIAN FEDERATION
SAINT KITTS AND NEVIS
SAINT VINCENT AND THE GRENADINES
SAN MARINO
SAUDI ARABIA
SINGAPORE
SOUTH AFRICA
SPAIN
SWEDEN
SWITZERLAND
SYRIAN ARAB REPUBLIC

THAILAND
TONGA
TRINIDAD AND TOBAGO
TUNISIA
TURKEY
TUVALU
UKRAINE
UNITED KINGDOM
UNITED STATES
URUGUAY
VANUATU
VENEZUELA (BOLIVARIAN REPUBLIC OF)

and from the following Associate Member of IMO:

HONG KONG, CHINA

1.3 The session was also attended by representatives from the following UN Programmes, UN Specialized Agencies and other UN Entities:

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)
UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)
REGIONAL ACTIVITY CENTER OF THE REGIONAL MARINE POLLUTION EMERGENCY, INFORMATION AND TRAINING CENTER FOR THE WIDER CARIBBEAN REGION (RAC/REMPEITEC-Carib)
THE REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

by observers from the following intergovernmental organizations:

EUROPEAN COMMISSION (EC)
MARITIME ORGANIZATION FOR WEST AND CENTRAL AFRICA (MOWCA)
COMMISSION FOR THE PROTECTION OF THE MARINE ENVIRONMENT OF THE NORTH-EAST ATLANTIC (OSPAR COMMISSION)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)
INTERNATIONAL CRIMINAL POLICE ORGANIZATION (INTERPOL)
REGIONAL ORGANIZATION FOR THE CONSERVATION OF THE ENVIRONMENT OF THE RED SEA AND THE GULF OF ADEN (PERSGA)

and by observers from the following non-governmental organizations in consultative status:

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL SHIPPING FEDERATION (ISF)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
COMITÉ INTERNATIONAL RADIO-MARITIME (CIRM)
INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)
BIMCO
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL MARITIME PILOTS' ASSOCIATION (IMPA)
FRIENDS OF THE EARTH INTERNATIONAL (FOEI)
INTERNATIONAL ASSOCIATION OF DRILLING CONTRACTORS (IADC)
INTERNATIONAL COUNCIL OF MARINE INDUSTRY ASSOCIATIONS (ICOMIA)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)
INTERNATIONAL ASSOCIATION OF OIL AND GAS PRODUCERS (OGP)

COMMUNITY OF EUROPEAN SHIPYARDS' ASSOCIATIONS (CESA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS (INTERTANKO)
THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN)
ADVISORY COMMITTEE ON PROTECTION OF THE SEA (ACOPS)
SOCIETY OF INTERNATIONAL GAS TANKER AND TERMINAL OPERATORS LIMITED (SIGTTO)
CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS (INTERCARGO)
WORLD WIDE FUND FOR NATURE (WWF)
ASSOCIATION OF EUROPEAN MANUFACTURERS OF INTERNAL COMBUSTION ENGINES (EUROMOT)
INTERNATIONAL PETROLEUM INDUSTRY ENVIRONMENTAL CONSERVATION ASSOCIATION (IPIECA)
THE INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY (IMarEST)
INTERNATIONAL SHIP MANAGERS' ASSOCIATION (InterManager)
INTERNATIONAL PARCEL TANKERS ASSOCIATION (IPTA)
INTERNATIONAL SAILING FEDERATION (ISAF)
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)
INTERNATIONAL BULK TERMINALS ASSOCIATION (IBTA)
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS (RINA)
INTERFERRY
INTERNATIONAL TOWING TANK CONFERENCE (ITTC)
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION (IBIA)
INTERNATIONAL ASSOCIATION OF MARITIME UNIVERSITIES (IAMU)
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
INTERNATIONAL PAINT AND PRINTING INK COUNCIL (IPPIC)
INTERNATIONAL SPILL CONTROL ORGANIZATION (ISCO)
WORLD SHIPPING COUNCIL (WSC)
NACE INTERNATIONAL
THE NAUTICAL INSTITUTE (NI)
PACIFIC ENVIRONMENT
CLEAN SHIPPING COALITION (CSC)
SUPERYACHT BUILDERS ASSOCIATION (SYBAss)

1.4 The Chairman of the Council, Mr. Jeffrey G. Lantz (United States); the Chairman of the Sub-Committee on Bulk Liquids and Gases (BLG), Mr. Sveinung Oftedal (Norway); and the Chairman of the Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), Mr. Carlos Salgado Riveros (Chile) were also present.

The Secretary-General's opening address

1.5 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link: http://www.imo.org/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetings.

Chairman's remarks

1.6 The Chairman thanked the Secretary-General for his opening address and stated that his advice and requests would be given every consideration in the deliberations of the Committee.

Statements on the *Costa Concordia* accident

1.7 With reference to the Secretary-General's opening address concerning the grounding and subsequent capsize of the **Costa Concordia** cruise ship last month, the delegation of Italy stated that it would continue to provide any useful information on the terrible accident to IMO with a view to help the maritime community in learning lessons from the accident, so that the safety of cruise ships could be further improved.

1.8 The observer from the Cruise Lines International Association (CLIA) thanked the Secretary-General and the delegation of Italy for their remarks on the matter and stated that, as part of the industry's continuous efforts to review and improve safety measures, CLIA had launched a Cruise Industry Operational Safety Review and would share any recommendations from the Review with IMO.

1.9 As requested, the text of the statements by the delegation of Italy and the observer from CLIA is set out in annex 1.

Adoption of the agenda

1.10 The Committee adopted the agenda (MEPC 63/1) and agreed to be guided during the session by the provisional timetable (MEPC 63/1/1, annex 2) on the understanding that it was subject to adjustments depending on the progress made each day. The agenda, as adopted, with a list of documents considered under each agenda item, is set out in document MEPC 63/INF.18.

Credentials

1.11 The Committee noted that credentials of the delegations attending the session were in due and proper order.

2 HARMFUL AQUATIC ORGANISMS IN BALLAST WATER

2.1 The Committee recalled that the "International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004" (BWM Convention) had been open for accession by any State since 31 May 2005 and noted that five more States (Lebanon, Mongolia, Montenegro, Palau, and Trinidad and Tobago) have acceded to the Convention since the last MEPC session, bringing the number of contracting Governments to 33, representing 26.46 per cent of the world's merchant fleet tonnage. The Committee urged those States, which have not yet ratified the Convention to do so at their earliest possible opportunity.

CONSIDERATION AND APPROVAL OF BALLAST WATER MANAGEMENT SYSTEMS THAT MAKE USE OF ACTIVE SUBSTANCES

2.2 The Committee noted that the eighteenth, nineteenth and twentieth meetings of the GESAMP-BWWG were held from 5 to 9 September 2011, from 31 October to 5 November 2011 and from 12 to 16 December 2011, respectively, at IMO Headquarters, under the chairmanship of Mr. Jan Linders. During the three meetings, the GESAMP-BWWG had reviewed a total of 10 proposals for approval of ballast water management systems that make use of Active Substances, submitted by China, Denmark, Germany, Greece, Japan and the Republic of Korea (five proposals). The Committee also noted that out of the 10 proposals evaluated, three proposals reviewed at the eighteenth meeting of the Group were the remainder of the submissions to MEPC 62, which, due to the limited time available, could not be considered at that session.

Basic Approval

2.3 The Committee, having considered the recommendations contained in annex 4 of the "Report of the eighteenth meeting of the GESAMP-BWWG" (MEPC 63/2/10), the recommendations contained in annex 4 of the "Report of the nineteenth meeting of the GESAMP-BWWG" (MEPC 63/2/11) as well as the recommendations contained in annex 4 of the "Report of the twentieth meeting of the GESAMP-BWWG" (MEPC 63/2/21), agreed to grant Basic Approval to:

.1 "Smart Ballast" Ballast Water Management System proposed by the Republic of Korea in document MEPC 62/2/8;

.2 DMU ·OH Ballast Water Management System proposed by China in document MEPC 63/2; and

.3 EcoGuardian™ Ballast Water Management System proposed by the Republic of Korea in document MEPC 63/2/4.

2.4 Having noted the conclusion of the GESAMP-BWWG (MEPC 63/2/10, annex 5) that the SEI-Ballast Water Management System does not use Active Substances and does not pose unacceptable risk to the environment, human health, property and resources, the Committee agreed that this system should not have been submitted because it does not make use of Active Substances and consequently does not need to go through the approval process in accordance with Procedure (G9). The Committee invited the concerned Administrations to conduct their future evaluations of this system in accordance with Guidelines (G8).

2.5 The Committee invited the Administrations of China and the Republic of Korea to take into account all the recommendations made in the aforementioned reports of the GESAMP-BWWG (annex 4 of the eighteenth meeting, annex 4 of the nineteenth meeting, and annex 4 of the twentieth meeting) during the further development of the systems.

2.6 The Committee concurred with the recommendation contained in annex 5 to document MEPC 63/2/21 not to grant Basic Approval to HS-BALLAST Ballast Water Management System proposed by the Republic of Korea in document MEPC 63/2/5.

Final Approval

2.7 The Committee, having considered the recommendations contained in annex 6 of the "Report of the eighteenth meeting of the GESAMP-BWWG" (MEPC 63/2/10), the recommendations contained in annexes 5, 6 and 7 of the "Report of the nineteenth meeting of the GESAMP-BWWG" (MEPC 63/2/11) as well as the recommendations contained in annex 6 of the "Report of the twentieth meeting of the GESAMP-BWWG" (MEPC 63/2/21) agreed to grant Final Approval to:

.1 SiCURE™ Ballast Water Management System proposed by Germany in document MEPC 62/2/10;

.2 ERMA FIRST Ballast Water Management System proposed by Greece in document MEPC 63/2/1;

.3 MICROFADE™ Ballast Water Management System proposed by Japan in document MEPC 63/2/2;

.4 AquaStar™ Ballast Water Management System proposed by the Republic of Korea in document MEPC 63/2/3; and

.5 Neo-Purimar™ Ballast Water Management System proposed by the Republic of Korea in document MEPC 63/2/6.

2.8 The Committee invited the Administrations of Germany, Greece, Japan and the Republic of Korea to verify that all recommendations contained in the report of the eighteenth meeting of the GESAMP-BWWG (MEPC 63/2/10, annex 6 (Germany)), in the report of the nineteenth meeting of the GESAMP-BWWG (MEPC 63/2/11, annex 5 (Greece), annex 6 (Japan), and annex 7 (Republic of Korea)), and in the report of the twentieth meeting of the GESAMP-BWWG (MEPC 63/2/21, annex 6 (Republic of Korea)) are fully addressed prior to the issuance of the Type Approval Certificates.

Future meetings of the GESAMP-BWWG

2.9 The Committee noted that 10 submissions for either Basic or Final Approval had been received by the deadline of 2 September 2011. Despite the efforts made by the GESAMP-BWWG and the Secretariat, the Group was able to evaluate only the first seven proposals for approval mentioned above in the chronological order of their submission. The Committee noted with appreciation that, with a view to facilitating the consideration of as many ballast water management systems as possible and in anticipation of a similar workload for year 2012, the GESAMP-BWWG had agreed to hold an extraordinary meeting (GESAMP-BWWG 21), scheduled from 16 to 20 April 2012, to evaluate the remaining three proposals described in documents MEPC 63/2/7 (Denmark), MEPC 63/2/8 (Republic of Korea) and MEPC 63/2/9 (Netherlands), the outcome of which would be reported to MEPC 64.

2.10 The Committee also noted that the next regular meeting of the GESAMP-BWWG (i.e. the twenty-second meeting) had been tentatively scheduled from 7 to 11 May 2012 and invited Members to submit their proposals for approval (application dossiers) and the non-confidential description of their ballast water management systems to MEPC 64, as soon as possible but not later than 16 March 2012 (BWM.2/Circ.36 of 19 December 2011 refers).

2.11 The Committee further noted that, recognizing the possibility that more than four proposals may be submitted for review by the Group and subsequent approval by MEPC 64, the GESAMP-BWWG had expressed its availability to have an additional meeting, (GESAMP-BWWG 23) in June 2012 to accommodate as many proposals as possible, provided that all the necessary conditions for organizing such a meeting are met. Any proposal for approval that is not reviewed in the twenty-second meeting and the additional meeting, (i.e. the twenty-third meeting), due to time constraints, will be reviewed at the earliest meeting of the Group after MEPC 64 and reported to MEPC 65 (MEPC 63/2/21, section 3 of the report of the twentieth meeting of the GESAMP-BWWG).

Other matters emanating from the GESAMP-BWWG meetings

2.12 Having received the recommendations of the GESAMP-BWWG regarding the optimization of the evaluation of the proposals for approval, the Committee agreed:

.1 to request the applicants and the submitting Administrations to provide the full data-set, in accordance with the Methodology for information gathering

and conduct of work of the GESAMP-BWWG, to avoid difficult and time-consuming communication with the applicants during the meeting of the Group;

.2 to request the applicants/Administrations to make available publicly, the data related to safety and environmental protection, including physical/chemical properties, environmental fate and toxicity in accordance with the provision contained in paragraph 8.1.1 of Procedure (G9) regarding non-confidential information;

.3 to encourage the applicants/Administrations to provide complete electronic versions (CD-ROM or pen drive) of the entire application dossier to facilitate enhanced efficiency of the evaluation process; and

.4 that there is no need to evaluate the results of chronic ecotoxicity testing using treated and effectively neutralized ballast water for BWMS using electrolysis and/or ozonation, submitted for Basic Approval.

2.13 Having considered the updated Methodology for information gathering and conduct of work of the GESAMP-BWWG contained in annex 7 of its eighteenth report (MEPC 63/2/10 and MEPC 63/2/10/Corr.1), the Committee noted the comments made by Germany, Japan, CEFIC and IPPIC, and instructed the Ballast Water Review Group to consider the Methodology in detail, taking those comments into consideration and advise the Committee as appropriate.

2.14 The Committee also agreed that the database mentioned in appendix 6 of the updated Methodology, currently under development by GESAMP-BWWG, should be made publicly available when completed.

2.15 Having discussed the date on which the new provisions of the updated Methodology should be applied, the Committee instructed the Ballast Water Review Group to consider the matter in detail, taking into account the recommendation to allow 18 months from the publication and advise the Committee as appropriate.

2.16 Having considered the request of Germany to retain the possibility to conduct face-to-face meetings to provide additional clarification during the GESAMP-BWWG evaluations, the Committee agreed that, subject to time availability and at no costs for the Organization, such meetings could continue at the request of the interested Administrations.

2.17 Having considered document MEPC 63/2/14 (Australia et al.) regarding the information to be made available in proposals for Basic Approval and Final Approval of ballast water management systems that make use of Active Substances or Preparations, the Committee noted that the proposal was structured based on the 2008 version of the Methodology for information gathering and conduct of work of the GESAMP-BWWG and agreed to instruct the Ballast Water Review Group to consider this document after the finalization of the updated Methodology and to advise the Committee as appropriate.

2.18 In line with the recent decisions of the Council and in order to contribute to the general effort to reduce the costs of the Organization, the Committee agreed that for documents containing the non-confidential information on proposed ballast water management systems submitted for Basic or Final Approval, which are in many cases more than 50 pages in length, only the cover note (less than four pages) will be printed and distributed in hard copy. The full document (cover and annex) will be made available through IMODOCS.

REVIEW OF THE AVAILABILITY OF BALLAST WATER TREATMENT TECHNOLOGIES

2.19 The Committee noted the information regarding the latest type-approved ballast water management systems provided in the following documents:

.1 MEPC 63/INF.4, MEPC 63/INF.5 and MEPC 63/INF.6 (Republic of Korea) on the type approval of the HiBallast™, EcoBallast™ and Purimar™ Ballast Water Management Systems; and

.2 MEPC 63/INF.12 (Japan) on the type approval of the FineBallast® OZ (the Special Pipe Hybrid Ballast Water Management System combined with Ozone treatment version),

which increases the total number of type-approved systems to 21 and instructed the Ballast Water Review Group to take this information into consideration when conducting its future reviews.

2.20 The Committee noted the information on the estimated value of the global market for purchasing and installing ballast water management systems provided in document MEPC 63/INF.11 (IMarEST), which between 2011 and 2016 may reach $50 to 74 billion and thanked IMarEST for this estimate.

2.21 Having considered document MEPC 63/2/17 (Japan) providing data on availability of ballast water management systems for installation on ships controlled by Japanese interests, the Committee noted the concern expressed by the delegation of the Bahamas with regard to the situation when even with approved ballast water management systems on board, shipowners could still be penalized in the absence of a clear sampling methodology and unified procedures for port State control officers.

2.22 The delegations of Brazil; Liberia; Malaysia; Malta; Panama; Singapore; Hong Kong, China and ICS supported the position of the Bahamas and, in addition, expressed concerns regarding the slow implementation of the BWM Convention due to lack of approved technologies, limited shipyard capacity, time availability and the costs involved, suggesting that the application dates contained in regulation 3 of the BWM Convention may have to be reconsidered.

2.23 The delegations of Germany, Ireland, Italy, Norway, the Republic of Korea and Spain, on the other hand pointed out that MEPC 60 and MEPC 61 had determined that there are sufficient systems available, with the possible exception of ships requiring very high flow rates and indicated that there is sufficient shipyard capacity and encouraged shipowners to start installing ballast water management systems on their ships in order to avoid possible bottlenecks at a later stage.

2.24 Despite the different views expressed, the Committee noted that there was consensus regarding the need for additional information on the implementation pace, availability of technologies and shipyard facilities and invited Member States to provide updated information regarding the status in their respective countries.

2.25 In this respect, the Committee agreed to a template which was developed based on the proposal contained in document MEPC 63/2/17 (Japan), to assist Member States intending to share the information mentioned in paragraph 2.24 above in order to facilitate an informed analysis of the implementation process. For ease of reference the template is set out in annex 2.

2.26 The delegation of Cyprus requested the Committee to review the possible unavailability of appropriate equipment and consider adopting a similar approach for ships built in or after 2012 having a ballast water capacity of more than 5,000 cubic meters for which regulation B-3.5 applies, with those ships built before 2012 as stipulated in circular BWM.2/Circ. 29/Rev.1.

CONSIDERATION AND ADOPTION OF AMENDMENTS TO BWM RELATED GUIDELINES

2.27 The Committee recalled that MEPC 62 agreed to amend the Guidelines on design and construction to facilitate sediment control on ships (G12) and instructed the Secretariat to replace the old text with the amended one and to prepare a new draft resolution for consideration and adoption by MEPC 63 (MEPC 62/24, paragraph 2.34.3).

2.28 Following consideration of the draft text of the new MEPC resolution on the 2012 Guidelines on design and construction to facilitate sediment control on ships (G12), contained in document MEPC 63/2/12 (Secretariat), the Committee adopted the 2012 Guidelines by resolution MEPC.209(63), as set out in annex 3.

2.29 The Committee recalled that the Assembly, at its twentieth session held in 1997, adopted resolution A.868(20) on the Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens. The Committee recalled further that after the adoption in 2004 of the Ballast Water Management Convention, the MEPC developed 14 sets of Guidelines for the uniform implementation of the Convention including the Guidelines for ballast water management and the development of ballast water management plans (G4).

2.30 Having considered documents MEPC 63/2/15 (Secretariat) and MEPC 63/2/19 (IACS) regarding the relationship between the 1997 Guidelines adopted by the Assembly and the Guidelines adopted by the MEPC after 2004, as required under the BWM Convention, the Committee agreed that whilst the Guidelines adopted after 2004 for the uniform implementation of the BWM Convention have effectively superseded the Guidelines adopted by resolution A.868(20), for practical reasons, the Ballast Water Management Plans, approved in accordance with resolution A.868(20), should remain valid until they require revision due to the installation of a ballast water management system. The Committee, therefore, instructed the Secretariat to reflect this in future editions of the BWM Convention.

2.31 Having examined document MEPC 63/2/16 (Norway and Singapore), proposing amendments to the Guidelines for approval of ballast water management systems (G8) related to the determination of the holding time in ballast water tanks during land-based testing under different climatic conditions, the Committee instructed the Ballast Water Review Group to consider the appropriateness of amending the Guidelines (G8) at this stage and to advise the Committee accordingly.

2.32 Also with respect to the Guidelines (G8), ICS reiterated their great concern with the robustness of the testing requirements in these Guidelines. Their concerns are related to the ability to discount non-compliant tests, the fact that compliance is judged on an average organism count, the ability to use surrogate organisms to the sizes specified in Guidelines (G8) for testing, the quality control in some test facilities and the lack of testing in cold and freshwater conditions; the stipulation to carry out tests on water with at least a difference of 10 PSU means testing in freshwater can be completely avoided. The lack of robustness of the biological Type Approval efficacy testing applied by some test facilities is, in the view of ICS, the root cause of the industry concern with the sampling and analysis guidance that is under development in BLG Sub-Committee. ICS saw the proposal in document

MEPC 63/2/16 as further indication that the Type Approval requirements for testing of treatment equipment are not "fit-for-purpose". ICS firmly believed that experience to date proved that review and reinforcement of the test procedures in Guidelines (G8) is necessary. ICS expressed their intention to assist any Administration willing to propose such action in order to improve confidence in the performance of Type Approved ballast water management systems and the Convention itself; this could also potentially remove the concern some Administrations which have agreed to accept other countries' Type Approvals.

2.33 Having considered document MEPC 63/11/3 (Secretariat) on the outcome of BLG 16 related to ballast water (MEPC 63/11/3), the Committee noted that, although BLG 16 had progressed the development of the draft circular on ballast water sampling and analysis with the information available at that session, the Sub-Committee was not able to finalize the circular and agreed that further work is needed. In this respect, the Sub-Committee urged Members and observers to share their experience and findings in developing and validating sampling and analysis methods through submissions to BLG 17. The Committee noted also that the work on this circular will continue at BLG 17.

IMPLEMENTATION OF THE BWM CONVENTION

2.34 The Committee noted document MEPC 63/2/13 (Netherlands) providing a description of the principles of the treatment by internal circulation considered to represent a practical solution for some types of ships, in particular for semi-submersibles, and thanked the Netherlands for the information provided. Also in this respect, the Committee noted the intention of Singapore to submit a document with regard to similar aspects related to jack-up rigs.

2.35 With regard to document MEPC 63/2/13, the delegation of the Netherlands invited the Committee to reconsider the issue of treatment by internal circulation at MEPC 64.

2.36 Having considered document MEPC 63/2/18 (Norway) seeking clarification of application of the BWM Convention to grey water and sewage stored in ballast tanks, the Committee agreed, after extensive discussions, that handling of grey water and sewage water on board ships should be regulated under MARPOL Annex IV and invited Parties to propose relevant amendments to that Annex for consideration at a future session of the Committee.

2.37 Following consideration of the implications of the entry into force of the BWM Convention for the survey and certification of ships (MEPC 63/2/20 (IACS)), the Committee decided to refer the document to the Ballast Water Review Group for further consideration of the three options proposed in paragraph 9 of the document.

2.38 The delegation of Cyprus expressed concern regarding the option provided by IACS in paragraph 9.3 due to the difficulties of that option which might exceed the allowable five-year period as provided in regulation D-5.1, as well as the legal status of a Certificate issued on behalf of a State, for a convention which is not yet in force.

2.39 The Committee noted the information provided in document MEPC 63/INF.9 (IPPIC) on compatibility between ballast water management systems and ballast tank coatings and thanked IPPIC for submitting this information.

ESTABLISHMENT OF THE BALLAST WATER REVIEW GROUP

2.40 The Committee agreed to establish the Ballast Water Review Group with the following terms of reference:

"Taking into consideration comments and decisions made in plenary, the Ballast Water Review Group is instructed to:

.1 review the updated Methodology for information gathering and conduct of work of the GESAMP-BWWG (MEPC 63/2/10, annex 7 and MEPC 63/2/10/Corr.1) and advise the Committee on its approval for dissemination as a BWM circular;

.2 advise on the date the updated Methodology should be applied to allow sufficient time for the applicants to fully implement the new provisions;

.3 consider the proposal for amendments contained in document MEPC 63/2/16 and advise the Committee on the appropriateness of amending the Guidelines (G8) at this stage;

.4 consider document MEPC 63/2/20 (IACS et al.) and advise the Committee as appropriate;

.5 consider the proposal for the minimum information necessary to submit a proposal for Basic/Final approval (MEPC 63/2/14) in light of the newly endorsed Methodology for information gathering and conduct of work of the GESAMP-BWWG and advise the Committee accordingly; and

.6 submit a written report on the review conducted, including its findings and recommendations, to plenary on Thursday, 1 March 2012."

CONSIDERATION OF THE REPORT OF THE BALLAST WATER REVIEW GROUP

2.41 Upon receipt of the report of the Ballast Water Review Group (MEPC 63/WP.7), the Committee approved the report in general and took action as follows (paragraph and annex numbers are those of document MEPC 62/WP.7):

.1 endorsed the updated Methodology for information gathering and conduct of work of the GESAMP-BWWG and approved its dissemination as a BWM circular to supersede the existing BWM.2/Circ.13 of June 2008 (paragraph 6 and annex 1);

.2 agreed that the updated Methodology should be applied to all submissions for Basic Approval to MEPC 65 and subsequent submissions for Final Approval of those systems (paragraph 7);

.3 concurred with the minimum information that should be made available, as set out in annex 2 of the document MEPC 63/WP.7, and instructed the Secretariat to disseminate the annex as a BWM circular (paragraph 8 and annex 2);

.4 reiterated the invitation to Administrations to submit information relevant to the evaluation of proposals for approval in accordance with paragraph 8.1.2.6 of Procedure (G9) (paragraph 8);

.5 concurred with the views and conclusions in paragraph 9 of document MEPC 63/WP.7, in particular the conclusion of the Group not to amend Guidelines (G8) at this stage (paragraph 9);

.6 requested interested parties to provide submissions to MEPC 64 on the appropriateness of changing Guidelines (G8), including general aspects that might be improved through revision, comments on the necessity for any change and the timeline to do so (paragraph 10);

.7 endorsed the conclusion of the Group that the solution contained in paragraph 9.3 of document MEPC 63/2/20 (IACS et al.) offers the most appropriate way forward and invited the submitters of this document to advise the MEPC on the progress made after the conditions for entry into force have been met and prior to the entry into force of the Ballast Water Management Convention (paragraph 14); and

.8 agreed to re-establish the Review Group at MEPC 64 in accordance with the provisions of regulation D-5.1 of the BWM Convention (paragraph 15).

2.42 The Committee thanked the Chairman of the Review Group and its members for their hard work.

2.43 On a related issue, but with no direct reference to the report of the Review Group, the delegation of the Bahamas informed the Committee about a press release regarding the withdrawal from the market of the current design of the Unitor Ballast Water Management System, which was found to be not fit-for-purpose and expressed concern about the possibility of shipowners making considerable investments with no guarantee that the ballast water discharged from the ballast water management systems would be accepted worldwide. The delegations of Liberia, Panama, Vanuatu, Venezuela and the observers from INTERTANKO, IFSMA and IPTA associated themselves with the concern expressed by the Bahamas.

3 RECYCLING OF SHIPS

3.1 The Committee recalled that MEPC 62 had adopted the "2011 Guidelines for the Development of the Inventory of Hazardous Materials" and the "2011 Guidelines for the Development of the Ship Recycling Plan".

3.2 The Committee also recalled that MEPC 62 had agreed to re-establish the intersessional Correspondence Group on Ship Recycling Guidelines which had been instructed to further develop and, if possible, finalize the "Guidelines for Safe and Environmentally Sound Ship Recycling" (Facility Guidelines) and the "Guidelines for the Authorization of Ship Recycling Facilities" (Authorization Guidelines), and also to commence the development of the "Guidelines for Survey and Certification under the Hong Kong Convention" (Survey Guidelines) and the "Guidelines for Inspection of Ships under the Hong Kong Convention" (PSC Guidelines).

Planning of the work

3.3 The Committee had for its consideration 11 documents submitted under the item, covering the following issues:

.1 There were nine submissions addressing the development of the guidelines and related matters. Four of these submissions formed the report of the correspondence group, which had been submitted by Japan, who was the group's coordinator (MEPC 63/3, MEPC 63/3/1, MEPC 63/3/2 and MEPC 63/3/3). Three further submissions, by France (MEPC 63/3/5), Denmark (MEPC 63/3/9) and ILO (MEPC 63/3/10), proposed amendments to the draft text of the Facility Guidelines and the Authorization Guidelines. Also, the Republic of Korea (MEPC 63/3/4) called for a clarification on whether Statements of Compliance on Inventory of Hazardous Materials issued prior to the Convention's entry into force would remain valid after its entry into force, and IACS proposed (MEPC 63/3/7) a framework for providing guidance to competent authorities to facilitate the delegation to organizations recognized by them for the authorization of Ship Recycling Facilities, on the basis of the draft RO Code, currently being developed by the FSI Sub-Committee.

.2 There were two further documents reporting on the outcome of the tenth meeting of the Conference of the Parties to the Basel Convention (COP 10), one by the Secretariat of the Basel Convention (MEPC 63/3/6) and one by the IMO Secretariat (MEPC 63/3/8). Both documents concentrated on the decision by COP 10 on whether the Hong Kong Convention established an equivalent level of control and enforcement as that established under the Basel Convention. The document submitted by the Secretariat of the Basel Convention provided an overview of the decision taken by COP 10, while the note by the IMO Secretariat examined the background to the decision.

3.4 The Committee agreed to discuss in plenary only the reports of the correspondence group and the documents reporting on COP 10 to the Basel Convention, while the remaining documents would be introduced in and considered by the working group.

Development of the guidelines and related matters

3.5 In considering the reports of the intersessional correspondence group (MEPC 63/3, MEPC 63/3/1, MEPC 63/3/2, and MEPC 63/3/3), the Committee noted that the group had made good progress on the development of all four guidelines and in particular with the Facility Guidelines and the Authorization Guidelines, whose development had been progressed with a view to their adoption at MEPC 63.

3.6 The Committee thanked Japan for its continuing contribution as coordinator of the correspondence group and all the members of the group for their excellent work.

3.7 In this regard, IACS clarified that its submission MEPC 63/3/7 was intended to provide a common framework to facilitate the delegation by competent authorities to organizations recognized by them for the authorization of Ship Recycling Facilities under regulation 16 of the Hong Kong Convention. The submission had not intended to transfer the requirements for "traditional ROs" from applicable IMO conventions for ships into requirements for organizations recognised by competent authorities of ship recycling States. IACS had simply offered a comprehensive and familiar framework so that the relevant

requirements could be better identified for organizations authorizing Facilities on behalf of competent authorities.

Outcome of the tenth meeting of the Conference of the Parties to the Basel Convention

3.8 The Committee noted the overview provided by the Secretariat of the Basel Convention (MEPC 63/3/6) on decision BC-10/17 of the tenth meeting of the Conference of the Parties to the Basel Convention (COP 10), held in October 2011, on whether the Hong Kong Convention establishes an equivalent level of control as that established under the Basel Convention.

3.9 Parties to the Basel Convention, with decision BC-10/17, had:

.1 noted that while some parties believed that the Hong Kong Convention provided an equivalent level of control and enforcement to that established under the Basel Convention, some other parties did not believe this to be the case;

.2 encouraged the ratification of the Hong Kong Convention for its early entry into force; and

.3 acknowledged that the Basel Convention should continue to assist countries to apply the Basel Convention as it related to ships.

Furthermore, the decision had a second part that highlighted the importance of cooperation amongst the United Nations stakeholders involved in the subject of ship recycling (IMO, ILO, Basel Convention).

3.10 The IMO Secretariat introduced document MEPC 63/3/8, which provided a historical background to the work of the Basel Convention on the issue of ship recycling and then discussed how decision BC-10/17 was reached at COP 10.

3.11 As background, the Committee noted that, at the end of the 1990s, Parties to the Basel Convention considered the implementation of the Basel Convention for the regulation of the dismantling of ships, the purpose of the Basel Convention being the protection of human health and the environment against adverse effects that result from the generation, transboundary movement, and management of hazardous and other wastes. However, as the Basel Convention had not been developed for regulating end-of-life ships, it did not address the governance structure of international shipping. Therefore, it became evident quite early that there were practical and legal difficulties in enforcing the Basel Convention to ships and, consequently, the seventh Conference of the Parties to the Basel Convention, in October 2004, with decision VII/26, decided to invite IMO to establish in its regulations mandatory requirements that would ensure an equivalent level of control as that established under the Basel Convention, and also ensure the environmentally sound management of ship dismantling.

3.12 The Committee also noted that, in June 2008, the ninth Conference of the Parties to the Basel Convention, with its decision IX/30 on Dismantling of Ships, expressed again its support for the development of the mandatory instrument by IMO for ship recycling and also requested its Open-Ended Working Group to carry out in 2010 a preliminary assessment on whether the ship recycling convention, as adopted, establishes an equivalent level of control and enforcement as that established under the Basel Convention and to transmit the results of that assessment to COP 10, to be held in 2011. In May 2010, the seventh session of its Open-Ended Working Group commenced work on the assessment of the equivalency

between the two conventions. The group compiled a set of criteria for the comparison between the two conventions but was unable to agree on a preliminary assessment.

3.13 In October 2011 COP 10 of the Basel Convention met in Colombia where the consensus could not be reached on the issue of the equivalency. In COP 10, States that had participated actively in the development of the Hong Kong Convention expressed their strong support for the conclusion that the Hong Kong Convention provides a level of control and enforcement that is at least equivalent to that established under the Basel Convention. However, some other States expressed concerns over the effects the Hong Kong Convention may have on the transboundary movement of hazardous wastes and even expressed fears that the Hong Kong Convention may lead to increased numbers of abandoned ships in their coasts. These States, therefore, did not support the conclusion that the Hong Kong Convention is equivalent to the Basel Convention. Consequently, with decision BC-10/17, COP 10 noted that there was no consensus on equivalency; encouraged the ratification of the Hong Kong Convention for its early entry into force; and acknowledged that the Basel Convention should continue to assist countries to apply the Basel Convention as it related to ships.

3.14 The representative of IMO's Secretariat at COP 10 had discussed with representatives of Parties to the Basel Convention, who had opposed the assessment of equivalency, their reasons for doing so. In the main, these delegates had limited experience with IMO and had not taken part in the discussions leading to the development of the Hong Kong Convention. In most cases these delegates said that they required more background information and explanations about the Hong Kong Convention before they could ascertain on the matter of equivalency. Consequently, the IMO Secretariat reported to the Committee that it intended, where necessary, to provide the required guidance, information and technical cooperation to States that wish to become familiar with the Hong Kong Convention and its provisions regarding the improvement of safety, health and environmental standards.

3.15 The Committee agreed that maritime administrations of Member States should brief their counterparts in ministries of environment that, in developing the Hong Kong Convention, IMO, with the support of the international community, had bridged a gap in maritime law by establishing, for the first time, mandatory requirements for the safe and environmentally sound recycling of ships that took into account the particular characteristics of world maritime transport and which were practicable, achievable and globally enforceable. As such, the Hong Kong Convention provided a level of control and enforcement that was at least equivalent to that established under the Basel Convention.

Establishment of the Working Group on Ship Recycling

3.16 Having considered the above issues, the Committee established the Working Group on Ship Recycling under the chairmanship of Dr. Claude Wohrer (France) with the following Terms of Reference:

> "Taking into account comments, proposals and decisions made in plenary, the Working Group on Ship Recycling is instructed to:
>
> .1 further develop the draft Guidelines for Safe and Environmentally Sound Ship Recycling with a view to their finalization and adoption at this session, using as basis the text contained in document MEPC 63/3, and taking into account the comments and proposals in document MEPC 63/3/9;

.2 further develop the draft Guidelines for the Authorization of Ship Recycling Facilities with a view to their finalization and adoption at this session, using as basis the text contained in document MEPC 63/3/1, and taking into account the comments and proposals in documents MEPC 63/3/5, MEPC 63/3/7, MEPC 63/3/9 and MEPC 63/3/10;

.3 further develop the draft Guidelines for Survey and Certification of Ships under the Hong Kong Convention, using as basis the text contained in document MEPC 63/3/2;

.4 further develop the draft Guidelines for Inspection of Ships under the Hong Kong Convention, using as basis the text contained in document MEPC 63/3/3;

.5 consider the proposals contained in document MEPC 63/3/4 and propose an appropriate course of action;

.6 consider and recommend whether an intersessional correspondence group on ship recycling guidelines should be established to further develop the Survey and Certification and the Inspection Guidelines; and if so, develop draft terms of reference for the group; and

.7 submit a written report to plenary on Thursday, 1 March 2012."

Report of the Working Group on Ship Recycling

3.17 The Committee considered and approved the report of the working group (MEPC 63/WP.8) in general and, in particular (paragraph numbers are those of document MEPC 63/WP.8):

.1 adopted the "2012 Guidelines for Safe and Environmentally Sound Ship Recycling" by resolution MEPC.210(63), as set out in annex 4 to this report;

.2 adopted the "2012 Guidelines for the Authorization of Ship Recycling Facilities" by resolution MEPC.211(63), as set out in annex 5 to this report;

.3 noted that the group did not have sufficient time to further develop the draft Guidelines for Survey and Certification and the draft Guidelines for Inspection of Ships under the Hong Kong Convention (paragraph 23);

.4 noted the recommendation of the group to develop the *Guidance to facilitate the delegation by competent authorities to organizations recognized by them for the authorization of Ship Recycling Facilities* and the request for submissions on the subject to a future session of the Committee (paragraph 18); and

.5 agreed to the re-establishment of the intersessional correspondence group on ship recycling guidelines, under the coordination of Japan[1] and approved the terms of reference for the group as follows:

"On the basis of the outcome of MEPC 63 and the report of the working group MEPC 63/WP.8, the correspondence group on ship recycling guidelines is instructed to:

.1 further develop the draft text of the Guidelines for Survey and Certification under the Hong Kong Convention on the basis of the text contained in the annex to document MEPC 63/3/2 and taking into account document MEPC 63/3/4, for consideration and decision by MEPC 64 as appropriate, prior to forwarding them to FSI 21 (March 2013) for comments from a survey and certification point of view;

.2 further develop the draft text of the Guidelines for Inspection of Ships under the Hong Kong Convention on the basis of the text contained in the annex to document MEPC 63/3/3, for consideration and decision by MEPC 64 as appropriate, prior to forwarding them to FSI 21 (March 2013) for comments from a port State control point of view; and

.3 report the outcome of its deliberations to MEPC 64."

3.18 A representative of ILO provided a statement after the adoption of the "2012 Guidelines for Safe and Environmentally Sound Ship Recycling". As requested, the statement is set out in annex 6.

3.19 The Committee thanked the Chairman and the members of the Working Group for their hard work.

4 AIR POLLUTION AND ENERGY EFFICIENCY

4.1 The Committee agreed that, in addition to the documents submitted under agenda item 4, documents MEPC 63/5/4 on a draft resolution on capacity-building, technical assistance and transfer of technology related to energy efficiency measures for ships, MEPC 63/7/7 and MEPC 63/7/8, concerning implementation of MARPOL Annex VI should be considered under this agenda item.

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Order of discussion

4.2 The Committee considered the various issues in the following order:

Energy efficiency for ships

.1 Outcome of EE-WG 2;

.2 Guidelines for calculation of reference lines for use with the EEDI;

.3 Application of energy efficiency measures;

.4 Work in accordance with the work plan for energy efficiency measures;

.5 Draft IMO model course on energy efficiency operation of ships;

.6 Energy efficiency measures;

.7 Impact of technical and operational energy efficiency measures;

Air pollution from ships

.8 Completion of the supplement to the IAPP Certificate;

.9 Assessment of availability of fuel oil under MARPOL Annex VI;

.10 Review of the status of the technological developments to implement Tier III NO_x standards (regulation 13.10 of MARPOL Annex VI);

.11 Treatment of ozone-depleting substances used to service ships;
.12 Designated ports at which VOC emissions are regulated; and

Draft MEPC resolution

.13 Draft MEPC resolution on capacity-building, technical assistance and transfer of technology related to energy efficiency measures for ships.

ENERGY EFFICIENCY FOR SHIPS

4.3 The Committee recalled that MEPC 62 had adopted the amendments to MARPOL Annex VI incorporating a new chapter 4 on regulation on energy efficiency for ships, which makes the EEDI mandatory for new ships, and the SEEMP for all (new and existing) ships. As the amendments will enter into force on 1 January 2013, the Committee should develop and adopt relevant guidelines as soon as possible for smooth and uniform implementation of the amendments.

Outcome of EE-WG 2 and documents commenting on it

4.4 The Committee recalled that MEPC 62 agreed to the holding of an Intersessional Meeting of the Working Group on Energy Efficiency Measures for Ships (EE-WG 2) with terms of reference, as set out in annex 10 to document MEPC 62/24, and that Council had subsequently concurred with the decision (C/ES.26/D, paragraph 7.3).

4.5 The Committee also recalled that, due to time constraints, MEPC 62 could not consider a number of documents submitted to that session on improvement of the relevant guidelines, as MEPC 62 concentrated on adoption of the amendments to MARPOL Annex VI. Therefore, the Intersessional Meeting had considered documents deferred from MEPC 62, as well as documents submitted to the Intersessional Meeting.

4.6 The Committee considered document MEPC 63/4/11 (report of the Intersessional Meeting) and noted that the most important task for the Intersessional Meeting was to finalize, to the extent possible, three priority guidelines, namely: guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI); guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP); and guidelines on survey and certification of the Energy Efficiency Design Index (EEDI), with a view to consideration for adoption by this session of the Committee, to provide sufficient lead time for industry to prepare.

4.7 The Committee also noted that the Intersessional Meeting considered guidelines for determining minimum propulsion power and speed to enable safe manoeuvring in adverse weather conditions, and other important issues, such as EEDI requirement for large tankers and bulk carriers, and EEDI frameworks for ships not covered by the current EEDI, for further development at future sessions.

4.8 Following consultation between the Secretariat and the Chairman, and in accordance with paragraph 6.15 of the Committee's guidelines, a relaxed deadline had been set for documents of maximum two pages commenting on the report of the Intersessional Meeting. The Committee agreed to consider the four documents submitted within the relaxed deadline commenting on the report of the Intersessional Meeting.

4.9 The Committee considered document MEPC 63/4/14 (Greece) arguing that the reference line is a good representation of small- to medium-sized ships, but not a good representation of the relatively few large ships, in which a standard VLCC falls 9.2 per cent above the reference lines. Greece requested the Committee to reconsider the EEDI reduction factors for large tankers and bulk carriers, as set out in document MEPC 62/6/19 (Greece), before the review time frame set out in regulation 21.6 of MARPOL Annex VI, so as to avoid compliance difficulties and underpowering of such ships.

4.10 The Committee considered document MEPC 63/4/15 (Greece) proposing to develop a minimum design speed requirement at the lower range of current pre-EEDI design speeds as an interim safety measure to avoid underpowered ships, until the results of work undertaken by IACS on minimum required power are known.

4.11 The Committee agreed to forward documents MEPC 63/4/14 and MEPC 63/4/15 to the working group on air pollution and energy efficiency for further consideration.

4.12 The Committee considered document MEPC 63/4/17 (BIMCO, INTERTANKO, OCIMF and RINA) seeking clarification as to whether application of the cubic correction factor f_c for chemical tankers should be limited to chemical tankers as defined in regulation 1.16.1 of MARPOL Annex II or should be extended to NLS tankers as defined in regulation 1.16.2 of MARPOL Annex II and to product carriers as defined in regulation 1.7 of MARPOL Annex I.

4.13 The Committee agreed that the cubic capacity correction factor f_c for chemical tankers should be applied only to such ships having an International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk issued under paragraph 1.5.4.1 of the International Bulk Chemical Code (IBC Code). The application of the cubic capacity

correction factor f_c to ships, of any type, without an International Certificate of Fitness was rejected.

4.14 The Committee considered document MEPC 63/4/11 (ICS) proposing textual amendments to the guidelines on survey and certification of the EEDI to improve the clarity of the text and the consistency of the verification process.

4.15 The delegation of Japan expressed the view that any numerical calculation method should be open for shipowners, shipbuilders and ship designers, and that paragraph 2.4 of the draft guidelines on survey and certification of the EEDI should be retained.

4.16 The Committee agreed to forward this document to the working group on air pollution and energy efficiency for further consideration.

4.17 The Committee approved the report of the second Intersessional Meeting of the Working Group on Energy Efficiency Measures for Ships in general and, in particular:

.1 noted that the draft guidelines for calculation of reference lines should clearly indicate that 70 per cent deadweight had been used for the calculation of estimated index values for containerships and that these estimated index values had been plotted against 100 per cent deadweight in order to obtain the values of parameters a and c;

.2 endorsed the view of the Intersessional Meeting that additional guidance with respect to innovative energy efficiency technologies, supporting the guidelines on the method of calculation of attained EEDI and guidelines on the survey and certification of the EEDI, should be developed as separate documents from the guidelines;

.3 noted that Japan would further develop the draft guidance for the assessment of innovative energy efficiency technologies in calculation and verification of the attained EEDI in cooperation with interested members;

.4 noted that ITTC would develop a standard for assessment of speed and power performance by analysis of speed trial data in time for MEPC 64;

.5 noted that IACS would develop a new iteration of the draft guidelines for determining minimum propulsion power to enable safe manoeuvring in adverse weather conditions in time for MEPC 64 as an interim measure and would be the basis for a more permanent solution;

.6 endorsed the view of the Intersessional Meeting that the guidelines for the voluntary use of the ship energy efficiency operational indicator (EEOI) in MEPC.1/Circ.684 should be kept under review and invite Member States and observer organizations to provide information to the Committee on their experiences in applying the guidelines with a view to improving them;

.7 noted that Japan would further develop draft guidelines for the calculation of f_w;

.8 noted the challenges identified by the Intersessional Meeting in applying the current reference line approach to new ship types where no historical ship data exist;

.9 noted the consideration on EEDI frameworks for passenger ships and ro-ro ships as well as the progress made by Member States and observer organizations in identifying possible approaches to these ship types, and that further progress should be made in accordance with the work plan agreed by MEPC 62; and

.10 noted the information by the Secretariat on its technical co-operation activities related to the new energy efficiency measures and that the Intersessional Meeting was invited to indicate other areas in which capacity-building activities may be needed and to identify experts for delivering technical co-operation activities.

Guidelines for calculation of reference lines for use with the EEDI

4.18 The Committee recalled that MEPC 62 requested the Secretariat to finalize the draft guidelines for calculation of reference lines for use with the Energy Efficiency Design Index (EEDI) (MEPC 62/6/4, annex 2) and submit them to this session with a view to their final adoption.

4.19 The Committee considered document MEPC 63/4 (Secretariat) providing draft guidelines for calculation of the reference lines for use with the EEDI, and noted that these draft guidelines should be updated, especially in respect of the need to clarify the calculation of the reference line estimated index values for containerships (paragraph 4.17.1 refers).

4.20 The Committee agreed to forward this document to the working group on air pollution and energy efficiency and to instruct it to refine the draft guidelines for calculation of the reference lines for use with the EEDI, with a view to adoption at this session.

Application of Energy Efficiency Measures

4.21 The Committee noted that regulation 19 of MARPOL Annex VI identifies the ships to which the energy efficiency regulations apply and that, under regulation 19.4 of MARPOL Annex VI, subject to the conditions given in regulation 19.5 of MARPOL Annex VI, a waiver can be issued for new ships, or existing ships that undergo a major conversion, as defined in regulation 2.24 of MARPOL Annex VI.

Major conversions

4.22 The Committee considered document MEPC 63/4/9 (China) seeking an interpretation of the terms "substantially", "major conversion" and "so extensive" related to major conversion. China also stressed that the relationship between the definition of a new ship in regulation 2.23 of MARPOL Annex VI and the application date of each phase in regulation 21 of MARPOL Annex VI is not clear. In order to solve this problem, China proposed that, regardless of contract date, requirements of each phase should be applied based on the constructed date, in which "constructed" should mean that the keel is laid or that the ship is at a similar stage of construction.

4.23 The Committee considered document MEPC 63/4/12 (IACS) proposing an interpretation of the term "major conversion" for use in survey and certification of the EEDI.

4.24 The Committee agreed that a Unified Interpretation for "major conversion" should be developed using document MEPC 63/4/12 (IACS) as basis, taking into account comments made in document MEPC 63/4/9 (China), and IACS agreed to develop a draft Unified Interpretation and submit it to MEPC 64 for consideration.

Unified interpretation of implementation dates of EEDI

4.25 The Committee considered document MEPC 63/4/6 (India) proposing a Unified Interpretation where flag States issuing waivers, as per regulation 19.4 of MARPOL Annex VI, would apply phase 0 only after completion of the waiver period, e.g. after four years.

4.26 Some Member States supported the interpretation proposed in document MEPC 63/4/6 (India) as there is a technological gap for construction of ships between developing and developed countries.

4.27 The majority view was that the waiver provisions specified in regulation 19.4 of MARPOL Annex VI should be granted to an individual ship and not be applied as a general waiver to postpone the implementation of the EEDI requirements for four years, and did not support the interpretation proposed in document MEPC 63/4/6 (India).

Ship Energy Efficiency Management Plan (SEEMP) matters

4.28 The Committee considered document MEPC 63/7/7 (IACS and ICS) seeking the Committee's advice on their understanding of regulation 5.4.4 of MARPOL Annex VI, in which initial survey of SEEMP on board existing ships is required at the first intermediate or renewal survey of the IAPP Certificate on or after 1 January 2013. The co-sponsors highlighted that, in the event the SEEMP is not found on board at the initial survey, they consider the validity of the IAPP Certificate should not be impacted by the lack of a SEEMP as it is a survey item solely under the International Energy Efficiency Certificate (IEEC).

4.29 The Committee agreed to invite IACS to develop a Unified Interpretation on this matter and submit it to MEPC 64 for consideration.

Work in accordance with the work plan for energy efficiency measures

4.30 The Committee agreed that documents MEPC 63/4/10 and MEPC 63/INF.17 (Italy), MEPC 63/4/3, MEPC 63/4/7 and MEPC 63/INF.15 (Cruise Lines International Association (CLIA)), and MEPC 63/4/4 and MEPC 63/INF.8 (International Tank Towing Conference (ITTC)) be forwarded to the working group for consideration.

Draft IMO model course on energy-efficient operation of ships

4.31 The Committee recalled that MEPC 62 had considered documents MEPC 62/5/29 and MEPC 62/INF.39 (Secretariat) providing information on the development of the draft IMO Model Course for energy-efficiency operation of ships prepared by WMU. MEPC 62 had invited interested delegations to provide practical information and examples of energy-efficient operation of ships to the Secretariat by 31 August 2011 for inclusion in the Model Course (MEPC 62/24, paragraph 5.32.1).

4.32 The Committee considered documents MEPC 63/4/5 and MEPC 63/INF.10 (Secretariat) notifying that WMU had finalized the draft Model Course for energy-efficient ship operation. The draft model course had been further developed to include some tutorial examples, but further work was needed to align it with the guidelines finalized at EE-WG 2.

4.33 The Committee noted that, for other IMO model courses developed to support implementation of IMO Conventions, a validation group had been established which reviews the model course in question and provides comments and recommendations to the Secretariat on the course content and structure. The Committee noted also that the validation group would consist of some five to seven expert individuals working independently of the Committee's other working and correspondence groups.

4.34 The Committee agreed to establish a validation group to review and update the draft Model Course on energy-efficiency measures for ships for consideration by the Committee at MEPC 65. The Committee noted that nominations for the validation group should be forwarded to the Secretariat by the end of March 2012.

Energy Efficiency Measures

4.35 The Committee considered document MEPC 63/4/8 (CSC) providing updated estimates of the impact of hull and propeller performance of individual vessel efficiency and on world fleet GHG emissions. CSC proposed to develop a transparent and reliable standard for measuring hull and propeller performance, by arguing that such standard will offer shipowners a more informed basis for their investments in seeking a better vessel performance and reduce overall GHG emissions.

4.36 The Committee noted document MEPC 63/INF.7 (OCIMF) presenting a study on estimated CO_2 emission reductions associated with technologies currently available in support of mandatory technical and operational measures, and agreed to keep this document in abeyance for future reference.

4.37 Some delegations expressed the view that, taking into account the wide range of ship type, size and operating parameters, it was challenging to develop a reliable standard for measuring hull and propeller performance as proposed in document MEPC 63/4/8 (CSC). Other delegations expressed the view that, as hull and propeller performance are a consequence of different characteristics, a common standard may not be appropriate.

4.38 A large number of delegations supported the proposal to develop a standard for measuring hull and propeller performance and that IMO should request ISO to develop such standard.

4.39 The Committee noted the offer by ISO to develop a standard for measuring hull and propeller performance but that there was a need for further information and so agreed to invite interested Member Governments and observer organizations to provide further input and specific proposals on what elements to be included in such a standard for further consideration of this matter at a future session.

Impact of technical and operational energy efficiency measures

4.40 The Committee noted documents MEPC 63/4/1 and MEPC 63/INF.2 presenting a study undertaken by Lloyd's Register and DNV on estimated CO_2 emission reductions associated with the mandatory technical and operational measures adopted at MEPC 62.

4.41 The delegation of China made a statement that the study had significant uncertainties in future emission projections, accuracy of the database used, as well as the fleet growth and scrapping rate scenarios. China considered that the study optimistically estimated the cost of complying with the EEDI requirements and that there was a lack of transparency in terms of the calculation process. As requested, the full statement is set out in annex 7.

4.42 The Committee noted that these documents were provided for information only.

AIR POLLUTION FROM SHIPS

Completion of the Supplement to the IAPP Certificate

4.43 The Committee recalled that MEPC 62 had approved MEPC.1/Circ.718 in respect of the revised section 2.3 of the Supplement to the International Air Pollution Prevention (IAPP) Certificate.

4.44 The Committee considered document MEPC 63/7/8 (IACS) emphasizing that section 2.3 of the supplement to IAPP Certificate will lead to situations that do not accurately reflect the current or future means by which the ship intends to operate either when inside/outside an ECA or when lower sulphur limits enter into force. IACS recommended that the wording "as documented by bunker delivery notes" in section 2.3 of the supplement should be understood that an "x" can be entered in advance in respect of all the relevant checkboxes.

4.45 The Committee agreed to invite IACS to develop a unified interpretation on this matter, and submit it to MEPC 64 for consideration.

Assessment of availability of fuel oil under MARPOL Annex VI

4.46 The Committee recalled that MEPC 62 had considered document MEPC 62/4/5 (United States) providing the report of the Correspondence Group on the assessment of availability of fuel oil under MARPOL Annex VI, including a draft methodology framework to examine the availability of compliant fuel. The Committee also recalled that it had considered document MEPC 62/4/21 (ICS) providing comments on the need for early validation and refinement of a fuel availability model. Some delegations at MEPC 62 had supported the proposal by ICS to undertake a preliminary study during the period 2012-2013 with a focus on availability of compliant fuel oil in Emission Control Areas (ECA) to provide fuel availability scenarios for the period 2015-2016. Other delegations at MEPC 62 were of the view that carrying out such a preliminary study would not lead to an effective validation for global supply of compliant-fuel oil in 2020 as the scope of the study would be limited only to ECA.

4.47 The Committee further recalled that MEPC 62 had agreed to defer the consideration of this matter and invited further submissions to this session on the proposed draft methodology for detailed consideration and action, and noted that no submissions had been received at this session (MEPC 63).

4.48 The Committee agreed to invite Member Governments and interested delegations to submit concrete proposals to the next session for further consideration.

Review of the status of the technological developments to implement Tier III NO_x standards (regulation 13.10 of MARPOL Annex VI)

4.49 The Committee recalled that MEPC 62 had established a Correspondence Group (NO_x-CG) to review the status of the technological developments to implement the Tier III NO_x emissions standards under the coordination of the United States, and requested the correspondence group to provide an interim report to MEPC 64, and to submit a final report to MEPC 65 in 2013.

4.50 The delegation of the United States, on behalf of the coordinator of the Correspondence Group (NO_x-CG), gave an oral update of the group's work to date, and highlighted that expertise relating to after-treatment of NO_x emissions and supply of global

consumables, e.g. urea, is not currently represented in the group and, for the review to be comprehensive, such expertise should be incorporated. It was emphasized that other expertise not currently represented in the correspondence group would provide valuable information to support the aims of the review.

4.51 The Committee agreed that the coordinator of the Correspondence Group (NO_x-CG) can identify and incorporate into the group's findings information from non-IMO affiliated technical bodies, as necessary.

Treatment of ozone-depleting substances used to service ships

4.52 The Committee recalled that MEPC 62 had requested the Secretariat to continue liaising with the United Nations Environment Programme (UNEP) and its Secretariat of the Montreal Protocol (the Ozone Secretariat) on the correct procedures for purchasing HCFCs in foreign ports.

4.53 The Committee considered document MEPC 63/4/13 (Secretariat) providing information on the decision by the Parties to the Montreal Protocol on the treatment of ozone-depleting substances used to service ships. The decision requested the Ozone Secretariat to collect current information about the sale of ozone depleting substances to ships for onboard servicing and other onboard uses. The Secretariat also provided information on a study that Lloyd's Register had been commissioned to undertake on the treatment of ozone depleting substances used to service ships.

4.54 The Committee agreed to request the Secretariat to continue liaising with the Ozone Secretariat and requested the Secretariat to provide an update on the work of the Montreal Protocol to MEPC 64, to facilitate the Committee's further deliberation of this issue.

4.55 The Committee also agreed that the Secretariat should provide the Ozone Secretariat with only information requested by the decisions adopted by the Twenty-Third Meeting of the Parties to the Montreal Protocol, namely information on whether and how IMO address (a) trade in ozone-depleting substances for use on board ships, and (b) use of ozone depleting substances on board ships.

Designated ports at which VOC emissions are regulated

4.56 The Committee noted that requirements related to the emissions of volatile organic compounds (VOCs) from tankers are set out in regulation 15 of MARPOL Annex VI, under which, if the emissions of VOCs from tankers are to be regulated in a certain port or terminal under the jurisdiction of a Party, such Party shall submit a notification to the Organization.

4.57 The Committee recalled that MEPC 54 had urged Member States to notify the Organization of any VOC requirements already in place or planned to be introduced and, for this purpose, approved MEPC/Circ.509 on notification to the Organization on ports or terminals where VOC emissions are to be regulated.

4.58 The Committee considered document MEPC 63/4/2 (Secretariat) providing information on notifications received from the Administrations of the Netherlands and the Republic of Korea. The details of the designated ports and size of tankers, etc., had been uploaded to the IMO GISIS module under MARPOL Annex VI, and a summary of the relevant information had been set out in annex to MEPC.1Circ.774.

4.59 The Committee agreed to encourage other Member States to notify the Organization of any VOC requirements already in place or planned to be introduced.

Establishment of Working Group on Air Pollution and Energy Efficiency

4.60 The Committee established the Working Group on Air Pollution and Energy Efficiency under the Chairmanship of Mr. Koichi Yoshida (Japan), with the following terms of reference:

> "Taking into account all relevant documents as well as comments and decisions made in plenary, the Working Group on Air Pollution and Energy Efficiency is instructed to:
>
> .1 finalize the draft 2012 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships and the associated resolution, with a view to adoption at this session;
>
> .2 finalize the draft 2012 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP) and the associated resolution, with a view to adoption at this session;
>
> .3 finalize the draft 2012 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI) and the associated resolution, with a view to adoption at this session;
>
> .4 finalize the draft Guidelines for calculation of reference lines for use with the EEDI and the associated resolution, with a view to adoption at this session;
>
> .5 continue work in accordance with the work plan agreed at MEPC 62 as set out in annex 9 to document MEPC 62/24; and
>
> .6 submit a written report to plenary on Thursday, 1 March 2012."

Outcome of the Working Group on Air Pollution and Energy Efficiency

4.61 The Committee received the report of the Working Group on Air Pollution and Energy Efficiency (MEPC 62/WP.9). In his introduction of the report, the Chairman of the Working Group, Mr. Koichi Yoshida (Japan), noted that the delegation of Malta had also attended the group and emphasized that the Working Group had:

> .1 finalized four sets of guidelines and associated resolutions, namely guidelines on the method of calculation of the EEDI; guidelines for the development of a SEEMP; guidelines on survey and certification of the EEDI; and guidelines for the calculation of reference lines for use with the EEDI;
>
> .2 reiterated the agreement of the Intersessional Meeting (EE-WG 2) on reduction factors for large tankers and bulk carriers, and interim minimum design speed;
>
> .3 considered matters related to ro-ro passenger ships, cruise passenger ships with non-conventional propulsion, ship model testing and speed correction, LNG carriers and the development of future reference lines; and

.4 updated the work plan and schedule for further development of technical and operational measures for ships, taking into account the outcome of EE-WG 2 and deliberation at this session.

Action taken on the report of the Working Group on Air Pollution and Energy Efficiency

4.62 In concluding its consideration of the report of the Working Group, the Committee approved it in general and, in particular (paragraph numbers are those of document MEPC 63/WP.9):

.1 adopted the 2012 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships (paragraph 3.3), by resolution MEPC.212(63), as set out in annex 8;

.2 adopted the 2012 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP) (paragraph 4.2), by resolution MEPC.213(63), as set out in annex 9;

.3 adopted the 2012 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI) (paragraph 5.3), by resolution MEPC.214(63), as set out in annex 10;

.4 adopted the Guidelines for calculation of reference lines for use with the Energy Efficiency Design Index (EEDI) (paragraph 6.4), by resolution MEPC.215(63), as set out in annex 11, and instructed the Secretariat to make an editorial check of the guidelines incorporating any conforming changes that may be necessary (paragraph 6.5); and

.5 endorsed the work plan and schedule for further development of technical and operational measures for ships (paragraph 7.17), as set out in annex 12.

4.63 The delegation of Greece highlighted that, in accordance with the revised work plan and paragraph 7.7 of the report, requirements for minimum design speed for tankers and bulk carriers as an interim safety measure proposed in document MEPC 63/4/15 (Greece) should be further considered at MEPC 64, so as to prevent the possibility of underpowered ships being designed and built for the first phase of the EEDI requirements. The delegation of Greece emphasized that a suitable interim safety measure should be agreed at MEPC 64. The delegations of Brazil and Vanuatu associated themselves with the comments made by the delegation of Greece.

4.64 The Committee agreed to delete an item on "identification and development of other guidelines or supporting documents for technical and operational measures" from the revised work plan, taking into account the decision made by Council that work plans should be specific. In this regard, the Chairman of the Working Group elaborated that, under this item, it was, inter alia, expected to develop guidelines for the calculation of weather coefficient f_w, guidance for the assessment of innovative energy efficiency technologies (air lubrication system, waste heat recovery system, solar power system, and wind propulsion technologies), as a long-standing work plan.

4.65 The Committee thanked the Chairman, Mr. Koichi Yoshida, and members of the group for their hard work.

Draft MEPC resolution on capacity-building, technical assistance and transfer of technology related to energy efficiency measures for ships

4.66 The Committee recalled that MEPC 62 had agreed that capacity-building, technical assistance and transfer of technology were important elements in a future comprehensive regulatory framework to promote energy efficiency in international shipping, and included regulation 23 of MARPOL Annex VI on promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships.

4.67 The Committee also recalled that MEPC 62 had developed a draft MEPC resolution on capacity-building, technical assistance and transfer of technology with the intention of adopting it with the amendments introducing a new chapter 4 of MARPOL Annex VI as a package; however, due to time constraints and some divergences of views, it was not possible to finalize the draft resolution. MEPC 62 noted that the Chairman would further develop the draft resolution based on the input during MEPC 62 and would submit it to this session, with a view to further consideration and adoption at MEPC 63.

4.68 The Committee considered document MEPC 63/5/4 submitted by the Chairman providing a draft MEPC resolution on capacity-building, technical assistance and transfer of technology related to energy efficiency measures for ships.

4.69 A group of Member States provided comments and proposed additional amendments to the Chairman's draft resolution, set out in an informal paper, by adding new paragraphs on the following: a methodology for assessing implementation, the necessary financial, technological and capacity-building support for developing countries by developed countries, taking into account the principles of common but differentiated responsibilities and respective capabilities under the UNFCCC and its Kyoto Protocol.

4.70 Some delegations expressed the view that, taking into account the entry into force of the amended MARPOL Annex VI, there was a compelling need to develop the draft resolution as soon as possible.

Establishment of Working Group on Draft MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the improvement of energy efficiency of ships

4.71 The Committee, after discussion, established the Working Group on the draft MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the improvement of energy efficiency of ships under the Chairmanship of Mr. Arsenio Dominguez (Panama), with the following terms of reference:

> "Taking into account all relevant documents as well as comments and decisions made in plenary, the Working Group on the draft MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the improvement of energy efficiency of ships is instructed to:
>
> .1 finalize the draft MEPC resolution on promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships, with a view to adoption at this session; and
>
> .2 submit a final report to plenary on Friday, 2 March 2012."

Outcome of the Working Group on Draft MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the improvement of energy efficiency of ships

4.72 The Committee received the report of the Working Group on the draft MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the improvement of energy efficiency of ships (MEPC 63/WP.13). In his introduction of the report, the Chairman of the Working Group, Mr. Arsenio Dominguez (Panama), noted that the delegation of Nigeria had also attended the group and emphasized that the Working Group had:

.1 discussed the development of the draft resolution on the basis of consensus, the need for the resolution to adequately reflect consideration of climate change under the UNFCCC and Article 2.2 of the Kyoto Protocol, including common but differentiated responsibilities and respective capabilities; IMO resolution A.963(23); responsibilities of developed countries to provide for means to achieve technical co-operation, technological development and transfer of technology; reference to regulation 23 in chapter 4 of MARPOL Annex VI, and to States, particularly developing States; the establishment of a mechanism to assess the implementation of regulation 23 in chapter 4 of MARPOL Annex VI, and legal clarification of the interaction of IMO and other United Nations bodies, in particular UNFCCC;

.2 discussed at length the text for the draft resolution but the Group could not reach agreement by consensus on some of the proposals and decided to keep the text that could not be agreed in square brackets for further consideration by the Committee; and

.3 considered the remaining proposals referred to the Group for consideration, but due to time constraints, the Group was unable to review the further changes proposed and the views expressed could not be reflected in the report of the Group.

4.73 The Committee noted the statements by the delegations of Brazil, China and India expressing disappointment that a resolution had not been finalized at this session and reiterating the importance of promotion of technical co-operation and transfer of technology. The Committee also noted the statements by the delegations of Australia, Sweden and the United Kingdom, also expressing disappointment that a resolution had not been finalized at this session and reiterating their commitment to fully comply with their obligations under regulation 23 of chapter 4 of MARPOL Annex VI. The delegations of Argentina, Chile, Democratic People's Republic of Korea, Ecuador, Ghana, Indonesia, Islamic Republic of Iran, Malaysia, Mexico, Nigeria, Peru, Philippines, Saudi Arabia, South Africa, Uruguay, Venezuela, associated themselves with the statements made by Brazil, China and India and expressed similar views. The delegations of Denmark, Italy, Germany, the Netherlands, Norway, Poland, Portugal and the United States, associated themselves with the statements made by Australia, Sweden and the United Kingdom and expressed similar views. As requested, the statements are set out in annex 13.

Action taken on the report of the Working Group on the draft MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the improvement of energy efficiency of ships

4.74 In concluding its consideration of the report of the Working Group, the Committee (paragraph numbers are those of document MEPC 63/WP.13):

.1 noted the outcome of the deliberations on development of the draft resolution on promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships (paragraphs 20 and 21); and

.2 agreed to continue to work on the draft resolution at its next session.

4.75 The Committee, in noting the importance of the resolution, thanked the Chairman, Mr. Arsenio Dominguez (Panama), and the members of the Working Group for their hard work and efforts.

5 REDUCTION OF GHG EMISSIONS FROM SHIPS

5.1 The delegations of Brazil, Chile, China and India made general statements on issues of policy and principle related to control of greenhouse gas emissions from international shipping. As requested, the statements are set out in annex 14.

5.2 The Committee noted that, with the mandatory technical and operational measures to increase energy efficiency in shipping having been adopted at the last session as a new chapter of MARPOL Annex VI, it was now opportune to consider the third element of the Organization's GHG policy, as set out in Assembly resolution A.963(23), namely the Market-Based Measures (MBM).

5.3 The Committee agreed that the focus at this session should be, as recommended both by the MBM Expert Group and by the Intersessional Working Group meeting, on a more comprehensive impact assessment of the possible consequences of introducing an MBM for international shipping under IMO. The assessment should focus on possible impacts for consumers and industries in developing countries as well as the impacts on developing countries' ability to continue developing in line with their priorities for poverty eradication and sustainable development.

Order of discussions

5.4 Based on a proposal by its Chairman, the Committee agreed on the following order of discussions:

.1 Market-based Measures:

.1 *Report of the third Intersessional Meeting*,

.2 *Impact assessment,*

.3 *Consideration and possible consolidation of MBM proposals*,

.4 *Climate finance and use of MBM revenues,*

.5 *Relation between an MBM and the WTO Rules;*

.2 Reduction target for international shipping;

.3 UNFCCC matters; and

.4 Other GHG issues.

Market-based Measures

5.5 The Committee recalled that, at its fifty-ninth session, it had held an in-depth debate on MBMs and noted the opinion of some Member States that such measures could serve two main purposes: the provision of incentives for the maritime industry and the possibility to offset growing ship emissions. The Committee also noted that some of the proposed measures could generate funds which could, among other purposes, be used for climate change actions in developing countries.

5.6 The Committee also recalled that, having received and considered the report of the Expert Group on Feasibility Study and Impact Assessment of possible MBMs, which was established by the Secretary-General following agreement at MEPC 60, MEPC 61 had agreed to hold an Intersessional Meeting on MBMs.

Report of the third Intersessional Meeting of the Working Group on GHG Emissions from Ships

5.7 The Committee considered document MEPC 62/5/1, containing the report on the third Intersessional Meeting of the Working Group on GHG Emissions from Ships (GHG-WG 3) which was dedicated to further work on MBMs. In approving the report in general, it noted (references are those of MEPC 62/5/1):

.1 that the third Intersessional Meeting completed, as far as possible, the Terms of Reference given to it by the Committee;

.2 that there were two opinions as to whether a compelling need and purpose of an MBM for international shipping under IMO had been clearly demonstrated, and agreed to return to the issue in due course;

.3 that the Intersessional Meeting placed the MBM proposals into two groups: (1) focus on in-sector and (2) in-sector and out-of-sector, based on the emission reduction mechanism used by the MBM proposals (annex 3);

.4 the debate on the relation to relevant conventions and rules and agreed to consider the issue further, partly based on a submission by India;

.5 the debate on strengths and weaknesses and that, for the MBM proposals identified under each group, the proponents had identified and listed strengths and weaknesses (annex 4) and that other delegations which were not proponents of MBMs identified additional weaknesses for all the MBM proposals (annex 5);

.6 that the Intersessional Meeting acknowledged the findings and conclusions of the Expert Group's report, including its identification that there would be a need for further study of both the direct and indirect impacts on developing countries due to the introduction and non-introduction of an MBM for international shipping under IMO; and

.7 that two documents GHG-WG 3/3/4 (Cyprus, Denmark, Marshall Islands and Nigeria) and GHG-WG 3/3 (Greece), or relevant parts thereof, should be considered further; and agreed to consider them at this session.

Impact assessment

5.8 The Committee noted that MEPC 62 had been unable, due to time constraints, to address, amongst others, MBMs and had agreed to defer relevant submissions to this session, as set out in document MEPC 63/5. In responding to the call for further impact assessments and to facilitate further progress on development of a suitable MBM for international maritime transport, the Chairman had submitted documents MEPC 63/5/2 and MEPC 63/WP.12 which the Committee agreed to use as basis for this part of the debate.

5.9 In his introduction, the Chairman emphasized that the Committee should acknowledge that the feasibility study called for by the work plan for further consideration of MBMs had been successfully completed by the Expert Group on Feasibility Study and Impact Assessment of Possible Market-based Measures (MBM-EG), which had concluded that all MBM proposals under review could be implemented, notwithstanding the challenges associated with the introduction of new measures. On the other hand it was also clear, from the debates at MEPC 61 and those held during GHG-WG 3, that analyses of possible impacts of introducing an MBM for international shipping under IMO, in particular on developing countries, need to continue, which was in line with the recommendations of the MBM-EG itself. The impact assessment would involve substantial gathering of trade and other data as well as computer modelling, and would need to be undertaken by relevant consultants with appropriate multi-discipline expertise and experience. The assessment should be commissioned by the Secretary-General, based on terms of reference and criteria which should be adopted by the Committee at its present session. To make the exercise open and transparent, the Chairman proposed that a Steering Committee with open representation should be established to oversee the assessment and to assist the Secretariat. The Committee was invited to encourage Member States and observer organizations to contribute financially towards the impact assessment, the cost of which had been estimated to be between US$500,000 and 700,000. The Committee was invited to consider and adopt Terms of Reference and criteria for the impact assessment set out at annex, and also invited the Secretary-General to commission the study as soon as possible.

5.10 The Committee considered document MEPC 63/5/8 by India presenting the findings of an MBM impact study on India's shipping sector and trade, which assessed the impact of MBMs on freight rates and export/import prices of three essential commodities (capesize iron ore exports from India to China, imports of coal to India from Australia and imports of crude oil to India from Saudi Arabia). It also argued that GHG targets should be agreed under UNFCCC and that IMO should maintain consonance with the UNFCCC process.

5.11 The Committee considered document MEPC 63/5/11 by China providing comments on the impact assessment and highlighting the need for further impact studies on impacts on developing countries. The document also proposed revised criteria for the assessment, introducing consistency with the UNFCCC principle of common but differentiated responsibility and respective capabilities (CBDR) as a criterion against which the MBMs should be assessed.

5.12 The Committee noted information provided by the Secretariat on available funds and the preparations made for the impact assessment and that about US$150,000 was available. This was the surplus from other analytical work in this field and donations by the Governments of Canada and Norway. In addition, the Secretariat had made available US$50,000 from the ITCP, thus enabling the exercise to commence. Without all

the funding available, the assessment will have to be divided in modules in order to address the most pressing issues first. Furthermore, with limited funding, it may be that some elements could not be addressed in the detail that would meet the expectations of the Committee.

5.13 In the ensuing debate on the need for additional impact assessments of the MBM proposals and on the proposed methodology and criteria for the study, inter alia, the following were highlighted:

.1 the need for further impact assessment was clearly demonstrated;

.2 a number of delegations advocated an open and transparent process for the further impact assessment, while noting that the Steering Committee should be kept at a manageable size;

.3 the Steering Committee should ensure that the Terms of Reference are met;

.4 different views were expressed on the use of external consultants, with a number of delegations expressing the view that the use of external consultants was needed for analyses and computer modelling, while others maintained the view that the assessment should be undertaken by experts nominated by Member States;

.5 a number of delegations stated that both IMO's mandate and UNFCCC's CBDR principle must be respected. Some delegations suggested that the debate on MBMs should be suspended until the outcome of the impact assessment was considered;

.6 the study should be focused and should avoid repetition of work done by the Expert Group on Feasibility Study and Impact Assessment of Possible Market-based Measures;

.7 Member States should be encouraged to provide expertise, data and relevant information which could be posted in a portal on the website. Relevant international organizations, such as FAO, UNCTAD and WFP should also be invited to provide appropriate information;

.8 the Steering Committee should be actively involved in the tendering process;

.9 it was suggested that the composition of the MBM Expert Group established in 2010 may be used as a basis for deciding on the establishment of the Steering Committee; and

.10 the Chairman stated that it is possible to involve experts from other organizations and IGOs that have observer status with IMO. He suggested empowering the Steering Committee to ensure it would function as intended and stated that the criteria should be clear and unambiguous.

5.14 The Committee reached agreement by consensus on the need for a continued impact assessment and that its focus should be on possible impacts on consumers and industries in developing countries.

5.15 The Committee welcomed, with appreciation, pledges for donations towards the impact assessment by the delegations of Australia, Canada, Finland, Germany, Japan and Norway.

5.16 The Committee noted an intervention by the Secretary-General where he underlined that the Organization should continue to take the lead in addressing GHG emissions from international shipping, and that the next step was to conduct a comprehensive impact assessment of the possible impacts of a Market-Based Measure for international shipping on economic development and growth in developing countries. He thanked the delegations which had pledged for donations towards the impact assessment and urged others to do the same. He stated that, without the pledges, the exercise would have had an uncertain future. He went on to say that, should the Committee decide to entrust him with the impact assessment, the work would be based on four guiding principles:

- ensure speedy action to provide useful information to the Committee;
- ensure full transparency of the process;
- ensure impartiality; and
- apply a dynamic way of handling the matter.

5.17 The Chairman thanked the Secretary-General for his intervention and proceeded with his informal consultations in an effort to develop the draft terms of reference for the Steering Committee, the methodology and criteria for the impact assessment.

5.18 In introducing the outcome of the informal consultations (MEPC 63/WP.14), the Chairman said that the informal consultations had been fruitful and constructive; however, there were issues where consensus had not been reached: one issue was the methodology for the impact assessment: whether by an expert group or by commissioned research institutes; another issue was the scope of impact assessment. Due to time constraints, the Committee agreed to further consider the terms of reference at its next session.

5.19 In respect of the request by a number of delegations concerning the possibility to financially support members/experts from developing countries to participate in the impact assessment and the Steering Committee, thereby securing a geographically balanced and equitable participation, the Committee noted that such a request would be outside the scope of the regular IMO budget.

5.20 The Committee urged those interested Member States and observer organizations that had not already come forward with pledges to contribute financially towards the impact assessment so as to ensure timely delivery of this undertaking, for the sake of environment, consumers and industries in developing countries and the Organization.

Consideration and possible consolidation of MBM proposals

5.21 The Committee considered the various MBM proposals and whether they, or some of them, might be consolidated, thus making the number more manageable.

5.22 The Committee had the following documents for its consideration under this subheading:

.1 MEPC 63/5/1 (Bahamas) and also relevant parts of document MEPC 62/5/13, deferred from the last session, which set forth a proposal

for draft amendments to MARPOL Annex VI to incorporate a new chapter 5 on regulations for the control of CO_2 emissions from ships with reduction obligations for all ships;

.2 MEPC 63/5/3 (Japan and WSC), which provided further information on the Efficiency Incentive Scheme (EIS) and stressed that it does not contain the capping nor target line and that "new and existing ships meeting the specified standards would be exempt from any fees";

.3 MEPC 63/5/9 (Germany), introducing a scientific study on the potential implementation of a worldwide ETS;

.4 MEPC 63/5/10 (Russian Federation), providing its position on regulation of GHG emissions from international shipping;

.5 MEPC 62/5/7 on a way ahead, and document GHG-WG 3/3 on grouping and evaluation of proposed MBMs, both by Greece;

.6 MEPC 62/5/8 (United States), on efficiency improvements within the international marine sector;

.7 MEPC 62/5/33 (Cyprus, Denmark, Marshall Islands, Liberia, Nigeria, Republic of Korea and IPTA), on the International Greenhouse Gas Fund – strengths and weaknesses; and

.8 GHG-WG 3/3/4 (Cyprus, Denmark, Marshall Islands and Nigeria), on the International Greenhouse Gas Fund, which was deferred from the Intersessional Meeting.

5.23 The Committee noted document MEPC 63/INF.13 by Japan on the cost analysis on the application of efficiency improvement measures in the maritime fleet; and MEPC 63/INF.14 by Germany on the design and implementation of a worldwide maritime emission trading scheme.

5.24 The Committee noted the oral information provided by:

.1 Norway as the focal point for the ETS proposal that further work had been undertaken that would be submitted to future sessions;

.2 Jamaica on its proposal for a "Port State Levy" where it informed that a refined and updated version would be submitted to MEPC 64 which would also explain how the PSL would function in respect to CBDR; and

.3 WWF as the focal point for the IUCN proposal on a Rebate Mechanism where it informed that further work would be presented in relation to the debate on climate finance and possible use of MBM revenues.

5.25 In the ensuing debate on the possibility of consolidating the various proposals, the Committee:

.1 agreed that a proposal would be eliminated at this session from being further considered, only if this was agreed to by the proponent(s) of the proposal;

.2 noted that a number of delegations supported the view expressed by Greece in its document MEPC 62/5/7, that only the GHG Fund and the ETS should be analysed further;

.3 noted that a number of delegations felt it desirable to carry out the analysis with a reduced number of MBM proposals, but also recognized that, in so doing, vital information could be lost which could be used at a later stage when the final MBM had been advanced in its development, as the resultant MBM could be a combination of elements of different MBMs or some compromise solution rather than any of the proposals in their initial form;

.4 noted that as the proposals are now grouped in two broad categories (m-sector; in-and-out-of-sector), it would be possible to assess the impacts quite accurately, while a comparative analysis may not be possible to do for all proposals, since some still lack sufficient detail;

.5 noted that one possibility is to use annex 3 to document MEPC 62/5/1, in which the MBMs are already grouped, as the basis for deciding which MBM to analyse;

.6 noted that a number of delegates expressed support for further development and consideration of the proposal by the Bahamas and that it should be subject to the impact assessment, as a possible alternative to an MBM or as an interim measure;

.7 noted that some delegations opposed further consideration of MBM, stating that IMO should focus on technical and operational measures only;

.8 noted that a large number of delegations were not ready to select a possible MBM proposal at this point in time and that legal text is not directly linked to the maturity of the proposals and should not be used as the benchmark for selection;

.9 noted that a number of delegations expressed the view that the EDDI was developed as a regulatory tool for new ships only and that it would be inappropriate to extend its application to the existing fleet as part of an MBM, and opposed the use of EEDI as a possible design benchmark for an MBM. Other delegations expressed the view that suitable benchmarks, both for design and operation, would have to be found if a future MBM would rely on such features and in that case, the Committee would have to consider their design and application; and

.10 agreed that all MBM proponents should be invited to refine their proposals as soon as possible, and not later than MEPC 64.

5.26 The delegations of Brazil and Japan made statements that are set out in annex 15.

5.27 The Committee agreed that the MBM proposals that will be subject to the impact assessment are those set out in annex 3 of MEPC 62/5/1. All proposals should be further developed and finalized in time for MEPC 64 to be part of the horizontal comparative analysis which would be one of the last modules to be undertaken (between MEPC 64 and MEPC 65). The Committee will consider further all proposals at MEPC 64 in order to determine whether they can be analysed against all criteria.

5.28 The Committee also agreed that the Bahamas' proposal will be subject to the impact study.

Climate finance and use of MBM revenues

5.29 The Committee had the following documents for its consideration under this sub-heading:

.1 MEPC 62/5/15 (Germany) on possible use of revenues generated by an ETS for international shipping, which was deferred from the last session;

.2 MEPC 63/5/7 (France), providing information on the G-20 report prepared by the World Bank and the International Monetary Fund on mobilizing climate finance, in which international shipping was identified as a possible funding source;

.3 MEPC 62/5/34 (France) on possible use of revenues generated by an ETS for shipping. The Committee noted that paragraph 8 of document MEPC 62/5/34 (France) referred to the "United Nations General Assembly", however, this was an error in translating the document, as it should refer to the "IMO Assembly"; and

.4 MEPC 63/5/6 and document MEPC 62/5/14 by WWF, both on ways to ensure no net incidence on developing countries from an MBM for international shipping under IMO.

5.30 The Committee noted document MEPC 62/INF.3 by the Secretariat, which provided information on the United Nations Secretary-General's High-Level Advisory Group on Climate Finance – AGF.

5.31 The Committee recalled that MEPC 59 noted that there was a general preference for the greater part of any funds generated by an MBM under the auspices of IMO to be used for climate change purposes in developing countries, through existing or new funding mechanisms under the UNFCCC or other international organizations.

5.32 The Committee noted that the Secretariat's report on the outcome of the Durban Conference, presented in document MEPC 63/5/5 and, in particular, the information on establishment of the Green Climate Fund and UNFCCC's consideration of climate change finance where international shipping had been mentioned as a possible source, were of relevance for this debate.

5.33 The Committee also noted that the Intersessional Meeting (GHG-WG 3) considered possible use of revenues and noted several possible uses as listed in paragraph 3.19 of its report (MEPC 62/5/1).

5.34 In the ensuing debate, the Committee considered the possible use of revenues from an MBM for international shipping under IMO and its relation with the wider efforts in the world community to mobilize climate finance for use in developing countries. It was, in particular, noted that:

.1 divergent views were expressed on use of revenues and the relation between an IMO MBM and climate finance, with a number of delegations advocating disbursement of revenues as a way to accommodate (reconcile) both CBDR and the IMO principles, while others opposed this if applied

universally to all ships and advocated an approach that would ensure no net incidence on developing countries;

.2 a large number of delegations expressed the view that the greater part of any MBM revenues should be used for climate finance in developing countries;

.3 a number of delegations expressed the view that an MBM for international shipping under IMO should not be used as a source for general climate finance in the context of the Green Climate Fund where funding should be provided by developed countries;

.4 if international shipping was to contribute to international climate financing, then international shipping should not be liable to "double taxation" (once through the UNFCCC and once through IMO). Moreover, international shipping should only contribute in a manner that is proportional to its share of global GHG emissions, which according to IMO's Second Greenhouse Gas Study 2009 is approximately 2.7% of global emissions;

.5 some delegations expressed the opinion that the Committee should take note of the ongoing work in other forums such as UNFCCC and G-20;

.6 a number of delegations stated that the RM is an innovative and constructive proposal that addresses the CBDR principle and should be analysed and considered further; and

.7 GHG-WG 3 had noted that there were several possible uses for revenues generated by an MBM for international shipping, as identified in the MBM proposals, including:

.1 incentivizing shipping to achieve improved energy efficiency;

.2 offsetting – purchase of approved emission reduction credits;

.3 providing a rebate to developing countries;

.4 financing adaptation and mitigation activities in developing countries;

.5 financing improvement of maritime transport infrastructure in developing countries (e.g. Africa);

.6 supporting R&D to improve energy efficiency of international shipping; and

.7 supporting the Organization's Integrated Technical Co-operation Programme.

5.35 The Committee noted the ongoing work under UNFCCC on climate finance, and also noted the AGF report (MEPC 62/INF.2 (Secretariat)) and the G-20 report (MEPC 63/5/7 by France) on mobilizing funding sources for the Green Climate Fund, in which international shipping had been listed as one possible source of finance.

5.36 The delegations of Brazil and the Republic of Korea made statements expressing that revenues mobilized by an MBM from international shipping under IMO should not be included in the GCF of the UNFCCC. The statements are set out in annex 16.

5.37 The Committee agreed that the debate on climate finance and possible use of MBM revenues should be considered further at its next session. It agreed to invite Member States and observers to submit further input to the debate.

Relation between an MBM and the WTO Rules

5.38 The Committee recalled that at the third Intersessional Meeting of the GHG working group (GHG-WG 3), a representative from the WTO Secretariat clarified that WTO could not challenge a global agreement adopted by another international organization, and that it encourages its members to pursue international standards wherever possible. The representative further noted that WTO Rules should not be used as an excuse for inaction in combating climate change.

5.39 The Committee recalled also that, following the presentation by the WTO representative, a large number of delegations concluded that no incompatibility exists between a potential MBM for international shipping under IMO and the WTO Rules. However, a number of other delegations noted that the presentation had to be viewed with caution as it expressed the position of the WTO Secretariat, and maintained the view that there are inconsistency issues between an MBM and the WTO Rules.

5.40 The Committee considered document MEPC 62/5/27 (India) on possible incompatibility between WTO Rules and a Market-Based Measure for international shipping, which was deferred from the last session. The delegation of India made a statement which is reproduced in annex 17.

5.41 The Committee agreed to continue the debate at MEPC 64 and invited further submissions and contributions.

Reduction target for international shipping

5.42 The Committee, due to time constraints, agreed to consider this issue at MEPC 64 and invited further submissions and contributions.

UNFCCC matters

5.43 The Committee noted the submissions containing information by the Secretariat on UNFCCC activities which had been deferred from the last session and related to the Cancun Conference held at the end of 2010 and the June session of 2011 held in Bonn, Germany: MEPC 62/5 and MEPC 62/5/Add.1.

5.44 The Committee considered document MEPC 63/5/5 providing information on the United Nations Climate Change Conference 2011 held in Durban, South Africa and noted that the Conference resulted in the adoption of a number of COP and CMP decisions and conclusions by the subsidiary bodies:

.1 The most relevant outcomes related to control of GHG emissions from international maritime transport are the conclusion by SBSTA 35, which can be found in paragraphs 23 to 26, the continued consideration of issues related to addressing emissions from international aviation and maritime transport under AWG-LCA, which can be found in paragraphs 18 to 21, and

the work programme on long-term finance, as it contains a reference to alternative sources.

.2 Also of relevance for IMO, as the custodian of the London Convention and the London Protocol, is the decision referred to in paragraph 8.5 to include carbon dioxide capture and storage in geological formations as a Clean Development Mechanism activity.

.3 The Conference decided that the next annual Climate Change Conference will take place from 26 November to 7 December 2012 in Doha, Qatar. The Conference will be preceded by a two-week session in Bonn, Germany, and it is expected that additional intersessional meetings of the three ad hoc working groups will be held, as well as workshops related to further work on the Green Climate Fund, in accordance with the decision reproduced in paragraph 8.4. It is intended that the Secretariat will, resources permitting, attend relevant meetings and report the outcomes to the Committee.

5.45 The Committee noted an intervention by the representative of the UNFCCC Secretariat, which provided a brief status report on the current state of negotiations in general and on bunker fuels in particular. As requested, the statement is set out in annex 18.

5.46 The Committee noted an intervention by the FAO representative informing it that FAO is currently working on a project on Climate Change, including GHG emissions from all food producing sectors, which includes the capture fisheries and aquaculture sectors. Part of this work is related to the energy use and GHG emissions of the world fishing fleet, which currently accounts for about 4.3 million vessels, of which about 2.6 million are powered by mechanical means. Although part of the work is related to the Second IMO GHG Study 2009, it should be noted that most of the world fishing fleet is excluded from that study. In this regard, FAO encouraged exchange of information between both organizations related to work programmes that address energy issues and the reduction of GHG emissions from fishing vessels.

5.47 The Committee requested the Secretariat to continue its well-established cooperation with the UNFCCC Secretariat, to attend relevant UNFCCC meetings, including the meetings concerning the identification of possible funding sources for the Green Climate Fund, and to bring the outcome of IMO's work to the attention of appropriate UNFCCC bodies and meetings.

5.48 The delegation of Brazil made a statement that is set out in annex 19.

Other GHG issues

5.49 The Committee had before it the following documents for consideration under this sub-heading:

.1 document MEPC 63/5/12 (INTERCARGO) expressing concern over possible application of the EEDI to existing ships. INTERCARGO argued that the EEDI has been developed to stimulate improvement in the energy efficiency of new ships through ship design and that once a ship is built it is too late to change the design to apply the EEDI. The EEDI is not a measure of the performance of a ship in operation – there are many influencing factors that overwhelmingly dominate. Applying the EEDI to a new ship is not a trivial task and it is vital it is done accurately. To do this for existing ships is even more challenging because of difficulties in

obtaining accurate data, including the speed in the EEDI condition, and also in verifying the results in a sea trial. INTERCARGO noted that the Committee had already agreed that the EEDI is only applicable to new ships as reflected in the adopted regulations, and hoped the Committee could agree that the application of the EEDI to existing ships is inappropriate; and

.2 document MEPC 63/5/13 (WWF and CSC) which provides comments on the study by LR and DNV on the effects of EEDI and SEEMP, contained in document MEPC 63/INF.2, and advocates the need for action beyond SEEMP for all vessels not subject to EEDI. It further proposes that the Organization should commission a study, and subsequently develop and implement fuel consumption measurement standards for all vessels subject to SEEMP (400 GT and above), and make such data publicly available.

Application of EEDI to existing ships

5.50 The Committee considered possible application of EEDI to existing ships either as part of an MBM or as an additional measure, as proposed by WWF and CSC.

5.51 A large number of delegations supported the INTERCARGO proposal and stated that the EEDI was developed and intended for new ships only and should not be applied to existing ships. The delegation of Japan stated that there should be some incentive mechanisms to both new and existing ships, and that in order to provide these mechanisms, there should be a benchmark.

5.52 The delegation of Belgium supported INTERCARGO and concurred with the conclusion that the EEDI will reduce CO_2 emissions on the long term and that the SEEMP is a tool with effect on the short and medium term. As mentioned in paragraph 12.10 of MEPC 63/INF.2, to make the application of the SEEMP more effective, the EEOI or a similar performance indicator should be encouraged. Belgium strongly believes in the EEOI as a tool, not only to monitor fuel consumption but also as an incentive to reduce fuel consumption and would like to refer to document GHG-WG 2/3/1 by Belgium proposing to break down the basic formula into sub-indexes which would lead to better understanding and transparency of the variation of the EEOI. The concept of the EVDI (Existing Vessel Design Index) as proposed by WWF and CSC could be used as a kind of indicator if in relation to fuel consumption. Today, there are a variety of tools on the market in order to reduce fuel consumption of existing ships. Classification societies and other organizations involved in research programmes offer the possibility to shipowners to investigate the fuel performance of their existing ships, case by case, and provide options to reduce the fuel consumption.

5.53 IPTA stated that, by definition, the Energy Efficiency Design Index is to be applied at the design stage of a ship and there are limits to what can be achieved at a later stage, particularly when derating the engine to reduce speed is not an option. It is, therefore, inevitable that many ships would be penalized even though they were constructed in good faith to all standards pertaining at the time of their design. Fuel costs provide a strong incentive for owners to ensure that their vessels are as fuel-efficient as they can be and owners will apply all measures that are feasible in the context of their vessels' design and trade to reduce fuel consumption. As far as the EEDI is concerned, however, there will be wide disparities in levels of compliance between ships of similar size and age. Thus some would be unaffected by an EEDI-related charge while others trading in the same markets, including some built not more than five years ago, would be penalized. The construction of a ship implies an extremely high investment and IPTA believes that, where an owner is prepared to make this level of commitment, he has a right to expect that the ship will be able

to compete on an equal footing for the anticipated length of its trading life. To penalize vessels for not conforming to design criteria that did not exist at the time of their construction is unjustified.

5.54 The Committee, having considered the above views, agreed that the EEDI had been developed as a regulatory tool for new ships only and, as a design index, it was inappropriate to extending its application to the existing fleet. Proponents of MBM proposals which rely on design benchmarks/parameters were invited to clarify in their proposals the relation between such design benchmarks/parameters and the EEDI set out in the new chapter 4 to MARPOL Annex VI.

Uncertainty in emission data

5.55 The Committee noted the concerns expressed that the reduction effects of the EEDI and SEEMP may have been overestimated in the study presented in document MEPC 63/INF.2.

5.56 Germany, supported by other delegations, noted a need for more accurate emissions data from international shipping as the current estimates and projections are out of date and were done prior to the recessions in world economy experienced over the last few years. It would be useful, in their view, to have, for example, an international database that includes all relevant data. This database could also be used as a basis for any kind of future emissions calculations. It encouraged updated studies on the topic and welcomed further efforts at international level to have more reliable and accurate up-to-date emission data.

5.57 The representative of the European Commission informed the Committee that the Commission is considering providing funding and other support for the impact assessment study. He also stated that the European Commission is undertaking an extensive analysis to establish the associated emissions of ships calling at European ports and was considering how the European Commission and the European Maritime Safety Agency (EMSA) could contribute to IMO's efforts at the global level.

5.58 The Committee noted that uncertainty exists in the estimates and projections of emissions from international shipping, and agreed that further work should take place to provide the Committee with reliable and up-to-date information to base its decisions on and requested the Secretariat to investigate possibilities and report to future sessions. Member States were encouraged to submit documents to MEPC 64.

Performance standard for fuel consumption measurement

5.59 The Committee agreed that development of an IMO performance standard for fuel consumption measurement for ships could be a useful tool and that the Committee should consider it further at future sessions, and invited further submissions on specific aspects of such a standard to future sessions.

6 CONSIDERATION AND ADOPTION OF AMENDMENTS TO MANDATORY INSTRUMENTS

General

6.1 The Committee recalled that, at MEPC 62, it had approved, with a view to adoption at this session, draft amendments to:

.1 MARPOL Annexes I, II, IV and V on Regional arrangements for port reception facilities (MEPC 62/24, paragraph 7.7 and annex 21);

.2 MARPOL Annex VI on Regional arrangements for port reception facilities (MEPC 62/24, paragraph 7.7 and annex 21); and

.3 the NO_x Technical Code 2008 on Certification of marine diesel engines fitted with Selective Catalytic Reduction Systems (MEPC 62/24, paragraph 4.56.2 and annex 21).

6.2 The Committee noted that the texts of above-mentioned approved amendments were circulated by the Secretary-General on 8 August 2011, under cover of Circular letter No.3220, in accordance with the provisions of article 16(2)(a) of the MARPOL Convention.

6.3 The Committee also recalled that MEPC 62 had agreed, in principle, that a drafting group would be established at this session to make any editorial changes to the draft amendments, as necessary, before adoption by the Committee.

Amendments to MARPOL Annexes I, II, IV and V

6.4 The Committee noted that the draft amendments as approved by MEPC 62, together with the draft MEPC resolution on their adoption, were set out in document MEPC 63/6.

6.5 The Committee considered comments on the draft amendments by the Marshall Islands and the United States (MEPC 63/6/3), proposing that all Parties in unique circumstances should be allowed to meet their obligations to provide adequate port reception facilities through regional arrangements, when such an approach is their only practical option.

6.6 In the ensuing discussion, the proposal by the co-sponsors did not receive sufficient support as the majority of the delegations who spoke maintained their view that regional arrangements should be established only in Small Island Developing States for which these arrangements had been first considered with a view, inter alia, to encourage accession to MARPOL by those States that might have difficulties in providing reception facilities as a fundamental obligation for MARPOL Parties.

6.7 Consequently, the Committee agreed that the text of the proposed amendments should reflect that regional arrangements for port reception facilities shall be limited to Small Island Developing States when such arrangements are the only practical means to satisfy MARPOL obligations to provide reception facilities because of their unique circumstance. The Committee also agreed that, in establishing the regional arrangements, the Organization should be consulted and a procedure should be included in the Guidelines for the development of a regional port reception facilities plan.

6.8 With the above-mentioned instructions, the Committee agreed to refer the draft amendments and the draft MEPC resolution on their adoption to the drafting group for editorial review.

6.9 In this connection, the Committee noted the concerns expressed by some delegations that the issue of MARPOL Annex II prewash requirements at the port of unloading was not adequately addressed in the proposed amendments and their intention to work on this issue, including considering the option of a possible consequential amendments to MARPOL Annex II.

Amendments to MARPOL Annex VI and the NO_x Technical Code 2008

6.10 The Committee noted that the draft amendments, as approved by MEPC 62, together with the draft MEPC resolution on their adoption, were set out in document MEPC 63/6/1.

6.11 The Committee agreed to refer the draft amendments and the draft MEPC resolution on their adoption to the drafting group for editorial review.

Draft MEPC resolution in relation to the designation of the Baltic Sea as a Special Area under MARPOL Annex IV

6.12 The Committee recalled that MEPC 62, having adopted, by resolution MEPC.200(62), amendments to MARPOL Annex IV (Special Area Provisions and the Designation of the Baltic Sea as a Special Area under MARPOL Annex IV), had approved the outline for a draft MEPC resolution on the development of technical onboard equipment in relation to the designation of the Baltic Sea as a Special Area under MARPOL Annex IV, for further development with a view to adoption at this session.

6.13 The Committee, having considered the text of the outline for the draft MEPC resolution (MEPC 63/6/2), instructed the drafting group to finalize it, using document MEPC 63/6/2 as a basis.

Establishment of the Drafting Group

6.14 The Committee established the Drafting Group on Amendments to Mandatory Instruments and Associated Guidelines (see also paragraph 7.23) and instructed it, taking into account any comments, proposals and decisions made in plenary to:

.1 review and finalize the texts of proposed amendments to MARPOL Annexes I, II, IV and V (Regional arrangements for port reception facilities), and to MARPOL Annex VI and the NO_x Technical Code 2008 (Regional arrangements for port reception facilities under MARPOL Annex VI and Certification of marine diesel engines fitted with Selective Catalytic Reduction Systems under the NO_x Technical Code 2008), as well as the two draft MEPC resolutions on their adoption, using documents MEPC 63/6 and MEPC 63/6/1 as a basis;

.2 finalize the draft MEPC resolution on the development of technical onboard equipment in relation to the designation of the Baltic Sea as a Special Area under MARPOL Annex IV, using document MEPC 63/6/2 as a basis; and

.3 submit a written report to the plenary on Thursday, 1 March 2012.

Report of the drafting group and action taken by the Committee

6.15 In considering the part of the report of the drafting group (MEPC 63/WP.10) relating to this output, the Committee noted that the drafting group had prepared a draft consequential amendment to regulation 18 of MARPOL Annex II (MEPC 63/WP.10, paragraph 8), with a view to addressing the concerns over prewash requirements (see paragraph 6.9). Following the suggestion by the observer from IPTA, the Committee agreed to modify the text slightly to read:

> "2*ter* Where regulation 13 of this Annex requires a prewash and the Regional Reception Facility Plan is applicable to the port of unloading, the prewash and subsequent discharge to a reception facility shall be carried out as prescribed in regulation 13 of this Annex or at a Regional Ship Waste Reception Centre specified in the applicable Regional Reception Facility Plan."

6.16 In this connection, the Committee also agreed that the option being given to the Government of the receiving Party to issue or not to issue the exemption under regulation 13.4 of MARPOL Annex II should not be used to favour the use of the reception facilities available in the region over appropriate facilities at the next port of call outside the Regional Reception Facilities Plan and, therefore, not obliging the ship to make a significant deviation from its route.

6.17 Having considered the part of the report of the drafting group relating to this output, the Committee approved the report in general and, in particular:

.1 confirmed the dates in both draft MEPC resolutions concerning the "deemed acceptance" (1 February 2013) and "entry into force" (1 August 2013) of the new amendments, in accordance with articles 16(2)(f)(iii) and 16(2)(g)(ii), respectively, of the 1973 MARPOL Convention;

.2 adopted, by resolution MEPC.216(63), amendments to the Annex of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (regional arrangements for port reception facilities under MARPOL Annexes I, II, IV and V), as set out in annex 20;

.3 adopted, by resolution MEPC.217(63), amendments to the Annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (regional arrangements for port reception facilities under MARPOL Annex VI and Certification of Marine Diesel Engines fitted with Selective Catalytic Reduction systems under the NO_x Technical Code 2008), as set out in annex 21;

.4 instructed the Secretariat to check the amendments carefully for any editorial omissions and, if necessary, insert these in the final text of the amendments; and

.5 adopted resolution MEPC.218(63) on the development of technical onboard equipment in relation to the designation of the Baltic Sea as a Special Area under MARPOL Annex IV, as set out in annex 22.

6.18 The delegation of the Cook Islands, in congratulating the Committee on the adoption of the amendments to MARPOL to institutionalize the regional arrangements for port reception facilities for Small Island Developing States, thanked all those involved in the work,

in particular the delegations of Australia and the United States, for their continued contribution in the process.

6.19 The delegation of Cyprus made a statement after the adoption of the amendments to MARPOL Annexes I, II, IV, V and VI on regional arrangements for port reception facilities, set out in annex 23.

7 INTERPRETATIONS OF, AND AMENDMENTS TO, MARPOL AND RELATED INSTRUMENTS

GENERAL

7.1 The Committee noted that 12 documents had been submitted under this agenda item; and that documents MEPC 63/7/7 (IACS and ICS) and MEPC 62/7/8 (IACS), dealing with matters related to MARPOL Annex VI, had been considered under agenda item 4 – Prevention of air pollution from ships; and that document MEPC 63/7/3 (Marshall Islands and United States), had been reissued under agenda item 6 – Consideration and adoption of amendments to mandatory instruments. The Committee agreed to consider document MEPC 63/11/2 (Chile et al.) under this agenda item as it relates to the development of Guidelines for the Implementation of MARPOL Annex V.

DEVELOPMENT OF ASSOCIATED GUIDELINES TO THE REVISED MARPOL ANNEX V

7.2 The Committee recalled that MEPC 61, having adopted, by resolution MEPC.201(62), the revised MARPOL Annex V, had re-established the correspondence group under the coordination of the United Kingdom to further develop the draft revised Guidelines for the implementation of MARPOL Annex V and the draft revised Guidelines for the development of garbage management plans. The Committee recalled further that MEPC 62 had instructed the DSC and BLG Sub-Committees to consider the issues of discharging of cargo residues and of cleaning agents or additives in cargo hold, deck and external surface wash water respectively, and advise it accordingly.

Outcomes of DSC 16 and BLG 16

7.3 The Committee noted that DSC 16, having noted the divergent views with respect to operational discharges cargo residues and the classification of substances harmful to the marine environment, had agreed to invite the MEPC to consider the issue, bearing in mind that the competence for such classifications lies with the Committee. Nevertheless, with a view to facilitating further debate on the matter, DSC 16 invited MEPC 63 to note that the Working Group on Amendments to the IMSBC Code had prepared a draft set of criteria for the classification of substances harmful to the marine environment (DSC 16/WP.3, annex 3).

7.4 The Committee also noted that, with regard to discharging of cleaning agents or additives in cargo hold, deck and external surface wash water, BLG 16 had agreed that an alternative system of classification to that employed for MARPOL Annex II cleaning additives should be utilized, given the potential diversity of products employed and this should function on a producer self-classification basis in line with principles already established in the IMDG Code. BLG 16 had also agreed that classification criteria should require that the cleaning product is not a harmful substance in accordance with MARPOL Annex III and does not contain any components which are known to be carcinogenic, mutagenic or reprotoxic.

Consideration of the report of the correspondence group and documents commenting on it

7.5 The Committee, in considering document MEPC 63/7 (United Kingdom), containing the report of the correspondence group, noted that the group had made significant progress in further developing the two sets of draft Guidelines with the only outstanding issues being those already referred to the DSC and BLG Sub-Committees for consideration.

7.6 The Committee also had for its consideration the following documents commenting on the report of the correspondence group or the outcomes of DSC 16 concerning the issue of discharge of cargo residues:

.1 MEPC 63/7/6 (Japan), commenting on the draft criteria, prepared by DSC 16, for the classification of cargo residues harmful to the marine environment, and proposing to include only acute and chronic aquatic toxicity and plastics into the criteria for the classification of cargo residues harmful to the marine environment;

.2 MEPC 63/7/10 (Secretariat), introducing a modified version of Table 1 of the draft 2012 Guidelines for the Implementation of MARPOL Annex V, which provides a summary of the restrictions to the discharge of garbage into the sea under regulations 4, 5 and 6 of MARPOL Annex V;

.3 MEPC 63/7/11 (Republic of Korea), commenting on the report of the correspondence group (MEPC 63/7) concerning, inter alia, the discharge of animal carcasses and the discharge or accidental loss of fishing gear; and

.4 MEPC 63/11/2 (Chile et al.), commenting on the outcome of DSC 16 concerning the issue of discharging of cargo residues and proposing a set of criteria for the evaluation of substances harmful to the marine environment with respect to discharge requirements under MARPOL Annex V for cargo residues from solid bulk cargoes.

Action taken by the Committee

7.7 The Committee, having considered the above documents together with the related outcomes of DSC 16 and BLG 16, took the following decisions:

.1 endorsed the view of BLG 16 on the issue of discharge of cleaning agents or additives in cargo hold, deck and external surface washwater (see paragraph 7.3) and instructed the drafting group to prepare the relevant text in the draft 2012 Guidelines for the Implementation of MARPOL Annex V accordingly;

.2 agreed to the modified version of Table 1 (MEPC 63/7/10, annex) for inclusion in the draft 2012 Guidelines for the Implementation of MARPOL Annex V;

.3 agreed to the set of criteria for the evaluation of substances harmful to the marine environment with respect to discharge requirements under MARPOL Annex V for cargo residues from solid bulk cargoes, as proposed in the annex to document MEPC 63/11/2 (Chile et al.), for inclusion in the draft 2012 Guidelines for the Implementation of MARPOL Annex V;

.4 noted the suggestion by some delegations regarding the need to introduce an interim measure for the application of bullet points 3 to 6 of the criteria, set out in annex to document MEPC 63/11/2, in order to comply with regulations 4.1.3 and 6.1.2 of MARPOL Annex V, due to the short time frame and the difficulties in obtaining data for evaluation before the entry into force of the revised MARPOL Annex V, and tasked a number of interested delegations to work on the matter outside normal working hours; and

.5 noted the views expressed by some delegations that ports and terminals receiving solid bulk cargo residues that are harmful to the marine environment should have adequate reception facilities for all relevant residues, including when contained in washwater.

7.8 The Committee instructed the drafting group to review and finalize the draft 2012 Guidelines for the implementation of MARPOL Annex V and the draft 2012 Guidelines for the development of garbage management plans.

DRAFT GUIDELINES FOR THE DEVELOPMENT OF A REGIONAL RECEPTION FACILITIES PLAN

7.9 The Committee recalled that MEPC 62, having approved the draft amendments to MARPOL Annexes I, II, IV, V and VI on regional arrangements for port reception facilities, had invited Australia and other interested delegations to continue the work on the proposed Guidelines for the development of a Regional Reception Facilities Plan (RRFP).

7.10 The Committee, having considered document MEPC 63/7/1 (Australia et al.) presenting a revised version of the draft Guidelines for the development of a Regional Reception Facilities Plan, agreed to refer the draft Guidelines to the drafting group established under agenda item 6 for review and finalization.

7.11 In this connection, the Committee endorsed the proposal by the delegation of the United States to add the following text at the end of paragraph 4 of the draft Guidelines:

> "The majority of States participating in an RRFP should be Small Island Developing States (SIDS). Although non-SIDS may participate, they should do so only so far as their ports may be Regional Waste Reception Centres. The obligations of non-SIDS to provide adequate reception facilities in all ports and terminals will not be satisfied by regional arrangement."

PROPOSAL FOR A UNIFIED INTERPRETATION TO THE FORM OF INTERNATIONAL SEWAGE POLLUTION PREVENTION CERTIFICATE

7.12 In introducing document MEPC 63/7/2, the delegation of India expressed its concern over the fact that there is no common understanding among flag States with respect to the number of persons that needs to be indicated in the International Sewage Pollution Prevention Certificate. The delegation was of the view that the International Sewage Pollution Prevention Certificate should reflect the number of persons the ship is certified to carry based upon the sewage treatment plant capacity or the sewage holding tank capacity, which should cater to the life-saving appliances' capacity of the vessel as available from Form E (Record of Equipment for the Cargo Ship Safety Equipment Certificate), or Form P (Record of Equipment for the Passenger Ship Safety Certificate). The delegation further suggested that a unified interpretation on the issue should be developed.

7.13 A number of delegations expressed their support for the proposal, emphasizing the need to address concerns over non-uniform understanding of port State control officers on the issue in question.

7.14 A number of other delegations did not support the proposal by India. Those delegations were of the view that there was no possible correlation between the number of persons a ship is certified to carry and the sewage treatment plant capacity (sewage holding tank capacity), as other factors, including the length of voyage, the use of port reception facility, as well as types of flush systems used, should also be taken into account.

7.15 Some delegations expressed their views that a standard for the volume of sewage generated per day (hour) per person on board may need to be developed in order to address the issue in question.

7.16 The Committee, in noting the divergent views on the issue and the fact that any modification to the International Sewage Pollution Prevention Certificate should be made through an amendment to MARPOL Annex IV rather than through a unified interpretation, invited the delegation of India and other interested delegations to submit a revised proposal to its future session if they wish to pursue the issue further.

MATTERS CONCERNING MARPOL ANNEX I (UNIFIED INTERPRETATIONS AND GUIDELINES)

Recording of incinerator capacity on the Supplement to the IOPP Certificate

7.17 In introducing document MEPC 63/7/4, the IACS observer expressed concern over the confusion caused in recording the incinerator capacity on the Supplement to the IOPP Certificate Forms A and B by using different units of measurement. The IACS observer was of the opinion that it was not necessary to record incinerator capacity on Form A or Form B, whether by using volumetric unit, in litres/hour (l/h) or by using a unit of heat or weight measurement, in kW or kcal/h and, therefore, suggested its deletion from these Forms.

7.18 Some delegations expressed their support for the proposal by IACS while some other delegations were of the view that careful consideration of the proposal was needed.

7.19 The Committee, recognizing that the proposal by IACS would entail an amendment to MARPOL Annex VI, decided not to pursue this matter further unless a proposal for an amendment to MARPOL Annex VI is received in the future for which a compelling need should be demonstrated.

Unified Interpretations to regulation 12.2 of MARPOL Annex I

7.20 The Committee recalled that MEPC 62 had approved the amendments to the Unified Interpretations to regulation 12.2 of MARPOL Annex I, which had been issued through MEPC.1/Circ.753. The Committee also recalled that MEPC 62 had endorsed the view of IACS that, while the revised Unified Interpretation could serve as interim guidance, options should be explored to formalize the interpretation, including possible amendments to regulation 12 of MARPOL Annex I, and that it had invited IACS and interested delegations to provide further considerations and comments.

7.21 The Committee had for its consideration the following documents:

.1 MEPC 63/7/5 (Denmark, Spain and BIMCO), seeking clarification on the scope of application of regulation 12 of MARPOL Annex I and its associated Unified Interpretations (UI) in MEPC.1/Circ.753; and

.2 MEPC 63/7/9 (IACS) providing IACS Unified Interpretation MPC 99 on regulation 12.2 of MARPOL Annex I, and proposing amendments to regulation 12 of MARPOL Annex I following the issuing of MEPC.1/Circ.753.

7.22 The Committee agreed to refer documents MEPC 63/7/5 and MEPC 63/7/9 to DE 57 for further consideration and advise it accordingly.

ADDITIONAL TERMS OF REFERENCE FOR THE DRAFTING GROUP ESTABLISHED UNDER AGENDA ITEM 6

7.23 Having considered all the documents under this agenda item, the Committee agreed to add the following terms of reference to the drafting group established under agenda item 6 (see paragraph 6.14):

.1 review and finalize the draft 2012 Guidelines for the implementation of MARPOL Annex V and the draft 2012 Guidelines for the development of garbage management plans; and

.2 review and finalize draft Guidelines for developing a Regional Reception Facilities Plan.

REPORT OF THE DRAFTING GROUP

7.24 In considering the part of the report of the drafting group (MEPC 63/WP.10) relating to this output, the Committee, following the suggestion by the delegation of Cook Islands, agreed to some modifications to paragraphs 4 and 6 of the preamble of the draft MEPC resolution on the Guidelines for the development of a Regional Reception Facilities Plan (MEPC 63/WP.10, annex 7) in line with the Committee's decision that regional arrangements should be limited to Small Island Developing States. The text, as modified, reads as follows:

"RECOGNIZING FURTHER that the unique circumstances of Small Island Developing States pose unique challenges for these States in meeting international shipping's needs for discharging ship generated wastes and cargo residues,

RECALLING ALSO the adoption of amendments to MARPOL Annexes I, II, IV, V and VI by resolutions MEPC.216(63) and MEPC.217(63) respectively, to provide for regional arrangements for Small Island Developing States where a Regional Reception Facilities Plan has been developed in accordance with the Guidelines to be developed by the Organization,"

7.25 The Committee noted that the drafting group, having completed its work on the draft 2012 Guidelines for the implementation of MARPOL Annex V, had worked as an informal working group and, after extensive discussions, had agreed that an MEPC circular on an interim measure should be developed with a view to assisting industry in applying the evaluation criteria for solid bulk cargoes to comply with regulations 4.1.3 and 6.1.2 of revised MARPOL Annex V.

7.26 Having considered the part of the report of the drafting group (MEPC 63/WP.10) relating to this output, the Committee took the following decisions:

.1 adopted, by resolution MEPC.219(63), the 2012 Guidelines for the implementation of MARPOL Annex V, as set out in annex 24;

.2 invited interested Member Governments and international organizations to consider developing a draft MEPC circular on discharge of solid bulk cargo residues in the context of applying the 2012 Guidelines for the Implementation of MARPOL Annex V and submit their proposals to MEPC 64, using annex 5 of document MEPC 63/WP.10 as a starting point;

.3 adopted, by resolution MEPC.220(63), the 2012 Guidelines for the development of garbage management plans, as set out in annex 25;

.4 adopted, by resolution MEPC.221(63), the 2012 Guidelines for the development of a Regional Reception Facilities Plan, as set out in annex 26; and

.5 instructed the FSI Sub-Committee to review and update MEPC/Circ.470, MEPC.1/Circ.469/Rev.1, MEPC.1/Circ.644, MEPC.1/Circ.645 and MEPC.1/Circ.671, as necessary, in light of revised MARPOL Annex V and the newly adopted amendments to MARPOL Annexes I, II, IV, V and VI on regional arrangement for port reception facilities.

7.27 The observer from INTERCARGO urged Member Governments and international organizations to disseminate the 2012 Guidelines for the implementation of MARPOL Annex V as widely and as quickly as possible in view of the time constrains that the industry may face in applying the 2012 Guidelines, such as evaluating all solid bulk cargos by shippers against the criteria listed in the 2012 Guidelines, and making necessary investments in reception facilities by ports and terminals in order to receive cargo residues, including those contained in washwater, classified as harmful to the marine environment.

8 IMPLEMENTATION OF THE OPRC CONVENTION AND THE OPRC-HNS PROTOCOL AND RELEVANT CONFERENCE RESOLUTIONS

8.1 The Committee considered nine documents under this agenda item as follows: MEPC 63/8 (Secretariat), Documents deferred from MEPC 62 for consideration at MEPC 63; MEPC 62/8 (Secretariat), Guidance on sensitivity mapping for oil spill response; MEPC 62/8/1 (Secretariat), Guideline for oil spill response in fast currents; MEPC 62/8/2 (Secretariat), Operational guide on the use of sorbents for spill response; MEPC 62/8/3 (Secretariat), Oil spill waste management decision support tool; MEPC 62/INF.4 (ROPME and MEMAC), Master Plan for the Protection of the Marine Environment in the ROPME Sea Area; MEPC 62/INF.4/Corr.1 (ROPME and MEMAC), Corrigendum to document 62/INF.4; MEPC 62/INF.5 (ROPME and MEMAC), Maritime Emergency Response and Salvage Co-ordination Unit in the ROPME Sea Area; and MEPC 62/INF.26 (United States), Status report and update of follow-on activities related to the Deepwater Horizon response incident and oil spill response.

8.2 The Committee recalled that, due to time constraints at MEPC 62, it had postponed consideration of all documents under agenda item 8 and deferred these for consideration at MEPC 63, with the exception of the report of the twelfth meeting of the OPRC-HNS Technical Group (MEPC 62/WP.14), which was duly approved, along with the Group's planned outputs and agenda for its thirteenth session. The Committee also approved the

exceptional timing of the thirteenth session of the OPRC-HNS Technical Group the week following MEPC 63, from 5 to 9 March 2012.

8.3 In this context, the Committee noted the information contained in document MEPC 63/8, setting out summary information on the documents under agenda item 8 deferred for consideration to MEPC 63 and further noted that no new documents had been submitted under agenda item 8 to this session.

Guidance on sensitivity mapping for oil spill response

8.4 The Committee recalled that, further to the recommendation of the OPRC-HNS Technical Group at its ninth session, MEPC 59 had approved the updating of the IMO/IPIECA Guidance on Sensitivity Mapping for Oil Spill Response (MEPC/OPRC-HNS/TG 9/3/8), last published in 1996 as part of the IMO/IPIECA report series, and added this to the work programme of the Technical Group.

8.5 The Committee, in considering document MEPC 62/8 (Secretariat), setting out the finalized text of the IMO/IPIECA Guidance on sensitivity mapping for oil spill response, as developed by the OPRC-HNS Technical Group:

.1 approved the finalized draft, set out in the annex to document MEPC 62/8; and

.2 instructed the Secretariat to work with IPIECA to prepare a joint IMO/IPIECA publication, as part of the IMO/IPIECA Report Series.

Guideline for oil spill response in fast currents

8.6 The Committee recalled that it had considered a proposal at MEPC 56, submitted by the United States, for the development of an international guideline for oil spill response in fast currents that could be elaborated on the basis of an existing Manual by the United States.

8.7 The Committee further recalled that, having approved the proposal, it had referred the matter to the OPRC-HNS Technical Group for its consideration at TG 7 and added it to the Group's work programme.

8.8 The Committee, having considered the finalized draft text of the Guideline for oil spill response in fast currents (MEPC 62/8/1), submitted by the Secretariat, as agreed by the OPRC-HNS Technical Group at TG 11:

.1 approved the finalized draft text, set out in the annex to document MEPC 62/8/1; and

.2 instructed the Secretariat to carry out any final editing and to prepare the document for publishing through the IMO Publishing Service.

Operational guide on the use of sorbents for spill response

8.9 The Committee recalled that, having noted the OPRC-HNS Technical Group's consideration of a proposal for the development of an Operational guide on the use of sorbents, submitted by France to the Group's ninth session, it had agreed to add this item to the work programme of the Technical Group at MEPC 59.

8.10 Having considered document MEPC 62/8/2 (Secretariat), containing the finalized draft text of the Operational guide on the use of sorbents for spill response, as developed by the OPRC-HNS Technical Group and finalized at TG 11, the Committee:

.1 approved the draft text, set out in annex 2 to document MEPC 62/8/2; and

.2 instructed the Secretariat to carry out any final editing and to prepare the document for publishing through the IMO Publishing Service.

Oil spill waste management decision support tool

8.11 The Committee recalled that, at MEPC 56, it had agreed that the OPRC-HNS Technical Group would participate in the development of a waste management decision support tool for the Mediterranean Region, developed through the Mediterranean Technical Working Group, coordinated by REMPEC.

8.12 The Committee also recalled that, having noted the progress on the draft Oil spill waste management decision support tool for the Mediterranean region at its fifty-ninth session, to which the Technical Group was contributing, MEPC 59 had concurred with the Group's recommendation that it would be further developed as international guidance and added it to the Group's work programme.

8.13 Having considered document MEPC 62/8/3 (Secretariat) setting out the finalized draft text of the Oil spill waste management decision support tool, as agreed by the OPRC-HNS Technical Group at TG 11, the Committee:

.1 approved the finalized draft text; and

.2 instructed the Secretariat to carry out any final editing and to prepare the document for publishing through the IMO Publishing Service.

Master Plan for the Protection of the Marine Environment in the ROPME Sea Area

8.14 The Committee noted the information contained in documents MEPC 62/INF.4 and MEPC 62/INF.4/Corr.1 (ROPME and MEMAC), providing background information and the interim results of the Co-ordinated Action: Master Plan for the Protection of the Marine Environment in the ROPME Sea Area.

Maritime Emergency Response and Salvage Co-ordination Unit in the ROPME Sea Area

8.15 The Committee noted the information submitted on the planned Maritime Emergency Response and Salvage Co-ordination Unit (MERCU) submitted by ROPME and MEMAC (MEPC 62/INF.5), which represents the central element of the ROPME Master Plan's risk reduction package for the ROPME Sea Area.

Status report and update of follow-on activities related to the Deepwater Horizon response incident and oil spill response

8.16 The Committee recalled that, having considered a proposal by the United States to develop internationally accepted guidance for International Offers of Assistance in response to a marine oil pollution incident at MEPC 62, based on lessons learned from the Deepwater Horizon incident (MEPC 62/20/1), it had approved its inclusion as a new unplanned output on the work programme of the OPRC-HNS Technical Group for the 2012-2013 biennium, with a target completion year of 2012.

8.17 The Committee noted the information submitted by the United States (MEPC 62/INF.26) providing a status report and planned follow-up to the Deepwater Horizon incident that occurred in the Spring and Summer of 2010 in the United States Gulf of Mexico.

Scheduling of the fourteenth session of the OPRC-HNS Technical Group

8.18 The Committee recalled that, in approving the planned outputs and provisional agenda of OPRC-HNS TG 13, it agreed to the exceptional request to schedule TG 13 during the week following MEPC 63, to allow delegations to participate in Interspill, the IMO-sponsored European oil spill conference which will take place the week following TG 13.

8.19 Having noted that, at as a result of this schedule change, there would be no report of the OPRC-HNS Technical Group to consider at MEPC 63, the Committee approved the scheduling of the fourteenth session of the OPRC-HNS Technical Group from 24 to 28 September 2012, its usual time slot in the week prior to MEPC 64.

9 IDENTIFICATION AND PROTECTION OF SPECIAL AREAS AND PARTICULARLY SENSITIVE SEA AREAS

Consequential amendments to the Guidelines for the Designation of Special Areas under MARPOL 73/78

9.1 The Committee recalled that MEPC 62 had adopted, by resolution MEPC.200(62), amendments to MARPOL Annex IV on Prevention of Pollution by Sewage from Ships, to include the possibility of establishing "Special Areas" for the prevention of such pollution from passenger ships and designated the Baltic Sea as the first of such Special Area under that Annex. The amendments are expected to enter into force on 1 January 2013.

9.2 The Committee, having considered document MEPC 63/9 containing draft amendments to the Guidelines for the Designation of Special Areas under MARPOL 73/78 which was adopted by Assembly resolution A.927(22) on 29 November 2001:

.1 approved the draft Assembly resolution and the draft 2013 Guidelines for the Designation of Special Areas under MARPOL 73/78, as set out in annex 27; and

.2 instructed the Secretariat to make an editorial check and submit the draft Assembly resolution, as amended, to the twenty-eighth session of the Assembly (December 2013) for adoption.

Collective Arrangement for management of selected areas of the North East Atlantic

9.3 The Committee noted that document MEPC 62/INF.3 contained a communication received from the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic regarding a proposed Collective Arrangement for management of selected areas of the North East Atlantic. This Arrangement had been developed by the OSPAR Commission Secretariat in collaboration with the Secretariats of several competent authorities, including the International Sea-bed Authority and the North-East Atlantic Fisheries Commission. The OSPAR Commission signed an Agreement of Co-operation agreement with IMO in 1999.

9.4 The Committee agreed that any proposal to amend maritime traffic in the North East Atlantic must be made by IMO Member Governments to the appropriate IMO body and requested the Secretariat to keep it informed of any future developments in this regard.

10 INADEQUACY OF RECEPTION FACILITIES

10.1 The Committee noted that the consideration of the inadequacy of port reception facilities is a standing item on its agenda. The International Organization for Standardization (ISO) had submitted a document (MEPC 62/10) to the last session of the Committee, but due to time constraints, the Committee had agreed to defer its consideration until this session.

10.2 In the submission, ISO informed the Committee of the development of an international standard for waste handling and segregation aboard ships, and of another international standard for waste handling and segregation at port reception facilities. These two new standards follow from the work of the FSI Sub-Committee on two of the work items of its Action Plan for tackling the inadequacy of port reception facilities.

10.3 The Committee was informed that ISO 21070 on Management and handling of shipboard garbage was published in 2011 for use by shipowners, Parties to MARPOL, governmental and regulatory bodies, and other stakeholders.

10.4 The Committee was also informed that ISO/DIS 16304 on Arrangement and management of port reception facilities was now in ISO Draft International Standard (DIS) stage for ballot among ISO Sub-Committee voting members for comment, which was expected to be published in 2012. ISO/DIS 16304 addressed many of the issues originally discussed in the correspondence group of the FSI Sub-Committee on tackling the inadequacy of port reception facilities and is meant to be a companion standard to ISO 21070. ISO 16304 will reiterate the principles of reduction, reuse, and recycling of wastes from ships and will build on existing IMO publications on best practices for waste handling at port reception facilities.

10.5 The Committee thanked ISO for its continuing input to the work of the Committee.

11 REPORTS OF SUB-COMMITTEES

11.1 The Committee noted that a number of documents which were deferred from MEPC 62 needed to be addressed at this session. Specifically, these related to the outcome of DE 54 and DE 55.

Outcome of DE 54

11.2 The Committee noted that DE 54 was held from 25 to 29 October 2010 and that its report was issued as DE 54/23. MEPC 62 approved the report of DE 54 in general and took decision on all action items, other than for two which were to be dealt with at MEPC 63.

11.3 The first outstanding action item from DE 54 concerned the juridical status, i.e. mandatory or recommendatory, of resolution MEPC.108(49) on Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers. In this regard, the Committee affirmed that the Revised Guidelines are of a recommendatory nature.

11.4 With respect to the second outstanding action item, to adopt a draft MEPC resolution on Amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers, the Committee noted that a number of relevant developments have taken place since this was initially proposed. BLG 16 (February 2012) considered a proposal put forward by the Russian Federation to delete references to "oil-like substances" in the revised guidelines as this term is no longer used in MARPOL Annex II. Whilst addressing this, it was also recognized that there was a need to update a number of the references used for MARPOL Annex I regulations and to reflect the requirements in relation to the carriage of biofuel blends. As not all of this work could be completed in the time available, the Sub-Committee agreed that the matter would be deferred to ESPH 18 for finalization in October 2012.

11.5 In view of this, the Committee agreed that it was inappropriate to adopt the draft amendments to the Revised guidelines at MEPC 63 and that a decision should await the outcome of the work of the ESPH Working Group.

11.6 The Committee decided, however, to assess the proposal put forward in document MEPC 63/11/1 (Denmark) in relation to a further amendment aimed at ensuring that sufficient spare parts were carried on board ships to ensure the proper functionality of the ODME at all times. After having considered all the views expressed and the two options presented, the Committee decided that paragraph 5.6*bis* of annex 3 of document DE 54/WP.2 should be included in the draft amendments to be developed for the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers. This paragraph states that "Manufacturer recommended spares for the ODME should be carried to ensure the operation of the equipment", but it was noted that, given the recommendatory nature of guidelines, this did not impose a mandatory requirement.

11.7 The observer of IACS advised that, in respect of the decision to reinstate this paragraph, it should be understood that the verification of those spares will not be addressed in relation to issuing an IOPP Certificate in view of the recommendatory nature of the guidelines as clearly established.

11.8 The Committee agreed that this outcome should be taken up by the ESPH Working Group when finalizing the draft Amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers.

Outcome of DE 55

11.9 The Committee noted that DE 55 was held from 21 to 25 March 2011 and that its report had been issued as DE 55/22. MEPC 62 approved the report of DE 55 in general and took decision on all action items other than for two relating to the development of a mandatory code for ships operating in polar waters.

11.10 In relation to the first outstanding action item on the introduction of an environmental protection chapter in the draft Polar Code being developed by the DE Sub-Committee, the Committee noted also document MEPC 62/11/6 (WWF, FOEI and IFAW) dealing with Arctic Shipping and Cetaceans and the request to take account of the information provided in developing the draft Polar Code. In this context, the delegation of Panama noted that this issue has been considered previously by the Sub-Committee on Safety of Navigation and that a Guidance document for minimizing the risk of ship strikes with cetaceans has been issued as MEPC.1/Circ.674.

11.11 The Committee, having considered the proposals and actions taken by DE 55, noted the decision to develop an environmental protection chapter in the draft Polar Code and endorsed the specific decisions taken so far by the Sub-Committee with regard to various environmental aspects of the Polar Code.

11.12 With regards to the further development of an environmental chapter in the Polar Code, the delegations of the Bahamas and Panama questioned whether the scope of the issues to be addressed should not first be discussed by the Committee in order to provide clear terms of reference as to what should be developed by the DE Sub-Committee. The Committee recalled, however, that at MEPC 60 the decision had been taken to refer document MEPC 60/21/1 (Norway), presenting an overview of environmental issues to be considered, to the DE Sub-Committee and that this consequently provided the mandate for this work.

11.13 Recognizing that there may be further aspects which should be considered and that there were accordingly concerns in relation to this, it was agreed that any specific points or issues which may be identified should be submitted to MEPC 64 for consideration. It was noted that as DE 57 will not convene until March 2013, the outcome of MEPC 64 on this matter may then accordingly be referred to the Sub-Committee for their attention as appropriate.

11.14 With respect to the second outstanding action item to consider the options for making the Polar Code mandatory under environment-related IMO instruments, the Committee considered the views expressed by the Legal Office of the Organization in document MEPC 62/11/4/Add.1 which had been prepared in response to a request from the DE Sub-Committee.

11.15 It was proposed that the Code could in theory be made mandatory through an amendment to SOLAS alone, by a range of amendments to a variety of instruments depending on the subject matter concerned or by the adoption of a new convention. The relative merits and issues associated with each approach were summarized as follows:

.1 an amendment to SOLAS (by adding a new chapter, for example), would have the clear advantage of allowing the use of the tacit acceptance procedure with the corresponding certainty about entry into force. The drawback, however, would be in scope-of-application issues, and in mixing substantial environmental requirements into a Convention which focuses on Safety of Life at Sea;

.2 amending a range of existing instruments such as SOLAS, the annexes to MARPOL, the Ballast Water Management Convention, and the AFS Convention, would address both the safety and environmental protection aspects of the code by mandating parts of the Code depending on subject matter. However, this approach could leave the Code fragmented with different entry-into-force dates and with different sets of

Parties. It could also pose challenges in coordinating future amendments to the code; and

.3 development and adoption of a new Convention would have the obvious disadvantages of uncertainly over entry into force and over the number of Contracting States which would be bound by its requirements. The main advantage, however, would be that all the requirements for operation in polar waters, which are supplementary to those already applicable under other IMO instruments, would be addressed by a single instrument and brought into force simultaneously.

11.16 During discussion, there was a preference among the views expressed for the option of amending the existing instruments, provided a way could be found to keep from fragmenting the Code. It was proposed by the Chairman of the Committee that the Code could be incorporated by reference into each instrument (e.g. SOLAS, MARPOL Annexes, BWM and AFS) as a consolidated text, but that the amendment procedures under each instrument would be applicable only to the chapters of the Code which contained the subject-matter which was relevant to the instrument concerned. Furthermore, the entry into force date could be coordinated by adjusting the date on which the amendments were deemed to be accepted. The representative of the Legal Office confirmed that this approach would be legally viable, but advised that the Committee should bear in mind that some sections might be common to the whole Code (such as definitions and certification requirements) and that this might then affect how the incorporation by reference and corresponding amendment procedures were drafted.

11.17 The Committee considered the issue as to whether the Code should be limited only to matters which were additional to those already addressed under existing instruments or if any relevant parts of existing instruments should also be included in the Code. Whilst noting that some support was expressed for a fully consolidated text, the Committee decided that it was preferable to include in the Code only new issues and additional requirements which do not appear in other instruments.

11.18 The Committee, having resolved these issues, instructed that these points should be addressed by the DE Sub-Committee as work on the Polar Code is progressed.

Outcome of DSC 16

11.19 The Committee noted that DSC 16 was held from 19 to 23 September 2011 and that its report had been issued as DSC 16/15. In the context of the environmental classification of solid bulk cargoes and the discharge of cargo residues, DSC 16 had invited the Committee to note the divergent views which had been expressed with respect to operational discharges and the classification of substances harmful to the marine environment, taking into account the deliberations contained in document DSC 16/WP.3 and bearing in mind the views expressed, that the competence for such classifications lies with the MEPC.

11.20 In this regards, the Committee noted that document MEPC 63/11/2 (Chile, the Netherlands and Norway) dealt with this point. As the document had specific relevance to the development of associated guidelines to the revised MARPOL Annex V, this issue was considered under agenda item 7 (see paragraphs 7.6.4, 7.7.4, 7.25 and 7.26.2).

Urgent matters emanating from BLG 16

11.21 The Committee noted that BLG 16 had held its sixteenth session from 30 January to 3 February 2012 and that its report on that session would be circulated under the symbol BLG 16/16. Document MEPC 63/11/3 (Secretariat) highlighted three urgent matters emanating from BLG 16 which required the attention of the Committee.

11.22 With regard to the two action items on ballast water sampling and cleaning agents under MARPOL Annex V, the Committee noted that they had been addressed under agenda items 2 and 7 respectively.

11.23 In respect of the third action item on draft amendments to the IBC Code, the Committee noted that, in accordance with the timeline agreed by MEPC 62 and MSC 89, BLG 16 finalized draft amendments to chapters 17, 18 and 19 of the IBC Code to capture the normal changes and developments which have occurred since the 2007 amendments were adopted. The Sub-Committee also requested the Secretariat to incorporate all of the agreed changes into their respective chapters to produce new consolidated listings and explanatory text for submission to MEPC 63 and MSC 90 for their approval.

11.24 The Committee considered the new listings as presented in document MEPC 63/11/3/Add.1 (Secretariat) and noted that the amendments presented a number of very specific updates but that, due to the short timeline from BLG 16, conducting any immediate, detailed analysis of the proposals was clearly difficult. The Committee recognized, however, that the draft changes had been endorsed by the BLG Sub-Committee and that, during the procedure of circulation and adoption, any inadvertent error which might be found in the listings could be corrected.

11.25 Taking this into account, the Committee approved the draft amendments to the IBC Code, as set out in annex 28, subject to MSC 90's concurrent decision, and requested the Secretary-General to circulate them with a view to adoption at MEPC 64. In taking this action, the Committee also authorized the Secretariat to effect any necessary corrections which may be notified in the time between MEPC 63 and MSC 90.

12 WORK OF OTHER BODIES

Outcome of FAL 37

12.1 The Committee noted that FAL 37 was held from 5 to 9 September 2011 and that its report had been issued as FAL 37/17.

12.2 The Committee considered the two action items relevant to it as contained in document MEPC 63/12. On the first action item, the Committee concurred with MSC 88 that future revision of the list of certificates and documents required to be carried on board ships should be initiated by the MSC on a regular basis.

12.3 With regard to the request for views on making available electronic copies of documents and certificates held on board ships for facilitation purposes, the Committee, noting that no objections or concerns were raised, agreed with the development of this system.

Outcome of C/ES.26

12.4 The Committee noted that C/ES.26 was held on 17 and 18 November 2011 and that its summary of decisions had been issued under the symbol C/ES.26/D. Matters of interest to the Committee were summarized in document MEPC 63/12/1 (Secretariat).

12.5 With respect to Strategy and Planning, the Committee noted that the Council had requested to update the Committees' Guidelines to include the "checklist for identifying administrative requirements and burdens" for new unplanned outputs, which was dealt with under agenda item 20 on Application of the Committees' Guidelines.

12.6 As regards the report of MEPC 62, the Committee noted that the Council had noted:

.1 the adoption of amendments to MARPOL Annexes IV, V and VI;

.2 the decisions taken, concerning the implementation of the BWM Convention, including the granting of Basic Approval to seven, and Final Approval to two, ballast water management systems that make use of Active Substances;

.3 the decisions taken, concerning the implementation of the Hong Kong Convention, including adoption and development of associated guidelines;

.4 the progress made, and decisions taken, concerning prevention of air pollution and reduction of GHG emissions from ships, including the approval of draft amendments to the NO_x Technical Code 2008; adoption of guidelines under MARPOL Annex VI; and the development of guidelines related to the EEDI and the SEEMP;

.5 the decisions taken on, and the adoption of, amendments to MARPOL Annex VI, for inclusion therein of regulations on energy efficiency for ships;

.6 the decisions taken concerning draft amendments to MARPOL Annexes I, II, IV, V and VI, for circulation with a view to adoption at MEPC 63;

.7 the action taken concerning implementation of the OPRC Convention, the OPRC-HNS Protocol and relevant Conference resolutions;

.8 the action taken concerning designation or approval, in principle, of PSSAs;

.9 the action taken concerning the reports of sub-committees and work of other bodies and, in particular, the approval of three Assembly resolutions for submission to the twenty-seventh session of the Assembly for adoption;

.10 the action taken concerning the environmental risk evaluation criteria for inclusion in the FSA Guidelines;

.11 the approval by the Committee of two new planned outputs in the 2012-2013 biennial agendas for the DE and DSC Sub-Committees;

.12 the status of planned outputs relating to the work of the Committee for the 2010-2011 biennium; and

.13 the Committee's proposals for the High-level Action Plan of the Organization and priorities for the 2012-2013 biennium.

12.7 The Committee also noted that the Council had approved the planned intersessional meetings for 2012 and had transmitted the report of MEPC 62 to A 27 with its comments and recommendations, in accordance with Article 21(b) of the IMO Convention.

Outcome of A 27

12.8 The Committee noted that A 27 was held from 21 to 30 November 2011 and that its decisions which were relevant to the work of the Committee were contained in document A 27/5(b)/2.

12.9 The Committee noted that the Assembly had approved the report of the last three sessions of the Committee (MEPC 60, MEPC 61 and MEPC 62), as presented in documents MEPC 63/12/2 and 63/12/2/Corr.1.

Assembly resolutions relating to both safety and environmental protection

12.10 The Committee also noted that A 27 had adopted the following resolutions which were jointly prepared by the MEPC and MSC:

.1 resolution A.1052(27) − Procedures for port State control, 2011;

.2 resolution A.1053(27) − Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011; and

.3 resolution A.1054(27) − Code for the Implementation of Mandatory IMO Instruments, 2011.

Strategy and Planning

12.11 The Committee further noted that A 27 had adopted:

.1 resolution A.1037(27) − Strategic Plan for the Organization (for the six-year period 2012-2017); and

.2 resolution A.1038(27) − High-level Action Plan of the Organization and Priorities for the 2012-2013 biennium.

Voluntary IMO Member State Audit Scheme

12.12 The Committee noted that A 27 had noted the number of audits conducted so far, the progress made and the ongoing work of various IMO bodies on the further development of the Audit Scheme.

12.13 With regard to the fifth consolidated audit summary report (A 27/8/1), the Committee considered the request of the Assembly and agreed to instruct the FSI Sub-Committee to consider it in detail and to report to MEPC 64 for further consideration by the Committee so that it may report to the Council, in due course, on the outcome of its consideration.

Outcome of LC 33-LP 6

12.14 The Committee noted the information provided in document MEPC 63/INF.16 (Secretariat) concerning the outcome of the thirty-third Consultative Meeting of Contracting Parties to the London Convention 1972 and the sixth Meeting of Contracting Parties to the 1996 Protocol to the London Convention (LC 33-LP 6).

12.15 The Committee noted that, to address the boundary issue between the London Convention/Protocol and MARPOL Annex V with respect to spoilt cargo, LC 33 and LP 6 had established a correspondence group to review the work of MEPC on the Implementation

Guidelines for MARPOL Annex V, with a view to revising the joint LC-LP/MEPC "Guidance on managing Spoilt Cargoes" (LC-LP.1/Circ.30; MEPC.1/Circ.688).

Outcome of C 106 and MEPC.1/Circ.779

12.16 The delegation of the United States recalled that the Council, at its 106th session in July 2011, had endorsed as the theme for World Maritime Day 2012, "IMO: One hundred years after the Titanic". In relation to the centenary of the loss, it was anticipated that an increase in the number of vessels visiting the site of the Titanic would occur and accordingly, a number of recommendations had been drawn up by the United States aimed at restricting pollution in the area and preserving the RMS **Titanic** as a maritime memorial. This guidance has been issued as MEPC.1/Circ.779 (Pollution prevention measures in the area surrounding the wreckage of RMS **Titanic**) and this was respectfully drawn to the attention of all members of the Committee.

12.17 The delegation of the United Kingdom noted that in support of this circular, an Admiralty Notice to Mariners, reference 1026(T)/2012, had been issued reiterating the guidance and recommendations proposed, recognizing that this was a wreck of exceptional international importance which needed to be treated with respect and reverence.

13 STATUS OF CONVENTIONS

13.1 The Committee noted the information on the status of IMO conventions and other instruments relating to marine environment protection as at 16 November 2011 (MEPC 63/13), as follows:

.1 annex 1, showing the status of the IMO conventions and other instruments relating to marine environment protection;

.2 annex 2, showing the status of MARPOL;

.3 annex 3, showing the status of the amendments to MARPOL;

.4 annex 4, showing the status of the 1990 OPRC Convention;

.5 annex 5, showing the status of the 2000 OPRC-HNS Protocol;

.6 annex 6, showing the status of the 2001 AFS Convention;

.7 annex 7, showing the status of the 2004 BWM Convention; and

.8 annex 8, showing the status of the 2009 Hong Kong Convention.

13.2 The Committee noted a correction to document MEPC 63/13 that in annex 3 – Status of MARPOL, Malaysia should be added to the list of Parties to MARPOL Annex IV.

13.3 The Committee also noted the following information provided by the Secretariat since document MEPC 63/13 was issued on 16 November 2011:

.1 With regard to annex 2 on the status of MARPOL Convention:

- India deposited its instrument of accession to MARPOL Annex VI on 23 November 2011.

.2 With regard to annex 5 on the status of 2000 OPRC-HNS Protocol:

- Norway deposited its instrument of accession on 16 February 2012.

.3 With regard to annex 6 on the status of 2001 AFS Convention:

- The Republic of Montenegro deposited its instrument of accession on 29 November 2011;

- Trinidad and Tobago deposited its instrument of accession on 3 January 2012;

- Barbados deposited its instrument of accession on 30 January 2012; and

- Brazil deposited its instrument of accession on 20 February 2012.

.4 With regard to annex 7 on the status of 2004 BWM Convention:

- The Republic of Montenegro deposited its instrument of accession on 29 November 2011;

- Lebanon deposited its instrument of accession on 15 December 2011; and

- Trinidad and Tobago deposited its instrument of accession on 3 January 2012.

13.4 The Committee noted the information provided by the delegation of Venezuela (Bolivarian Republic of) on the activities and progress under the GloBallast Partnerships Project, as one of the leading partnering countries in the wide Caribbean region.

13.5 The delegation of Panama informed the Committee that their Government had prepared a draft national legislation related to ballast water management and thanked the Organization's ITCP and the GloBallast Partnerships Project for providing the technical assistance.

14 HARMFUL ANTI-FOULING SYSTEMS FOR SHIPS

14.1 The Committee noted that the International Convention on the Control of Harmful Anti-Fouling Systems on Ships had been in force since 17 September 2008 and that, to date, the Convention has 58 Parties, representing 78.92 per cent of the gross tonnage of the world's merchant fleet. All those States that have not yet ratified this Convention were invited to do so at the earliest opportunity.

14.2 Having considered document MEPC 62/14 (ISO), deferred to this session by MEPC 62, the Committee noted that the Ships and Marine Technology Technical Committee/Marine Environment Protection Sub-Committee of ISO (ISO TC8/SC2) had been developing the ISO 13073 standards on risk assessment on anti-fouling systems on ships, consisting of:

Part 1: Marine environmental risk assessment method of biocidally Active Substances used for anti-fouling systems on ships;

Part 2: Marine environmental risk assessment method for anti-fouling systems using biocidally Active Substances on ships; and

Part 3: Human health risk assessment for the application and removal of anti-fouling systems.

14.3 The observer from ISO informed the Committee on the updated status of the standards under development, indicating that Part 1 is now in the Final Draft International Standard (FDIS) stage, Part 2 is in the Draft International Standard (DIS) stage and Part 3 is in the Committee Draft (CD) stage.

14.4 The Committee noted the progress made and requested ISO to keep it updated on the status of the development of those standards.

15 PROMOTION OF IMPLEMENTATION AND ENFORCEMENT OF MARPOL AND RELATED INSTRUMENTS

15.1 The Committee considered two documents which were deferred from MEPC 62.

INTERPOL Project Clean Seas

15.2 The Committee considered document MEPC 62/15 (INTERPOL) which provided information on INTERPOL's activity for the protection of the environment. This was welcomed by the Committee and, as noted by the delegation of Australia, the desirability of cooperation between IMO and INTERPOL was endorsed.

15.3 As regards the actions requested of it, the Committee agreed to invite Member Governments to provide information on prosecutions for MARPOL violations to INTERPOL and also noted the availability of INTERPOL's expertise to assist in capacity-building in the area of investigation of MARPOL violations through investigative tools and model training courses.

15.4 The observer of ICS noted that the investigative manual and the model training course referred to in the document are only available to law enforcement officials through a restricted part of the INTERPOL website. It was recognized that, without further background knowledge and information, it was difficult to understand the reasoning for such developments, but it was noted that the increasing criminalization of seafarers is of rising concern and that this action may be one further indication where a "pollution crime working group" is being promoted in the context of shipping.

Magnetic holding power-based oil spill stopper for damaged tankers

15.5 The Committee noted the information provided in document MEPC 62/INF.11 (Republic of Korea) on the development of a magnetic holding power-based oil spill stopper for damaged tankers and, recognizing that the information may be useful for the work of the OPRC-HNS Technical Group, agreed to refer the document to that Group for reference.

16 TECHNICAL CO-OPERATION SUB-PROGRAMME FOR THE PROTECTION OF THE MARINE ENVIRONMENT

16.1 The Committee noted the information provided in documents MEPC 63/16, MEPC 63/16/1, MEPC 63/16/2, MEPC 63/16/3, MEPC 63/16/4, MEPC 63/16/5 and MEPC 63/16/6 on the Organization's technical co-operation activities related to the protection of the marine environment, during the period from 1 April 2011

to 30 November 2011, under the Integrated Technical Co-operation (ITCP) for the 2010-2011 biennium as well as under the major projects which are financed through external sources. These were aimed at assisting Member States in the implementation of the provisions of the relevant IMO instruments, including AFS, BWM, MARPOL, OPRC, OPRC-HNS, London Convention/Protocol and the Hong Kong Ship Recycling Convention.

16.2 The Committee further noted that during the period under review, significant progress has been achieved through the major projects, namely the Marine Electronic Highway Demonstration Project; the GEF-UNDP-IMO GloBallast Partnerships project and its related initiatives, including the Global Industry Alliance (GIA); the GI WACAF project which aims at assisting the West, Central and Southern African region in implementing the OPRC Convention; the EC/MEDA financed regional project on EUROMED Co-operation on Maritime Safety and Prevention of Pollution from Ships being implemented by REMPEC with technical support from the Secretariat; and the IMO-KOICA Project on building capacities in East Asian countries to address greenhouse gas (GHG) emissions from ships.

16.3 The Committee also took note of the information provided in document MEPC 63/16/5 which gave a progress report on the implementation of the protocol to the Barcelona Convention concerning Co-operation in Preventing Pollution from Ships and, in cases of Emergency, combating Pollution of the Mediterranean Sea.

16.4 The Committee noted with appreciation the Cooperation Agreement signed between the Korea International Cooperation Agency (KOICA) and IMO, and that KOICA had generously contributed support for a two-year technical co-operation project, entitled "Building Capacities in East Asia Countries to address GHG emissions from ships", which aims at assisting the East Asian countries with their transition to energy efficient shipping.

16.5 The Committee also noted with appreciation that the Secretariat and the Norwegian Agency for Development Cooperation (Norad) concluded a framework cooperation agreement which will provide the basis for three project specific agreements, with an approximate total budget of $3 million, in the field of marine environmental protection. The Committee also took note with appreciation that Norway is also funding a technical co-operation project to undertake a preliminary feasibility study on LNG fuelled short sea and coastal shipping in the wider Caribbean region.

16.6 The Committee noted the information provided by the delegation of Turkey that the "Mediterranean Strategy on Ships' Ballast Water Management, including its Action Plan and Timetable", was developed by the Mediterranean Regional Task Force under the chairmanship of Turkey and with the coordination support from REMPEC. The Strategy was later adopted by the 17th Ordinary Meeting of the Contracting Parties to the Barcelona Convention. The Committee noted that the Meeting of the Contracting Parties also adopted the "General Guidance on the Voluntary Application of the D1 Ballast Water Exchange Standard by Vessels Operating between the Mediterranean Sea and the North-East Atlantic and/or the Baltic Sea" which was prepared in close cooperation with the HELCOM and OSPAR Commissions. The Committee also noted that the General Guidance document would be submitted to IMO soon.

16.7 The delegation of Turkey referred to the positive impacts of the GEF-IMO-UNDP GloBallast Partnerships Project in assisting the countries to prepare for the implementation of BWM Convention and recommended that the Secretariat should explore opportunities to initiate similar major technical co-operation projects on energy efficiency of ships and GHG emissions, in cooperation with multilateral donor agencies such as the Global Environment Facility (GEF).

16.8 The Committee noted the information provided by the delegation of Russian Federation on the successful outcomes of the cooperation between IMO and the European Bank for Reconstruction and Development (EBRD) in providing technical assistance to the countries and encouraged the Secretariat to continue such fruitful cooperation.

16.9 The Committee noted the information provided by the delegation of Nigeria that the 4th biennial conference of the GI WACAF Project was held in Lagos, Nigeria in October 2011 which determined the project objectives for the next biennium. The Committee also noted the suggestion by the delegation of Nigeria that the Secretariat should explore opportunities for sustaining the momentum in the region while replicating such successful initiatives in other regions and countries.

16.10 The Committee noted the information provided by the delegation of Singapore that the inaugural subregional workshop on GHG emissions and energy efficiency of ships was held in Singapore, under the framework of the IMO-KOICA project. The Committee noted with appreciation the continued commitment from Singapore in supporting IMO's ITCP activities.

16.11 Several other delegations highlighted the importance of IMO's ITCP activities and the key role these activities play in capacity-building for implementation of the IMO Conventions and encouraged the Secretariat to continue the efforts in identifying the critical needs of the countries and regions while prioritizing the ITCP interventions.

16.12 In summing up, the Chairman recalled that the constituent programmes of IMO's ITCP could only be delivered if the required funding is secured from IMO's internal resources and/or external donor contributions. He expressed appreciation for all the financial and in-kind contributions to the ITCP and major projects and, especially, the generous financial contribution by the Republic of Korea and Norway in supporting technical co-operation activities related to the energy efficiency of ships. He invited Member States and international organizations to continue, and if possible, increase their appreciable support for IMO's technical co-operation activities so that successful delivery of the programme could be achieved.

17 ROLE OF THE HUMAN ELEMENT

Joint MSC/MEPC Working Group on the Human Element

17.1 The Committee recalled that, at MSC 88, the delegation of the Netherlands had proposed that the general subject of the human element could well be included within the responsibility of the STW Sub-Committee, where human element experts could attend on a regular basis and advise the Committees accordingly. In this context, the delegation had advised MSC 88 of its intention to submit proposals on this issue to MSC 89 and MEPC 62, respectively.

17.2 The Committee also recalled that MSC 89 (11 to 20 May 2011), after an in-depth discussion, agreed, in principle, to entrust a leading and coordinating role for the implementation of the Organization's strategy to address the human element to the STW Sub-Committee, subject to the concurrence of MEPC 62. Accordingly, MSC 89 approved the revised terms of reference for the STW Sub-Committee (MSC 89/25, annex 21) and agreed, subject to MEPC 62's concurrent decision, to include the "Role of the human element" in the 2012-2013 biennial agenda of the STW Sub-Committee and in the provisional agenda for STW 43 as an ongoing output.

17.3 The Committee further recalled that MEPC 62 had before it four documents on the issue: MEPC 62/17 (Australia et al.); MEPC 62/17/1 (United Kingdom); MEPC 62/17/3 (Germany); and MEPC 62/17/4 (ITF). However, due to time constraints, MEPC 62 had deferred consideration of those documents to MEPC 63.

17.4 The Committee noted that document MEPC 62/17 (Australia et al.) proposed to discontinue the present Joint MSC/MEPC Working Group on the Human Element and, alternatively, to include the general subject of the human element within the responsibility of the STW Sub-Committee.

17.5 The United Kingdom withdrew its document (MEPC 62/17/1) that commented on document MEPC 62/17 (Australia et al.).

17.6 The Committee further noted that document MEPC 62/17/3 (Germany) also commented on document MEPC 62/17 with the view that the discontinuation of the Joint MSC/MEPC Working Group on the Human Element, under the auspices of the two Committees, would affect the structured approach for addressing human-element issues in a holistic way, as set out in resolution A.947(23). Accordingly, Germany recommended the continuation of the Joint MSC/MEPC Working Group on the Human Element and, in case the scheduling of regular meetings of the Joint Working Group became difficult due to the workload of the Committees, consideration could be given to convening the Working Group during the meetings of Sub-Committees. However, when an appropriate time slot became available for a working group session under the direction of both the MSC and the MEPC, the Working Group should meet during the Committees.

17.7 In addition, Germany, supported by others, expressed the view that they did not agree with the decision of MSC 89. Following MSC 89, the Assembly had approved the High-level Action Plan indicating that matters relating to the ISM Code were within the purview of the Committees only. If work related to the Human Element were to be transferred to the STW Sub-Committee, the Committees must, in line with the Assembly decision, retain responsibility for the ISM Code and related guidance and consequently any related issues should be considered only by them.

17.8 The Committee noted the proposal set out in document MEPC 62/17/4 (ITF) that the Joint MSC/MEPC Working Group on the Human Element should not be discontinued, but remain on the agenda of the two parent Committees, as the relevant skills required to address these issues were available within them.

17.9 The observer from ITF made a statement on the issue of the human element. As requested, it is set out in annex 29.

17.10 The Committee recalled that most of the foregoing comments had also been discussed at MSC 89 which had, nevertheless, already decided to entrust a leading and coordinating role for the implementation of the Organization's strategy to address the human element to the STW Sub-Committee and that an ongoing output on the "Role of the Human Element" had been established under the agenda of the STW Sub-Committee.

17.11 After an in-depth discussion, the Committee agreed, in principle, to entrust a coordinating role for the implementation of the Organization's strategy to address the Human Element to the STW Sub-Committee, subject to review of this arrangement after a few years to decide if it achieved the objectives. However, the Committee could refer human element matters relating to environmental issues directly to the Human Element Working Group, and that the Working Group should consider the issues referred to it, without discussion firstly in the plenary of the STW Sub-Committee.

17.12 Furthermore, it was clarified that matters related to the ISM Code, which was mandatory under the SOLAS Convention, were within the purview of the Maritime Safety Committee. Accordingly, the STW Sub-Committee could consider matters related to the ISM Code, as agreed by MSC 89.

17.13 With regard to retaining the item of "Role of the Human Element" on the Committee's agenda, the Committee agreed to consider this issue when discussing agenda item 19 (Work Programme) (see paragraph 19.8).

Human and organizational factors – The critical role of "Just Culture"

17.14 The Committee noted with appreciation the information provided by the United Kingdom (MEPC 62/17/2), on how an effective "Just Culture" could lead to significant improvements in organizational performance and safety, and be an effective basis for self-regulation. In this context, the United Kingdom invited input from Member Governments and international organizations to develop this concept further, for the benefit of the international maritime industry.

18 NOISE FROM COMMERCIAL SHIPPING AND ITS ADVERSE IMPACTS ON MARINE LIFE

18.1 The Committee recalled that MEPC 58, having approved the inclusion of this item in the work programme and agenda of the Committee with a target completion date of three or four sessions, established an intersessional Correspondence Group, coordinated by the United States, to identify and address ways to minimize the introduction of incidental noise into the marine environment from commercial shipping and to develop voluntary technical guidelines for ship-quieting technologies as well as potential navigation and operational practices. The intersessional Correspondence Group reported its progress to MEPC 59, 60 and 61.

18.2 The Committee also recalled that MEPC 62, having noted that a new output had already been planned on the DE Sub-Committee's biennial agenda to develop the technical guidelines to address the issue of noise from commercial shipping and its adverse impacts on marine life, instructed the DE Sub-Committee to address this issue. MEPC 62 also decided that this issue would remain active as a distinct item on the Committee's agenda. However, due to time constraints, MEPC 62 agreed to postpone consideration of all documents submitted under this item to MEPC 63.

Development of international standards for underwater noise from ships

18.3 The Committee noted the information provided by the International Organization for Standarization (MEPC 62/19) on progress made in developing the international standard, ISO 16554, entitled: "Protecting marine ecosystem from underwater irradiated noise – Measurement and reporting of underwater sound radiating from merchant ships" and, in particular, that the standard would be published shortly.

Information on the propeller as the main source for ship-generated underwater noise

18.4 The Committee also noted the information provided by Germany (MEPC 62/19/1) aimed at narrowing the focus of global shipping noise research towards the most important noise contributor. In this regard, it was noted that the screw-propeller, as the dominating propulsion type of ships, is the main source of noise and, therefore, any activities should be directed to reducing the underwater noise level produced by these propeller types.

In recognizing further, the Committee agreed that any relevant research should be funded under national programmes.

Information on Shipping Noise Research and Marine Biodiversity, with a special focus on cetaceans

18.5 The Committee further noted the information provided by Spain (MEPC 62/INF.22) on shipping noise research and marine biodiversity, with a special focus on cetaceans.

18.6 The Committee agreed to refer the three aforementioned documents to the DE Sub-Committee for consideration.

Outcome of DE 56 on noise from commercial shipping and its impact on marine life

18.7 The Committee noted that the DE Sub-Committee had just concluded its fifty-sixth session which met from 13 to 17 February 2012. Due to the close proximity of DE 56 to MEPC 63, the outcome of DE 56 on the matter would be reported to MEPC 64 for consideration.

19 WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

Items in the biennial agendas of DE, DSC and NAV Sub-Committees relating to environmental issues

19.1 The Committee noted that the biennial agendas of the DE, DSC and NAV Sub-Committees for the 2012-2013 biennium which relate to environmental issues were approved by MEPC 62 and the items were consequentially included in resolution A.1038(27) on "High-level Action Plan of the Organization and priorities for the 2012-2013 biennium".

19.2 The Committee, having considered document MEPC 63/WP.2, approved the items in the biennial agendas of the DE, DSC and NAV Sub-Committees which relates to environmental issues with amendments proposed by DE 56 (February 2012), as set out in annex 30.

Biennial agenda of the BLG Sub-Committee and provisional agenda for BLG 17

19.3 The Committee noted that the biennial agenda of the BLG Sub-Committee was approved by MSC 89 and MEPC 62 and the items were then included in resolution A.1038(27) on "High-level Action Plan of the Organization and priorities for the 2012-2013 biennium".

19.4 The Committee also noted that BLG 16 (February 2012) made progress on a number of items and proposed some amendments to the planned outputs for the 2012-2013 biennium. The Committee, having considered annex 1 to document MEPC 63/WP.3 with reference to annex 8 to document BLG 16/16, approved the revised biennial agenda of the BLG Sub-Committee and the provisional agenda for BLG 17 with the amendments proposed by BLG 16, as set out in annex 31.

19.5 The delegation of the Cook Islands, supported by some delegations, expressed the view that the title of draft agenda item 10 for BLG 17 "Consideration of the impact on the Arctic of emissions of Black Carbon from international shipping" should be amended to have a focus on impact of Black Carbon emissions from "international shipping in the Arctic", and that the matter should be considered further at MEPC 64. The Committee noted the reconfirmation given by the Chairman of the Committee that the report of MEPC 62

(MEPC 62/24, paragraphs 4.14 to 4.21) was factual and correct in this regard and agreed not to modify the title of agenda item 10 for BLG 17.

Biennial agenda of the FSI Sub-Committee

19.6 The Committee noted that the biennial agenda of the FSI Sub-Committee was approved by MSC 89 and MEPC 62 and the items were then included in resolution A.1038(27) on "High-level plan of the Organization and priorities for the 2012-2013 biennium".

19.7 The Committee, having considered annex 2 to document MEPC 63/WP.3, noted the biennial agenda of FSI Sub-Committee for 2012-2013 biennium, as set out in annex 32.

Items to be included in the draft agendas of MEPC 64, MEPC 65 and MEPC 66

19.8 The Committee, having considered document MEPC 63/WP.4 and taking into account the decisions made at this session including the retention of the item on the "Role of the human element" on the agenda of MEPC 64, approved the items to be included in the agendas for MEPC 64, MEPC 65 and MEPC 66 and the proposed groups, as set out in annex 33.

Report of the status of planned outputs for the MEPC for the 2012-2013 biennium

19.9 The Committee noted that, in accordance with paragraph 9.1 of the "Guidelines on the application of the Strategic Plan and the High-level Action of the Organization" adopted by resolution A.1013(26), reports on the status of planned outputs included in the High-level Action Plan and priorities for the 2012-2013 biennium should be prepared and annexed to the report of each session of the sub-committees and committees, and to be reported to the Council and Assembly. Such reports should separately identify unplanned outputs accepted for inclusion in their biennial agendas.

19.10 The Committee also noted that the Assembly requested it to take action in accordance with the "High-level Action Plan of the Organization and priorities for the 2012-2013 biennium" adopted by resolution A.1038(27) and, in particular, Table 2 on the "High-level actions and related planned outputs".

19.11 The Committee, having considered document MEPC 63/WP.5 containing all the items listed in Table 2 of the annex to resolution A.1038(27) relating to the work of the Committee and relevant sub-committees, approved its report on the status of the planned output for the MEPC for the 2012-2013 biennium with amendments proposed by BLG 16 and DE 56, as set out in annex 34, and requested the Secretariat to update the status of planned outputs, taking into account the progress made at this session.

Working/review/drafting groups at MEPC 64

19.12 The Committee agreed, in principle, to establish the following working/review/drafting groups at MEPC 64:

.1 Ballast Water Review Group;

.2 Working Group on Ship Recycling;

.3 Working Group on Air Pollution and Energy Efficiency; and

.4 Drafting Group on Amendments to Mandatory Instruments.

Correspondence group

19.13 The Committee agreed to establish the intersessional Correspondence Group on ship recycling guidelines, which would report to MEPC 64.

Intersessional meetings

19.14 The Committee agreed to hold the following intersessional meetings, subject to approval by the Council:

.1 OPRC/HNS Technical Group to be held in the week before MEPC 64 in October 2012, which should report to MEPC 64; and

.2 ESPH Working Group to be held in October 2013.

20 APPLICATION OF THE COMMITTEES' GUIDELINES

The Committees' Guidelines and its release on the IMO Website

20.1 The Committee recalled that MEPC 62 concurred with the decision of MSC 89 on the approval of the revised Committees' Guidelines, which were issued as MSC-MEPC.1/Circ.4.

Checklist for identifying administrative requirements and burdens

20.2 The Committee noted the request of C/ES 26 that, in accordance with paragraph 4 of resolution A.1013(26) – Guidelines on the application of the Strategic Plan and the High-level Action Plan of the Organization, the checklist for identifying administrative requirements and burdens, to be used when preparing the analysis of implications required of submissions of proposals for inclusion of unplanned outputs, should be included in the Committees' Guidelines and, pending its inclusion in the Committees' Guidelines, Member Governments are advised to complete the checklist when proposing new unplanned outputs for the consideration by the Committee.

20.3 The Committee agreed to include the checklist, as set out in the annex to document MEPC 63/WP.11, in the Committees' Guidelines as annex 6, subject to concurrent decision by MSC 90.

21 ELECTION OF THE CHAIRMAN AND VICE-CHAIRMAN FOR 2012

21.1 The Committee recalled that, at its last session, it unanimously re-elected Mr. Andreas Chrysostomou (Cyprus) as Chairman for 2012 in accordance with rule 17 of its Rules of Procedure and that it also decided to conduct the election of Vice-Chairman at this session.

21.2 The Committee unanimously elected Mr. Arsenio Dominguez (Panama) as Vice-Chairman for 2012.

22 ANY OTHER BUSINESS

22.1 The Committee had before it five documents: Documents MEPC 63/22 and MEPC 63/WP.6; and three further documents (MEPC 62/23, MEPC 62/INF.36 and MEPC 62/INF.38), which had been submitted to the last session of the Committee, but due to time constraints, the Committee had agreed to defer their consideration until this session.

Cooperation between the Basel Convention and the International Maritime Organization – Report of the tenth meeting of the Conference of the Parties to the Basel Convention

22.2 The Committee noted document MEPC 63/22 by the Secretariat of the Basel Convention, which provided an overview of decision BC-10/16 on cooperation between the Basel Convention and the International Maritime Organization, which had been adopted by the tenth meeting of the Conference of the Parties to the Basel Convention in October 2011.

22.3 The submission had informed the Committee that decision BC-10/16 focuses on the relationship between the Basel Convention and MARPOL, and that it identified three main areas of cooperation in relation to hazardous and other wastes generated on board ships:

- The first main area of cooperation related to the legal analysis of the application of the Basel Convention to hazardous and other wastes generated on board ships (UNEP/CHW.10/INF/16). Parties and others, including IMO, had been invited to submit further comments on the legal analysis to the Secretariat of the Basel Convention by 15 March 2012.

- Besides the cooperation in this area, COP 10 had requested its Secretariat, subject to the availability of resources, to develop a guidance manual, in cooperation with IMO, on how to improve the sea-land interface to ensure that wastes falling within the scope of MARPOL, once offloaded from a ship, are managed in an environmentally sound manner.

- And lastly, COP 10 had invited any Party willing to do so to undertake an assessment on how far the current Basel Convention technical guidelines covered wastes that are also covered by MARPOL, or to provide funds to enable the Secretariat of the Basel Convention to undertake such an assessment in close consultation with the IMO.

22.4 The Committee also noted that COP 10 had requested the Secretariat of the Basel Convention to keep IMO informed, as appropriate, of any developments arising in the context of the Basel Convention, and to monitor any consideration by IMO's MEPC and MSC regarding any issues of relevance to the Basel Convention. In this regard, it was highlighted that wastes generated during the normal operation of ships are within the regulatory scope of the MARPOL Convention.

Recommendations to regulate the use of the information resulting from statistical data presented by the Organization

22.5 Panama, in introducing document MEPC 62/23, which had been deferred to this session by MEPC 62, raised issues concerning flag State performance. Panama had made some observations regarding the report of the FSI Sub-Committee (FSI 19/19) and had raised concern on the use of information resulting from IMO statistical data by some private companies related to ship vetting. In this regard, the delegation of Panama suggested to establish guidelines aimed at promoting the official use of such information. In particular, Panama suggested either to put in place a mechanism to identify the private companies using this information, or to establish a new module in GISIS that could help to maintain transparency of IMO objectives while enhancing security and protecting the marine environment.

22.6 The observer from ICS stated that the Shipping Industry Flag State Table simply reproduced information which is already available in the public domain, and that it sought to provide information that could help shipping companies to make informed decisions about the flags they use. It was also stated that the concerns raised by governments at FSI 19 were taken into account when the most recent update of the table, published in January 2012, was prepared. Following discussion, the Committee agreed to refer document MEPC 62/23 to the FSI Sub-Committee for consideration.

United Nations General Assembly resolution on Oceans and the law of the sea

22.7 The Committee noted document MEPC 62/INF.36 by the Secretariat that had been deferred to this session by MEPC 62. The document drew attention to resolution 65/37 on Oceans and the law of the sea, which had been adopted by the General Assembly of the United Nations at its 65th session in December 2010. The resolution particularly encouraged States to become Parties to the following international instruments: the Ballast Water Management Convention; the London Protocol 1996; the OPRC Convention and OPRC-HNS Protocol; MARPOL Annex VI and the Hong Kong Convention. The resolution also noted IMO's work on the review of MARPOL Annex V to prevent pollution by garbage from ships and on the reduction of greenhouse gas emissions from ships.

Preparation of Rio+20

22.8 The Committee noted that document MEPC 62/INF.38 by the Secretariat, which was deferred to this session by MEPC 62, provided information on the preparations for the United Nations Conference on Sustainable Development (UNCSD) or Rio+20, which will be held from 20 to 22 June 2012.

22.9 The Committee noted that ocean and shipping related issues and the so-called "blue economy" were on the agenda of Rio+20 and had been particularly highlighted in the preparatory meetings. Accordingly, the Secretariat was actively participating in the preparations and process leading up to Rio+20. In this regard, the Secretariat would keep the Committee informed of developments and would submit to Rio+20 a document summarizing the regulatory and technical assistance work of IMO in addressing relevant provisions of the Rio Declaration and Agenda 21 of 1992, as previously reported by the Committee to the United Nations Commission on Sustainable Development, and further work undertaken by the Organization since then, in response to the Millennium Development Goals, the World Summit on Sustainable Development (WSSD) and other related instruments.

22.10 In this context, the Committee also noted document MEPC 63/WP.6, which provided further information on United Nations General Assembly resolution A/RES/64/236 "Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development", on the timeline for the United Nations Conference on Sustainable Development (UNCSD) Rio+20, and on IMO's involvement in the preparatory process.

22.11 The Committee was informed that IMO had contributed to a number of interagency publications and papers which provide context for the Rio+20 discussions and that IMO continues to participate actively in the preparatory process.

22.12 The Committee noted that Rio+20 would be an opportunity for IMO to show continued leadership towards the goal of sustainable development in its area of responsibility, namely safe, secure, environmentally sound, efficient and sustainable shipping through cooperation, which contains aspects of all of the three pillars of sustainable development: economic, social and environmental.

22.13 The Committee further noted that delegations were invited to consider providing input on ocean- and shipping-related issues through their national delegates to Rio+20 with a view to demonstrating IMO's contribution to a green economy within the context of sustainable development, bearing in mind that sustainable development would only be possible if the environmental and social pillars of sustainable development were given equal footing with the economic one.

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ANNEX 1

STATEMENTS BY THE DELEGATION OF ITALY AND THE OBSERVER OF CLIA ON THE COSTA CONCORDIA ACCIDENT

Statement by the delegation of Italy

Italy would like to reassure the Secretary General and Member States that we will continue to provide any useful information on the terrible accident of the Costa Concordia cruise ship, with a view to help the maritime community in learning lessons from these accidents, so that the safety of cruise ships could be further improved.

We would also like to provide a very brief update on the current situation, on behalf of the Italian Ministry of the Environment.

The accident area has been declared an “environmental emergency area” since 20 January this year. A technical-scientific Committee has been appointed to support the Civil Protection Agency in taking all the necessary measures and performing the needed assessments.

To face the situation, the following plans have been prepared by the Italian authorities:

1 an anti-pollution plan addressing the deployment of Italian anti-pollution ships in the accident area;

2 a drainage plan addressing the removal of the oil contained in the bunker tanks and in the engines;

3 a plan to recover floating litter around the ship; and

4 an environmental monitoring plan will be implemented soon.

The plans are also aimed at assessing possible environmental damage.

To date, as resulting from the sampling conducted by national regional research institutes, no significant contamination of the marine ecosystem around the ship has been detected.

We are retrieving the fuel that is still present in the ship, that is 2043 cubic meters of IFO 380 oil and 203 cubic meters of gasoil. So far, 1300 cubic meters of IFO 380 oil have been pumped out. No pollution event has been detected to date.

Costa Cruises has presented a plan for the removal of the litter resulting from the ship. The removal of floating litter is on-going.

The stability of the ship is constantly under observation. Costa Cruises has invited international companies to present proposals for the removal of the wreck. The proposal will have to be approved by the competent Italian Authorities, and the operations will be monitored until the complete restoration of the environment in the affected area.

Statement by the observer of CLIA

The Cruise Lines International Association (CLIA) would like to thank the Secretary-General and the delegation of Italy for their remarks regarding the Costa Concordia incident. We will continue to offer our most heartfelt sympathies to those who have lost loved ones, and we

are especially grateful to all those who are working tirelessly in the ongoing recovery, salvage, and other efforts.

In response to the Concordia incident and as part of the industry's continuous efforts to review and improve safety measures, CLIA launched a Cruise Industry Operational Safety Review last month. The Review will include a comprehensive assessment of the critical human factors and operational aspects of maritime safety. As best practices are identified, any appropriate recommendations will be shared with IMO on an ongoing basis and further information will be provided to MSC 90 by CLIA.

CLIA is fully committed to understanding the factors that had contributed to the Concordia incident and is proactively responding to all maritime safety issues. The Cruise Industry Operational Safety Review will enable the industry to do so in a meaningful and expeditious manner.

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ANNEX 2

INFORMATION TEMPLATE FOR SHIPOWNERS/OPERATORS REGARDING IMPLEMENTATION OF THE BWM CONVENTION

Construction year	Number of ships	Ballast Water Capacity (m3)			Ballast water flow rate (m^3/h) (if information available)			Analysis
		Less than 1,500	Between 1,500 and 5,000	Greater than 5,000	Up to 200	Between 200 and 2,000	Greater than 2,000	
Before 2009	BWMS installed							
	BWMS not installed							
	Of those: system ordered							
	Total							
Between 2009 and 2011	BWMS installed							
	BWMS not installed							
	Of those: system ordered							
	Total							
After 2011	BWMS installed							
	BWMS not installed							
	Of those: system ordered							
	Total							

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ANNEX 3

RESOLUTION MEPC.209(63)

Adopted on 2 March 2012

2012 GUIDELINES ON DESIGN AND CONSTRUCTION TO FACILITATE SEDIMENT CONTROL ON SHIPS (G12)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on Ballast Water Management for Ships held in February 2004 adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Ballast Water Management Convention) together with four conference resolutions,

NOTING that regulation A-2 of the Ballast Water Management Convention requires that discharge of ballast water shall only be conducted through ballast water management in accordance with the provisions of the Annex to the Convention,

NOTING ALSO that regulation B-5.2 of the Ballast Water Management Convention provides that ships constructed in or after 2009 should, without compromising safety or operational efficiency, be designed and constructed with a view to minimize the uptake and undesirable entrapment of sediments, facilitate removal of sediments, and provide safe access to allow for sediment removal and sampling taking into account the guidelines developed by the Organization,

NOTING FURTHER resolution MEPC.150(55) by which the Committee adopted the Guidelines on design and construction to facilitate sediment control on ships (G12) and resolved to keep these guidelines under review,

HAVING CONSIDERED, at its sixty-third session, a revised text of the Guidelines on design and construction to facilitate sediment control on ships (G12), developed by the Ballast Water Review Group of the Committee at its sixty-second session,

1. ADOPTS the 2012 Guidelines on design and construction to facilitate sediment control on ships (G12), as set out in the Annex to this resolution;

2. INVITES Member Governments to apply the 2012 Guidelines (G12) as soon as possible or when the Convention becomes applicable to them; and

3. REVOKES the Guidelines (G12) adopted by resolution MEPC.150(55).

ANNEX

2012 GUIDELINES ON DESIGN AND CONSTRUCTION TO FACILITATE SEDIMENT CONTROL ON SHIPS (G12)

1 PURPOSE

1.1 Regulation B-5.2 of the Convention requires that ships described in regulations B-3.3 to B-3.5 should, without compromising safety or operational efficiency, be designed and constructed with a view to minimize the uptake and undesirable entrapment of sediments, facilitate removal of sediments and provide safe access to allow for sediment removal and sampling, taking into account these Guidelines. Ships described in regulation B-3.1 of the Convention should, to the extent practicable, also comply with regulation B-5.2, taking into account these Guidelines.

1.2 The purpose of these Guidelines is to provide guidance to ship designers, shipbuilders, owners and operators in the development of ship structures and equipment to achieve the objectives of paragraph 1.1 and, thereby, reduce the possibility of introducing harmful aquatic organisms and pathogens.

1.3 There may be a conflict between preventing accumulation of sediments and preventing the discharge of harmful aquatic organisms and pathogens.

2 INTRODUCTION

2.1 Water taken up as ships' ballast can contain solid alluvial matter that, once the water is becalmed in a ship's ballast tank, will settle out onto the bottom of the tank and other internal structures.

2.2 Aquatic organisms can also settle out of the ballast water and can continue to exist within the sediment. These organisms can survive for long periods after the water they were originally in has been discharged. They may thereby be transported from their natural habitat and discharged in another port or area where they may cause injury or damage to the environment, human health, property and resources.

2.3 Regulation B-5.1 of the Convention requires that all ships remove and dispose of sediments from spaces designated to carry ballast water in accordance with the Ballast Water Management Plans. These Guidelines are to assist ship designers, shipbuilders, owners and operators to design ships to minimize the retention of sediment. Guidance on the management of sediment is contained in the Guidelines for ballast water management and development of ballast water management plans (G4).

3 DEFINITIONS

3.1 For the purposes of these Guidelines, the definitions in the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Convention) apply.

3.2 **Ballast water tank** – For the purposes of these Guidelines, a ballast water tank is any tank, hold or space used for the carriage of ballast water as defined in Article 1 of the Convention.

4 DESIGN FOR REDUCING ACCUMULATION OF SEDIMENT

4.1 Ballast water tanks and their internal structure should be designed to avoid the accumulation of sediment in a ballast tank. The following should, as far as is practicable, be taken into account when designing ballast tanks:

.1 horizontal surfaces to be avoided wherever possible;

.2 where longitudinals are fitted with face bar stiffeners, consideration should be given to fit the face bar stiffeners below the horizontal surfaces to aid drain off from the stiffeners;

.3 arrange for induced flows of water, either by pump forces or gravitational forces, to wash along horizontal or near horizontal surfaces so that it re-suspends already settled sediment;

.4 where horizontal stringers or webs are required, drainage holes to be as large as possible, especially if edge toe-stops are fitted where horizontal stringers are used as walkways, to encourage rapid flow of water off them as the water level in the tank falls;

.5 internal girders, longitudinals, stiffeners, intercostals and floors, where fitted, should incorporate extra drain holes which allow water to flow with minimal restriction during discharge and stripping operations;

.6 where inner members butt against bulkheads, their installation should be such as to prevent the formation of stagnant pools or sediment traps;

.7 scallops should be located at the joints of the inner bottom (tank top) longitudinals or intercostals and floors to allow for good airflow, and thus drying out of an empty tank. This will also allow air to escape to the air pipe during filling so that minimum air is trapped within the tank;

.8 pipeline systems should be designed such that, when deballasting, disturbance of the water in the tank is as powerful as possible, so that the turbulence re-suspends sediment; and

.9 flow patterns in ballast water tanks should be studied (for example by the use of Computational Fluid Dynamics (CFD)) and considered, so that internal structure can be designed to provide effective flushing. The amount of internal structure in double bottom tanks will reduce the scope for improving flow patterns. The hydrodynamic performance of the ballast tank is crucial to ensure sediment scouring.

4.2 Any designs depending upon water flow to re-suspend sediment should, as far as possible, be independent of human intervention, in order that the workload of ships' crews is minimal when operating the system.

4.3 The benefits of design concepts for reducing sediment accumulation are that there is likely to be good sediment removal while deballasting, with minimum retention of sediment in the tanks, and therefore a reduction or no need for removal by other means.

4.4 The design of all ships should provide safe access to allow for sediment removal and sampling.

4.5 The design of ballast water systems should, as far as practicable, facilitate installation of high sea suction points on each side of the ship.

4.6 When practical, equipment to remove suspended matter at the point of uptake should be installed.

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ANNEX 4

RESOLUTION MEPC.210(63)

Adopted on 2 March 2012

2012 GUIDELINES FOR SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on the Safe and Environmentally Sound Recycling of Ships held in May 2009 adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention) together with six Conference resolutions,

NOTING that regulations 17.1 and 19 of the annex to the Hong Kong Convention require that Ship Recycling Facilities shall establish management systems, procedures and techniques which do not pose health risks to the workers or to the population in the vicinity of the Ship Recycling Facility and which will prevent, reduce, minimize and to the extent practicable eliminate adverse effects on the environment caused by Ship Recycling, taking into account guidelines developed by the Organization,

NOTING ALSO that regulation 18 of the annex to the Hong Kong Convention requires that Ship Recycling Facilities shall prepare a Ship Recycling Facility Plan, addressing worker safety and training; protection of human health and the environment; roles and responsibilities of personnel; emergency prepardness and response; and monitoring, reporting and record-keeping systems, taking into account the guidelines developed by the Organization,

NOTING FURTHER that regulations 20.2 and 22 of the annex to the Hong Kong Convention require that Ship Recycling Facilities shall ensure that all Hazardous Materials are identified, labelled, packaged and removed to the maximum extent possible prior to cutting, and shall also ensure that all workers at the Ship Recycling Facility have been provided with appropriate training and familiarization prior to performing any Ship Recycling operation, taking into account the guidelines developed by the Organization,

BEARING IN MIND that the International Conference on the Safe and Environmentally Sound Recycling of Ships, in its resolution 4, invited the Organization to develop Guidelines for global, uniform and effective implementation and enforcement of the relevant requirements of the Convention as a matter of urgency,

HAVING CONSIDERED, at its sixty-third session, the draft 2012 Guidelines for safe and environmentally sound ship recycling developed by the Working Group on Ship Recycling,

1. ADOPTS the 2012 Guidelines for safe and environmentally sound ship recycling, as set out in the annex to this resolution;

2. INVITES Governments to bring the Guidelines to the attention of ship recycling facilities and to encourage their application as soon as possible; and to apply them when the Hong Kong Convention becomes applicable to them; and

3. REQUESTS the Committee to keep the Guidelines under review.

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2012 GUIDELINES FOR SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING

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1 INTRODUCTION

1.1 Objectives of the guidelines

These guidelines provide stakeholders, particularly Ship Recycling Facilities, with recommendations for the safe and environmentally sound recycling of ships and implementation of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereafter "the Convention").

It should be noted that article 6 and regulations 9 and 17 to 25 of the annex to the Convention provide requirements for Ship Recycling Facilities and require these guidelines to be taken into account.

These guidelines should be used primarily by Ship Recycling Facilities, but other stakeholders such as the Competent Authority(ies) and the organizations recognized by it may also find them useful in implementing the Convention.

1.2 Approach of the guidelines

Article 6 of the Convention requires the authorization of Ship Recycling Facilities that recycle ships to which the Convention applies or ships treated similarly pursuant to article 3.4 of the Convention. Regulation 18 specifies that such authorized Ship Recycling Facilities shall develop a comprehensive Ship Recycling Facility Plan (SRFP) that, among others, should cover worker safety and training, protection of human health and the environment, roles and responsibilities of personnel, emergency preparedness and response and systems for monitoring, reporting and record-keeping.

These guidelines describe the recommended content of the SRFP, and information is provided where appropriate to illustrate the performance standards anticipated by specific regulations of the Convention.

2 DEFINITIONS

The terms used in these guidelines have the same meaning as those defined in the Convention. The following additional definitions apply to these guidelines only.

2.1 "Adjacent space" means those spaces bordering a space in all directions, including all points of contact, corners, diagonals, decks, tank tops and bulkheads.

2.2 "Dangerous atmosphere" means an atmosphere that may expose workers to the risk of death, incapacitation, impairment of ability to self-rescue (i.e. to escape unaided from a space), injury or acute illness.

2.3 "Enclosed space" means a space that has any of the following characteristics:

.1 limited openings for entry and exit;

.2 inadequate ventilation; and/or

.3 is not designed for continuous worker occupancy.

Enclosed spaces include, but are not limited to, cargo spaces, double bottoms, fuel tanks, ballast tanks, cargo pump-rooms, cargo compressor rooms, cofferdams, void spaces, duct keels, inter-barrier spaces, boilers, engine crankcases, engine scavenge air receivers, sewage tanks and adjacent connected spaces.

2.4 "Entry" means the action by which a person passes through an opening into a space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

2.5 "Hot work" means any activity requiring the use of electric arc or gas welding equipment, cutting burner equipment or other forms of flame, as well as heating or spark-generating tools, regardless of where it is carried out on board a ship.

2.6 "Space" means a permanent or temporary three-dimensional structure or compartment on a ship such as, but not limited to, cargo tanks or holds; pump or engine rooms; storage lockers; tanks containing flammable or combustible liquids, gases, or solids; other rooms; crawl spaces; tunnels (i.e. shaft alleys); or access ways. The atmosphere within a space is the entire volume within its bounds.

3 SHIP RECYCLING FACILITY PLAN (SRFP)

The Ship Recycling Facility Plan (SRFP) shall be adopted by the board or appropriate governing body of the Recycling Company. The SRFP is the main document that the Competent Authority(ies), or organization recognized by it, will rely on in authorizing a Ship Recycling Facility. Site inspections are to be utilized to verify that Facility operations conform to the description in the SRFP. It is therefore critical that the SRFP should fully describe the operations and procedures that are in place at the Ship Recycling Facility to ensure compliance with the Convention.

The SRFP should demonstrate knowledge and understanding of all applicable statutory and regulatory requirements and a strong commitment to worker health and safety and protection of the environment. The SRFP should also describe the operational processes and procedures involved in ship recycling at the Ship Recycling Facility, demonstrating how the requirements of the Convention will be met. The recommended format for the SRFP is included in appendix 1.

3.1 Facility management

The SRFP should provide information regarding the organizational structure and management policies of the Recycling Company, an overview of the Ship Recycling Facility, and methodologies related to ship recycling. The SRFP should provide sufficient detail to demonstrate a thorough understanding of production processes and project management associated with ship recycling, and should demonstrate that the Ship Recycling Facility uses valid and practical solutions to the technical problems inherent in ship recycling.

The SRFP should anticipate alterations to recycling operational processes as a result of the discovery of previously unknown factors or items during ship recycling. Procedures should be established for identifying and dealing with previously unknown features. In addition, the decision-making process should lead to an approach that will ensure protection of the safety and health of workers and the environment.

3.1.1 Company information

The SRFP should provide detailed information on:

.1 the operator of the Ship Recycling Facility, including the organizational structure and a detailed summary of the operator's experience relevant to ship recycling;

.2 the name of the land or Facility owner, if different to the operator;

.3 the roles, responsibilities and qualifications of management personnel;

.4 the roles and responsibilities of the key personnel at the Ship Recycling Facility (key personnel should have the appropriate skills and experience for the intended job functions. The Ship Recycling Facility should have a dedicated environmental, safety and health manager and a person trained in first aid or medical care);

.5 the Ship Recycling Facility's environmental, occupational safety and health management systems, including application of any formally recognized international standards for an environmental management system (e.g. ISO14001) and occupational safety and health management systems (e.g. OHSAS18001), and any certification awarded, as applicable;

.6 the policy statement on the Facility's commitment to protection of the environment and occupational safety and health, including the objectives set by the Facility for the minimization and ultimate elimination of adverse effects on human health and the environment caused by ship recycling;

.7 the methodologies used for ensuring compliance with the applicable statutory and regulatory requirements; and

.8 the system by which the objectives and goals set out in the policy of the Recycling Company and the continuous improvement of the performance of the Facility are to be achieved.

The Ship Recycling Facility's environmental and occupational safety and health management programme, policies and objectives should be communicated to and understood by all personnel working at the Facility.

3.1.2 Training programme

Regulation 22 of the Convention specifies that the Ship Recycling Facility shall ensure that training programmes are provided. The SRFP should provide detailed information on the general workforce and job functions and on training procedures to ensure the appropriate level of worker safety and environmental protection. The training programmes should cover all workers and members of the Ship Recycling Facility, including contractor personnel and employees (regulation 22.3.1), and should identify the type and frequency of training. The training programme shall be reviewed periodically and modified as necessary (regulation 22.3.5).

The training programme should enable workers to safely undertake all operations that they are tasked to do and ensure that all workers at the Ship Recycling Facility have been provided with the appropriate training prior to performing any ship recycling operation.

The programme should include appropriate training for tasks and operations performed by the employees including, but not limited to, the following:

.1 awareness and communication of information about Hazardous Materials;

.2 job hazard awareness, including handling and management of Hazardous Materials;

.3 personal protective equipment;

.4 fire protection and prevention;

.5 emergency response and evacuation;

.6 safety and health training;

.7 environmental awareness; and

.8 first-aid awareness.

3.1.3 Worker management

The SRFP should include specific information on worker responsibilities, including qualifications, training and monitoring responsibilities.

3.1.4 Records management

The SRFP should outline the policies and procedures for retaining vital records associated with Facility operations and, specifically, the recycling of each ship. The retention of records should include, but not be limited to, laboratory analytical results, manifests, shipping documents, truck receipts, waste shipment records, records of training and exercises/drills, worker accidents, injuries and medical or health records such as occupational health examinations carried out and occupational diseases contracted, and a description of any national requirements for records management and retention. If national requirements do not specify a time period, it is recommended that records should be kept for five years.

3.2 Facility operation

The SRFP should demonstrate an understanding of the regulations, production processes, project management and other requirements associated with performing recycling operations in accordance with applicable laws and regulations, and demonstrate how the Ship Recycling Facility plans to prevent adverse effects to human health and the environment (regulation 19).

3.2.1 Facility information

The SRFP should provide a clear and concise description of the physical location of the Facility, including acreage and Facility access routes. A detailed Ship Recycling Facility drawing or map should be included, with information regarding the area where recycling will occur. The SRFP should include a clear and concise description of the pertinent details of the Ship Recycling Facility, such as Facility layout, water depth, accessibility, maintenance and dredging.

The SRFP should include a clear and concise description of the total estimated ship recycling capacity, the production throughput/capacity of recyclables including steel and engineering features for material segregation and processing. Temporary and permanent buildings such as offices, workers' complex, drinking water supply, sanitation, medical and first-aid facilities, gas storage and Hazardous Materials storage and processing facilities should be identified, as should the floor construction, other structures, roadways and emergency access routes.

The SRFP should include a clear and concise description of the pertinent details of the principle operational equipment in use at the Ship Recycling Facility. It is recommended that this should include the quantity, capacity and type of such equipment and other pertinent information such as test certificates, safe working loads and qualifications of operators, in relation to worker safety and protection of the environment.

An example of Facility information is given in appendix 2, which also covers the guidance contained in section 3.2.2 ("Permits, licences and certification").

3.2.2 Permits, licences and certification

The SRFP should document the procedures in place to ensure that the Ship Recycling Facility is operated and maintained in a manner that complies with all applicable laws and regulations.

The SRFP should include information on site-specific permits, licences, and/or certificates that are in effect or obtained prior to the start of ship recycling, including any lease or authorization from a landowner, port or other entity granting authorization to use the Facility for ship recycling purposes.

The SRFP should include procedures to ensure the appropriate level of certification and/or verification in order that all subcontractors (including those involved in handling, transport, treatment, storage and disposal) hold valid permits, registrations and/or certificates, as applicable.

The use of subcontractors for any part of the process of working with or managing Hazardous Materials in the Ship Recycling Facility does not relieve the Ship Recycling Facility of its responsibilities. In all matters covered by these guidelines, the Ship Recycling Facility should ensure and maintain records to document safe and environmentally sound management by subcontractors.

3.2.3 Acceptability of ships

The Convention contains requirements for the acceptance of ships for recycling. The SRFP should describe the processes and procedures to be implemented before the ship arrives at the Ship Recycling Facility for recycling.

When preparing to receive a ship for recycling, the first step shall be to notify the Competent Authority(ies) of the intent (see regulation 24.2). When the ship destined to be recycled has acquired the International Ready for Recycling Certificate, the Ship Recycling Facility shall report to its Competent Authority(ies) the planned start date of the ship recycling, using the reporting format in appendix 6 of the Convention. The procedures to be followed by stakeholders from the recycling preparation phase to the completion of recycling, as required by the Convention, are illustrated in appendix 3 of these guidelines.

3.2.4 Ship Recycling Plan (SRP) development

Under regulation 9 of the Convention, a ship-specific Ship Recycling Plan (SRP) shall be developed by the Ship Recycling Facility before any recycling of a ship can take place. The operational processes that are indicated in the SRFP can be used to prepare the SRP. The Convention requires that the SRP should be approved, in accordance with regulation 9, prior to issuance of an International Ready for Recycling Certificate. The SRFP should describe the process for developing a SRP, taking into account the *Guidelines for the Development of the Ship Recycling Plan (SRP)*.

3.2.5 Vessel arrival management

The SRFP should describe the procedures to be implemented to secure vessels upon arrival at the Ship Recycling Facility, including provisions for mooring, heavy and/or severe weather contingencies, afloat monitoring, stability during recycling and flooding and/or sinking prevention methods. Provisions may be different depending on the ship recycling method.

3.2.6 Ship recycling methodology

The SRFP should provide a comprehensive description of the Ship Recycling Facility's ship recycling methodology, covering the entire process of recycling a vessel including management of Hazardous Materials and wastes and a description of the methodology and procedures for identifying and segregating materials. The SRFP should also include a detailed description of how recycled materials, reusable items and wastes are handled and/or disposed of in a safe and environmentally sound manner.

The SRFP should include procedures for conducting assessments of the hazards associated with the safe and environmentally sound recycling of ships and should identify the subsequent process for minimizing and eliminating any such hazards.

Where materials or wastes are removed from the Ship Recycling Facility for further processing and/or disposal, the SRFP should provide details of the procedures that will be used to ensure that they are transferred only to a facility that is authorized to deal with their treatment and/or disposal in an environmentally sound manner.

3.2.7 Reporting upon completion

Regulation 25 of the Convention contains requirements for reporting upon completion. The SRFP should describe the procedures in place for such reporting, including how the Ship Recycling Facility will document and report any incidents and accidents.

3.3 Worker safety and health compliance approach

3.3.1 Worker health and safety

In this section of the SRFP, the Ship Recycling Facility should provide a comprehensive description of the Facility's plans and procedures for protecting worker health and safety and should reflect applicable requirements of the Convention (particularly regulations 19 and 21 to 23) and national legislation. The Ship Recycling Facility should also take into account, as appropriate, guidelines developed by international organizations. A reference list of these guidelines is provided in appendix 4. The SRFP should identify and demonstrate the Ship Recycling Facility's knowledge and understanding of applicable worker safety and occupational health processes, procedures, laws, regulations and guidance. Further, the SRFP should demonstrate that the safety and health programme supports the activities necessary for environmental compliance and for recycling and disposal at the Ship Recycling Facility.

3.3.2 Key safety and health personnel

The SRFP should identify one or more key personnel who possess the level of training and experience necessary to effectively ensure that safe conditions are maintained during operations at the Ship Recycling Facility, including one or more Competent persons for the performance of specific work. Depending upon the size of the Ship Recycling Facility and the number of workers, the SRFP could include a hierarchy of safety and health management staff, including an overall manager, supervisory staff and general workers.

3.3.3 Job hazard assessment

The SRFP should include the procedures to be implemented to conduct a job-hazard assessment to determine the proper approach to maximizing worker safety. Responsibility for job hazard assessments should be assigned to a Competent person for the specific hazards of each job. It is recommended that the assessments should be conducted by a team of personnel including the Competent person, a representative of management and workers with the appropriate level of expertise.

3.3.4 Prevention of adverse effects to human health

Regulation 19 of the Convention specifies that the Ship Recycling Facility shall establish and utilize procedures to prevent explosions by ensuring that Safe-for-hot-work and Safe-for-entry conditions are established and maintained throughout the ship recycling process; to prevent other accidents that cause or have the potential to cause damage to human health; and to prevent spills of cargo residues and other materials which may cause harm to human health and/or the environment. Since these are among the more critical aspects for the safe operation of Ship Recycling Facilities, it is important that the SRFP clearly demonstrates that it has procedures in place to prevent workplace accidents and injuries. The guidelines below outline the key considerations that should be included in the SRFP.

3.3.4.1 Safe-for-entry procedures

Throughout the entire recycling process, the Ship Recycling Facility should ensure that, prior to entry and during work, enclosed spaces and other areas where the atmosphere is dangerous are monitored to ensure that they remain Safe-for-entry and safe for continued activity. The Ship Recycling Facility should ensure that shipboard spaces are not entered until a Safe-for-entry certificate has been issued by a Competent person. A Competent person should visually inspect and test each space on the ship to determine the areas which are safe for entry before issuing a certificate and before recycling activities are commenced.

Safe-for-entry certification, inspection and testing should be conducted in all spaces that have the potential to pose harm to human health as a result of the space's oxygen content, flammability or atmospheric toxicity, with particular attention paid to enclosed spaces and to spaces and adjacent spaces where hot work has been or will be performed during the course of the daily recycling work.

Designation as "Safe-for-entry" is not sufficient for hot work, as additional criteria should be met to address safety issues related to hot work.

3.3.4.1.1 Safe-for-entry criteria

For entry purposes, steady readings of all the following should be obtained:

.1 the oxygen content of the atmosphere is 21 per cent by volume, measured using an oxygen content meter (Note: National requirements may determine a safe atmosphere range);

.2 where the preliminary assessment has determined that there is potential for flammable gases or vapours, the concentration of those gases or vapours is not higher than 1 per cent of their lower flammable limit (LFL), measured using a suitably sensitive combustible gas indicator; and

.3 the concentration of any toxic vapours and gases is not higher than 50 per cent of their occupational exposure limit (OEL)[1].

If these conditions cannot be met, the space should be ventilated further and retested after a suitable interval.

3.3.4.1.2 Competent person for Safe-for-entry determination

Regulation 1 of the Convention defines "Competent person". The Competent Authority should define the appropriate criteria for designation of a Competent person. However, the Competent person(s) for Safe-for-entry and/or Safe-for-hot-work determination should be able to determine oxygen content, concentration of flammable vapours and gases and the presence of toxic, corrosive, irritant or fumigated atmospheres and residues. The Competent person should possess sufficient knowledge and practical experience to make an informed assessment based on the structure, location and designation of spaces where work is done. The Competent person should possess the ability to inspect, test and evaluate spaces to determine the need for further testing. The Competent person should also monitor the maintenance of appropriate conditions in spaces.

3.3.4.1.3 Safe-for-entry inspection and testing procedures

Designation as "Safe-for-entry" is not sufficient for hot work, as additional criteria must be met to address safety issues related to hot work. Testing should be carried out by a Competent person using appropriate and properly certified and calibrated equipment, including, but not limited to, an oxygen content meter, combustible gas indicator, toxicity meter and gas or vapour detection equipment.

3.3.4.1.4 Oxygen

The Ship Recycling Facility should ensure that spaces are tested by a Competent person to determine the atmosphere's oxygen content prior to initial entry into the space by workers, and also that the space is periodically monitored and recorded for as long as it is occupied. Spaces that warrant particular consideration include the following:

- spaces that have been sealed;

[1] It should be noted that the term occupational exposure limit (OEL) includes the permissible exposure limit (PEL), maximum allowable concentration (MAC) and threshold limit value (TLV), or any other internationally recognized terms.

- spaces and adjacent spaces that contain or have recently contained combustible or flammable liquids or gases;

- spaces and adjacent spaces that contain or have recently contained liquids, gases or solids that are toxic, corrosive, or irritant;

- spaces and adjacent spaces that have been fumigated; and

- spaces containing materials or residues of materials that create an oxygen-deficient atmosphere.

A worker should only enter a space where the oxygen content, by volume, has the value noted in 3.3.4.1.1. In such a case, the space should be labelled "Safe-for-entry". If an oxygen-deficient or oxygen-enriched atmosphere is found, ventilation should be provided at volumes and flow rates sufficient to ensure that the oxygen content is maintained at the value noted in 3.3.4.1.1. The label may be reattached when the oxygen content returns to the value noted in 3.3.4.1.1, and after it has been tested and inspected by the Competent person.

3.3.4.1.5 Flammable atmospheres

The Ship Recycling Facility should ensure that spaces and adjacent spaces that contain or have contained combustible or flammable liquids or gases are visually inspected and tested by the Competent person prior to entry by workers, and that they are periodically monitored and the results recorded throughout the time that the spaces are occupied.

If the concentration of flammable vapours or gases in the space to be entered is equal to or greater than 1 per cent of the lower flammable limit, then no one should enter the space and the label "Safe-for-entry" should be removed. Ventilation should be provided at volumes and flow rates sufficient to ensure that the concentration of flammable vapours is maintained below 1 per cent of the lower flammable limit. The label may be reattached when the concentration of flammable vapours falls below 1 per cent of the lower flammable limit and after it has been tested and inspected by the Competent person.

3.3.4.1.6 Toxic, corrosive, irritant or fumigated atmospheres and residues

The Ship Recycling Facility should ensure that spaces or adjacent spaces that contain or have contained liquids, gases or solids that are toxic, corrosive or irritant are visually inspected and tested by a Competent person prior to initial entry by workers.

If a space contains an air concentration of a material which exceeds 50 per cent of their OEL, then no one should enter the space and it should not be labelled "Safe-for-entry". Ventilation should be provided at volumes and flow rates sufficient to ensure that air concentrations are maintained below 50 per cent of their OEL. The label may be reattached when the concentration of contaminants is maintained below 50 per cent of their OEL and after it has been tested and inspected by the Competent person.

3.3.4.1.7 Safe-for-entry determination by a Competent person

A Competent person should visually inspect and test each space certified as "Safe-for-entry" as often as necessary to ensure that atmospheric conditions within that space are maintained within the conditions established by the certificate. However, at a minimum, the space should be inspected and tested at least once in an eight-hour shift period. The results of these tests should be recorded on the Safe-for-entry certificate.

When a change occurs that could alter conditions within a tested enclosed space or other dangerous atmosphere, work in the affected space or area should be stopped. Work may not be resumed until the affected space or area is visually inspected and retested by the Competent person and found to comply with the certification. It is recommended that the space should be ventilated and the atmospheric conditions returned to the acceptable limits after a space has been found to exceed limits.

If the Competent person has initially determined that a space is safe for an employee to enter and they subsequently find that the conditions within the tested space fail to meet the requirements, work should be stopped until the conditions in the tested space are corrected to comply with the certification requirements. If it is safe to do so, the Competent person may be asked to investigate the reason for the space's non-compliance and to ensure that the remedial action to be taken will prevent a reoccurrence.

3.3.4.1.8 Safe-for-entry certificate, warning signs and labels

Any determination of a space as "Safe-for-entry" should be accompanied by a certificate which, at a minimum, should clearly indicate the following information:

- name and title of the Competent person performing the test(s) and inspection(s);
- signature of the above person;
- name of vessel and location;
- the areas of the ship that are Safe-for-entry;
- date and time of the inspection;
- location of inspected spaces;
- tests performed;
- type of equipment used in testing;
- test results;
- period of retesting of the spaces;
- results of periodic retesting undertaken;
- conditions when the Competent person should be recalled or conditions that void the certificate;
- safety designation(s) ("Safe-for-entry", "Not Safe-for-entry");
- validity period and expiration date of the certificate, recommended to be a maximum of 24 hours, with periodic retesting intervals not exceeding eight hours;
- type of ventilation; and
- any additional relevant information or instructions.

Safe-for-entry certificates should be posted at every access point between ashore and the ship. A record of inspection of atmospheric tests should be appended to the certificate.

The certificate and/or the spaces themselves should be clearly marked and presented in a manner that can be seen and understood by all workers in the working language of the yard and, if possible, with pictorial representations.

If an entire work area has been tested and labelled with the proper signage (for example, as being "Safe-for-entry") at all points of access to the work area, an individual tank or other space located within the work area need not be labelled separately.

The certificate, updates and any other records should be kept on file for a period of at least three months from the completion date of the specific job for which they were generated.

If a space at any time ceases to meet the Safe-for-entry criteria, the label "Safe-for-entry" should be removed.

3.3.4.1.9 Safe-for-entry operational measures

In addition to ensuring certification as "Safe-for-entry", the following operational measures should also be observed:

- no person may open or enter an enclosed space unless authorized by the Competent person of the Ship Recycling Facility and unless the appropriate safety procedures have been followed;

- a permit for entry has been issued for those intended to enter the space by the same individual(s) who is/are responsible for maintaining the certificate on behalf of the Ship Recycling Facility, confirming that all certification processes and operational measures for safe entry have been completed and are in effect;

- the space is properly illuminated;

- there is appropriate access and egress to the space and the working area in the enclosed space is suitable for the work that is being considered, specifically for heavy, large or complex lifting operations;

- a suitable system of communication between all parties for use during entry is agreed upon, tested and used;

- the space is adequately isolated from gases, liquids or other identified hazardous substances that could inadvertently be released into the space in which work is being undertaken;

- a fully-trained supervisor, who may be in charge of one or more work teams, has oversight of the area and frequently monitors the conditions to which the workers are exposed;

- the style of ventilation equipment is such that no ignition sources are introduced into a hazardous space;

- the ventilation provided for the space is adequate for the work to be undertaken and for any diurnal variation in environmental conditions that may be experienced in hot or humid regions;

- the ventilation system is designed to prevent the persistence of gas pockets within tanks/spaces – owing either to the complex structure of the tank/space or to the fact that the gas pockets are heavier than air vapours in the tank – which may be achieved by suction/evacuation style ventilation rather than blower ventilation;

- in the event of ventilation system failure, some means of alert is provided so that any persons in the space can leave immediately;

- appropriate rescue and fire control plans are in place;

- appropriate personal protective equipment (PPE), protective clothing and safety equipment (including harnesses and lifelines) are provided to the workers, and used during entry to and work in the designated spaces; and

- adequate and functioning rescue and resuscitation equipment has been provided and is positioned ready for use at the entrance of the space.

If the fire alarm is activated, the space should be evacuated until the all-clear for re-entry is given by the Competent person.

3.3.4.2 Safe-for-hot-work procedures

The Ship Recycling Facility should ensure that no hot work commences on a ship unless the area is deemed "Safe-for-hot-work".

Safe-for-hot-work certification, inspection and testing apply to all of the following:

- enclosed spaces and all other spaces enclosed by bulkheads and decks (including cargo holds, tanks, quarters, and machinery and boiler spaces) that potentially contain dangerous atmospheres;

- within, on, or immediately adjacent to spaces that contain or have contained combustible or flammable liquids or gases;

- within, on, or immediately adjacent to fuel tanks that contain or have last contained fuel;

- on pipelines, heating coils, pump fittings or other accessories connected to spaces that contain or have last contained fuel; and

- bilges, cargo holds, engine room spaces and boiler spaces not containing dangerous atmospheres.

The Ship Recycling Facility should ensure that no hot work commences in any of these spaces until Safe-for-hot-work certification has been issued by a Competent person; these inspections and tests should be entered on the record of inspection and testing and posted in a conspicuous place on board. A Competent person should visually inspect and test each space on the ship to determine the areas which are deemed "Safe-for-hot-work" before a certificate is issued and before recycling activities commence.

3.3.4.2.1 Safe-for-hot-work criteria

A space that is "Safe-for-hot-work" is one that meets all the Safe-for-entry criteria and also the following criteria:

- any residues or materials in the space are not capable of producing an oxygen-enriched or oxygen-deficient environment, and are not capable of generating flammable or explosive vapours;

- all adjacent spaces have been cleaned, rendered inert or sufficiently treated to prevent the risk of explosion, the release of noxious or toxic fumes or gases and the spread of fire; and

- work in adjacent spaces is not affected by the hot work, such as tank entry, lifting operations or deconstruction by hand.

3.3.4.2.2 Competent person for Safe-for-hot-work determination

A Competent person for matters related to Safe-for-hot-work determination should meet the criteria identified in 3.3.4.1 and possess the additional knowledge and skills required to handle hot work activities.

3.3.4.2.3 Safe-for-hot-work inspection, testing and determination

Each space should be certified by a Competent person as "Safe-for-hot-work" as often as necessary to ensure that conditions within that space are maintained as established by the certificate. The frequency with which a space should be monitored to determine whether conditions are being maintained is a function of the following, but should in any event not exceed an eight-hour shift period:

- temperature: any changes in temperature in the space could result in a change in its atmospheric conditions, and hotter days can cause residues to produce more vapours, resulting in a greater risk of flammable or explosive conditions;

- work in the space: activity in the space can change its atmospheric conditions; gas leaks from a hose or torch or manual tank cleaning by scraping or using hand-held high-pressure spray devices can stir up residues, which can result in a greater risk of flammable or explosive conditions;

- period of elapsed time: if a sufficient period of time (not to exceed 24 hours) has elapsed since Safe-for-hot-work certificate was issued, the condition of the space should be retested prior to entry and commencement of work;

- unattended spaces: a tank or space that has been certified as "Safe-for-hot-work" then subsequently left unattended for a sufficient period of time should be retested prior to entry and commencement of work;

- work break: tanks or spaces should be checked for equipment left behind when workers take a break or leave at the end of the shift, and the condition of the tank or space should be retested prior to entry and resumption of work; and

- ballasting or trimming: changing the position of the ballast or moving or trimming the ship in any way can produce a change in the atmosphere of the spaces; the condition of the spaces should be retested prior to entry and resumption of work.

3.3.4.2.4 Safe-for-hot-work certificate, warning signs and labels

Any determination of a space as "Safe-for-hot-work" should be accompanied by a certificate which, at a minimum, should include the information identified in section 3.3.4.1.8 ("Safe-for-entry certificate, warning signs and labels"). Warning signs and labels should be posted in the manner described in section 3.3.4.1.8 for Safe-for-entry determination, clearly indicating that the space is "Safe-for-hot-work".

3.3.4.2.5 Safe-for-hot-work operational measures

In addition to the measures identified in section 3.3.4.1.9 ("Safe-for-entry operational measures"), the following should also be applied in order to achieve certification as "Safe-for-hot-work":

- each area where hot work is to be performed should be carefully prepared and isolated before hot work commences;

- all trash, debris, oil residues or other materials that could generate flammable or explosive vapours should be removed from the space prior to commencing hot work. The space and adjacent spaces should be kept free of any trash, debris, oil residues or other materials that could result in a risk of flammable or explosive conditions;

- drums and similar small containers which have contained flammable substances should, before they are cut, be either filled with water or thoroughly cleaned of such substances;

- deck tanks should be appropriately cleaned, gas freed and certified as Safe-for-entry and tested for hot work as described in the general sections (see sections 3.3.4.1 and 3.3.4.2). A suitable supply of fresh air should be maintained, given that oxygen from the atmosphere may be removed in the combustion process. The tanks should be isolated and tested in accordance with the guidance given in these guidelines. Particular attention should be paid to access and egress and to the unique challenges presented by these spaces regarding tank rescue in an emergency situation;

- fixed cargo or fuel tanks should be cleaned and ventilated before any work commences and after having been passed as "Safe-for-entry" and "Safe-for-hot-work". Cleaning should be sufficient to remove any hazardous liquids, light solids and clinkage to allow the tank to be gas freed. Complex structures may require additional preparation before being certified as "Safe-for-hot-work". The need for localized manual cleaning should be considered. Ventilation should allow an adequate flow of air to all parts of the space to prevent a build-up of gases either from the hot work or from the tank coatings;

- ventilation should be provided at volumes and flow rates sufficient to ensure that the concentration of flammable vapours is maintained below 1 per cent of the lower flammable limit;

- general mechanical ventilation should be of sufficient capacity and so arranged as to produce sufficient air changes to maintain safe levels of welding fumes and smoke; and

- the Ship Recycling Facility's fire safety procedures should be followed.

3.3.4.3 Welding, cutting, grinding and heating

The SRFP should include procedures for ventilation, personnel monitoring for heavy-metals exposure, protection of personnel, training, respiratory protection, torch cutting, permits and inspections (including hot-work certification). The SRFP should include procedures for transporting, moving, securing, storing and using hoses and torches.

3.3.4.4 Drums, containers and pressure vessels

The SRFP should include procedures for handling, transporting and storing pressure vessels containing flammable gases, such as acetylene (C_2H_2), propane gas (C_3H_8) or oxygen (O_2) for welding, heating and cutting works, in order to avoid any human injuries, caused by external forces, shock or heat to such vessels.

Procedures for removing pressure vessels containing carbon dioxide (CO_2), nitrogen (N_2) and other ozone-depleting substances used in fire-fighting and refrigeration systems should also be included.

Procedures for transporting and storing drums and containers containing hazardous liquids, using appropriate PPEs, should also be described in the SRFP.

3.3.4.5 Prevention of falling from heights and accidents caused by falling objects

The SRFP should include procedures for using personal flotation devices, guarding deck openings, deck edges and platforms, utilizing personal fall arrest systems and guard rails and ensuring safe access to ships to prevent slip-and-fall accidents and the dropping and scattering of objects.

3.3.4.6 Gear and equipment for rigging and materials handling

The SRFP should include procedures for testing and inspecting ropes, chains, slings, hooks, chain-falls and hoisting and hauling equipment. It should further include a description of operations using cranes, machines, mobile equipment and aerial and man-lift systems and a list of qualifications required for the operators.

3.3.4.7 Housekeeping and illumination

The SRFP should include procedures for work areas, such as aisles, passageways and temporary deck openings.

3.3.4.8 Maintenance and decontamination of tools and equipment

The SRFP should include procedures for inspection and maintenance of equipment, regulatory requirements for third-party inspections and decontamination procedures. These activities and the result of the inspections should be recorded.

The Ship Recycling Facility should ensure that the quantity and the deployment of tools and equipment are suitable for the corresponding recycling activities, especially when a number of ships are to be recycled at the same time.

3.3.4.9 Health and sanitation

The SRFP should include a description of washing facilities, showers, eating and recreation areas, toilet facilities and changing rooms. It is recommended that appropriate changing rooms and sanitary and washing facilities should be provided by the Ship Recycling Facility to control exposure and avoid the spread of Hazardous Materials. Sanitary and washing facilities should be conveniently accessible and situated so that they are not at risk of contamination from the workplace. Separate and appropriate changing rooms and sanitary and washing facilities should be provided for exclusive use by workers handling asbestos. It is also recommended that the Ship Recycling Facility should designate separate and uncontaminated areas for workers to use for eating, drinking and other breaks.

3.3.4.10 Personal protective equipment

The SRFP should include information on procedures and equipment used for the protection of employees from various risks associated with ship recycling.

Respiratory protection and hearing conservation programmes should be developed for all employees who could be exposed to excessive levels. The SRFP should describe how the programmes are in compliance with national regulations. In the absence of domestic law, the Ship Recycling Facility should utilize best industry practices to provide effective respiratory protection and hearing conservation programmes.

3.3.4.11 Worker exposure and medical monitoring

The SRFP should include procedures to be used for monitoring exposure and for medical surveillance.

3.3.5 Emergency preparedness and response plan (EPRP)

Regulations 18.5 and 21 of the Convention specify that Ship Recycling Facilities shall establish and maintain an emergency preparedness and response plan (EPRP). While the EPRP could be incorporated into the SRFP, it is highly recommended that the EPRP should be a separate, self-contained document. By having it as a self-contained document, the information contained within is more readily available and easily accessible, and the Ship Recycling Facility may want to distribute copies to several locations at the site. It is also helpful to have a summary page at the front of the document for quick access, showing 24-hour contact information (including telephone numbers) for the appropriate contact personnel (such as management personnel and emergency response personnel).

The SRFP should identify the locations where the EPRP will be readily available, and should contain a brief summary of the EPRP, so that the appropriate entities (such as those that are authorizing facilities) or other relevant stakeholders can easily confirm that it exists. The EPRP should take into consideration a wide variety of potential scenarios, including, but not limited to, human injuries, environmental accidents, extreme acts of nature and the activities of the surrounding community (such as an emergency at a nearby chemical processing plant).

The EPRP should, at a minimum, include the Facility's response to:

- fire or explosion or ingress of water on the ship being recycled or awaiting recycling, within the perimeter of the Facility, or in an adjacent facility;
- accidents to workers within the Facility;
- spillages of Hazardous Materials; and
- probable acts of nature in the area concerned, such as earthquakes or flooding.

The location, physical and environmental characteristics of the Ship Recycling Facility and the size and nature of activities associated with each ship recycling operation should be taken into consideration during preparation of the EPRP. The EPRP should do the following:

- ensure that the necessary equipment – including fire hydrants, extinguishers, first-aid facilities, clean-up equipment, breathing apparatus, alarms and signals and details of training arrangements that are commensurate with the possible

emergency situations likely to occur at the Ship Recycling Facility – and emergency procedures are in place, and that drills are being held on a regular basis;

- provide for the information and internal communication and coordination necessary to protect all people in the event of an emergency at the Ship Recycling Facility;

- provide information to and ensure communication with the relevant Competent Authority(ies) or organization recognized by it, the surrounding community and the emergency response services;

- provide for first-aid and medical assistance, fire-fighting, evacuation of all people from the Ship Recycling Facility (including emergency escape route and muster station) and pollution prevention measures such as the response to spills of Hazardous Materials (including the safe handling of spilled or emitted materials and the procedure for cleaning contaminated areas);

- provide visible indications of location of first aid stations, fire control stations and evacuation routes;

- further ensure the provision of relevant information and training to all workers at the Ship Recycling Facility, at all levels and according to their competence, including regular exercises in emergency prevention, preparedness and response procedures; and

- include procedures for recording of an emergency incident and investigation and corrective actions following an emergency incident.

3.3.6 Fire and explosion prevention, detection and response

The Ship Recycling Facility should have systems in place for preventing fires and explosions and for fire-fighting, by controlling any outbreak of fire quickly and efficiently and by quickly and safely evacuating all personnel at the Facility. The SRFP should provide for the following:

- sufficient and secure storage areas for flammable liquids, solids, and gases;
- procedures for the prohibition of smoking through "no smoking" notices;
- precautions to be implemented in spaces where flammable gases, vapours or dust can cause danger (no naked light or flame or hot work should be permitted unless the space has been tested and deemed safe by a Competent person); and
- procedures for the proper storage of combustible materials, greasy or oily wastes and scrap wood or plastics.

The SRFP should also include procedures for regular inspections of spaces where there are risks of fire and explosion. This includes the vicinity of heating appliances, electrical installations, conductors, stores of flammable and combustible materials and areas where operations involving hot welding, cutting, grinding and heating are conducted. The appropriate precautions to reduce the risk of fire and explosions from welding, flame cutting and other hot work should be identified.

The SRFP should include procedures for the provision and selection of fire-extinguishing equipment according to the provisions of applicable international and national laws and regulations, and should record the results of the initial hazard identification and risk assessment of the Ship Recycling Facility operations. Equipment deployment should take account of the following: any restrictions to access or egress to spaces inside the ship; the quantity and characteristics of hazardous, flammable and explosive substances handled in ship recycling operations; site transport and storage facilities; and first-stage fire-fighting demands (such as hand-held or trolley-mounted portable fire extinguishers).

The SRFP should identify the locations of the fire-extinguishing equipment, ensuring that they are readily available, easily visible and in accessible areas. Adequate water supply should be provided in places where the danger of fire exists (in accordance with national laws and regulations).

The SRFP should include procedures for the provision, proper operation, maintenance and regular inspection of all fire-extinguishing equipment by a Competent person. Access to fire-extinguishing equipment, such as hydrants, portable extinguishers, and connections for hoses, should be kept clear at all times.

The SRFP should describe procedures for providing suitable training, instruction and information to all supervisors and workers (including details of the frequency of such training) about the hazards of fires, appropriate precautions to be taken and use of fire-extinguishing equipment, so that adequately trained personnel are readily available during all working periods. Records of training and drills/exercises should be maintained, including such information as type of training/drill, role of person trained, equipment used, duration, location, date and time.

The SRFP should include procedures for the installation of sufficient, suitable and effective warning signals (such as sight and sound signals) in case of fire. There should be an effective evacuation plan so that all personnel are evacuated speedily and safely. The SRFP should include procedures for posting notices in conspicuous places indicating, if applicable, the nearest fire alarm, the telephone number and address of the nearest emergency services and the nearest first-aid station.

3.4 Environmental compliance approach

The SRFP should provide a description of the Ship Recycling Facility's plan and procedures for protecting the environment. The SRFP should demonstrate that the Ship Recycling Facility understands the environmental risks associated with ship recycling, understands and is implementing the environmental requirements imposed by applicable international and national laws and regulations, is capable of managing and disposing of all the materials in the ship in an environmentally sound manner, and is implementing controls to protect the environment, including with respect to handling and disposing of Hazardous Materials. The SRFP should reflect applicable requirements of the Convention (particularly regulations 20 to 22).

The SRFP should describe dedicated infrastructure for the treatment and disposal of Hazardous Materials generated from ship recycling operations pursuant to national laws and regulations. The Ship Recycling Facility should also take account of guidelines developed by international organizations as appropriate. A reference list of such guidelines is provided in appendix 5.

3.4.1 Environmental monitoring

The SRFP should describe the environmental monitoring programme aimed at preventing possible negative impacts to the environment during ship recycling.

Possible negative impacts during ship recycling may be divided into four main categories:

- releases of Hazardous Materials to ground and sediments;
- releases of Hazardous Materials to water;
- emissions of Hazardous Materials to air; and
- noise/vibrations.

The monitoring programme, if included in the SRFP, should be Facility-specific, taking into account the Facility's characteristics, such as the use of dry dock, jetty/piers and/or recycling plots on land-sea interface, and should identify chemical, biological and physical changes in the environment surrounding the Ship Recycling Facility.

The monitoring programme, if included in the SRFP, should utilize well-established standards for the sampling and analysis of relevant environmental parameters.

3.4.2 Management of Hazardous Materials

Prior to recycling, the IHM shall, in addition to the properly maintained and updated Part I, incorporate Part II for operationally generated wastes and Part III for stores (regulation 5.4).

Ships destined to be recycled shall conduct operations in the period prior to entering the Ship Recycling Facility in a manner that minimizes the amount of cargo residues, fuel oil and wastes remaining on board (regulation 8.2).

The following Hazardous Materials, at the very least, should be addressed in the SRFP:

(a) Hazardous materials contained in the ship's structure and equipment (IHM, Part I):

Asbestos
Polychlorinated biphenyls (PCBs)
Ozone-depleting substances (ODSs)
Anti-fouling compounds and systems
Cadmium and cadmium compounds
Hexavalent chromium and hexavalent chromium compounds
Lead and lead compounds
Mercury and mercury compounds
Polybrominated biphenyls (PBBs)
Polybrominated diphenyl ethers (PBDEs)
Polychlorinated naphthalenes (PCNs)
Radioactive substances
Certain short-chain chlorinated paraffins

(b) Operationally generated wastes (IHM, Part II):

Waste oil (sludge)
Bilge and/or waste water generated by the after-treatment systems fitted on machineries
Oily liquid cargo residues
Ballast water
Raw sewage
Treated sewage
Non-oily liquid cargo residues
Dry cargo residues
Medical/infectious waste
Incinerator ash
Garbage
Fuel tank residues
Oily solid cargo tank residues
Oily or chemical contaminated rags
Dry tank residues
Cargo residues

(c) Stores including regular consumable goods (IHM, Part III). A list of these is shown in appendix 6 to these guidelines.

Regular consumable goods potentially containing Hazardous Materials comprise goods which are not integral to a ship and are unlikely to be dismantled or treated at a Ship Recycling Facility.

The Ship Recycling Facility's approach for properly managing each of the Hazardous Materials found on board a ship should be described in its SRFP.

The SRFP should describe the Ship Recycling Facility's process, control procedures and abatement methodologies used for the removal, labelling, storage, segregation, transport, treatment and disposal of all such Hazardous Materials, which should be developed in accordance with national requirements, as applicable.

It is important to describe the sequence of removal of Hazardous Materials as part of the ship recycling activities.

It is recommended that the following aspects of proper management of Hazardous Materials should be clearly addressed for each of the potentially Hazardous Materials identified above:

- identification, marking and labelling and potential on-board locations;
- recycling approach;
- removal, handling and remediation;
- storage and labelling; and
- treatment, transportation and disposal.

The Facility's approach to the safe and environmentally sound removal and treatment of any non-hazardous wastes on board should be described in the SRFP. The SRFP should describe the Facility's processes, control procedures and capabilities for removing and treating all such non-hazardous wastes, taking into account applicable IMO guidance, including but not limited to the *Comprehensive Manual on Port Reception Facilities*.

3.4.2.1 Potentially containing Hazardous Materials

The prerequisite for classification as "potentially containing Hazardous Materials" (PCHM) is "a comprehensible justification such as the impossibility of conducting sampling without compromising the safety of the ship and its operational efficiency" (paragraph 4.2.3 of the *2011 Guidelines for the Development of the Inventory of Hazardous Materials*, hereafter "the Inventory Guidelines").

The SRFP should describe how PCHMs will be treated; either:

- they will be removed, stored and treated as Hazardous Materials in accordance with the requirements of the Convention; or

- sampling and analysis will be conducted and PCHMs will be treated accordingly, based on the findings of sampling and analysis.

The basis of such a decision on how to treat PCHMs should be transparent and consistent as far as practicable. This information will need to be fully described in the Ship Recycling Plan.

3.4.2.2 Additional sampling and analysis

If, during the recycling process or in preparation for it, the Ship Recycling Facility deems it necessary, sampling, analysis and/or visual inspection should be conducted, possibly with the cooperation of the shipowner, to enable the identification of Hazardous Materials. A sampling plan should be developed describing the sampling locations, number of samples to be taken, the name of the sampler (including subcontractors) and the type of analysis to be performed.

When conducting the sampling of any possible Hazardous Materials, the samplers should be protected from exposure by the worker-safety measures required for the Hazardous Materials in question. Analysis of the samples should be performed by an accredited laboratory.

It is recommended that, in conducting additional sampling, the Ship Recycling Facility should follow the relevant part on sampling and analysis of the Inventory Guidelines.

After the sampling and analysis results are known, the Ship Recycling Facility should manage the materials appropriately according to whether they have been found to be hazardous.

3.4.2.3 Identification, marking and labelling and potential onboard locations

The Ship Recycling Facility should utilize the information in the IHM for the purposes of identifying the type, location and quantity of any Hazardous Materials and for marking and/or labelling. Asbestos, PCBs, other Hazardous Materials and ship tanks – such as crude oil tank (COT), fuel oil tank (FOT), lubricating oil tank (LOT), fresh water tank (FWT) and water ballast tank (WBT) – should be clearly marked in an easily identifiable manner.

It is recommended that the Ship Recycling Facility should ensure that it is fully aware of all the potential locations of Hazardous Materials on board ships. Examples of typical locations for many of the Hazardous Materials are provided in section 2.2 ("Indicative List") of appendix 5 ("Example of the Development Process for Part I of the Inventory for Existing Ships") of the Inventory Guidelines.

3.4.2.4 Removal, handling and remediation

The SRFP should describe how to safely remove, handle and/or clean the Hazardous Materials that have been identified on the ship, taking account of their potential adverse effects on human health and/or the environment.

Removal of Hazardous Materials should only be conducted by appropriately trained personnel following the worker-safety measures required for the Hazardous Materials in question.

Whenever in use, the space where the removal work is occurring should be isolated from other work spaces and should be clearly marked to inform all persons of the hazards in the area.

After the removal of highly toxic, explosive or reactive Hazardous Materials, decontamination or remediation of the space should be performed by trained personnel.

Methods and procedures for the removal, handling and remediation of Hazardous Materials should be established to ensure safe and environmentally sound operations in accordance with the applicable national requirements.

Pursuant to section 2.2 of the Supplement to the Document of Authorization to conduct Ship Recycling (DASR) (appendix 5 of the Convention), the SRFP should indicate the responsible personnel authorized to carry out removal of Hazardous Materials, with the certificate number or other relevant information, for each of the Hazardous Materials identified.

In the normal handling of all hazardous materials due attention should be paid to relevant occupational exposure limits.

3.4.2.5 Storage and labelling after removal

The SRFP should describe how all wastes generated from recycling activity will be kept separate from recyclable materials and equipment, labelled for clear identification and stored in appropriate conditions either temporarily or for a longer term. The SRFP should describe how the Ship Recycling Facility will avoid waste being mixed or contaminated in a way that interferes with subsequent handling, storage, treatment, recycling or disposal.

3.4.2.6 Treatment, transportation and disposal

The SRFP should demonstrate how the Ship Recycling Facility will ensure environmentally sound management of all Hazardous Materials and wastes removed from a ship at the Ship Recycling Facility. If treatment or disposal is taking place at the Ship Recycling Facility, the SRFP should describe how the materials will be managed in an environmentally sound manner and in compliance with applicable national requirements.

In situations where the Hazardous Materials and wastes are sent off site, the SRFP should describe procedures to ensure that they are transferred only to a facility authorized to deal with their safe and environmentally sound treatment and disposal.

The SRFP should identify all off-site management and disposal facilities, describe how the materials will be managed at those facilities and identify all authorizations, permits, certificates, approvals and licences required by national and other agencies authorizing the facilities to manage the wastes. The SRFP should include procedures for tracking Hazardous Materials and wastes as they are transported from the Ship Recycling Facility to their ultimate destination, and for managing and storing documentation, including that of subcontractors.

The final waste-management facilities should adhere to national standards and requirements which should take into account applicable international standards and requirements.

3.4.3 Environmentally sound management of Hazardous Materials

3.4.3.1 Asbestos and materials containing asbestos

The Ship Recycling Facility should identify the location and quantity of asbestos and materials containing asbestos by actively utilizing the IHM. Identification, marking and labelling should be conducted by the Ship Recycling Facility before asbestos and materials containing asbestos are removed.

Indicative lists of shipboard locations for asbestos are provided in the Inventory Guidelines (section 2.2.2.1 of appendix 5), and can be used as supporting material if additional assessment and sampling are required.

In order to safely remove asbestos and materials containing asbestos, the following protective measures should be taken, and the SRFP should describe how they are implemented by the Ship Recycling Facility:

.1 workers should be present who are trained and authorized in the removal of asbestos and materials containing asbestos in accordance with applicable national requirements;

.2 the removal of the asbestos and materials containing asbestos should be conducted under the monitoring and management of the Competent person;

.3 the number of workers exposed to asbestos should be limited to the necessary minimum;

.4 the area in which the removal of asbestos and materials containing asbestos is to be conducted should be isolated from the other work areas, and entry should be allowed only to appropriately trained personnel. The area should be clearly posted with a caution that asbestos removal work is occurring;

.5 if the removal work includes cutting, boring, grinding or otherwise disturbing friable asbestos and materials containing asbestos which may scatter into the environment, appropriate protection should be provided, so as not to release the asbestos in the air, by isolating the area in the room or space where the removal will occur; a common approach is as follows:

- seal the room or space with plastic sheets;
- the plastic sheets should be of sufficient strength;

- where the machines, equipment, pipes or spaces cannot be isolated or sealed (for example, a complex and narrow area under a floor plate in the engine room), partial protection may be provided with plastic sheets;

- the isolated area should be maintained under negative pressure where possible; and

- practices for dealing with materials containing asbestos under a partial pressure chamber system and the use of wet methods should be encouraged as far as possible;

.6 materials containing friable asbestos in areas such as walls and ceilings should be carefully removed, and water or an appropriate wetting agent should be applied prior to the removal of materials containing asbestos in order to prevent the asbestos from scattering into the atmosphere;

.7 personal protection equipment (PPE) for workers, including respiratory protection and special protective clothing for asbestos, should be provided;

.8 after removal of asbestos, the area should be cleaned in the following manner:

- equipment and tools should be washed/cleaned and then removed from the area;

- the asbestos and materials containing asbestos should be packed and sealed in plastic containers prior to being removed from the area;

- the plastic sheets used for isolating the area should be moistened with water and handled carefully to prevent the asbestos from scattering;

- an efficient vacuum cleaner should be used for cleaning the area, such as one equipped with a high efficiency particulate air (HEPA) filter; and

- the airborne asbestos in the air and/or space should be checked before removing the plastic isolation sheets and allowing other work to continue in the area;

.9 workers removing asbestos should properly prepare for entry into a contaminated area, and should be decontaminated before leaving the contaminated area, as follows:

- workers should not be allowed to wear street clothes in the isolated area or under their PPE;

- after completing work in the isolated area, workers should shower to remove asbestos, and then enter a separate clean area to put on their clothes; and

- work clothes should not be laundered at home; they should be bagged, labelled and laundered at an appropriate location at the Facility or off site;

.10 containers used for packing and transporting the removed asbestos materials should be properly labelled and sufficiently strong and resilient as to minimize the possibility of accidental damage or breakage during transport, which could result in the uncontained release of asbestos fibres into the atmosphere; and

.11 asbestos should not be reused or recycled, and its management and final disposal should comply with national requirements.

3.4.3.2 PCBs and materials containing PCBs

The Ship Recycling Facility should identify the location and quantity of the Hazardous Materials and wastes containing PCBs (polychlorinated biphenyls) by actively utilizing the IHM.

Indicative lists of shipboard locations for PCBs are provided in the Inventory Guidelines (section 2.2.2.2 of appendix 5), and can be used as supporting material if additional assessment and sampling are required. PCBs may be contained in the equipment and materials in both solid and liquid forms as shown on the IHM. Since PCB sampling and analytical procedures can be expensive and time consuming, it may be more economical to presume that the materials do contain PCBs and remove and manage them accordingly.

In order to safely remove PCBs and materials containing PCBs, the following protective measures should be taken and the SRFP should describe how they are implemented by the Ship Recycling Facility:

.1 workers should be specifically trained and authorized in the removal of PCBs;

.2 personal protection equipment (PPE) for workers, including respiratory protection and dermal protection, should be provided;

.3 removal of Hazardous Materials and wastes containing PCBs should be carefully performed to avoid spills, volatilization or scattering, in the following manner:

- spill prevention measures should be taken when draining or removing liquid-filled equipment, including booms, drip pans, liners and/or absorbent materials placed around the system or piece of equipment; and

- most solid materials containing PCBs can be removed by using manual, chemical or mechanical means such as blasting, scraping, cutting, stripping or gouging;

.4 thermal or "hot" methods of removal or recycling should not be used if the presence of PCB is known or suspected (for example, electric cable insulation, hydraulic oil, transformer oil and paints containing PCBs should not be burned);

.5 equipment used to remove PCB-containing materials should be decontaminated appropriately after use (a common decontamination process for equipment would be to rinse with non-polar organic solvent such as kerosene or diesel, then wash with soap and water and rinse with clean water); any water or other liquid used should be appropriately managed as waste;

.6 removed PCBs and materials containing PCBs should be appropriately stored in properly labelled, leak-proof containers that are made for transport and are sealed (liquids) or covered (solids);

.7 a separate storage area should be set up for PCB wastes, in accordance with the following points:

- Hazardous Materials and wastes containing PCBs should not be stored or kept with other Hazardous Materials and wastes;
- the storage area should be clearly marked on the exterior with warnings that it contains PCBs;
- the storage area should provide protection from rain; and
- containers should be regularly inspected for leaks and damage;

.8 containers or vehicles used for packing and transporting the removed PCB materials should be properly labelled and the possibility of accidental release during transport should be minimized; and

.9 PCBs should not be reused or recycled and their management and final disposal should comply with national requirements.

3.4.3.3 Ozone-depleting substances (ODSs)

The Ship Recycling Facility should identify the location and quantity of ozone-depleting substances (ODSs) prior to removal by actively utilizing the IHM.

The indicative list for ODSs in the Inventory Guidelines (section 2.2.2.3 of appendix 5) can be used as the supporting material if an additional survey and sampling are required.

The SRFP should describe how the Ship Recycling Facility implements the following protective measures to safely remove and manage ODSs:

.1 extraction of ODSs from the system should be done by persons who are trained and authorized for handling such materials;

.2 ODSs on board in containers, equipment and piping systems should not be released into the atmosphere;

.3 management or destruction of ODSs should comply with national requirements; and

.4 ODSs used as blowing agents and trapped in insulation foam in refrigerated areas should not be released into the atmosphere and environmentally sound management should be observed while dismantling and disposing of the foam waste.

3.4.3.4 Paints and coatings

The SRFP should describe procedures for properly managing any paints and coatings that are highly flammable or that may release toxins during cutting.

3.4.3.4.1 Anti-fouling compounds and systems (organotin compounds including tributyltin (TBT))

The Convention applies to all anti-fouling compounds and systems regulated under annex 1 of the International Convention on the Control of Harmful Anti-Fouling Systems on Ships (hereafter "the Anti-Fouling Convention"). Since the only systems currently regulated by the Anti-Fouling Convention are organotin compounds, these guidelines address the proper management of organotins only. However, similar considerations should be applied to future anti-fouling compounds that become subject to the Anti-Fouling Convention.

Organotin compounds include tributyltin (TBT), triphenyltin (TPT) and tributyltin oxide (TBTO). Organotin compounds have been commonly used as anti-fouling paint on the bottom of ships. Some ships applied the organotin compounds with a coating forming a barrier to stop such compounds from leaching into sea. Therefore, the Ship Recycling Facility should check the IHM carefully, and might inspect the hull paint.

Organotin paint should not be released into the sea or soil during the ship recycling process. If it is possible that organotin paint might be removed as a result of work (whether it is intentionally removed, or the collateral effect of some other effort, such as dragging), the work should be conducted in an environmentally sound manner to ensure that any organotin paint removed is not released into the sea.

Organotin paint may be removed using techniques such as blasting, chemical stripping or mechanical removal. However, special attention should be given to preventing scattering of the paint chips in the air or adjacent areas.

Blasted paints should be collected, stored and disposed of in an environmentally sound manner in accordance with national requirements.

3.4.3.4.2 Toxic and highly flammable paints

The removal of paints prior to cutting during ship recycling may not be necessary unless the process leads to the release of toxic compounds or the paint is highly flammable. Prior to cutting painted surfaces, the Ship Recycling Facility should check the flammability and toxicity of the paint or coating. If it is toxic or flammable, it is suggested that, prior to hot cutting, a sufficiently wide band of paint is mechanically or chemically removed (for example, through blasting, scraping or stripping) from along the cut line. Appropriate PPE should be worn, and a containment system for paint particles should be used (especially for blasting operations).

If removal is not possible or feasible, cutting can proceed in a controlled manner provided that the workers are well protected with PPEs specifically designed for breathing and eye protection.

3.4.3.5 Hazardous liquids, residues and sediments (such as oils, bilge and ballast water)

The Ship Recycling Facility should identify the location and volume of hazardous liquids remaining on board by actively utilizing the IHM. Identification, marking and labelling of the

tanks and other areas should be conducted by the Ship Recycling Facility before the liquids are removed.

The residual oil storage tank should be protected against leakage, overflow, fire and other potential accidents.

Hazardous liquids, residues and sediments in stores, tanks, machines, equipment and piping should be removed under safe and environmentally sound conditions.

Ballast water should be handled in accordance with relevant national requirements.

3.4.3.6 Heavy metals (lead, mercury, cadmium and hexavalent chromium)

As indicated in the Inventory Guidelines, heavy metals are found in batteries, galvanized materials, level switches, gyro compasses, thermometers, coatings, etc. Radioactive substances may be found in level indicators and smoke detectors.

Equipment and other instruments containing heavy metals should be removed carefully to ensure that they do not break and to avoid contamination of the environment. Reusable equipment and instruments should be stored properly. Broken equipment and instruments should be delivered to the appropriate companies for repair, recycling or disposal in accordance with national requirements.

Anodes fitted to the ship's hull as sacrificial metal should be removed in the course of block cutting and should be managed properly.

3.4.3.7 Other Hazardous Materials

Other Hazardous Materials not listed above and which are not part of the ship's structure – those materials listed in the IHM, Parts II and III – should be removed under safe conditions.

To the maximum extent possible, these materials should be removed prior to cutting according to the provisions of national laws and regulations. After the materials have been removed from ships, safe and environmentally sound methods should be used for storing and processing them; for example, electric cable insulation containing chlorinated compounds should not be burned.

3.4.4 Prevention of adverse effects to the environment

3.4.4.1 Spill prevention, control and countermeasures

The purpose of developing and implementing a programme for spill prevention, control and countermeasures is to minimize the risk of spills and leaks that could adversely impact the environment. The SRFP should include a programme that defines the Ship Recycling Facility's procedures for spill prevention, response and countermeasures. The programme should define proactive approaches to spill prevention and procedures to be implemented in the event of spills.

At a minimum, the programme should demonstrate that the Ship Recycling Facility has adequate containment and spill clean-up equipment and procedures, by identifying the following:

- containment and diversionary structures in place to prevent discharged Hazardous Materials from contaminating soil and water;
- Facility drainage areas;
- location of spill response equipment;
- environmental protection measures to be implemented during transfer and offloading of fuels;
- location of other oils and bilges;
- fuel storage locations;
- inspection and record-keeping procedures;
- security measures;
- personnel training programmes;
- spill prevention and reporting procedures; and
- the history of incidents at the Ship Recycling Facility.

As part of the procedures for spill prevention, response and countermeasures, the SRFP should identify the designated in-house and subcontracted personnel who will be responsible for managing the programme and for responding to spills or similar emergencies, as well as the local authorities (such as the fire department) that may have jurisdiction at the Ship Recycling Facility. This SRFP should include 24-hour contact information. The SRFP should include both a narrative and graphic description of the Facility layout, including the location of any water bodies or other routes of migration, the storage location of oil or other Hazardous Materials, procedures for fuel transfer from ship to shore, procedures to be implemented in the event of a spill and the types and locations of emergency-response equipment (such as absorbent materials, personal protective equipment and first-aid equipment).

By identifying the potential sources of spills or leaks, the Ship Recycling Facility can then identify proactive measures to be implemented in order to minimize the risk associated with Facility activities. It is helpful for the Ship Recycling Facility to review the potential sources for spills and leaks and to determine the types of failures associated with them in order to determine the most appropriate and effective prevention measures. For example, drums should not be left open unless being filled, should be within a secondary containment or beamed structure and should not be exposed to rainfall that could corrode them over time.

The programme for spill prevention, control and countermeasures can be used as a tool by the Ship Recycling Facility to communicate practices on preventing and responding to spills and leaks, as a resource during emergency response and as a repository for information on storage, inspection and testing. It is important to maintain records on maintenance, inspections and employee training. Periodic review of the programme for spill prevention, control and countermeasures is also an effective tool for determining which procedures are fulfilling their intended function and for identifying weaknesses in the programme.

3.4.4.2 Storm-water pollution prevention

Storm-water run-off from industrial facilities has the potential to adversely affect the environment. Improper storage and handling of Hazardous Materials and wastes could increase the risk of environmental degradation through contact with water. The SRFP should include a programme that defines measures to be implemented and maintained to minimize the potential for storm-water contamination at the Ship Recycling Facility.

A programme for the prevention of storm-water pollution should include the identification of all potential pollutant sources at the Ship Recycling Facility that could come into contact with storm water, with the nearby receiving waters and with storm water-conveyance systems. A site map should be developed that depicts such information.

Following compilation of the relevant site information, an assessment should be conducted in order to determine the appropriate control measures. Control measures should be implemented to reduce the threat of storm-water pollution, to control erosion and sediment and to protect nearby natural resources. Control measures can include best management practices, maintenance and inspection programmes, employee training and reporting.

As an example, a potential pollutant source at a Ship Recycling Facility is the storage of drums, tanks or other containers for the offloading of fuel from a ship. The activity of transferring and storing the fuel includes multiple potential pollutant sources, such as spills and leaks during transfer to the water or the ground, leaking drums or containers or run-off from the drum storage area. Control measures to minimize the risk to the environment from storm-water contamination could include storing drums and other containers under semi-permanent or permanent coverings, controlling spills or run-off from drum storage areas with appropriately sized secondary containment, conducting routine inspections of drum storage areas and establishing appropriate clean-up procedures in the event of spills or leaks.

The development of preventive measures is the most effective way to minimize the discharge of pollutants via storm water. It is important to maintain records on maintenance, inspections and employee training. Periodic review of the storm-water management programme is also an effective tool for determining which best management practices are fulfilling their intended function and for identifying weaknesses in the programme.

3.4.4.3 Debris prevention and control

The introduction of debris into the marine environment by ship recycling activities has the potential to adversely affect the environment. The SRFP should include a programme that defines measures to be implemented and maintained to minimize the potential for debris deposition into the water, including the maintenance of areas from which debris might be transported into the marine environment by wind, storm drains, tides or run-off. Control measures should be implemented to reduce the likelihood of debris deposition.

3.4.4.4 Incident and spills reporting procedures

The SRFP should describe the procedures for reporting incidents and spills, including at a minimum the following information:

- how duties and responsibilities are assigned to the Ship Recycling Facility's responsible team, department or persons and their reporting responsibilities in the event of an incident;

- how the reporting procedures relate to the emergency preparedness and response plan (EPRP);
- communication link to the local community for any necessary assistance; and
- procedures for providing information to the public and for carrying out post-incident surveys and releasing post-incident reports.

APPENDIX 1

RECOMMENDED FORMAT OF THE SHIP RECYCLING FACILITY PLAN

SHIP RECYCLING FACILITY PLAN

1 Facility management

1.1 Company information
1.2 Training programme
1.3 Worker management
1.4 Records management

2 Facility operation

2.1 Facility information
2.2 Permits, licences and certification
2.3 Acceptability of ships
2.4 Ship Recycling Plan (SRP) development
2.5 Vessel arrival management
2.6 Ship recycling methodology
2.7 Reporting upon completion

3 Worker safety and health compliance approach

3.1 Worker health and safety
3.2 Key safety and health personnel
3.3 Job hazard assessment
3.4 Prevention of adverse effects to human health
- 3.4.1 Safe-for-entry procedures
  - 3.4.1.1 Safe-for-entry criteria
  - 3.4.1.2 Competent person for Safe-for-entry determination
  - 3.4.1.3 Safe-for-entry inspection and testing procedures
  - 3.4.1.4 Oxygen
  - 3.4.1.5 Flammable atmospheres
  - 3.4.1.6 Toxic, corrosive, irritant or fumigated atmospheres and residues
  - 3.4.1.7 Safe-for-entry determination by a Competent person
  - 3.4.1.8 Safe-for-entry certificate, warning signs and labels
  - 3.4.1.9 Safe-for-entry operational measures
- 3.4.2 Safe-for-hot-work procedures
  - 3.4.2.1 Safe-for-hot-work criteria
  - 3.4.2.2 Competent person for Safe-for-hot-work determination
  - 3.4.2.3 Safe-for-hot-work inspection, testing and determination
  - 3.4.2.4 Safe-for-hot-work certificate, warning signs and labels
  - 3.4.2.5 Safe-for-hot-work operational measures
- 3.4.3 Welding, cutting, grinding and heating
- 3.4.4 Drums, containers and pressure vessels
- 3.4.5 Prevention of falling from heights and accidents caused by falling objects
- 3.4.6 Gear and equipment for rigging and materials handling
- 3.4.7 Housekeeping and illumination

3.4.8 Maintenance and decontamination of tools and equipment
3.4.9 Health and sanitation
3.4.10 Personal protective equipment
3.4.11 Worker exposure and medical monitoring
3.5 Emergency preparedness and response plan
3.6 Fire and explosion prevention, detection and response

4 Environmental compliance approach

4.1 Environmental monitoring
4.2 Management of Hazardous Materials
4.2.1 Potentially containing Hazardous Materials
4.2.2 Additional sampling and analysis
4.2.3 Identification, marking and labelling and potential on-board locations
4.2.4 Removal, handling and remediation
4.2.5 Storage and labelling after removal
4.2.6 Treatment, transportation and disposal
4.3 Environmentally sound management of Hazardous Materials
4.3.1 Asbestos and materials containing asbestors
4.3.2 PCBs and materials containing PCBs
4.3.3 Ozone-depleting substances (ODSs)
4.3.4 Paints and coatings
4.3.4.1 Anti-fouling compounds and systems (organotin compounds including tributyltin (TBT))
4.3.4.2 Toxic and highly flammable paints
4.3.5 Hazardous liquids, residues and sediments (such as oils, bilge, and ballast water)
4.3.6 Heavy metals (lead, mercury, cadmium and hexavalent chromium)
4.3.7 Other Hazardous Materials
4.4 Prevention of adverse effects to the environment
4.4.1 Spill prevention, control and countermeasures
4.4.2 Storm-water pollution prevention
4.4.3 Debris prevention and control
4.4.4 Incident and spills reporting procedures

Plan Attachments

Facility Map
Organizational Flow Chart
Permits, Licences and Certification
Resumes

APPENDIX 2

EXAMPLE FORMAT OF FACILITY INFORMATION IN SRFP

(relating to sections 3.2.1 (Facility information) and 3.2.2 (Permits, licences and certification))

Facility name and contact information			
Facility name			
Registered address			
Facility address			
Representative and communication address			
Number of employees			
Tel. No.		Fax No.	
E-mail address		URL	
Working language			

Capacity of Facility	
Maximum capacity of ship to be recycled	DWT GT LDT Length Breadth Width Depth
Types of ship to be accepted Annual recycling capacity (in LDT)	

Waste management capacity	
Asbestos	removal storage process
Ozone-depleting substances	removal storage process
Polychlorinated biphenyls (PCB)	removal storage process
Anti-fouling compounds and system	removal storage process

Cadmium and Cadmium Compounds	removal storage process
Hexavalent Chromium and Hexavalent Chromium Compounds	removal storage process
Lead and Lead Compounds	removal storage process
Mercury and Mercury Compounds	removal storage treatment process
Polybrominated Biphenyl (PBBs)	removal storage treatment process
Polybrominated Diphenyl Ethers (PBDEs)	removal storage treatment process
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	removal storage treatment process
Radioactive substances	removal storage treatment process
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)	removal storage treatment process
Hazardous liquids, residues and sediments	removal storage treatment process
Paints and coatings that are highly flammable and/or lead to toxic release	removal storage treatment process
Other Hazardous Materials not listed above and that are not a part of the ship structure (specify)	removal storage treatment process

Facility equipment and other information			
Area of Facility (m^2)*		Area of pavement (m^2)	
Description of ship recycling facility (layout, waterdepth, accessibility, etc.)			

Heavy lifting machines	e.g. Jib crane: 60 tons
	Mobile crane: 35 tons×1, 27 tons×1
	Hydraulic backhoe: SH400, ZX330, SK220, ZX200 With Shear, Magnet
	Hydraulic shear: 600 tons×1
	Weight bridge: 50 tons
Boat	e.g. Gross tonnage: 5 tons, Power: 240 PS
Shear	e.g. Capacity: 600 tons
O_2 supply	e.g. Liquid O_2 supply system: 10 m^3
Gas supply	e.g. LPG bottles
Compressed air	
Fire extinguisher	e.g. Portable fire extinguisher
Waste oil treatment	e.g. Oil water separation tank Tank capacity: abt. 20 tons
Wastes storage	e.g. Container for asbestos: 2
Incinerator	e.g. none
Electric power supply	e.g. Substation

Location	
Division and classification of the location	e.g. urbanization control area
Peripheral environment	e.g. factories: former quarry, two marinas in the vicinity
	Housing: private houses at the entrance and 200 m from entrance

Facility certificate and licence (if applicable specify: certifying authority; date of expiry; number of certificate; etc.)[2]	

Workers' certificates/licences	
Certificate/licence	Name
1) Manager of asbestos handling	Mr. Yxxxx ****** 1 person
2) Manager of PCB handling	Mr. Yxxxx ****** 1 person
3) Designated chemicals handling	None
4) Asbestos handling class	Mr. ***** *****
	Mr. ***** *****
	Mr. ***** ***** 3 persons
5) Gas cutting	Mr. ***** *****
	Mr. ***** *****
	Mr. ***** ***** 3 persons
6) Welding	Mr. ***** ***** 1 person

[2] List here any applicable certificates, for example relevant to waste treatment, waste transportation, or other, such as certificates relevant to management systems of environmental performance, and/or occupational health and safety.

7) Zinc handling	Mr. ***** ***** 1 person
8) Lifting	Mr. ***** *****
	Mr. ***** *****
	Mr. ***** ***** 3 persons
9) Heavy lift machines	Mr. ***** *****
	Mr. ***** ***** 2 persons
10) Seafarer	Mr. ***** ***** 1 person
11) Diver	None
12) Removal of Hazardous Materials (Material A)	Mr. ***** ***** 2 persons
(Material B)	Mr. ***** ***** 2 persons

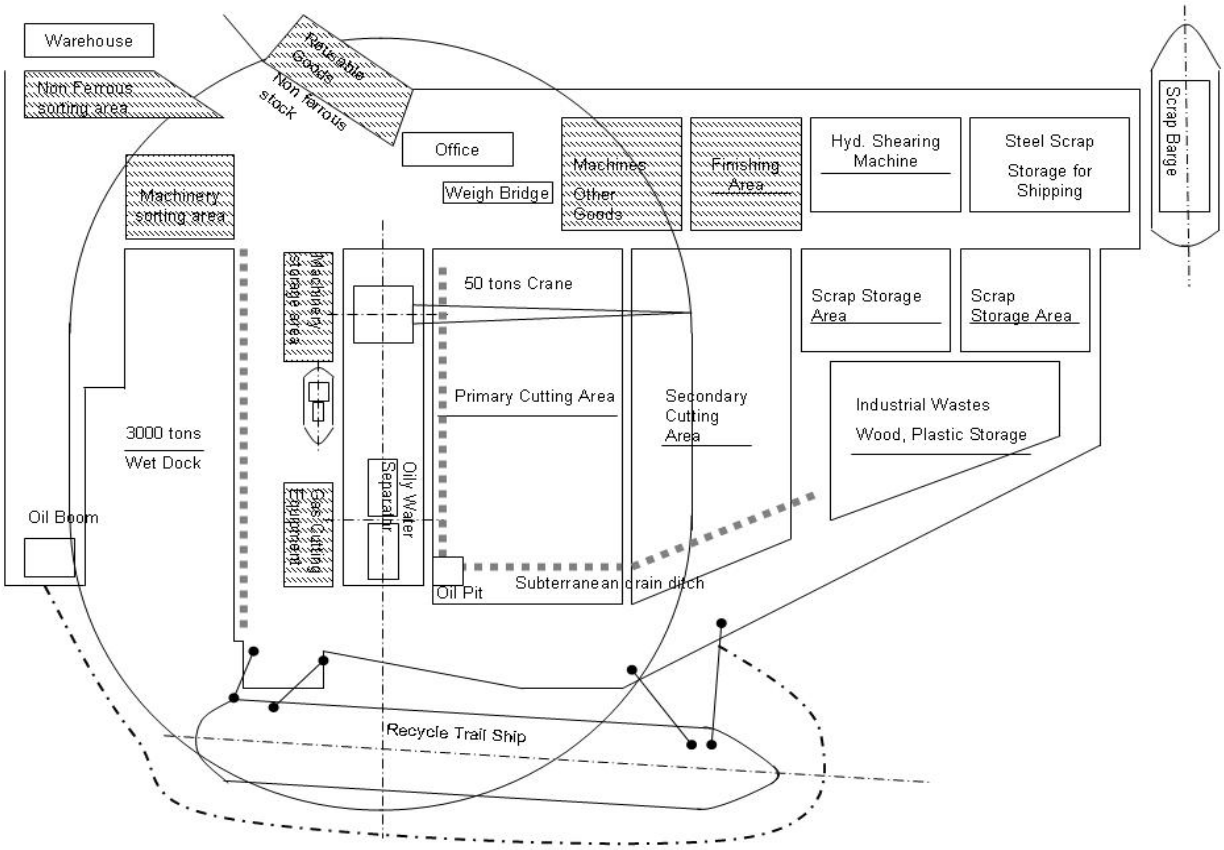
Subcontractor information[3]			
Subcontractor name			
Registered address			
Representative and communication address			
Field of services			
Licences for services			
Number of employees			
Tel. No.		Fax No.	
E-mail address		URL	

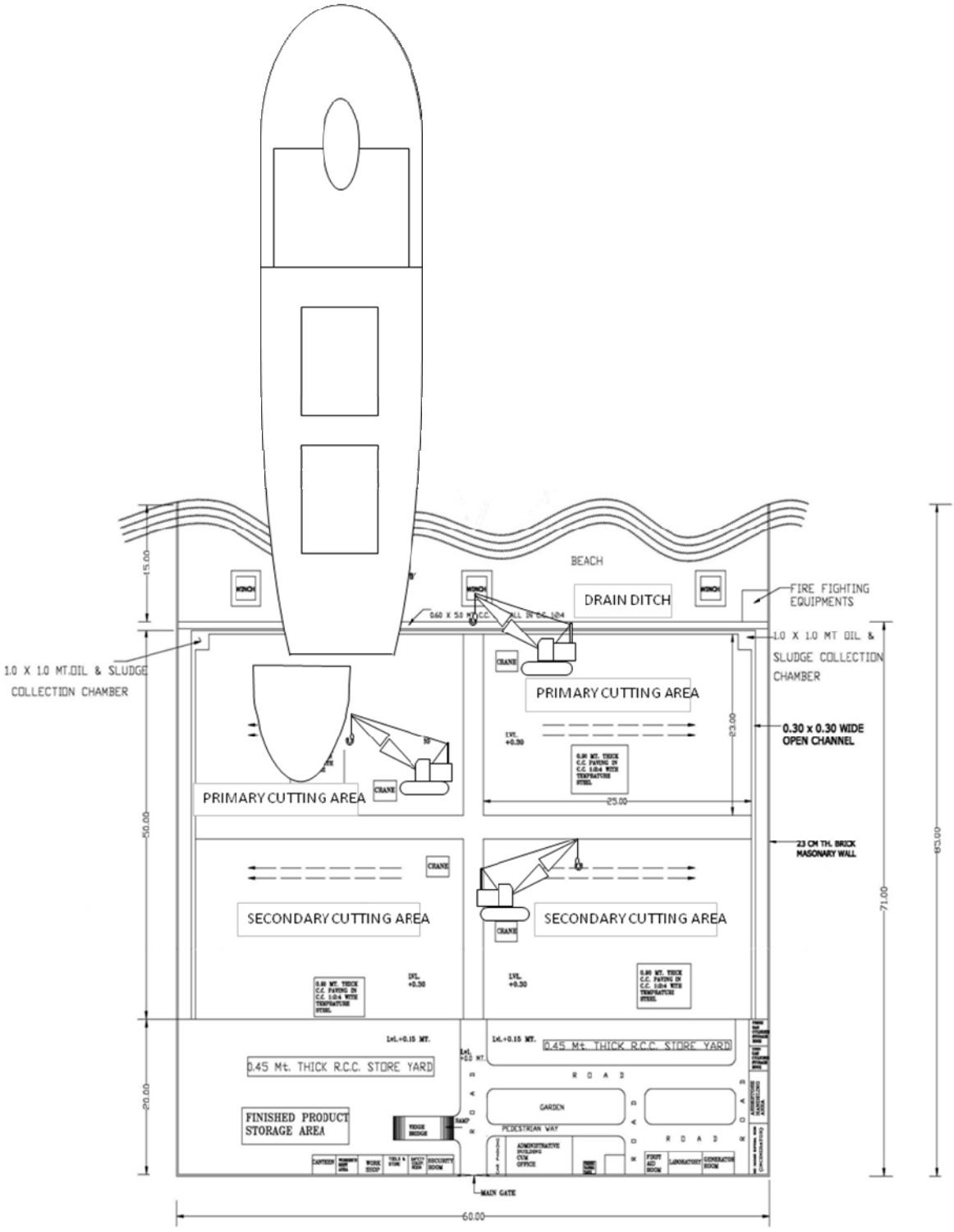
[3] Supply all pertinent information relevant to the services of the subcontractor to the ship recycling facility.

Location Map

Yard plan (examples)

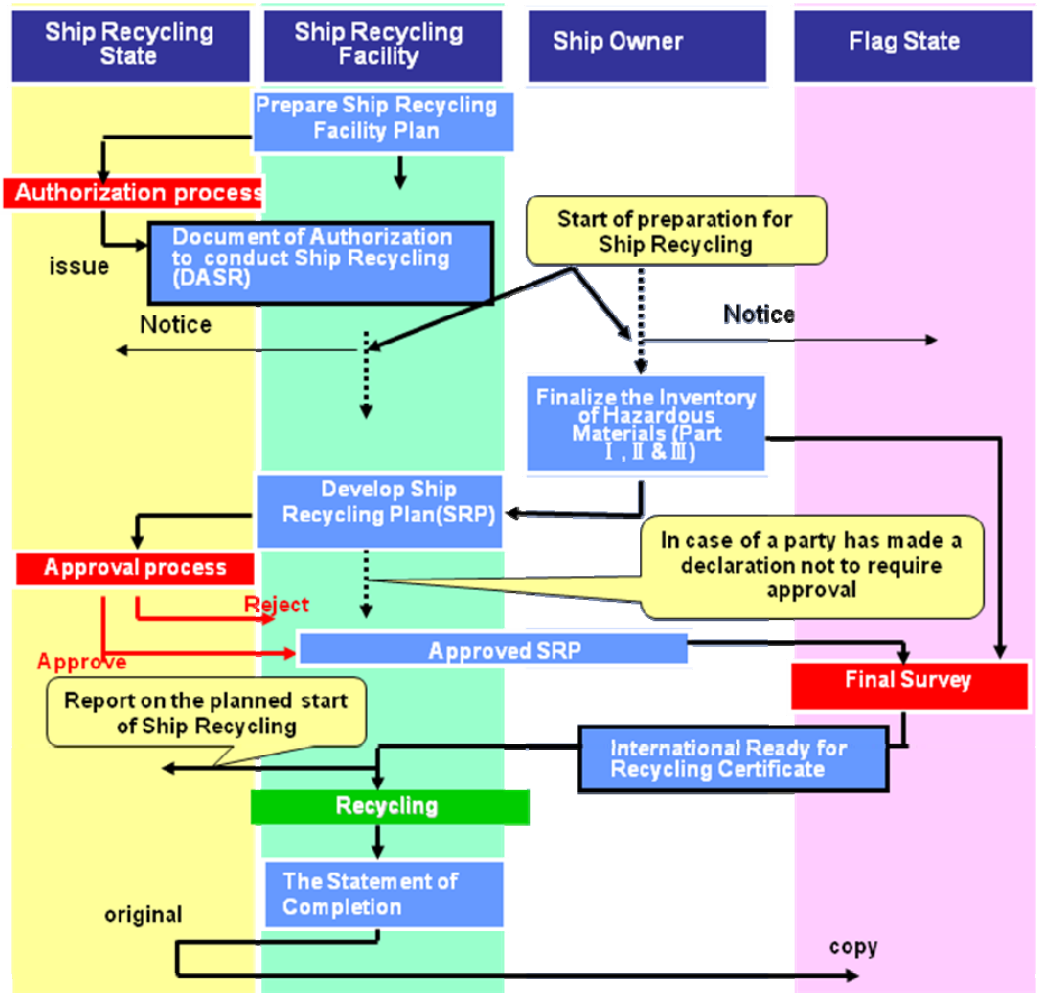
Yard plan should be included in Facility information.




BEACH
DRAIN DITCH
FIRE FIGHTING EQUIPMENTS
1.0 X 1.0 MT.OIL & SLUDGE COLLECTION CHAMBER
1.0 X 1.0 MT OIL & SLUDGE COLLECTION CHAMBER
PRIMARY CUTTING AREA
PRIMARY CUTTING AREA
0.30 x 0.30 WIDE OPEN CHANNEL
23 CM TH. BRICK MASONARY WALL
SECONDARY CUTTING AREA
SECONDARY CUTTING AREA
0.45 Mt. THICK R.C.C. STORE YARD
0.45 Mt. THICK R.C.C. STORE YARD
FINISHED PRODUCT STORAGE AREA
GARDEN
PEDESTRIAN WAY
ROAD
ROAD
MAIN GATE
60.00
71.00
83.00
50.00
20.00
15.00
25.00
23.00

APPENDIX 3

SHIP RECYCLING PROCESS FROM PREPARATION TO COMPLETION



Responsibility of Stakeholders			
Regulation 16 -Authorize the Ship Recycling Facilities Regulation 9 -Approve SRP Regulation 25 -Send a copy of the Statement to the flag State	Regulation 18 -Prepare an SRFP Regulation 9 -Develop a ship-specific SRP Regulation 24 -Notify its Competent Authority of the intent -Report to its Competent Authority the planned start of Ship Recycling Regulation 25 - Issue a statement of Completion and report to its Competent Authority	Regulation 5 -Have on board an Inventory of Hazardous Materials -Finalize Inventory of Hazardous Materials including Parts Ⅱ & Ⅲ Regulation 8 -Provide the information with the SRF	Regulation 10 -Verify Inventory of Hazardous Materials, SRP and DASR

APPENDIX 4

RELEVANT INSTRUMENTS OF THE INTERNATIONAL LABOUR ORGANIZATION (ILO)

Fundamental ILO Conventions

Worst Forms of Child Labour Convention, 1999 (No. 182)
Minimum Age Convention, 1973 (No. 138)
Discrimination (Employment and Occupation) Convention, 1958 (No. 111)
Abolition of Forced Labour Convention, 1957 (No. 105)
Equal Remuneration Convention, 1951 (No. 100)
Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
Forced Labour Convention, 1930 (No. 29)

Conventions on occupational safety and health and working conditions

Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)
Prevention of Major Industrial Accidents Convention, 1993 (No. 174)
Night Work Convention, 1990 (No. 171)
Chemicals Convention, 1990 (No. 170)
Asbestos Convention, 1986 (No. 162)
Occupational Health Services Convention, 1985 (No. 161)
Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155)
Occupational Safety and Health Convention, 1981 (No. 155)
Collective Bargaining Convention, 1981 (No. 154)
Occupational Safety and Health (Dock Work) Convention, 1979 (No. 152)
Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)
Occupational Cancer Convention, 1974 (No. 139)
Benzene Convention, 1971 (No. 136)
Workers' Representatives Convention, 1971 (No. 135)
Maximum Weight Convention, 1967 (No. 127)
Employment Injury Benefits Convention, 1964 (No. 121)
Guarding of Machinery Convention, 1963 (No. 119)
Radiation Protection Convention, 1960 (No. 115)

ILO codes of practice

Safety and health in ports, 2005. ISBN 92-2-115287-1.
Contents overview: management of safety and health; safe systems of work; port infrastructure, plant and equipment; lifting appliances and loose gear; safe use of lifting appliances and loose gear; operations afloat; health; personal welfare facilities; emergency arrangements; testing of lifting appliances and loose gear.

Safety and health in shipbreaking: Guidelines for Asian countries and Turkey, 2004. ISBN 92-2-115289-8 (print version), ISBN 92-2-115671-0 (web version).
Contents overview: general responsibilities, duties and rights, and framework; Occupational safety and health management; occupational health services; operational planning; preventive and protective measures; management of hazardous substances; measures against physical, biological, ergonomic and psychosocial hazards; safety requirements for tools, machines and equipment; competence and training; personal protective equipment and protective clothing; contingency and emergency preparedness; special protection; welfare.

Safety and health in the non-ferrous metal industries, 2003. ISBN 92-2-111640-9.
Contents overview: general principles of prevention and protection; prevention and protection specific to non-ferrous metals production processes; recycling non-ferrous metals; occupational exposure limits for hazardous substances, electric and magnetic fields, optical radiation, heat noise and vibration.

Ambient factors in the workplace, 2001. ISBN 92-2-111628-X
Contents overview: general obligations, responsibilities, duties and rights; general principles of prevention and control; hazardous substances; ionising radiation; electric and magnetic fields; optical radiation; heat and cold; noise; vibration; occupational exposure limits.

Management of alcohol- and drug-related issues in the workplace, 1996. ISBN 92-2-109455-3.
Contents overview: development of an alcohol and drug policy for the work place; measures to reduce alcohol- and drug-related problems through good employment practices; restrictions on alcohol, legal and illegal drugs in the workplace; prevention through information, education and training programmes.

Accident prevention on board ship at sea and in port, 1996. ISBN 92-2-109450-2
Contents overview: shipboard emergencies and emergency equipment; safe access to ship; safe movement about the ship; entering and working in enclosed or confined spaces; manual lifting and carrying; tools and materials; welding, flame-cutting and other hot work; working aloft and over side; working with dangerous and irritating substances and radiations; upkeep of wire and fibre ropes; working in machinery spaces.

Recording and notification of occupational accidents and diseases, 1996. ISBN 92-2-109451-0.
Contents overview: recording, notification and investigation of occupational accidents, occupational diseases and dangerous occurrences, and related statistics.

Safety in the use of chemicals at work, 1993. ISBN 92-2-108006-4.
Contents overview: classification systems; labelling and marking; chemical safety data sheets; operational control measures; work systems and practices; personal protection; monitoring in the workplace; medical and health surveillance; investigation and reporting of accidents, occupational diseases and other incidents.

Safety, health and working conditions in the transfer of technology to developing countries, 1988. ISBN 92-2-106122-1
Contents overview: appendix A: Occupational safety and health check-list for hazard control in the design and operation of a plant or process.

Safety in the use of asbestos, 1984. ISBN 92-2-103872-6.
Contents overview: exposure limits; monitoring in the workplace; general preventive methods; personal protection; cleaning of premises and plant; packaging, transport and storage; disposal of asbestos waste; supervision of the health of workers; handling of asbestos fibre in ports and container terminals; construction, demolition and alteration work; exposure limits in various countries.

Occupational safety and health in the iron and steel industry, 1983. ISBN 92-2-103471-2
Contents overview: basic requirements for work stations, workplaces, traffic lanes and installations; maintenance, repair and demolition; electricity, tools, machine guarding and gas systems; transport and handling; substances and agents harmful to health; working clothes and personal protective equipment; medical services and supervision, safety and health organization, hygiene and welfare.

Safety and health in shipbuilding and ship repair, 1974. ISBN 92-2-101199-2.
Contents overview: workplaces, their approaches and equipment; scaffolding and staging; ladders, stairs, gangways and ramps; lifting appliances; ropes chains and accessories; hand tools, portable power-driven tools; work with dangerous and irritating substances and radiations; welding, flame cutting and other hot work; work in confined spaces and dangerous atmospheres; transport of workers by water; working clothes and personal protective equipment; medical services and supervision, safety and health organization, hygiene and welfare.

Other guidelines

Guidelines on occupational safety and health management systems, ILO-OSH 2001. ISBN 92-2-111634-4.
Contents overview: the occupational safety and health management system in the organisation; policy; organizing; planning and implementation; evaluation; action for improvement.

APPENDIX 5

RELEVANT INSTRUMENTS AND REFERENCE MATERIALS OF THE UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP) AND OTHERS

Instruments

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989

Stockholm Convention on Persistent Organic Pollutants (POPs), 2001

Montreal Protocol on Substances that Deplete the Ozone Layer, 1987

Reference Materials[4]

Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships
http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/techgships-e.pdf

Training Resource Pack for Hazardous Waste Management in Developing Countries
http://www.basel.int/pub/pub.html

Updated General Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Persistent Organic Pollutants (POPs)
http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tg-POPs.pdf

Updated Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Polychlorinated Biphenyls (PCBs), Polychlorinated Terphenyls (PCTs) or Polybrominated Biphenyls (PBBs)
http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tg-PCBs.pdf

Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury
http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx

Basel Convention Technical Guidelines on Waste Oils from Petroleum Origins and Sources
http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-y8.pdf

Technical Guidelines for the Environmentally Sound Management of Waste Lead-acid Batteries
http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tech-wasteacid.pdf

Basel Convention Technical Guidelines on Used Oil Re-refining or Other Re-uses of Previously Used Oil
http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-r9.pdf

[4] A full set of the Basel Convention Technical Guidelines can be accessed at: http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx.

Technical Guidelines on the Environmentally Sound Recycling/Reclamation of Metals and Metal Compounds
http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/r4-e.pdf

Technical Guidelines on the Environmentally Sound Management of Biomedical and Healthcare Wastes
http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/techguid/tech-biomedical.pdf

Basel Convention Technical Guidelines on Specially Engineered Landfill
http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d5.pdf

Basel Convention Technical Guidelines on Incineration on Land
http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d10.pdf

Basel Convention Technical Guidelines on Hazardous Waste – Physico-Chemical Treatment — Biological Treatment
http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/old%20docs/tech-d8d9.pdf

United Nations Recommendations on the Transport of Dangerous Goods
http://www.unece.org/trans/danger/publi/unrec/English/Recommend.pdf

United Nations Globally Harmonized System for the Classification and Labelling of Chemicals (GHS)
http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html

APPENDIX 6

MATERIALS FOUND ON BOARD SHIPS THAT THE SHIP RECYCLING FACILITY SHOULD BE PREPARED TO HANDLE (INCLUDED IN PART III OF THE INVENTORY OF HAZARDOUS MATERIALS)

Kerosene
White spirit
Lubricating oil
Hydraulic oil
Anti-seize compounds
Fuel additive
Engine coolant additives
Antifreeze fluids
Boiler and feed water treatment and test reagents
Deionizer-regenerating chemicals
Evaporator dosing and descaling acids
Paint stabilizers/rust stabilizers
Solvents/thinners
Paints
Chemical refrigerants
Battery electrolyte
Alcohol/methylated spirits
Acetylene
Propane
Butane
Oxygen
Carbon dioxide
Perfluorocarbons (PFCs)
Methane
Hydrofluorocarbons (HFCs)
Nitrous oxide (N_2O)
Sulfur hexafluoride (SF_6)
Bunkers, e.g. fuel oil
Grease
Fuel gas
Batteries (including lead-acid batteries)
Pesticides/insecticide sprays
Extinguishers
Chemical cleaner (including electrical equipment cleaner, carbon remover)
Detergent/bleacher (potentially a liquid)
Miscellaneous medicines
Fire-fighting clothing and personal protective equipment
Spare parts containing Hazardous Materials

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ANNEX 5

RESOLUTION MEPC.211(63)

Adopted on 2 March 2012

2012 GUIDELINES FOR THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on the Safe and Environmentally Sound Recycling of Ships held in May 2009 adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention) together with six Conference resolutions,

NOTING that regulation 16.1 of the annex to the Hong Kong Convention requires that Ship Recycling Facilities which recycle ships to which the Convention applies, or ships treated similarly pursuant to article 3.4 of the Hong Kong Convention, shall be authorized by a Party taking into account the guidelines developed by the Organization,

NOTING ALSO that regulation 15.3 of the annex to the Hong Kong Convention requires that each Party shall establish a mechanism for ensuring that Ship Recycling Facilities comply with the requirements of the Convention including the establishment and effective use of inspection, monitoring and enforcement provisions, and that such a mechanism may include an audit scheme to be carried out by the Competent Authority(ies) or an organization recognized by the Party, taking into account guidelines developed by the Organization,

BEARING IN MIND that the International Conference on the Safe and Environmentally Sound Recycling of Ships, in its resolution 4, invited the Organization to develop Guidelines for global, uniform and effective implementation and enforcement of the relevant requirements of the Convention as a matter of urgency,

HAVING CONSIDERED, at its sixty-third session, the draft 2012 Guidelines for the authorization of ship recycling facilities, developed by the Working Group on Ship Recycling,

1. ADOPTS the 2012 Guidelines for the authorization of ship recycling facilities, as set out in the Annex to this resolution;

2. INVITES Governments to apply the Guidelines as soon as possible, or when the Hong Kong Convention becomes applicable to them; and

3. REQUESTS the Committee to keep the Guidelines under review.

ANNEX

2012 GUIDELINES FOR THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Objectives of the guidelines

These guidelines provide recommendations for Parties on establishing mechanisms for authorizing Ship Recycling Facilities in accordance with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereafter referred to as "the Convention").

These guidelines should be used primarily by the Competent Authority(ies) and the organizations recognized by the Competent Authority(ies). The guidelines may also be useful for Ship Recycling Facilities in preparing for the authorization process.

1.2 Approach of the guidelines

Article 6 and regulation 16 of the Convention require Ship Recycling Facilities that recycle ships to which the Convention applies, or ships treated similarly pursuant to article 3.4 of the Convention, to be authorized taking into account the guidelines developed by the Organization.

The present guidelines provide guidance on establishing a scheme for authorizing Ship Recycling Facilities, covering the following areas: necessary documentation; verification of documentation; site inspection; audit scheme; specific procedural action relating to issuing, amending, suspending, withdrawing and renewing the Document of Authorization to conduct Ship Recycling (DASR); validity of the DASR; communication of information; and monitoring of the activities of the Ship Recycling Facility.

2 DEFINITIONS

The terms used in these guidelines have the same meaning as those defined in the Convention. For the purposes of these guidelines, the following additional definitions apply.

2.1 "Organization recognized by the Competent Authority(ies)" means an organization designated by the Competent Authority(ies) in accordance with regulation 16.2 and regulation 16.3 of the Annex to the Convention to undertake relevant tasks on behalf of the Competent Authority(ies).

2.2 "Determination" means the process by which the Competent Authority(ies) decides whether to issue, amend, suspend, withdraw or renew a DASR.

3 IDENTIFICATION OF COMPETENT AUTHORITY(IES) RESPONSIBLE FOR AUTHORIZATION

According to the Convention, the Party shall designate one or more Competent Authorities as responsible for authorizing Ship Recycling Facilities within its jurisdiction. The Competent Authority(ies) should identify a single contact point to act as central communicating partner between the Competent Authority(ies), Administrations and Ship Recycling Facilities. The Competent Authority(ies) may entrust the authorization of Ship Recycling Facilities to organizations recognized by it (regulation 16.2). The Party should determine the extent to which it delegates the authorization of the Ship Recycling Facility to organizations recognized by the Competent Authority(ies), and notify the Organization of the specific responsibilities and conditions of the authority delegated to such organizations , for circulation to Parties (regulation 16.3). The extent to which authority is delegated to the organization recognized by the Competent Authority(ies) therefore varies according to each Party's decision. In every case, the Competent Authority retains full responsibility for the authorization (regulation 16.3).

Hereafter in these guidelines, the term "Competent Authority(ies)" should be interpreted as "Competent Authority(ies)" or "organization recognized by the Competent Authority(ies)", depending upon the extent to which authority is delegated to such organizations in each Party.

Organizations recognized by the Competent Authority(ies) should work in harmony with the Competent Authority(ies) while undertaking the responsibilities that it has entrusted to them.

The Competent Authority(ies) should ensure that the organization recognized by it has the appropriate qualifications and expertise to conduct the tasks delegated to it, taking into account guidance to be developed by the Organization.

Where the organization recognized by the Competent Authority(ies) is delegated to authorize Ship Recycling Facilities, a system for tracking the flow of information between the organization and the Competent Authority(ies) should be established.

The Competent Authority(ies) should establish systems for evaluating, controlling and auditing the organization recognized by it.

4 APPLICATION FOR AUTHORIZATION

4.1 General

The Ship Recycling Facility should submit an application for authorization to conduct ship recycling to the Competent Authority(ies). The formal application should be accompanied by a completed Ship Recycling Facility Plan (SRFP). The Ship Recycling Facility and Competent Authority(ies) may hold preliminary discussions before the formal application is submitted.

The Competent Authority(ies) should be aware of any requirements and obligations outside the scope of the Convention that have been established under regional and/or national law and regulations and are applicable to Ship Recycling Facilities operating under its jurisdiction.

Nothing in the Convention or these guidelines precludes a Party from supplementing the requirements of the Convention with technical standards, codes of practice and/or guidelines that might take account of technological developments, advanced practice, norms and standards, in order to further reduce risks to occupational health and safety and to the environment and any other adverse effects related to ship recycling, or from using such supplementary requirements during the process of authorizing a Ship Recycling Facility.

The Ship Recycling Facility should submit a formal application, ensuring that it is complete. The onus is on the Ship Recycling Facility to assess the effects of its operations and to demonstrate how ship recycling operations should be managed so as to meet the requirements of the Convention and of relevant national and/or regional legislation.

The Competent Authority(ies) may ask for additional documentation and/or return the application if it is not complete. The Ship Recycling Facility may draw upon or attach other sources of information in its application, and indeed is encouraged to make use of existing information where appropriate.

5 NECESSARY DOCUMENTATION FOR ISSUING THE DOCUMENT OF AUTHORIZATION TO CONDUCT SHIP RECYCLING (DASR)

5.1 General

The SRFP, described in the *Guidelines for Safe and Environmentally Sound Ship Recycling* ("Facility Guidelines") and as required by regulation 18, shall be used as the main document in issuing the DASR.

Any other documentation and/or certification required under applicable international or national legislation, including those related to ship recycling activity, should be submitted with the application.

The Competent Authority(ies) should ensure that the Ship Recycling Facility has a management system in place and described in its documentation, together with the appropriate procedures and techniques, aimed at protecting human health and the environment without posing any unacceptable risks. The Competent Authority(ies) should check that the SRFP includes the policy, plans, systems and other factors set out in regulation 18 of the annex to the Convention.

5.2 Management of Hazardous Materials

The Competent Authority(ies) should check that the Ship Recycling Facility has established, implemented and maintained procedures for environmentally sound management of Hazardous Materials and wastes.

The Competent Authority(ies) should check that the Ship Recycling Facility has procedures in place to ensure that all Hazardous Materials detailed in the Inventory of Hazardous Materials are, to the maximum extent possible prior to cutting, identified, labelled, packaged and removed by properly trained and equipped workers, then stored and transported to waste management facilities by licensed vehicles.

The Competent Authority(ies) should check that the Ship Recycling Facility has established procedures to send all Hazardous Materials and wastes to authorized waste management and disposal sites before issuing a DASR. Documentation demonstrating these sites' compliance with national regulations[5] should also be checked by the Competent Authority.

The Competent Authority(ies) should ensure that the Ship Recycling Facility has established procedures for managing all wastes generated by recycling activity, which should be kept separate from recyclable materials and equipment and labelled and stored under conditions that do not pose a risk to workers, human health or the environment.

5.3 Other requirements

The Ship Recycling Facility should undertake all necessary steps to fulfil the requirements of applicable international and national legislation.

The Ship Recycling Facility should ensure that planned and conducted activities respect the limits set out in applicable national laws and regulations on land use where the Ship Recycling Facility is located and is operating.

[5] Where such regulations are based on applicable international agreements, these should also be referenced.

The Competent Authority(ies) may require an environmental impact study from Ship Recycling Facilities. In this case, the following guidance is to be considered.

A study may be conducted to assess the potential environmental impacts from the Ship Recycling Facility as a basis for identifying and prioritizing the Facility's environmental aspects. If a new Ship Recycling Facility is planned, the study may provide the basis to determine whether the location is appropriate and suitable for ship recycling activities. If the actual project involves a site already used for ship recycling or similar activities, the study may include an assessment of the environmental conditions of the location. It is advisable to conduct the study during the planning stage and to initiate it as early as possible.

The study may address in particular whether the Ship Recycling Facility has adverse effects on factors including, but not limited to, the following, and whether these effects are within acceptable limits as defined by applicable international and/or national legislation:

- flora and fauna of the specific area;
- hydrogeology;
- surface and ground water;
- soil structure;
- historical, cultural, social and economic values; and
- air quality.

The study may focus particularly on the significant environmental effects of releases, identifying and quantifying the possible release of polluting substances into any media and their effects. Most attention might be paid to large-scale releases and releases of the more hazardous pollutants, which are likely to have most significant effects. Conversely, any releases at levels so low that they are unlikely to have any serious effects do not need to be assessed. However, consideration may be given to other substances capable of causing pollution in the same way.

The study may pay special attention to:

.1 Consumption and nature of raw materials:
Consideration may be given to options that use fewer resources or those that use materials that are less likely to create hazards or pollution risks;

.2 Waste issues:
Consideration may be given to the annual material flow, consisting of incoming ships for recycling and the resultant waste leaving the Facility. This may cover the types of waste that the Facility can receive and store, depending on the ships that the Facility is planning to recycle, and for each type:

- the maximum quantity that the Facility can receive;
- the maximum storage capacity for each type of waste; and
- the environmental hazards caused by waste during recycling activities and possible measures to mitigate the negative impact on the environment.

.3 Accidents:
Consideration may be given to the environmental hazards posed by possible accidents and their associated risks, including the practicality of measures to reduce risks and hazards and to respond to accidents; and

.4 Site restoration:
Consideration may be given as to whether there is a risk that the ship recycling operation will pollute the site, including planning in advance for decommissioning and restoring the site upon closure.

In some cases, a judgement will need to be made about the relative significance of different environmental effects. In making this comparison, certain basic parameters may help in reaching a conclusion. For example, long-term irreversible effects are worse than short-term reversible ones, if all other factors, such as immediate severity, are equal.

6 VERIFICATION OF DOCUMENTATION

The application, including its documentation, should be assessed and verified by the Competent Authority(ies). The assessment and verification should be concluded within a reasonable time frame, if possible within three months.

The assessment and verification process should include a site inspection, as described in section 7, after the documentation has been reviewed and evaluated.

If the application is rejected, the Competent Authority(ies) should inform the Ship Recycling Facility of the reason for the rejection.

7 SITE INSPECTION

Site inspections should be conducted at Ship Recycling Facilities. The Competent Authority(ies) is responsible for planning and undertaking the site inspection. The site inspection may involve, or use the guidance and reports of, local or national labour inspection services.

The main purpose of the site inspection is to check the consistency of the documentation with the actual arrangements and operations at the Ship Recycling Facility.

The first site inspection should be announced in advance to the Ship Recycling Facility, in order to ensure that it will be possible to meet all relevant persons.

In advance of, during and following the site inspection, any necessary information should be provided by the Ship Recycling Facility.

Safety issues should be considered and sufficient precautions taken throughout the site inspection, including with respect to personal protection.

The inspection should address the functionality of arrangements established, focusing on safety and environmental protection and the handling of all materials including hazardous wastes and debris. The inspection should cover situations in which the Ship Recycling Facility is operating at maximum capacity with a full body of staff, including subcontractors.

The site inspection should verify that a SRFP exists and that it is being fully implemented. In particular, the following factors should be verified:

.1 availability of the SRFP to all personnel at the Ship Recycling Facility;

.2 knowledge of the SRFP, as appropriate, among management, Competent persons and workers according to their designated tasks, roles and responsibilities, including those with special duties such as first-aid personnel and fire fighters, as assessed through interviews with all categories of personnel and supervision of drills if appropriate; and

.3 implementation of the objectives of the SRFP, as demonstrated by implementation of operational procedures in:

- ship preparation processes;
- monitoring of Safe-for-entry and Safe-for-hot-work conditions;
- deconstruction processes;
- hot work processes;
- management of Hazardous Materials and wastes (protective measures and removal, transport, storage and disposal); and
- emergency preparedness.

The site inspection should identify procedures and routines for the following:

.1 developing and using the Ship Recycling Plan;

.2 accepting ships, taking into account relevant requirements and the required certificates;

.3 reporting and following up incidents; and

.4 conducting operations in a safe and environmentally sound manner, in accordance with the regulations of the Convention.

The site inspection should verify the availability, size, restrictions and general set-up of the Ship Recycling Facility as stated in the application. Any arrangements established for the purpose of facilitating the recycling process should be described in the inspection report, as should any limitations related to the operation of the Ship Recycling Facility.

All sites utilizing established procedures, methods, arrangements and facilities for the removal, storage, processing (incineration, reclamation and specific treatment), transport and disposal of Hazardous Materials and wastes should be inspected. The inspection should verify that the Ship Recycling Facility is designed and constructed to manage any Hazardous Materials and wastes that are included in their application.

In cases where the Ship Recycling Facility is engaging one or more contractors by means of subcontracting for any activities related to the requirements of the Convention, the contractors should be subject to the same verification as if the Ship Recycling Facility itself was undertaking the activities. The Ship Recycling Facility is responsible for providing the Competent Authority with information required to perform a verification on the aforementioned contractors, as part of the overall assessment of the Facility.

Furthermore, the site inspection should include a practical test for assessing the implementation of measures relating to emergency preparedness and response. This may involve an unannounced complete evacuation of the Ship Recycling Facility or a similar procedure described in the plans for emergency preparedness and response.

The Competent Authority(ies) should have procedures in place for providing detailed information and analysis of the authorization process to the Ship Recycling Facility. Such procedures could include a written report by the Competent Authority(ies), to be made available to the Ship Recycling Facility, containing inspection data and an evaluation of findings.

The supplement to the DASR (appendix 5 of the annex to the Convention) may be used as guidance in planning site inspections.

If the Ship Recycling Facility is under construction or not fully operational, the site inspection should be conducted as far as practicable, and the Competent Authority(ies) may issue the DASR subject to certain terms and conditions as appropriate. In such a case, an additional, follow-up site inspection should be conducted after the Ship Recycling Facility becomes fully operational. According to the results of the follow-up site inspection, the Competent Authority(ies) may suspend, amend or withdraw the DASR.

8 ISSUANCE, AMENDMENT, SUSPENSION, WITHDRAWAL AND RENEWAL OF DASR

8.1 General

As stated in regulation 16.5 of the annex to the Convention, the Party shall identify the terms on which the authorization will be issued, withdrawn, suspended, amended and renewed.

8.2 Mechanism for ensuring the establishment and effective use of inspection, monitoring and enforcement provisions

Under regulation 15.3 of the annex to the Convention, each Party shall establish a mechanism for ensuring the establishment and effective use of inspection, monitoring and enforcement provisions, including powers of entry and sampling. Such a mechanism may include an audit scheme to be carried out by the Competent Authority(ies) or an organization recognized by the Competent Authority(ies). If the Party establishes an audit scheme based on the national law and regulations, the Party should make available relevant information on the audit scheme in advance of any audit, including, but not limited to, the following:

- the frequency of the audit: at least one audit should be conducted, in the middle of the validity period of the DASR; and

- the audit process: this may include the submission by the Ship Recycling Facility of written reports containing summaries of ship recycling activities and interviews with representatives or managers of the Ship Recycling Facility and site inspections.

The Competent Authority(ies) should establish procedures for conducting follow-up site inspections at the Ship Recycling Facility as necessary, after the DASR has been issued.

8.3 Issuance

The Competent Authority(ies) should issue a DASR to the Ship Recycling Facility if the document verification process and site inspection prove satisfactory.

The DASR should not be issued until all required documentation has been received and the site inspection has been successfully completed.

The supplement to the DASR (appendix 5 of the annex to the Convention) must be permanently attached to the DASR. Most of the information required for the supplement is available in the SRFP, as described in the Facility Guidelines.

The DASR should be available at the Ship Recycling Facility at all times.

8.4 Amendment

The Competent Authority(ies) may amend the DASR as appropriate. The amendment procedure may be initiated by the Competent Authority(ies) or the Ship Recycling Facility. The Competent Authority(ies) may require a site inspection to verify compliance with the Convention before it amends the DASR. The Ship Recycling Facility should provide the Competent Authority(ies) with appropriate documentation and updates to the SRFP.

Situations which may necessitate amendment of the DASR include, but are not limited to, the following:

1. the Ship Recycling Facility applies for the DASR amendment in order to widen the scope of authorization; for example, after having invested in the Facility and added new capabilities which should be reflected in the DASR;

2. the DASR amendment is triggered by compelling needs on the part of Competent Authority(ies); for example, when new domestic regulations are put into effect;

3. the DASR amendment is triggered by investigations conducted by the Competent Authority(ies) following accidents;

4. the DASR amendment is triggered by a deviation of practice at the Ship Recycling Facility from the SRFP, which thereby affect the contents of the DASR; and

5. the DASR amendment is triggered by a change in the hazardous materials which the Ship Recycling Facility can remove, store and process.

8.5 Suspension

The Competent Authority(ies) may suspend the DASR, or require corrective action by the Ship Recycling Facility, if it has information demonstrating that the Ship Recycling Facility no longer satisfies the terms and conditions of the DASR. The Competent Authority(ies) may suspend the DASR temporarily or indefinitely, depending on the Ship Recycling Facility's subsequent level of compliance. During any period of suspension, the Ship Recycling Facility is not authorized to conduct recycling activities, except insofar as the Competent Authority(ies) has specified that the Ship Recycling Facility should continue with certain activities that do not negatively affect the protection of human health or the environment.

The Competent Authority(ies) should suspend the DASR in cases where site inspections, conducted as part of the audit, are restricted by the Ship Recycling Facility without justification.

8.6 Withdrawal

The Competent Authority(ies) may withdraw the DASR if the Competent Authority(ies) has information demonstrating that the Ship Recycling Facility no longer satisfies the terms and conditions of the DASR. The Competent Authority(ies) should generally reserve withdrawal for cases when the Ship Recycling Facility has seriously or repeatedly failed to comply and when suspending the DASR does not present an adequate remedy. The Competent Authority(ies) may reinstate the Ship Recycling Facility's authorization only after the Ship Recycling Facility has submitted a new application to the Competent Authority(ies) demonstrating that the Ship Recycling Facility is in full compliance with the Convention's requirements and related Guidelines.

Any action or modification at the Ship Recycling Facility that may affect the conditions on which the authorization was granted should prompt a new inspection. If such an inspection reveals that the conditions for authorization are no longer in place, the DASR should be withdrawn.

8.7 Renewal

The Competent Authority(ies) may renew the DASR upon written request by the Ship Recycling Facility. The Ship Recycling Facility should support any such request with revised documents, as appropriate, as stated in section 6 above in relation to the Ship Recycling Facility's initial application for authorization. The Competent Authority(ies) may, at its discretion, conduct a site inspection before it renews the DASR.

9 VALIDITY

The DASR shall be issued for a period determined by the Party not exceeding five years.

If a Ship Recycling Facility changes ownership, the new owner should – within a reasonable time frame, if possible not exceeding 30 days – notify the Competent Authority(ies) so that it can amend the DASR accordingly. The new owner should confirm in writing that it will fully comply with all requirements, including the SRFP, and the Convention. The new owner should also provide any supporting documentation requested by the Competent Authority(ies). If operations at the Ship Recycling Facility are changed in such a way as to affect the conditions on which authorization was granted, the Competent Authority(ies) may amend, suspend or withdraw the DASR and inform the new owner accordingly.

10 COMMUNICATION OF INFORMATION

10.1 Organizations recognized by the Competent Authority(ies)

The Party shall notify the Organization of the specific responsibilities and conditions of the authority delegated to the organizations recognized by the Competent Authority(ies), for circulation to Parties. In every case, the Competent Authority(ies) retains full responsibility for the authorization issued (regulation 16.3).

The organization recognized by the Competent Authority(ies) may be asked to maintain a list of surveyors with adequate expertise for conducting the tasks requested by the Party.

Each Party shall report to the Organization and the Organization shall disseminate, as appropriate, a list of the organizations recognized by the Competent Authority(ies) and nominated surveyors that are authorized to act on behalf of that Party in the administration of matters relating to the control of ship recycling in accordance with the Convention, and the specific responsibilities and conditions of the authority delegated to organizations recognized by the Competent Authority(ies) or nominated surveyors (article 12.3).

10.2 Violations and sanctions

In case of an alleged violation, the Party having jurisdiction over the Ship Recycling Facility shall promptly inform the Party that reported the alleged violation, as well as the Organization, of any action taken.

If the Party has not taken any action within one year of receiving the information, it shall inform the Party that reported the alleged violation, and the Organization, of the reasons why no action has been taken.

If a request for an investigation is received from any Party, together with sufficient evidence that a Ship Recycling Facility is operating, has operated or is about to operate in violation of any provision of the Convention, the Party under whose jurisdiction the Ship Recycling Facility is operating should investigate it and produce a report. The report of any such investigation, including information on action taken or to be taken, if any, shall be sent to the requesting Party and to the Organization for appropriate action.

The Competent Authority(ies) should be promptly informed by the Ship Recycling Facility in cases of alleged violations covered by article 9 of the Convention.

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ANNEX 6

STATEMENT BY A REPRESENTATIVE OF THE INTERNATIONAL LABOUR ORGANIZATION (ILO) ON THE MATTER OF SHIP RECYCLING

"The International Labour Organization (ILO) would like to place on record its congratulations and appreciation to IMO on the adoption of the 2012 Guidelines for Safe and Environmentally Sound Ship Recycling. These Guidelines will be instrumental in transforming the Hong Kong Convention into practice.

During the many years of developing the Hong Kong Convention and the guidelines, ILO has remarked that, in ship recycling, our two organizations are working together in overlapping spheres of influence. ILO has a number of conventions and other instruments directed to protecting workers' safety and health. The Hong Kong Convention, in Article 15 and regulation 3, recognizes ILO's competence and ensures that governments do not have to deal with inconsistent international obligations between Hong Kong Convention and applicable ILO conventions.

The purpose of the guidelines is to describe the recommended content of the Ship Recycling Facility Plan, and the guidelines provide information to illustrate the performance standards anticipated by specific regulations of the Hong Kong Convention. Throughout the development of these guidelines, commonly called the facility guidelines, the discussion has centred on whether the guidelines should be prescriptive or not. The end result is somewhat hybrid as some parts of the guidelines are short and generic, others long and detailed. And, we do regret that most of our proposals regarding safety and health did not get enough support.

The facility guidelines have been adopted but they will face the test of practice: they can and should be improved as governments and facilities gain experience from the use of the guidelines. In any case, the facility guidelines alone are not enough to ensure safe ship recycling. These guidelines would need to be complemented by technical guidance, to be given in a guidance manual. ILO would like to reiterate its commitment to contribute to developing this guidance manual. In this process ILO can rely on its expertise on safety and health accumulated ever since the founding of ILO in 1919.

We – IMO, ILO and other governmental organizations, non-governmental organizations and other stakeholders - need to work together on ship recycling and expand technical cooperation so as to ensure that the health and safety of workers and the general public will be protected."

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ANNEX 7

STATEMENT BY THE DELEGATION OF CHINA ON A STUDY CONCERNING CO_2 EMISSION REDUCTIONS FROM THE MANDATORY TECHNICAL AND OPERATIONAL MEASURES FOR SHIPS

General comments on document MEPC 63/INF 2

1 It is inappropriate for the Secretariat to commission this study without clear instructions of the MEPC;

2 it is inappropriate for the Secretariat to transfer document MEPC 63/INF 2 to the Secretariat's document and translate it into other working languages. This is unfair to other INF documents;

3 it is requested that the Secretariat carries out its work strictly in line with its mandate and refrain from conducting work beyond its mandate; and

4 it is requested that the Secretariat treats all INF documents in an equal and fair manner.

Comments on the technical aspects of document MEPC 63/INF 2

China would like to thank Lloyd's Register and Det Norske Veritas for undertaking this study. The following are the technical comments on this study report.

1 The study has significant uncertainties. First of all, the future emission projections are based on the conclusions contained in the 2nd IMO GHG study 2009. However, the estimated emissions differ remarkably in various development scenarios in the 2009 study. The emission of the highest is 10 times more than the lowest scenario in 2050. These uncertainties are transplanted and amplified in this study when the amount of reduction of CO_2 emissions from ships due to the application of the EEDI and SEEMP regulations is calculated based on the 2009 study. Secondly, the IHS Fairplay is used as data source for this study. As pointed out by WWF and CSC in document MEPC 63/5/13, "there are also concerns regarding the accuracy of other data included in the IHS Fairplay database that are used in the EEDI calculation, a matter that needs to be addressed", we also think that the accuracy of this database should be questioned and improved. Therefore, the outcome of this study, which is based on IHS database, should be verified. Thirdly, no explanations have been made to the fleet growth and scrapping rate and no consideration has been given to the effect of the shipping cycle. This also increases the uncertainties of the final conclusions of the study. Therefore, the credibility of conclusions of the study is doubtful.

2 The study optimistically estimates the cost of complying with the EEDI requirements and states that ship hydrodynamic and main engine optimization will bring about energy saving opportunities. The technology development, infrastructure investment and capacity building of the ship-building industry are not considered properly. The technology and capacity building needs of developing countries are not assessed either. We believe the estimated cost of compliance is too optimistic to objectively reflect the pressure and needs of developing countries for implementing and enforcing energy efficiency regulations.

3 The report lacks of transparency in terms of the calculation process. The method of standard deviation is used in calculating CO_2 reduction as a result of the application of the EEDI reduction factor. The gamma distribution, which contains two key parameters (and k) are applied to describe and calculate the shape of the curve and CO_2 reductions. Nevertheless, the study only simply states the principles used when determining the parameters in the distributions. No specific data was provided and we are unable to understand the calculation process and verify the results. We hope this report would provide specific parameters and data in an open and transparent manner.

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ANNEX 8

RESOLUTION MEPC.212(63)

Adopted on 2 March 2012

2012 GUIDELINES ON THE METHOD OF CALCULATION OF THE ATTAINED ENERGY EFFICIENCY DESIGN INDEX (EEDI) FOR NEW SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution,

RECALLING ALSO that, at its sixty-second session, the Committee adopted, by resolution MEPC.203(62), amendments to the annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (inclusion of regulations on energy efficiency for ships in MARPOL Annex VI),

NOTING the amendments to MARPOL Annex VI adopted at its sixty-second session by inclusion of a new chapter 4 for regulations on energy efficiency for ships, are expected to enter into force on 1 January 2013 upon their acceptance on 1 July 2012,

NOTING ALSO that regulation 20 (Attained EEDI) of MARPOL Annex VI, as amended, requires that the Energy Efficiency Design Index shall be calculated taking into account the guidelines developed by the Organization,

RECOGNIZING that the amendments to MARPOL Annex VI requires the adoption of relevant guidelines for smooth and uniform implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its sixty-third session, the draft 2012 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships,

1. ADOPTS the 2012 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships, as set out at annex to the present resolution;

2. INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement provisions set forth in regulation 20 of MARPOL Annex VI, as amended;

3. REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines related to the Energy Efficiency Design Index (EEDI) to the attention of shipowners, ship operators, shipbuilders, ship designers and any other interested groups;

4. AGREES to keep these Guidelines under review in light of the experience gained; and

5. REVOKES the Interim Guidelines circulated by MEPC.1/Circ.681, as from this date.

ANNEX

2012 GUIDELINES ON THE METHOD OF CALCULATION OF THE ATTAINED ENERGY EFFICIENCY DESIGN INDEX (EEDI) FOR NEW SHIPS

CONTENTS

1 Definitions

MARPOL means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended.

For the purpose of these Guidelines, the definitions in "REGULATIONS ON ENERGY EFFICIENCY FOR SHIPS" (RESOLUTION MEPC. 203(62)) apply.

2 Energy Efficiency Design Index (EEDI)

The attained new ship Energy Efficiency Design Index (EEDI) is a measure of ships energy efficiency (g/t*nm) and calculated by the following formula:

$$\frac{\left(\prod_{j=1}^{n} f_j\right)\left(\sum_{i=1}^{nME} P_{ME(i)} \cdot C_{FME(i)} \cdot SFC_{ME(i)}\right) + \left(P_{AE} \cdot C_{FAE} \cdot SFC_{AE}*\right) + \left(\left(\prod_{j=1}^{n} f_j \cdot \sum_{i=1}^{nPTI} P_{PTI(i)} - \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{AEeff(i)}\right) C_{FAE} \cdot SFC_{AE}\right) - \left(\sum_{i=1}^{neff} f_{eff(i)} \cdot P_{eff(i)} \cdot C_{FME} \cdot SFC_{ME}**\right)}{f_i \cdot f_c \cdot Capacity \cdot f_w \cdot V_{ref}}$$

* If part of the Normal Maximum Sea Load is provided by shaft generators, SFC_{ME} and C_{FME} may – for that part of the power – be used instead of SFC_{AE} and C_{FAE}

** In case of $P_{PTI(i)}>0$, the average weighted value of (SFC_{ME} · C_{FME}) and (SFC_{AE} · C_{FAE}) to be used for calculation of P_{eff}

Note: This formula may not be able to apply to diesel-electric propulsion, turbine propulsion or hybrid propulsion system.

Where:

.1 C_F is a non-dimensional conversion factor between fuel consumption measured in g and CO_2 emission also measured in g based on carbon content. The subscripts $_{MEi}$ and $_{AEi}$ refer to the main and auxiliary engine(s) respectively. C_F corresponds to the fuel used when determining *SFC* listed in the applicable test report included in a Technical File as defined in paragraph 1.3.15 of NO_x Technical Code ("test report included in a NO_x technical file" hereafter). The value of C_F is as follows:

Type of fuel	Reference	Carbon content	C_F (t-CO_2/t-Fuel)
1 Diesel/Gas Oil	ISO 8217 Grades DMX through DMB	0.8744	3.206
2 Light Fuel Oil (LFO)	ISO 8217 Grades RMA through RMD	0.8594	3.151
3 Heavy Fuel Oil (HFO)	ISO 8217 Grades RME through RMK	0.8493	3.114
4 Liquefied Petroleum Gas (LPG)	Propane	0.8182	3.000
	Butane	0.8264	3.030
5 Liquefied Natural Gas (LNG)		0.7500	2.750

.2 V_{ref} is the ship speed, measured in nautical miles per hour (knot), on deep water in the condition corresponding to the *Capacity* as defined in paragraphs 2.3.1 and 2.3.3 (in case of passenger ships and ro-ro passenger ships, this condition should be summer load draught as provided in paragraph 2.4) at the shaft power of the engine(s) as defined in paragraph 2.5 and assuming the weather is calm with no wind and no waves.

.3 *Capacity* is defined as follows:

.1 For bulk carriers, tankers, gas tankers, ro-ro cargo ships, general cargo ships, refrigerated cargo carrier and combination carriers, deadweight should be used as *Capacity*.

.2 For passenger ships and ro-ro passenger ships, gross tonnage in accordance with the International Convention of Tonnage Measurement of Ships 1969, Annex I, regulation 3 should be used as *Capacity*.

.3 For containerships, 70 per cent of the deadweight (DWT) should be used as *Capacity*. EEDI values for containerships are calculated as follows:

.1 attained EEDI is calculated in accordance with the EEDI formula using 70 per cent deadweight for *Capacity*.

.2 estimated index value in the Guidelines for calculation of the reference line is calculated using 70 per cent deadweight as:

$$Estimated\ Index\ Value = 3.1144 \cdot \frac{190 \cdot \sum_{i=1}^{NME} P_{MEi} + 215 \cdot P_{AE}}{70\%\mathrm{DWT} \cdot V_{ref}}$$

.3 parameters a and c for containerships in Table 2 of regulation 21 of MARPOL Annex VI are determined by plotting the estimated index value against 100 per cent deadweight i.e. a=174.22 and c=0.201 were determined.

.4 required EEDI for a new containership is calculated using 100 per cent deadweight as:

Required EEDI = (1-X/100) · a · 100% deadweight $^{-c}$

Where X is the reduction factor (in percentage) in accordance with Table 1 in regulation 21 of MARPOL Annex VI relating to the applicable phase and size of new containership.

.4 *Deadweight* means the difference in tonnes between the displacement of a ship in water of relative density of 1,025 kg/m^3 at the summer load draught and the lightweight of the ship. The summer load draught should be taken as the maximum summer draught as certified in the stability booklet approved by the Administration or an organization recognized by it.

.5 P is the power of the main and auxiliary engines, measured in kW. The subscripts $_{ME}$ and $_{AE}$ refer to the main and auxiliary engine(s), respectively. The summation on i is for all engines with the number of engines ($_{nME}$). (See diagram in appendix 1.)

.1 $P_{ME(i)}$ is 75 per cent of the rated installed power (MCR*) for each main engine (i).

The influence of additional shaft power take off or shaft power take in is defined in the following paragraphs.

.2 **Shaft generator**

In case where shaft generator(s) are installed, $P_{PTO(i)}$ is 75 per cent of the rated electrical output power of each shaft generator.

For calculation of the effect of shaft generators two options are available:

Option 1:

.1 The maximum allowable deduction for the calculation of $P_{ME(i)}$ is to be no more than P_{AE} as defined in paragraph 2.5.6. For this case, $P_{ME(i)}$ is calculated as:

$$P_{ME(i)} = 0.75 \times \left(MCR_{ME(i)} - P_{PTO(i)}\right)$$

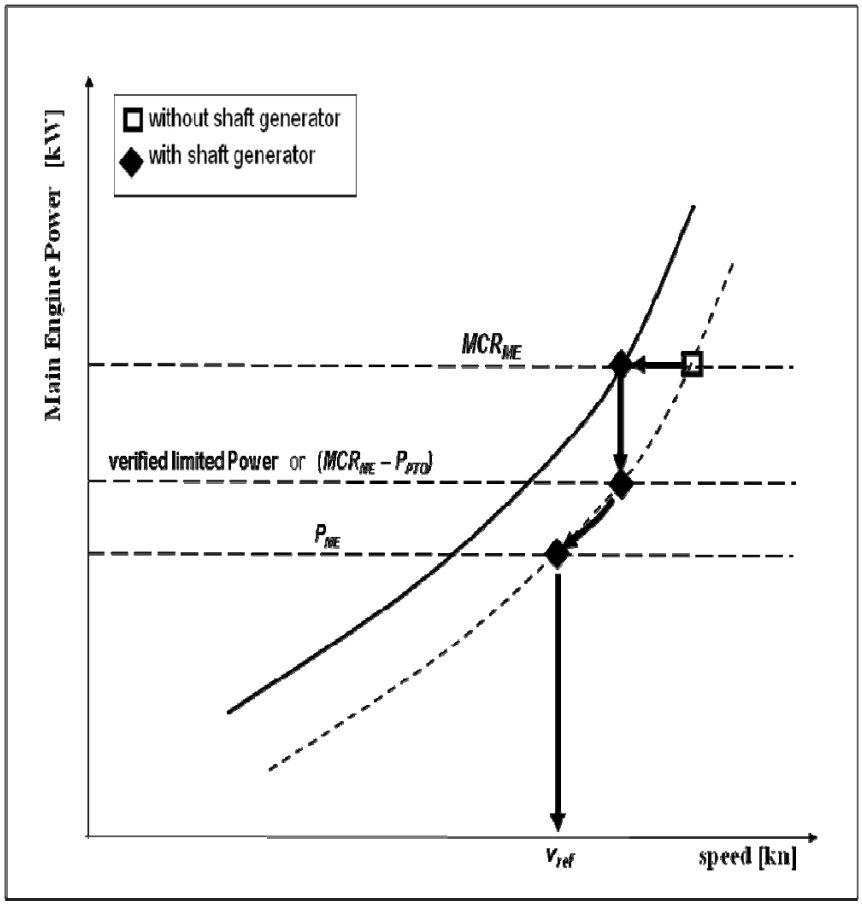
or

Option 2:

.2 Where an engine is installed with a higher rated power output than that which the propulsion system is limited to by verified technical means, then the value of $P_{ME(i)}$ is 75 per cent of that limited power for determining the reference speed, V_{ref} and for EEDI calculation.

* The value of MCR specified on the EIAPP certificate should be used for calculation. If the main engines are not required to have an EIAPP certificate, the MCR on the nameplate should be used.

The following figure gives guidance for determination of $P_{ME(i)}$:



.3 **Shaft motor**

In case where shaft motor(s) are installed, $P_{PTI(i)}$ is 75 per cent of the rated power consumption of each shaft motor divided by the weighted average efficiency of the generator(s).

The propulsion power at which V_{ref} is measured, is:

$$\sum P_{ME(i)} + \sum P_{PTI(i),Shaft}$$

Where:

$$\sum P_{PTI(i),Shaft} = \sum \left(P_{PTI(i)} \cdot \eta_{PTI(i)} \right) \cdot \eta_{\overline{Gen}}$$

$\eta_{PTI(i)}$ is the efficiency of each shaft motor installed

$\eta_{\overline{Gen}}$ is the weighted average efficiency of the generator(s)

Where the total propulsion power as defined above is higher than 75 per cent of the power the propulsion system is limited to by verified technical means, then 75 per cent of the limited power is to be used as the total propulsion power for determining the reference speed, V_{ref} and for EEDI calculation.

In case of combined PTI/PTO, the normal operational mode at sea will determine which of these to be used in the calculation.

Note: The shaft motor's chain efficiency may be taken into consideration to account for the energy losses in the equipment from the switchboard to the shaft motor, if the chain efficiency of the shaft motor is given in a verified document.

.4 $P_{eff(i)}$ is the output of the innovative mechanical energy efficient technology for propulsion at 75 per cent main engine power.

Mechanical recovered waste energy directly coupled to shafts need not be measured, since the effect of the technology is directly reflected in the V_{ref}.

In case of a ship equipped dual-fuel engine or a number of engines, the C_{FME} and SFC_{ME} should be the power weighted average of all the main engines.

.5 $P_{AEeff\ (i)}$ is the auxiliary power reduction due to innovative electrical energy efficient technology measured at $P_{ME(i)}$.

.6 P_{AE} is the required auxiliary engine power to supply normal maximum sea load including necessary power for propulsion machinery/systems and accommodation, e.g. main engine pumps, navigational systems and equipment and living on board, but excluding the power not for propulsion machinery/systems, e.g. thrusters, cargo pumps, cargo gear, ballast pumps, maintaining cargo, e.g. reefers and cargo hold fans, in the condition where the ship engaged in voyage at the speed (V_{ref}) under the condition as mentioned in paragraph 2.2.

.1 For ships with a main engine power of 10,000 kW or above, P_{AE} is defined as:

$$P_{AE(MCRME \geq 10000KW)} = \left(0.025 \times \left(\sum_{i=1}^{nME} MCR_{MEi} + \frac{\sum_{i=1}^{nPTI} P_{PTI(i)}}{0.75} \right) \right) + 250$$

.2 For ships with a main engine power below 10,000 kW, P_{AE} is defined as:

$$P_{AE(MCRME < 10000KW)} = \left(0.05 \times \left(\sum_{i=1}^{nME} MCR_{MEi} + \frac{\sum_{i=1}^{nPTI} P_{PTI(i)}}{0.75} \right) \right)$$

.3 For ship where the P_{AE} value calculated by paragraph 2.5.6.1 or 2.5.6.2 is significantly different from the total power used at normal seagoing, e.g. in cases of passenger ships (see NOTE under the formula of EEDI), the P_{AE} value should be estimated by the consumed electric power (excluding propulsion) in conditions when the ship is engaged in a voyage at reference speed (V_{ref}) as given in the electric power table[1], divided by the average efficiency of the generator(s) weighted by power (see appendix 2).

.6 V_{ref}, *Capacity* and *P* should be consistent with each other.

.7 *SFC* is the certified specific fuel consumption, measured in g/kWh, of the engines. The subscripts $_{ME(i)}$ and $_{AE(i)}$ refer to the main and auxiliary engine(s), respectively. For engines certified to the E2 or E3 test cycles of the NO_x Technical Code 2008, the engine Specific Fuel Consumption ($SFC_{ME(i)}$) is that recorded in the test report included in a NO_x technical file for the engine(s) at 75 per cent of MCR power of its torque rating. For engines certified to the D2 or C1 test cycles of the NO_x Technical Code 2008, the engine Specific Fuel Consumption ($SFC_{AE(i)}$) is that recorded on the test report included in a NO_x technical file at the engine(s) 50 per cent of MCR power or torque rating.

The *SFC* should be corrected to the value corresponding to the ISO standard reference conditions using the standard lower calorific value of the fuel oil (42,700kJ/kg), referring to ISO 15550:2002 and ISO 3046-1:2002.

For ships where the P_{AE} value calculated by paragraphs 2.5.6.1 and 2.5.6.2 is significantly different from the total power used at normal seagoing, e.g. conventional passenger ships, the Specific Fuel Consumption (SFC_{AE}) of the auxiliary generators is that recorded in the test report included in a NO_x technical file for the engine(s) at 75 per cent of MCR power of its torque rating.

SFC_{AE} is the power-weighted average among $SFC_{AE(i)}$ of the respective engines *i*.

For those engines which do not have a test report included in a NO_x technical file because its power is below 130 kW, the *SFC* specified by the manufacturer and endorsed by a competent authority should be used.

At the design stage, in case of unavailability of test report in the NO_x file, the *SFC* specified by the manufacturer and endorsed by a competent authority should be used.

For LNG driven engines of which *SFC* is measured in kJ/kWh should be corrected to the *SFC* value of g/kWh using the standard lower calorific value of the LNG (48,000 kJ/kg), referring to the 2006 IPCC Guidelines.

[1] The electric power table should be examined and validated by the verifier. Where ambient conditions affect any electrical load in the power table the contractual ambient conditions leading to the maximum design electrical load of the installed system for the ship in general should apply.

.8 f_j is a correction factor to account for ship specific design elements:

.1 The power correction factor, f_j, for ice-classed ships should be taken as the greater value of f_{j0} and $f_{j,min}$ as tabulated in Table 1 but not greater than $f_{j,max}$ = 1.0.

For further information on approximate correspondence between ice classes, see HELCOM Recommendation 25/7[2].

Table 1: Correction factor for power f_j for ice-classed ships

Ship type	f_{j0}	$f_{j,min}$ depending on the ice class			
		IA Super	IA	IB	IC
Tanker	$\frac{0.308 L_{PP}^{1.920}}{\sum_{i=1}^{nME} P_{ME(i)}}$	$0.15 L_{PP}^{0.30}$	$0.27 L_{PP}^{0.21}$	$0.45 L_{PP}^{0.13}$	$0.70 L_{PP}^{0.06}$
Bulk carrier	$\frac{0.639 L_{PP}^{1.754}}{\sum_{i=1}^{nME} P_{ME(i)}}$	$0.47 L_{PP}^{0.09}$	$0.58 L_{PP}^{0.07}$	$0.73 L_{PP}^{0.04}$	$0.87 L_{PP}^{0.02}$
General cargo ship	$\frac{0.0227 \cdot L_{PP}^{2.483}}{\sum_{i=1}^{nME} P_{ME(i)}}$	$0.31 L_{PP}^{0.16}$	$0.43 L_{PP}^{0.12}$	$0.56 L_{PP}^{0.09}$	$0.67 L_{PP}^{0.07}$

.2 The factor *fj*, for shuttle tankers with propulsion redundancy should be *fj* = 0.77. This correction factors applies to shuttle tankers with propulsion redundancy between 80,000 and 160,000 deadweight. The Shuttle Tankers with Propulsion Redundancy are tankers used for loading of crude oil from offshore installations equipped with dual-engine and twin-propellers need to meet the requirements for dynamic positioning and redundancy propulsion class notation.

.3 For other ship types, f_j should be taken as 1.0.

.9 f_w is a non-dimensional coefficient indicating the decrease of speed in representative sea conditions of wave height, wave frequency and wind speed (e.g. Beaufort Scale 6), and is determined as follows:

.1 for attained EEDI calculated under regulations 20 and 21 of MARPOL Annex VI, f_w is 1.00;

.2 when f_w is calculated according to the subparagraph .2.1 or .2.2 below, the value for attained EEDI calculated by the formula in paragraph 2 using the obtained f_w should be referred to as "*attained EEDI*$_{weather}$";

.1 f_w can be determined by conducting the ship specific simulation on its performance at representative sea conditions. The simulation methodology should be based on the Guidelines developed by the Organization and the

[2] HELCOM Recommendation 25/7 may be found at http://www.helcom.fi.

method and outcome for an individual ship should be verified by the Administration or an organization recognized by the Administration; and

.2 in cases where a simulation is not conducted, f_w should be taken from the "Standard f_w " table/curve. A "Standard f_w " table/curve is provided in the Guidelines[3] for each ship type defined in paragraph 1, and expressed as a function of Capacity (e.g. deadweight). The "Standard f_w " table/curve is based on data of actual speed reduction of as many existing ships as possible under the representative sea condition.

f_w and *attained EEDI*$_{weather}$, if calculated, with the representative sea conditions under which those values are determined, should be indicated in the EEDI Technical File to make a distinction with the attained EEDI calculated under regulations 20 and 21 of MARPOL Annex VI.

.10 $f_{eff(i)}$ is the availability factor of each innovative energy efficiency technology. $f_{eff(i)}$ for waste energy recovery system should be one (1.0)[4].

.11 f_i is the capacity factor for any technical/regulatory limitation on capacity, and should be assumed to be one (1.0) if no necessity of the factor is granted.

.1 The capacity correction factor, f_i, for ice-classed ships should be taken as the lesser value of f_{i0} and $f_{i,max}$ as tabulated in Table 2, but not less than $f_{i,min}$ = 1.0. For further information on approximate correspondence between ice classes, see HELCOM Recommendation 25/7[5].

Table 2: Capacity correction factor f_i for ice-classed ships

Ship type	f_{i0}	$f_{i,max}$ depending on the ice class			
		IA Super	IA	IB	IC
Tanker	$\frac{0.00138 \cdot L_{PP}^{3.331}}{capacity}$	$2.10 L_{PP}^{-0.11}$	$1.71 L_{PP}^{-0.08}$	$1.47 L_{PP}^{-0.06}$	$1.27 L_{PP}^{-0.04}$
Bulk carrier	$\frac{0.00403 \cdot L_{PP}^{3.123}}{capacity}$	$2.10 L_{PP}^{-0.11}$	$1.80 L_{PP}^{-0.09}$	$1.54 L_{PP}^{-0.07}$	$1.31 L_{PP}^{-0.05}$
General cargo ship	$\frac{0.0377 \cdot L_{PP}^{2.625}}{capacity}$	$2.18 L_{PP}^{-0.11}$	$1.77 L_{PP}^{-0.08}$	$1.51 L_{PP}^{-0.06}$	$1.28 L_{PP}^{-0.04}$
Containership	$\frac{0.1033 \cdot L_{PP}^{2.329}}{capacity}$	$2.10 L_{PP}^{-0.11}$	$1.71 L_{PP}^{-0.08}$	$1.47 L_{PP}^{-0.06}$	$1.27 L_{PP}^{-0.04}$
Gas carrier	$\frac{0.0474 \cdot L_{PP}^{2.590}}{capacity}$	1.25	$2.10 L_{PP}^{-0.12}$	$1.60 L_{PP}^{-0.08}$	$1.25 L_{PP}^{-0.04}$

Note: containership capacity is defined as 70% of the *DWT*.

3 Guidelines for the calculation of the coefficient *fw* for the decrease of ship speed in respective sea conditions will be developed.

4 EEDI calculation should be based on the normal sea-going condition outside Emission Control Area designated under paragraph 6 of regulation 13 in MARPOL ANNEX VI.

5 HELCOM Recommendation 25/7 may be found at http://www.helcom.fi.

.2 $f_{i\,VSE}$ for ship specific voluntary structural enhancement is expressed by the following formula:

$$f_{iVSE} = \frac{DWT_{reference\,design}}{DWT_{enhanced\,design}}$$

Where:

$$DWT_{reference\,design} = \Delta_{ship} - lightweight_{reference\,design}$$

$$DWT_{enhanced\,design} = \Delta_{ship} - lightweight_{enhanced\,design}$$

For this calculation the same displacement (Δ) for reference and enhanced design should be taken.

DWT before enhancements ($DWT_{reference\ design}$) is the deadweight prior to application of the structural enhancements. DWT after enhancements ($DWT_{enhanced\ design}$) is the deadweight following the application of voluntary structural enhancement. A change of material (e.g. from aluminum alloy to steel) between reference design and enhanced design should not be allowed for the $f_{i\ VSE}$ calculation. A change in grade of the same material (e.g. in steel type, grades, properties and condition) should also not be allowed.

In each case, two sets of structural plans of the ship should be submitted to the verifier for assessment. One set for the ship without voluntary structural enhancement; the other set for the same ship with voluntary structural enhancement. (Alternatively, one set of structural plans of the reference design with annotations of voluntary structural enhancement should also be acceptable.) Both sets of structural plans should comply with the applicable regulations for the ship type and intended trade.

.3 for bulk carriers and oil tankers, built in accordance with Common Structural Rules (CSR) of the classification societies and assigned the class notation CSR, the following capacity correction factor f_{iCSR} should apply:

$f_{iCSR} = 1 + (0.08 \cdot LWT_{CSR} / DWT_{CSR})$

Where, DWT_{CSR} is the deadweight determined by paragraph 2.4 and LWT_{CSR} is the light weight of the ship.

.4 for other ship types, *fi* should be taken as 1.0.

.12 f_c is the cubic capacity correction factor and should be assumed to be one (1.0) if no necessity of the factor is granted.

.1 for chemical tankers, as defined in regulation 1.16.1 of MARPOL Annex II, the following cubic capacity correction factor f_c should apply:

$f_c = R^{-0.7} - 0.014$, where R is less than 0.98

or

$f_c = 1.000$, where R is 0.98 and above;

where: R is the capacity ratio of the deadweight of the ship (tonnes) as determined by paragraph 2.4 divided by the total cubic capacity of the cargo tanks of the ship (m^3).

.2 for gas carriers having direct diesel driven propulsion system constructed or adapted and used for the carriage in bulk of liquefied natural gas, the following cubic capacity correction factor f_{cLNG} should apply:

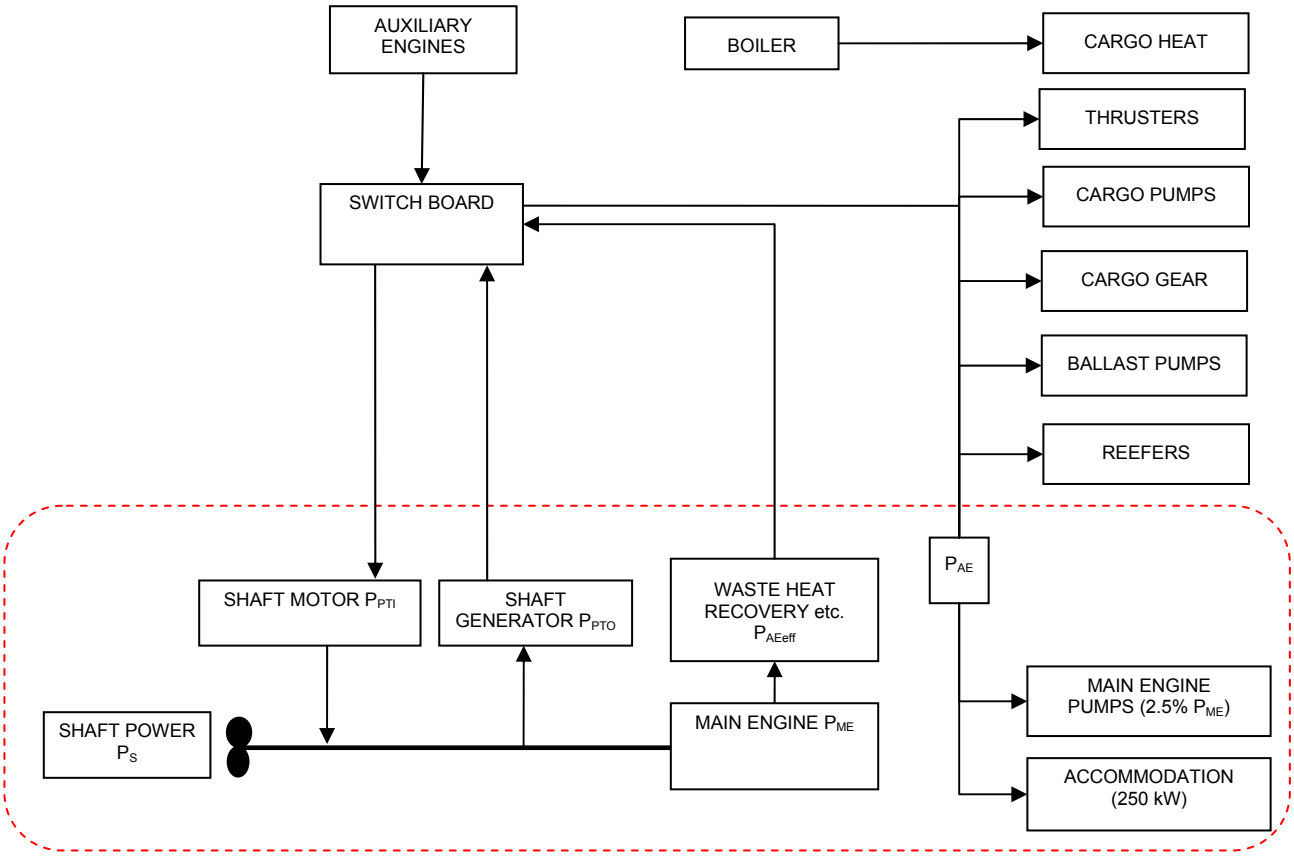
$$f_{cLNG} = R^{-0.56}$$

where, R is capacity ratio of deadweight of the ship (tonnes) as determined by paragraph 2.4 divided by the total cubic capacity of the cargo tanks of the ship (m^3).

.13 *Length between perpendiculars*, *Lpp* means 96 per cent of the total length on a waterline at 85 per cent of the least moulded depth measured from the top of the keel, or the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that were greater. In ships designed with a rake of keel the waterline on which this length is measured should be parallel to the designed waterline. The length between perpendiculars (L_{pp}) should be measured in metres.

APPENDIX 1

A GENERIC AND SIMPLIFIED MARINE POWER PLANT



Note 1: Mechanical recovered waste energy directly coupled to shafts need not be measured, since the effect of the technology is directly reflected in the V_{ref} .

Note 2: In case of combined PTI/PTO, the normal operational mode at sea will determine which of these to be used in the calculation.

APPENDIX 2

GUIDELINES FOR THE DEVELOPMENT OF ELECTRIC POWER TABLES FOR EEDI (EPT-EEDI)

1 Introduction to the document "Electric Power Table for EEDI"

1.1 This appendix contains a guideline for the document "Electric Power Table for EEDI" which is similar to the actual shipyards' load balance document, utilizing well defined criteria, providing standard format, clear loads definition and grouping, standard load factors, etc. A number of new definitions (in particular the "groups") are introduced, giving an apparent greater complexity to the calculation process. However, this intermediate step to the final calculation of P_{AE} stimulates all the parties to a deep investigation through the global figure of the auxiliary load, allowing comparisons between different ships and technologies and eventually identifying potential efficiencies improvements.

2 Auxiliary load power definition

2.2 P_{AE} is to be calculated as indicated in paragraph 2.5.6 of the Guidelines, together with the following additional three conditions:

.1 no emergency situations (e.g. "no fire", "no flood", "no blackout", "no partial blackout");

.2 evaluation time frame of 24 hours (to account loads with intermittent use); and

.3 ship fully loaded of passenger and/or cargo and crew.

3 Definition of the data to be included in the Electric Power Table for EEDI

3.1 The Electric power table for EEDI calculation should contain the following data elements, as appropriate:

.1 Load's group;
.2 Load's description;
.3 Load's identification tag;
.4 Load's electric circuit Identification;
.5 Load's mechanical rated power "*Pm*" [*kW*];
.6 Load's electric motor rated output power [*kW*];
.7 Load's electric motor efficiency "*e*" [/];
.8 Load's Rated electric power "*Pr*" [*kW*];
.9 Service factor of load "*kl*" [/];
.10 Service factor of duty "*kd*" [/];
.11 Service factor of time "*kt*" [/];
.12 Service total factor of use "*ku*" [/], where *ku=kl·kd·kt;*
.13 Load's necessary power "*Pload*" [*kW*], where *Pload=Pr·ku;*
.14 Notes;
.15 Group's necessary power [*kW*]; and
.16 Auxiliaries load's power P_{AE} [*kW*].

4 Data to be included in the Electric Power Table for EEDI

Load groups

4.1 The Loads are put into defined groups, allowing a proper breakdown of the auxiliaries. This eases the verification process and makes it possible to identify those areas where load reductions might be possible. The groups are listed below:

.1 A – Hull, Deck, Navigation and Safety services;
.2 B – Propulsion service auxiliaries;
.3 C – Auxiliary Engine and Main Engine Services;
.4 D – Ship's General services;
.5 E – Ventilation for Engine-rooms and Auxiliaries room;
.6 F – Air Conditioning services;
.7 G – Galleys, refrigeration and Laundries services;
.8 H – Accommodation services;
.9 I – Lighting and socket services;
.10 L – Entertainment services;
.11 N – Cargo loads; and
.12 M – Miscellaneous.

All the ship's loads have to be delineated in the document, excluding only *PAeff*, the shaft motors and shaft motors chain (while the propulsion services auxiliaries are partially included below in paragraph 4.1.2 B). Some loads (i.e. thrusters, cargo pumps, cargo gear, ballast pumps, maintaining cargo, reefers and cargo hold fans) still are included in the group for sake of transparency, however their service factor is zero in order to comply with rows 4 and 5 of paragraph 2.5.6 of the Guidelines, therefore making it easier to verify that all the loads have been considered in the document and there are no loads left out of the measurement.

4.1.1 A – Hull, Deck, Navigation and safety services

.1 loads included in the Hull services typically are: ICCP systems, mooring equipment, various doors, ballasting systems, Bilge systems, Stabilizing equipment, etc. Ballasting systems are indicated with service factor equal to zero to comply with row 5 of paragraph 2.5.6 of the Guidelines;

.2 loads included in the deck services typically are: deck and balcony washing systems, rescue systems, cranes, etc.;

.3 loads included in the navigation services typically are: navigation systems, navigation's external and internal communication systems, steering systems, etc.; and

.4 loads included in the safety services typically are: active and passive fire systems, emergency shutdown systems, public address systems, etc.

4.1.2 B – Propulsion service auxiliaries

This group typically includes: propulsion secondary cooling systems such as LT cooling pumps dedicated to shaft motors, LT cooling pumps dedicated to propulsion converters, propulsion UPSs, etc. Propulsion service Loads do not include shaft motors (*PTI(i)*) and the auxiliaries which are part of them (shaft motor own cooling fans and pump, etc.) and the shaft motor chain losses and auxiliaries which are part of them (i.e. shaft motor converters including relevant auxiliaries such as converter own cooling fans and pumps, shaft motor

transformers including relevant auxiliaries losses such as propulsion transformer own cooling fans and pumps, shaft motor Harmonic filter including relevant auxiliaries losses, shaft motor excitation system including the relevant auxiliaries consumed power, etc.). Propulsion service auxiliaries include manoeuvring propulsion equipments such as manoeuvring thrusters and their auxiliaries whose service factor is to be set to zero.

4.1.3 C – Auxiliary Engine and Main Engine Services
This group includes: cooling systems, i.e. pumps and fans for cooling circuits dedicated to alternators or propulsion shaft engines (seawater, technical water dedicated pumps, etc.), lubricating and fuel systems feeding, transfer, treatment and storage, ventilation system for combustion air supply, etc.

4.1.4 D – Ship's General services
This group includes Loads which provide general services which can be shared between shaft motor, auxiliary engines and main engine and accommodation support systems. Loads typically included in this group are: Cooling systems, i.e. pumping seawater, technical water main circuits, compressed air systems, fresh water generators, automation systems, etc.

4.1.5 E – Ventilation for Engine-rooms and Auxiliaries room
This group includes all fans providing ventilation for engine-rooms and auxiliary rooms that typically are: Engine-rooms cooling supply-exhaust fans, auxiliary rooms supply and exhaust fans. All the fans serving accommodation areas or supplying combustion air are not included in this group. This group does not include cargo hold fans, and garage supply and exhaust fans.

4.1.6 F – Air Conditioning services
All Loads that make up the air conditioning service that typically are: air conditioning chillers, air conditioning cooling and heating fluids transfer and treatment, air conditioning's air handling units ventilation, air conditioning re-heating systems with associated pumping, etc. The air conditioning chillers service factor of load, service factor of time and service factor of duty are to be set as 1 (*kl=1, kt*=1 and *kd*=1) in order to avoid the detailed validation of the heat load dissipation document (i.e. the chiller's electric motor rated power is to be used). However, *kd* is to represent the use of spare chillers (e.g. four chillers are installed and one out four is spare then *kd=0* for the spare chiller and *kd*=1 for the remaining three chillers), but only when the number of spare chillers is clearly demonstrated via the heat load dissipation document.

4.1.7 G – Galleys, refrigeration and Laundries services
All Loads related to the galleys, pantries refrigeration and laundry services that typically are: Galleys various machines, cooking appliances, galleys' cleaning machines, galleys auxiliaries, refrigerated room systems including refrigeration compressors with auxiliaries, air coolers, etc.

4.1.8 H – Accommodation services
All Loads related to the accommodation services of passengers and crew that typically are: crew and passengers' transportation systems, i.e. lifts, escalators, etc., environmental services, i.e. black and grey water collecting, transfer, treatment, storage, discharge, waste systems including collecting, transfer, treatment, storage, etc., accommodation fluids transfers, i.e. sanitary hot and cold water pumping, etc., treatment units, pools systems, saunas, gym equipments, etc.

4.1.9 I – Lighting and socket services
All Loads related to the lighting, entertainment and socket services. As the quantity of lighting circuits and sockets within the ship may be significantly high, it is not practically feasible to list all the lighting circuits and points in the EPT for EEDI. Therefore circuits should be grouped into subgroups aimed to identify possible improvements of efficient use of power. The subgroups are:

.1 Lighting for 1) cabins, 2) corridors, 3) technical rooms/stairs, 4) public spaces/stairs, 5) engine-rooms and auxiliaries' room, 6) external areas, 7) garages and 8) cargo spaces. All have to be divided by main vertical zone; and

.2 Power sockets for 1) cabins, 2) corridors, 3) technical rooms/stairs, 4) public spaces/stairs, 5) engine-rooms and auxiliaries' room, 6) garages and 7) cargo spaces. All have to be divided by main vertical zone.

The calculation criteria for complex groups (e.g. cabin lighting and power sockets) subgroups are to be included via an explanatory note, indicating the load composition (e.g. lights of typical cabins, TV, hair dryer, fridge, etc., typical cabins).

4.1.10 L – Entertainment services
This group includes all Loads related to the entertainment services that typically are: public spaces audio and video equipments, theatre stage equipments, IT systems for offices, video games, etc.

4.1.11 N – Cargo Loads
This group will contain all cargo loads such as cargo pumps, cargo gear, maintaining cargo, cargo reefers loads, cargo hold fans and garage fans for sake of transparency. However, the service factor of this group is to be set to zero.

4.1.12 M – Miscellaneous
This group will contain all loads which have not been associated to the above-mentioned groups but still are contributing to the overall load calculation of the normal maximum sea load.

Loads description

4.2 This identifies the loads (for example "seawater pump").

Loads identification tag

4.3 This tag identifies the loads according to the shipyard's standards tagging system. For example, the "PTI1 fresh water pump" identification tag is "SYYIA/C" for an example ship and shipyard. This data provides a unique identifier for each load.

Loads electric circuit Identification

4.4 This is the tag of the electric circuit supplying the load. Such information allows the data validation process.

***Loads mechanical rated power* "*Pm*"**

4.5 This data is to be indicated in the document only when th electric load is made by an electric motor driving a mechanical load (for example a fan, a pump, etc.). This is the rated power of the mechanical device driven by an electric motor.

Loads electric motor rated output power [kW]

4.6 The output power of the electric motor as per maker's name plate or technical specification. This data does not take part of the calculation but is useful to highlight potential over rating of the combination motor-mechanical load.

***Loads electric motor efficiency* "*e*" [*/*]**

4.7 This data is to be entered in the document only when the electric load is made by an electric motor driving a mechanical load.

Loads rated electric power* "*Pr*" *[kW]

4.8 Typically the maximum electric power absorbed at the load electric terminals at which the load has been designed for its service, as indicated on the maker's name plate and/or maker's technical specification. When the electric load is made by an electric motor driving a mechanical load the load's rated electric power is: *Pr=Pm/e [kW].*

Service factor of load* "*kl*" *[/]

4.9 Provides the reduction from the loads rated electric power to loads necessary electric power that is to be made when the load absorb less power than its rated power. For example, in case of electric motor driving a mechanical load, a fan could be designed with some power margin, leading to the fact that the fan rated mechanical power exceeds the power requested by the duct system it serves. Another example is when a pump rated power exceed the power needed for pumping in its delivery fluid circuit. Another example in case of electric self-regulating semi-conductors electric heating system is oversized and the rated power exceeds the power absorbed, according a factor *kl.*

***Service factor of duty* "*kd*" [*/*]**

4.10 Factor of duty is to be used when a function is provided by more than one load. As all loads have to be included in the EPT for EEDI, this factor provides a correct summation of the loads. For example when two pumps serve the same circuit and they run in duty/stand-by their *Kd* factor will be ½ and ½. When three compressors serves the same circuit and one runs in duty and two in stand-by, then *kd* is 1/3, 1/3 and 1/3.

***Service factor of time* "*kt*" [*/*]**

4.11 A factor of time based on the shipyard's evaluation about the load duty along 24 hours of ship's navigation as defined at paragraph 3. For example the Entertainment loads operate at their power for a limited period of time, 4 hours out 24 hours; as a consequence *kt=4/24.* For example, the seawater cooling pumps operate at their power all the time during the navigation at *Vref*. As a consequence *kt=1*.

***Service total factor of use* "*ku*" [*/*]**

4.12 The total factor of use that takes into consideration all the service factors: *ku=kl·kd·kt.*

Loads necessary power* "*Pload*" *[kW]

4.13 The individual user contribution to the auxiliary load power is *Pload=Pr·ku.*

Notes

4.14 A note, as free text, could be included in the document to provide explanations to the verifier.

***Groups necessary power* [*kW*]**

4.15 The summation of the "Loads necessary power" from group A to N. This is an intermediate step which is not strictly necessary for the calculation of *PAE*. However, it is useful to allow a quantitative analysis of the *PAE*, providing a standard breakdown for analysis and potential improvements of energy saving.

***Auxiliaries load's power PAE* [*kW*]**

4.16 Auxiliaries load's power *PAE* is the summation of the "Load's necessary power" of all the loads divided by the average efficiency of the generator(s) weighted by power.

PAE=ΣPload(i)/(average efficiency of the generator(s) weighted by power)

Layout and organization of the data indicated in the "Electric power table for EEDI"

5 The document "Electric power table for EEDI" is to include general information (i.e. ship's name, project name, document references, etc.) and a table with:

.1 one row containing column titles;

.2 one Column for table row ID;

.3 one Column for the groups identification ("A", "B", etc.) as indicated in paragraphs 4.1.1 to 4.1.12 of this guideline;

.4 one Column for the group descriptions as indicated in paragraphs 4.1.1 to 4.1.12 of this guideline;

.5 one column each for items in paragraphs 4.2 to 4.14 of this guideline (e.g. "load tag", etc.);

.6 one row dedicated to each individual load;

.7 the summation results (i.e. summation of powers) including data from paragraphs 4.15 to 4.16 of this guideline; and

.8 explanatory notes.

An example of an Electric Power Table for EEDI for a cruise postal vessel which transports passenger and have a car garage and reefer holds for fish trade transportation is indicated below. The data indicated and the type of ship is for reference only.

ELECTRIC POWER TABLE FOR EEDI			HULL "EXAMPLE"	PROJECT "EXAMPLE"										(NMSL=Normal Maximun Sea Load)
id	Load group	Load description	Load identification tag	Load electric circuit Identification	Load mechanical rated power "Pm" [kW]	Load electric motor rated output power [kW]	Load electric motor efficiency "e" [/]	Load Rated electric power "Pr" [kW]	service factor of load "kl" [/]	service factor of duty "kd" [/]	service factor of time "kt" [/]	service total factor of use "ku" [/]	Load necessary power "Pload" [kW]	Note
1	A	Hull cathodic protection Fwd	xxx	yyy	n.a.	n.a.	n.a.	5.2	1	1	1*	1	5.2	*in use 24hours/day
2	A	Hull cathodic protection mid	xxx	yyy	n.a.	n.a.	n.a.	7.0	1	1	1*	1	7	*in use 24hours/day
3	A	Hull cathodic protection aft	xxx	yyy	n.a.	n.a.	n.a.	4.8	1	1	1*	1	4.8	*in use 24hours/day
4	A	Ballast pump 3	xxx	yyy	30	36	0.92	32.6	0.9	0.5	1	0*	0	*not in use at **NMSL** see para 2.5.6 of Circ.681
5	A	Fwd Stb mooring winch motor n.1	xxx	yyy	90	150	0.92	97.8	0.8	1	0*	0*	0	*not in use at **NMSL** see para 2.5.6 of Circ.681
6	A	WTDs system main control panel	xxx	yyy	n.a.	n.a.	n.a.	0.5	1	1	1*	1	0.5	*in use 24hours/day
7	A	WTD 1, deck D frame 150	xxx	yyy	1.2	3	0.91	1.3	0.7	1	0.104*	0.0728	0.096	*180 secs to open/close x 100 opening a day
8	A	WTD 5, deck D frame 210	xxx	yyy	1.2	3	0.91	1.3	0.7	1	0.156*	0.1092	0.14	*180 secs to open/close x 150 opening a day
9	A	Stabilisers control unit	xxx	yyy	n.a.	n.a.	n.a.	0.7	1	1	1*	1	0.7	*in use 24hours/day
10	A	Stabilisers Hydraulic pack power pump 1	xxx	yyy	80	90	0.9	88.9	0.9	1	0*	0	0	*NMSL=> calm sea,=> stabiliser not in use
11	A	S-band Radar 1 controller	xxx	yyy	n.a.	n.a.	n.a.	0.4	1	1	1*	1	0.4	*in use 24hours/day
12	A	S-band Radar 1 motor	xxx	yyy	0.8	1	0.92	0.9	1	1	1*	1	0.9	*in use 24hours/day
13	A	Fire detection system bridge main unit	xxx	yyy	n.a.	n.a.	n.a.	1.5	1	1	1*	1	1.5	*in use 24hours/day
14	A	Fire detection system ECR unit	xxx	yyy	n.a.	n.a.	n.a.	0.9	1	1	1*	1	0.9	*in use 24hours/day
15	A	High pressure water fog contol unit	xxx	yyy	n.a.	n.a.	n.a.	1.2	1	1	1*	1	1.2	*in use 24hours/day
16	A	High pressure water fog engines rooms pump 1a	xxx	yyy	25	30	0.93	26.9	0.9	0.5	0*	0	0	*NMSL=> not emergency =>Load not in use
17	A	High pressure water fog engines rooms pump 1b	xxx	yyy	25	30	0.93	26.9	0.9	0.5	0*	0	0	* not emergency situations
18	B	PTi port fresh water pump 1	xxx	yyy	30	36	0.92	32.6	0.9	0.5*	1	0.45	14.7	* pump1,2 one is duty and one is stand-by
19	B	PTi port fresh water pump 2	xxx	yyy	30	36	0.92	32.6	0.9	0.5*	1	0.45	14.7	* pump1,2 one is duty and one is stand-by
20	B	Thrusters control system	xxx	yyy	n.a.	n.a.	n.a.	0.5	1	1	1*	1	0.5	in use 24hours/day (even if thruster motor isn't)
21	B	Bow thruster 1	xxx	yyy	3000	3000	0.96	3125.0	1	1	0*	0	0	*NMSL=>thrusters motor are not in use
22	B	PEM port cooling fan 1	xxx	yyy	20	25	0.93	21.5	0.9	1	n.a.	n.a	n.a.*	*this load is included in the propulsion chain data
23	C	HT circulation pump 1 DG 3	xxx	yyy	8	10	0.92	8.7	0.9	0.5*	1	0.45	3.9	* pump1,2 one is duty and one is stand-by
24	C	HT circulation pump 2 DG 3	xxx	yyy	8	10	0.92	8.7	0.9	0.5*	1	0.45	3.9	* pump1,2 one is duty and one is stand-by
25	C	DG3 combustion air fan	xxx	yyy	28	35	0.92	30.4	0.9	1	1*	0.9	27.4	*in use 24hours/day
26	C	DG3 exhaust gas boiler circulationg pump	xxx	yyy	6	8	0.93	6.5	0.8	1	1*	0.8	5.2	*in use 24hours/day
27	C	Alternator 3 external cooling fan	xxx	yyy	3	5	0.93	3.2	0.8	1	1*	0.8	2.75	*in use 24hours/day
28	C	fuel feed fwd booster pump a	xxx	yyy	7	9	0.92	7.6	0.9	0.5*	1	0.45	3.4	* pump1,2 one is duty and one is stand-by
29	C	fuel feed fwd booster pump b	xxx	yyy	7	9	0.92	7.6	0.9	0.5*	1	0.45	3.4	* pump1,2 one is duty and one is stand-by
30	D	Fwd main LT cooling pump 1	xxx	yyy	120	150	0.95	126.3	0.9	0.5*	1	0.45	56.8	* pump1,2 one is duty and one is stand-by
31	D	Fwd main LT cooling pump 2	xxx	yyy	120	150	0.95	126.3	0.9	0.5*	1	0.45	56.8	* pump1,2 one is duty and one is stand-by
32	E	FWD engine room supply fan 1	xxx	yyy	87.8	110	0.93	94.4	0.95	1	1*	0.95	89.7	*in use 24hours/day
33	E	FWD engine room exhaust fan 1	xxx	yyy	75	86	0.93	80.6	0.96	1	1*	0.96	77.4	*in use 24hours/day
34	E	purifier room supply fan 1	xxx	yyy	60	70	0.93	64.5	0.96	0.5	1*	0.48	31.0	*in use 24hours/day
35	E	purifier room supply fan 2	xxx	yyy	60	70	0.93	64.5	0.96	0.5	1*	0.48	31.0	*in use 24hours/day
36	F	HVAC chiller a	xxx	yyy	1450	1600	0.95	1526.3	1	2/3*	1	0.66	1007.4	*1 Chiller is spare; see heat load dissipation doc.
37	F	HVAC chiller b	xxx	yyy	1450	1600	0.95	1526.3	1	2/3*	1	0.66	1007.4	*1 Chiller is spare; see heat load dissipation doc.
38	F	HVAC chiller C	xxx	yyy	1450	1600	0.95	1526.3	1	2/3*	1	0.66	1007.4	*1 Chiller is spare; see heat load dissipation doc.
39	F	A.H.U. Ac station 5.4 supply fan	xxx	yyy	50	60	0.93	53.8	0.9	1	1*	0.9	48.4	*in use 24hours/day
40	F	A.H.U. Ac station 5.4 exhaust fan	xxx	yyy	45	55	0.93	48.4	0.9	1	1*	0.9	43.5	*in use 24hours/day
41	F	Chilled water pump a	xxx	yyy	80	90	0.93	86.0	0.88	0.5*	1	0.44	37.8	* pump1,2 one is duty and one is stand-by
42	F	Chilled water pump b	xxx	yyy	80	90	0.93	86.0	0.88	0.5*	1	0.44	37.8	* pump1,2 one is duty and one is stand-by
43	G	Italian's espresso coffee machine	xxx	yyy	n.a.	n.a.	n.a.	7.0	0.9	1	0.2*	0.18	1.3	*in use 4.8hours/day
44	G	deep freezer machine	xxx	yyy	n.a.	n.a.	n.a.	20.0	0.8	1	0.16*	0.128	3.2	*in use 4hours/day
45	G	washing machine 1	xxx	yyy	n.a.	n.a.	n.a.	8.0	0.8	1	0.33*	0.264	3.2	*in use 8hours/day
46	H	lift pax mid 4	xxx	yyy	30	40	0.93	32.3	0.5	1	0.175*	0.0875	0.9	*in use 4hours/day
47	H	vaccum collecting system 4 pump a	xxx	yyy	10	13	0.92	10.9	0.9	1	1*	0.9	8.7	*in use 24hours/day
48	H	sewage treatmet system 1 pump 1	xxx	yyy	15	17	0.93	16.1	0.9	1	1*	0.9	8.7	*in use 24hours/day
49	H	Gym running machine	xxx	yyy	n.a.	n.a.	n.a.	2.5	1	1	0.3*	0.3	0.8	*in use 7.2hours/day
50	I	Cabin's lighting MVZ3	n.a.	n.a.	n.a.	n.a.	n.a.	80*	1	1	1	1	80.0	* see explainatory note
51	I	corridors ligthing MVZ3	n.a.	n.a.	n.a.	n.a.	n.a.	10*	1	1	1	1	10.0	* see explainatory note
52	I	Cabin's sockets MVZ3	n.a.	n.a.	n.a.	n.a.	n.a.	5*	1	1	1	1	5.0	* see explainatory note
53	L	Main Theatre audio booster amplifier	xxx	yyy	n.a.	n.a.	n.a.	15.0	1	1	0.3*	0.3	4.5	*in use 7.2hours/day
54	L	Video wall atrium	xxx	yyy	n.a.	n.a.	n.a.	2.0	1	1	0.3*	0.3	0.6	*in use 7.2hours/day
55	M	Car Garage supply fan1	xxx	yyy	28	35	0.92	30.4	0.9	1	1*	0*	0	*not in use at **NMSL** see para 2.5.6 of Circ.681
56	M	Fish transportation refeer hold n.2	xxx	yyy	25	30	0.93	26.9	0.9	0.5	0*	0*	0	*not in use at **NMSL** see para 2.5.6 of Circ.681
57	N	Sliding glass roof	xxx	yyy	30	40	0.93	32.3	0.9	1	0.3*	0.27	0.2	*in use 7.2hours/day
											ΣPload(i)=		**3764**	

***PAE* =3764/(weighted average efficiency of generator(s)) [kW]** Group's necessary power (group A=22.9kW, B=29.8kW,C=49.9kW, D=113.7kW, E=229kW , F=3189kW, G=7.6kW, H=19kW, I=95kW, L=5.1kW, M=0kW, N=0.22kW)

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ANNEX 9

RESOLUTION MEPC.213(63)

Adopted on 2 March 2012

2012 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution,

RECALLING ALSO that, at its sixty-second session, the Committee adopted, by resolution MEPC.203(62), amendments to the Annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (inclusion of regulations on energy efficiency for ships in MARPOL Annex VI),

NOTING the amendments to MARPOL Annex VI adopted at its sixty-second session by inclusion of a new chapter 4 for regulations on energy efficiency for ships, are expected to enter into force on 1 January 2013 upon their acceptance on 1 July 2012,

NOTING ALSO that regulation 22 of MARPOL Annex VI, as amended, requires each ship to keep on board a ship specific Ship Energy Efficiency Management Plan taking into account guidelines developed by the Organization,

RECOGNIZING that the amendments to MARPOL Annex VI requires the adoption of relevant guidelines for smooth and uniform implementation of the regulations and to provide sufficient lead time for industry to prepare,

HAVING CONSIDERED, at its sixty-third session, the draft 2012 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP),

1. ADOPTS the 2012 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP), as set out at annex to the present resolution;

2. INVITES Administrations to take the annexed Guidelines into account when developing and enacting national laws which give force to and implement provisions set forth in regulation 22 of MARPOL Annex VI, as amended;

3. REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the annexed Guidelines related to the Ship Energy Efficiency Management Plan (SEEMP) to the attention of masters, seafarers, shipowners, ship operators and any other interested groups;

4. AGREES to keep these Guidelines under review in light of the experience gained; and

5. REVOKES the Guidance circulated by MEPC.1/Circ.683, as from this date.

ANNEX

2012 GUIDELINES FOR THE DEVELOPMENT OF A SHIP ENERGY EFFICIENCY MANAGEMENT PLAN (SEEMP)

CONTENTS

1 INTRODUCTION

1.1 These Guidelines have been developed to assist with the preparation of Ship Energy Efficiency Management Plan (hereafter referred to as the "SEEMP") that are required by regulation 22 of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) (hereafter referred to as the "Convention").

1.2 A SEEMP provides a possible approach for monitoring ship and fleet efficiency performance over time and some options to be considered when seeking to optimize the performance of the ship.

1.3 These Guidelines should be used primarily by ships' masters, operators and owners in order to develop the SEEMP.

1.4 A sample form of a SEEMP is presented in the appendix for illustrative purposes.

2 DEFINITIONS

2.1 For the purpose of these Guidelines, the definitions in the Annex VI of the Convention apply.

2.2 "Company" means the owner of the ship or any other organization of person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the shipowner.

2.3 "Safety Management system" means a structured and documented system enabling company personnel to implement effectively the company safety and environmental protection policy, as defined in paragraph 1.1 of International Safety Management Code.

3 GENERAL

3.1 In global terms it should be recognized that operational efficiencies delivered by a large number of ship operators will make an invaluable contribution to reducing global carbon emissions.

3.2 The purpose of a SEEMP is to establish a mechanism for a company and/or a ship to improve the energy efficiency of a ship's operation. Preferably, the ship-specific SEEMP is linked to a broader corporate energy management policy for the company that owns, operates or controls the ship, recognizing that no two shipping companies are the same, and that ships operate under a wide range of different conditions.

3.3 Many companies will already have an environmental management system (EMS) in place under ISO 14001 which contains procedures for selecting the best measures for particular vessels and then setting objectives for the measurement of relevant parameters, along with relevant control and feedback features. Monitoring of operational environmental efficiency should therefore be treated as an integral element of broader company management systems.

3.4 In addition, many companies already develop, implement and maintain a Safety Management System. In such case, the SEEMP may form part of the ship's Safety Management System.

3.5 This document provides guidance for the development of a SEEMP that should be adjusted to the characteristics and needs of individual companies and ships. The SEEMP is intended to be a management tool to assist a company in managing the ongoing environmental performance of its vessels and as such, it is recommended that a company develops procedures for implementing the plan in a manner which limits any onboard administrative burden to the minimum necessary.

3.6 The SEEMP should be developed as a ship-specific plan by the company. The SEEMP seeks to improve a ship's energy efficiency through four steps: *planning*, *implementation*, *monitoring*, and *self-evaluation and improvement*. These components play a critical role in the continuous cycle to improve ship energy management. With each iteration of the cycle, some elements of the SEEMP will necessarily change while others may remain as before.

3.7 At all times safety considerations should be paramount. The trade a ship is engaged in may determine the feasibility of the efficiency measures under consideration. For example, ships that perform services at sea (pipe laying, seismic survey, OSVs, dredgers, etc.) may choose different methods of improving energy efficiency when compared to conventional cargo carriers. The length of voyage may also be an important parameter as may trade specific safety considerations.

4 FRAMEWORK AND STRUCTURE OF THE SEEMP

4.1 Planning

4.1.1 Planning is the most crucial stage of the SEEMP, in that it primarily determines both the current status of ship energy usage and the expected improvement of ship energy efficiency. Therefore, it is encouraged to devote sufficient time to planning so that the most appropriate, effective and implementable plan can be developed.

Ship-specific measures

4.1.2 Recognizing that there are a variety of options to improve efficiency – speed optimization, weather routeing and hull maintenance, for example – and that the best package of measures for a ship to improve efficiency differs to a great extent depending upon ship type, cargoes, routes and other factors, the specific measures for the ship to improve energy efficiency should be identified in the first place. These measures should be listed as a package of measures to be implemented, thus providing the overview of the actions to be taken for that ship.

4.1.3 During this process, therefore, it is important to determine and understand the ship's current status of energy usage. The SEEMP then identifies energy-saving measures that have been undertaken, and determines how effective these measures are in terms of improving energy efficiency. The SEEMP also identifies what measures can be adopted to further improve the energy efficiency of the ship. It should be noted, however, that not all measures can be applied to all ships, or even to the same ship under different operating conditions and that some of them are mutually exclusive. Ideally, initial measures could yield energy (and cost) saving results that then can be reinvested into more difficult or expensive efficiency upgrades identified by the SEEMP.

4.1.4 Guidance on Best Practices for Fuel-Efficient Operation of Ships set out in chapter 5, can be used to facilitate this part of the planning phase. Also, in the planning process, particular consideration should be given to minimize any onboard administrative burden.

Company-specific measures

4.1.5 The improvement of energy efficiency of ship operation does not necessarily depend on single ship management only. Rather, it may depend on many stakeholders including ship repair yards, shipowners, operators, charterers, cargo owners, ports and traffic management services. For example, "Just in time" – as explained in 5.5 – requires good early communication among operators, ports and traffic management service. The better coordination among such stakeholders is, the more improvement can be expected. In most cases, such coordination or total management is better made by a company rather than by a ship. In this sense, it is recommended that a company also establish an energy management plan to manage its fleet (should it not have one in place already) and make necessary coordination among stakeholders.

Human resource development

4.1.6 For effective and steady implementation of the adopted measures, raising awareness of and providing necessary training for personnel both on shore and on board are an important element. Such human resource development is encouraged and should be considered as an important component of planning as well as a critical element of implementation.

Goal setting

4.1.7 The last part of planning is goal setting. It should be emphasized that the goal setting is voluntary, that there is no need to announce the goal or the result to the public, and that neither a company nor a ship are subject to external inspection. The purpose of goal setting is to serve as a signal which involved people should be conscious of, to create a good incentive for proper implementation, and then to increase commitment to the improvement of energy efficiency. The goal can take any form, such as the annual fuel consumption or a specific target of Energy Efficiency Operational Indicator (EEOI). Whatever the goal is, the goal should be measurable and easy to understand.

4.2 Implementation

Establishment of implementation system

4.2.1 After a ship and a company identify the measures to be implemented, it is essential to establish a system for implementation of the identified and selected measures by developing the procedures for energy management, by defining tasks and by assigning them to qualified personnel. Thus, the SEEMP should describe how each measure should be implemented and who the responsible person(s) is. The implementation period (start and end dates) of each selected measure should be indicated. The development of such a system can be considered as a part of *planning*, and therefore may be completed at the planning stage.

Implementation and record-keeping

4.2.2 The planned measures should be carried out in accordance with the predetermined implementation system. Record-keeping for the implementation of each measure is beneficial for self-evaluation at a later stage and should be encouraged. If any identified measure cannot be implemented for any reason(s), the reason(s) should be recorded for internal use.

4.3 Monitoring

Monitoring tools

4.3.1 The energy efficiency of a ship should be monitored quantitatively. This should be done by an established method, preferably by an international standard. The EEOI developed by the Organization is one of the internationally established tools to obtain a quantitative indicator of energy efficiency of a ship and/or fleet in operation, and can be used for this purpose. Therefore, EEOI could be considered as the primary monitoring tool, although other quantitative measures also may be appropriate.

4.3.2 If used, it is recommended that the EEOI is calculated in accordance with the Guidelines developed by the Organization (MEPC.1/Circ.684), adjusted, as necessary, to a specific ship and trade.

4.3.3 In addition to the EEOI, if convenient and/or beneficial for a ship or a company, other measurement tools can be utilized. In the case where other monitoring tools are used, the concept of the tool and the method of monitoring may be determined at the planning stage.

Establishment of monitoring system

4.3.4 It should be noted that whatever measurement tools are used, continuous and consistent data collection is the foundation of monitoring. To allow for meaningful and consistent monitoring, the monitoring system, including the procedures for collecting data and the assignment of responsible personnel, should be developed. The development of such a system can be considered as a part of *planning*, and therefore should be completed at the planning stage.

4.3.5 It should be noted that, in order to avoid unnecessary administrative burdens on ships' staff, monitoring should be carried out as far as possible by shore staff, utilizing data obtained from existing required records such as the official and engineering log-books and oil record books, etc. Additional data could be obtained as appropriate.

Search and Rescue

4.3.6 When a ship diverts from its scheduled passage to engage in search and rescue operations, it is recommended that data obtained during such operations is not used in ship energy efficiency monitoring, and that such data may be recorded separately.

4.4 Self-evaluation and improvement

4.4.1 *Self-evaluation and improvement* is the final phase of the management cycle. This phase should produce meaningful feedback for the coming first stage, i.e. planning stage of the next improvement cycle.

4.4.2 The purpose of self-evaluation is to evaluate the effectiveness of the planned measures and of their implementation, to deepen the understanding on the overall characteristics of the ship's operation such as what types of measures can/cannot function effectively, and how and/or why, to comprehend the trend of the efficiency improvement of that ship and to develop the improved SEEMP for the next cycle.

4.4.3 For this process, procedures for self-evaluation of ship energy management should be developed. Furthermore, self-evaluation should be implemented periodically by using data collected through monitoring. In addition, it is recommended to invest time in identifying the cause-and-effect of the performance during the evaluated period for improving the next stage of the management plan.

5 GUIDANCE ON BEST PRACTICES FOR FUEL-EFFICIENT OPERATION OF SHIPS

5.1 The search for efficiency across the entire transport chain takes responsibility beyond what can be delivered by the owner/operator alone. A list of all the possible stakeholders in the efficiency of a single voyage is long; obvious parties are designers, shipyards and engine manufacturers for the characteristics of the ship, and charterers, ports and vessel traffic management services, etc., for the specific voyage. All involved parties should consider the inclusion of efficiency measures in their operations both individually and collectively.

Fuel-Efficient Operations

Improved voyage planning

5.2 The optimum route and improved efficiency can be achieved through the careful planning and execution of voyages. Thorough voyage planning needs time, but a number of different software tools are available for planning purposes.

5.3 IMO resolution A.893(21) (25 November 1999) on "Guidelines for voyage planning" provides essential guidance for the ship's crew and voyage planners.

Weather routeing

5.4 Weather routeing has a high potential for efficiency savings on specific routes. It is commercially available for all types of ship and for many trade areas. Significant savings can be achieved, but conversely weather routeing may also increase fuel consumption for a given voyage.

Just in time

5.5 Good early communication with the next port should be an aim in order to give maximum notice of berth availability and facilitate the use of optimum speed where port operational procedures support this approach.

5.6 Optimized port operation could involve a change in procedures involving different handling arrangements in ports. Port authorities should be encouraged to maximize efficiency and minimize delay.

Speed optimization

5.7 Speed optimization can produce significant savings. However, optimum speed means the speed at which the fuel used per tonne mile is at a minimum level for that voyage. It does not mean minimum speed; in fact, sailing at less than optimum speed will consume more fuel rather than less. Reference should be made to the engine manufacturer's power/consumption curve and the ship's propeller curve. Possible adverse consequences of slow speed operation may include increased vibration and problems with soot deposits in combustion chambers and exhaust systems. These possible consequences should be taken into account.

5.8 As part of the speed optimization process, due account may need to be taken of the need to coordinate arrival times with the availability of loading/discharge berths, etc. The number of ships engaged in a particular trade route may need to be taken into account when considering speed optimization.

5.9 A gradual increase in speed when leaving a port or estuary whilst keeping the engine load within certain limits may help to reduce fuel consumption.

5.10 It is recognized that under many charter parties the speed of the vessel is determined by the charterer and not the operator. Efforts should be made when agreeing charter party terms to encourage the ship to operate at optimum speed in order to maximize energy efficiency.

Optimized shaft power

5.11 Operation at constant shaft RPM can be more efficient than continuously adjusting speed through engine power (see paragraph 5.7). The use of automated engine management systems to control speed rather than relying on human intervention may be beneficial.

Optimized ship handling

Optimum trim

5.12 Most ships are designed to carry a designated amount of cargo at a certain speed for a certain fuel consumption. This implies the specification of set trim conditions. Loaded or unloaded, trim has a significant influence on the resistance of the ship through the water and optimizing trim can deliver significant fuel savings. For any given draft there is a trim condition that gives minimum resistance. In some ships, it is possible to assess optimum trim conditions for fuel efficiency continuously throughout the voyage. Design or safety factors may preclude full use of trim optimization.

Optimum ballast

5.13 Ballast should be adjusted taking into consideration the requirements to meet optimum trim and steering conditions and optimum ballast conditions achieved through good cargo planning.

5.14 When determining the optimum ballast conditions, the limits, conditions and ballast management arrangements set out in the ship's Ballast Water Management Plan are to be observed for that ship.

5.15 Ballast conditions have a significant impact on steering conditions and autopilot settings and it needs to be noted that less ballast water does not necessarily mean the highest efficiency.

Optimum propeller and propeller inflow considerations

5.16 Selection of the propeller is normally determined at the design and construction stage of a ship's life but new developments in propeller design have made it possible for retrofitting of later designs to deliver greater fuel economy. Whilst it is certainly for consideration, the propeller is but one part of the propulsion train and a change of propeller in isolation may have no effect on efficiency and may even increase fuel consumption.

5.17 Improvements to the water inflow to the propeller using arrangements such as fins and/or nozzles could increase propulsive efficiency power and hence reduce fuel consumption.

Optimum use of rudder and heading control systems (autopilots)

5.18 There have been large improvements in automated heading and steering control systems technology. Whilst originally developed to make the bridge team more effective, modern autopilots can achieve much more. An integrated Navigation and Command System can achieve significant fuel savings by simply reducing the distance sailed "off track". The principle is simple; better course control through less frequent and smaller corrections will minimize losses due to rudder resistance. Retrofitting of a more efficient autopilot to existing ships could be considered.

5.19 During approaches to ports and pilot stations the autopilot cannot always be used efficiently as the rudder has to respond quickly to given commands. Furthermore at certain stage of the voyage it may have to be deactivated or very carefully adjusted, i.e. heavy weather and approaches to ports.

5.20 Consideration may be given to the retrofitting of improved rudder blade design (e.g. "twist-flow" rudder).

Hull maintenance

5.21 Docking intervals should be integrated with ship operator's ongoing assessment of ship performance. Hull resistance can be optimized by new technology-coating systems, possibly in combination with cleaning intervals. Regular in-water inspection of the condition of the hull is recommended.

5.22 Propeller cleaning and polishing or even appropriate coating may significantly increase fuel efficiency. The need for ships to maintain efficiency through in-water hull cleaning should be recognized and facilitated by port States.

5.23 Consideration may be given to the possibility of timely full removal and replacement of underwater paint systems to avoid the increased hull roughness caused by repeated spot blasting and repairs over multiple dockings.

5.24 Generally, the smoother the hull, the better the fuel efficiency.

Propulsion system

5.25 Marine diesel engines have a very high thermal efficiency (~50%). This excellent performance is only exceeded by fuel cell technology with an average thermal efficiency of 60 per cent. This is due to the systematic minimization of heat and mechanical loss. In particular, the new breed of electronic controlled engines can provide efficiency gains. However, specific training for relevant staff may need to be considered to maximize the benefits.

Propulsion system maintenance

5.26 Maintenance in accordance with manufacturers' instructions in the company's planned maintenance schedule will also maintain efficiency. The use of engine condition monitoring can be a useful tool to maintain high efficiency.

5.27 Additional means to improve engine efficiency might include:

Use of fuel additives;
Adjustment of cylinder lubrication oil consumption;
Valve improvements;
Torque analysis; and
Automated engine monitoring systems.

Waste heat recovery

5.28 Waste heat recovery is now a commercially available technology for some ships. Waste heat recovery systems use thermal heat losses from the exhaust gas for either electricity generation or additional propulsion with a shaft motor.

5.29 It may not be possible to retrofit such systems into existing ships. However, they may be a beneficial option for new ships. Shipbuilders should be encouraged to incorporate new technology into their designs.

Improved fleet management

5.30 Better utilization of fleet capacity can often be achieved by improvements in fleet planning. For example, it may be possible to avoid or reduce long ballast voyages through improved fleet planning. There is opportunity here for charterers to promote efficiency. This can be closely related to the concept of "just in time" arrivals.

5.31 Efficiency, reliability and maintenance-oriented data sharing within a company can be used to promote best practice among ships within a company and should be actively encouraged.

Improved cargo handling

5.32 Cargo handling is in most cases under the control of the port and optimum solutions matched to ship and port requirements should be explored.

Energy management

5.33 A review of electrical services on board can reveal the potential for unexpected efficiency gains. However care should be taken to avoid the creation of new safety hazards when turning off electrical services (e.g. lighting). Thermal insulation is an obvious means of saving energy. Also see comment below on shore power.

5.34 Optimization of reefer container stowage locations may be beneficial in reducing the effect of heat transfer from compressor units. This might be combined as appropriate with cargo tank heating, ventilation, etc. The use of water-cooled reefer plant with lower energy consumption might also be considered.

Fuel Type

5.35 Use of emerging alternative fuels may be considered as a CO_2 reduction method but availability will often determine the applicability.

Other measures

5.36 Development of computer software for the calculation of fuel consumption, for the establishment of an emissions "footprint", to optimize operations, and the establishment of goals for improvement and tracking of progress may be considered.

5.37 Renewable energy sources, such as wind, solar (or photovoltaic) cell technology, have improved enormously in the recent years and should be considered for onboard application.

5.38 In some ports shore power may be available for some ships but this is generally aimed at improving air quality in the port area. If the shore-based power source is carbon efficient, there may be a net efficiency benefit. Ships may consider using onshore power if available.

5.39 Even wind assisted propulsion may be worthy of consideration.

5.40 Efforts could be made to source fuel of improved quality in order to minimize the amount of fuel required to provide a given power output.

Compatibility of measures

5.41 This document indicates a wide variety of possibilities for energy efficiency improvements for the existing fleet. While there are many options available, they are not necessarily cumulative, are often area and trade dependent and likely to require the agreement and support of a number of different stakeholders if they are to be utilized most effectively.

Age and operational service life of a ship

5.42 All measures identified in this document are potentially cost-effective as a result of high oil prices. Measures previously considered unaffordable or commercially unattractive may now be feasible and worthy of fresh consideration. Clearly, this equation is heavily influenced by the remaining service life of a ship and the cost of fuel.

Trade and sailing area

5.43 The feasibility of many of the measures described in this guidance will be dependent on the trade and sailing area of the vessel. Sometimes ships will change their trade areas as a result of a change in chartering requirements but this cannot be taken as a general assumption. For example, wind-enhanced power sources might not be feasible for short sea shipping as these ships generally sail in areas with high traffic densities or in restricted waterways. Another aspect is that the world's oceans and seas each have characteristic conditions and so ships designed for specific routes and trades may not obtain the same benefit by adopting the same measures or combination of measures as other ships. It is also likely that some measures will have a greater or lesser effect in different sailing areas.

5.44 The trade a ship is engaged in may determine the feasibility of the efficiency measures under consideration. For example, ships that perform services at sea (pipe laying, seismic survey, OSVs, dredgers, etc.) may choose different methods of improving energy efficiency when compared to conventional cargo carriers. The length of voyage may also be an important parameter as may trade specific safety considerations. The pathway to the most efficient combination of measures will be unique to each vessel within each shipping company.

APPENDIX

A SAMPLE FORM OF A SHIP EFFICIENCY ENERGY MANAGEMENT PLAN

Name of Vessel:		GT:	
Vessel Type:		Capacity:	

Date of Development:		Developed by:	
Implementation Period:	From: Until:	Implemented by:	
Planned Date of Next Evaluation:			

1 MEASURES

Energy Efficiency Measures	**Implementation** (including the starting date)	**Responsible Personnel**
Weather Routeing	<Example> Contracted with [Service providers] to use their weather routeing system and start using on-trial basis as of 1 July 2012.	<Example> The master is responsible for selecting the optimum route based on the information provided by [Service providers].
Speed Optimization	While the design speed (85% MCR) is 19.0 kt, the maximum speed is set at 17.0 kt as of 1 July 2012.	The master is responsible for keeping the ship's speed. The log-book entry should be checked every day.

2 MONITORING

Description of monitoring tools

3 GOAL

Measurable goals

4 EVALUATION

Procedures of evaluation

(Annexes 10 to 34 to the report are contained in document MEPC 63/23/Add.1)

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