INTERNATIONAL MARITIME ORGANIZATION

E

SUB-COMMITTEE ON POLLUTION PREVENTION AND RESPONSE
3rd session
Agenda item 22

PPR 3/22
14 March 2016
Original: ENGLISH

REPORT TO THE MARINE ENVIRONMENT PROTECTION COMMITTEE

LIST OF ANNEXES

1 GENERAL

1.1 The Sub-Committee on Pollution Prevention and Response (PPR) held its third session from 15 to 19 February 2016 under the chairmanship of Mr. S. Oftedal (Norway). The Vice-Chairman, Dr. F. Da Costa Fernandes (Brazil), was also present.

1.2 The session was attended by delegations from Member Governments and observers from international organizations and non-governmental organizations in consultative status as listed in document PPR 3/INF.1.

Opening address

1.3 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-GeneralsSpeechesToMeeting

Chairman's remarks

1.4 In responding, the Chairman thanked the Secretary-General for his words of guidance and encouragement and assured him that his advice and requests would be given every consideration in the deliberations of the Sub-Committee.

Adoption of the agenda and related matters

1.5 The Sub-Committee adopted the agenda (PPR 3/1) and agreed to be guided in its work, in general, by the annotations contained in document PPR 3/1/1 (Secretariat) and the proposed arrangements for the session set out in document PPR 3/1/2 (Chairman). The agenda, as adopted, together with the list of documents considered under each agenda item, is set out in document PPR 3/INF.8.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the outcome of MEPC 68, MSC 95, SDC 2, SSE 2 and CCC 2 relevant to its work, as reported in document PPR 3/2 (Secretariat), and took appropriate action under the relevant agenda items.

2.2 The Sub-Committee also noted that the Assembly, at its twenty-ninth session, had adopted the following pertinent resolutions:

.1 Strategic Plan for the Organization (for the six-year period 2016 to 2021) (resolution A.1097(29));

.2 High-level Action Plan of the Organization and priorities for the 2016-2017 biennium (resolution A.1098(29)); and

.3 Application of the Strategic Plan and the High-level Action Plan of the Organization (resolution A.1099(29)).

3 SAFETY AND POLLUTION HAZARDS OF CHEMICALS AND PREPARATION OF CONSEQUENTIAL AMENDMENTS TO THE IBC CODE

Revision of the IBC Code – chapters 17, 18 and 21

3.1 The Sub-Committee agreed to refer documents PPR 3/3 (Norway), PPR 3/3/3 (Norway), PPR 3/3/4 (Secretariat) and PPR 3/INF.3 and Corr.1 (Norway), directly to the ESPH Working Group, having noted that these pertained to ongoing tasks of the group.

Report of ESPH 21

3.2 The Sub-Committee recalled that the twenty-first session of the ESPH Working Group (ESPH 21) had taken place from 26 to 30 October 2015 and that the report of that session was circulated under document PPR 3/3/2.

3.3 Having considered the report of ESPH 21, the Sub-Committee approved it in general and, in particular:

.1 noted the group's discussions with regard to the introduction of a fee for the re-evaluation of products by the GESAMP/EHS Working Group;

.2 agreed to the draft MSC-MEPC circular on Example of a Certificate of Protection for products requiring oxygen-dependent inhibitors, set out in annex 1, for submission to MSC 96 and MEPC 70 for approval;

.3 concurred with the evaluation of products and noted their respective inclusion in lists 1, 2 and 3 of MEPC.2/Circ.21, with validity for all countries and with no expiry date;

.4 concurred with the addition of four new bio-fuels to the list of recognized bio-fuels set out in annex 11 of MEPC.2/Circ.21;

.5 endorsed the general principles for the preparation of submissions and data requirements for list 3 trade-named mixtures;

.6 concurred with the evaluation of cleaning additives and noted their inclusion in MEPC.2/Circ.21;

.7 noted the progress made in revising chapter 21 of the IBC Code;

.8 noted the proposed milestones and timeline for finalization, adoption and entry into force of the amendments to chapters 17, 18 and 21 of the IBC Code;

.9 noted the discussions with regard to a proposal for the introduction of a numerical product identification for noxious liquid substances transported in bulk for inclusion in chapters 17 and 18 of the IBC Code;

.10 noted the progress made on the revision of the *Guidelines for the provisional assessment of liquid substances transported in bulk* (MEPC.1/Circ.512);

.11 noted the discussions on the development of minimum carriage requirements for contaminated bulk liquids carried on OSVs; and

.12 approved the proposed provisional agenda for ESPH 22, subject to revision based on the progress made by the ESPH Working Group at this session.

3.4 Further to concerns raised by some delegations regarding the lack of submissions to assist in developing carriage requirements for contaminated backloads carried on OSVs (see paragraph 3.3.11), given the anticipated finalization of the OSV Code at PPR 4, the Chairman of the ESPH Working Group noted that generic carriage requirements could be established for such backloads at ESPH 22, if no documents on this subject were submitted to that session. The PPR Chairman further noted that this option could be proposed and discussed in more detail in the working group.

3.5 The Sub-Committee agreed with this approach and instructed the ESPH Working Group to proceed accordingly.

Analysis of the impacts on carriage requirements based on the application of draft revised chapter 21 of the IBC Code

3.6 The Sub-Committee considered document PPR 3/3/1 (Secretariat) setting out an analysis of the impacts on carriage requirements based on the application of the draft revised chapter 21 of the IBC Code, together with document PPR 3/3/6 (IPTA et al.) commenting on the analysis and highlighting the implications for industry resulting from the proposed amendments.

3.7 The Sub-Committee noted, in particular, that the application of the current draft of revised chapter 21 of the IBC Code would result in a 64% increase in products that have both safety and pollution aspects; a 145% increase in products requiring controlled venting; a 183% increase in products identified as toxic or flammable/toxic with regard to vapour detection requirements and a 102% increase in products that would now require personal protective equipment, all representing an escalation to more stringent carriage requirements than currently required.

3.8 Concern was expressed by a number of delegations with regard to the significant number of products that would now be considered toxic and the associated carriage requirements that would be triggered by this increase.

3.9 A number of delegations were of the view that these products had a long history of safe carriage in accordance with the existing requirements and therefore questioned the need for introducing more stringent requirements. However, other delegations recognized that the change in categorization of these products was not due to the current revision of the criteria in chapter 21 of the Code, but was a result of a re-evaluation based on the availability of more recent technical data for these substances, many of which demonstrated long-term health impacts (e.g. carcinogenicity) that had not previously been known. While acknowledging the challenge of addressing a higher number of toxic products and the resulting operational issues, most delegations agreed that the evidence could not be ignored and that appropriate standards were needed.

3.10 The Sub-Committee noted a number of other considerations that were raised, notably the lack of availability of vapour equipment for the full range of toxic products and the need to review the special requirements related to toxic products in chapter 15 of the IBC Code to determine whether these were still applicable.

3.11 Having considered the comments and concerns raised, the Sub-Committee agreed to refer the documents to the ESPH Working Group for further consideration as part of its ongoing work on the revision of chapter 21 of the IBC Code, taking into account the views expressed in plenary.

Guidance/procedures for assessing products classified under Annex I or II of MARPOL

3.12 The Sub-Committee recalled that MEPC 68 had considered document MEPC 68/12/6 (United Kingdom) proposing the development of guidance/procedures for assessing products classified under Annexes I and II of MARPOL and had instructed it to develop such guidance to ensure the products are shipped under the correct Annex.

3.13 The Sub-Committee also recalled that MEPC 68 had considered a proposal to amend MARPOL Annexes I and II in order to include technically suitable bio-fuels in the scope of Annex I (MEPC 67/16/1 by Brazil and Finland and MEPC 68/17/6 by Finland and Italy) and had referred the matter to the Sub-Committee, requesting it to consider the products identified in documents MEPC 67/16/1 and MEPC 68/17/6 when developing the aforementioned guidance.

3.14 The Sub-Committee considered document PPR 3/3/5 (United Kingdom) providing a basis for the development of guidance/procedures for assessing products classified under MARPOL Annex I and II, to ensure that they were covered under the appropriate Annex.

3.15 Having discussed the matter and having noted the wide support for the development of such guidance, the Sub-Committee agreed to refer the matter to the ESPH Working Group for further consideration, instructing the group to also take into account the product lists set out in documents MEPC 67/16/1 and MEPC 68/17/6 and to report back to the Sub-Committee with the results of its discussions.

Establishment of the ESPH Working Group

3.16 The Sub-Committee established the Working Group on Evaluation of Safety and Pollution Hazards of Chemicals (ESPH) and instructed it, taking into account the report of ESPH 21 (PPR 3/3/2) and the comments and decisions made in plenary, to:

.1 conduct an evaluation of cleaning additives, noting that no new products had been submitted for evaluation at this session;

.2 progress its work on the review of the safety criteria guidelines in chapter 21 of the IBC Code and of the product lists set out in chapters 17 and 18, taking into account documents PPR 3/3 (Norway), PPR 3/3/1 (Secretariat), PPR 3/3/3 (Norway), PPR 3/3/4 (Secretariat) and PPR 3/3/6 (IPTA et al.);

.3 continue its work on the revision of the *Guidelines for the provisional assessment of liquid substances transported in bulk* (MEPC.1/Circ.512);

.4 continue its work on the development of minimum carriage requirements for contaminated bulk liquids carried on OSVs;

.5 initiate the development of guidance for the assessment of products under Annex I or Annex II of MARPOL, taking into account the product lists set out in documents MEPC 67/16/1 and MEPC 68/17/6, and report back to the Sub-Committee with the results of its discussions; and

.6 review and update the agenda for ESPH 22, as appropriate.

Report of the ESPH Working Group

3.17 Having considered the relevant parts of the report of the ESPH Working Group (PPR 3/WP.3), the Sub-Committee approved the report in general, including those items referred to it under agenda item 4 (paragraphs 4.11 and 4.12), and took action as described in the following paragraphs.

Evaluation of cleaning additives

3.18 The Sub-Committee concurred with the results of the group's evaluation of cleaning additives and their inclusion in the next revision of the MEPC.2/Circular, i.e. MEPC.2/Circ.22, in December 2016.

Review of the MEPC.2/Circular

3.19 The Sub-Committee noted that the tripartite agreements for 30 products would reach their expiry dates in December 2016 and invited Member States to take action as appropriate, to avoid any delay in the carriage of these products beyond their expiry dates.

Revision of the IBC Code – Chapters 17, 18 and 21

3.20 The Sub-Committee noted the progress made in the revision of chapters 17, 18 and 21 of the IBC Code.

3.21 The Sub-Committee also noted the group's consideration of the rationale for deviating from the usual carriage requirements, based on the application of the criteria set out in the draft revised chapter 21 of the IBC Code, and its agreement to modified carriage requirements for some products, based on expert judgement.

3.22 The Sub-Committee endorsed the group's agreement regarding the application of the new subcategories of sensitizers established by GESAMP/EHS, noting that these had been incorporated in the revision of chapter 21 of the Code, and also the group's intention to apply this new categorization to the assessment of any new products submitted to the ESPH Working Group henceforth.

3.23 Further to the analysis submitted by the Secretariat (PPR 3/3/1) and the commenting document specifically related to toxic products submitted by IPTA et al. (PPR 3/3/6), the Sub-Committee noted the group's initial deliberations on the increased number of toxic products that would be included in chapter 17 as a result of the proposed amendments to the IBC Code, and invited industry to submit information to ESPH 22 on the components triggering the toxicity rating.

Revision of the Guidelines for the provisional assessment of liquid substances transported in bulk (MEPC.1/Circ.512)

3.24 The Sub-Committee noted the progress made on the revision of the *Guidelines for the provisional assessment of liquid substances transported in bulk* (MEPC.1/Circ.512) and agreed to request the GESAMP/EHS Working Group to undertake an assessment of mineral oil, with a view to confirming or revising the component factor used in mixture calculations involving diluent mineral oil.

Development of minimum carriage requirements for contaminated bulk liquids carried on OSVs

3.25 Given that no documents had been submitted to either ESPH 21 or the current session, the Sub-Committee agreed to retain this item on the agenda of the ESPH Working Group for one more session and invited industry to submit, as a matter of priority, the necessary technical information on the composition of contaminated backloads to ESPH 22, noting the timeline for finalization of the OSV Code.

3.26 The Sub-Committee also concurred with the group's proposal to develop generic minimum carriage requirements for contaminated backloads, based on known toxicity and flammability concerns, should there be no information submitted to ESPH 22 on this matter.

Guidance for the assessment of products under Annex I or Annex II of MARPOL

3.27 The Sub-Committee, having noted the results of the group's preliminary discussions related to the development of guidance for assessing and classifying products under Annexes I and II of MARPOL, invited submissions on the matter to ESPH 22, noting that more information would be needed in order for the group to progress on this work.

Future planned output of the ESPH Working Group

3.28 Taking into account the group's progress during the session, as well as the progress made under agenda item 4, which had also been referred to it, the Sub-Committee approved the provisional agenda for ESPH 22 as set out in annex 2.

4 REVIEW OF MARPOL ANNEX II REQUIREMENTS THAT HAVE AN IMPACT ON CARGO RESIDUES AND TANK WASHINGS OF HIGH VISCOSITY AND PERSISTENT FLOATING PRODUCTS

4.1 The Sub-Committee recalled that PPR 1 had considered document PPR 1/3/3 (Denmark et al.) regarding ongoing issues related to high-viscosity and persistent floating products discharged in accordance with MARPOL Annex II requirements, but which were solidifying and coming ashore in the northern European region, and had agreed to keep the matter in abeyance, pending a decision by MEPC 66 related to the High-level Action Plan output under which this issue would be captured.

4.2 The Sub-Committee also recalled that MEPC 68 had agreed to include a new output on "Review of MARPOL Annex II requirements that have an impact on cargo residues and tank washings of high viscosity, solidifying and persistent floating products and associated definitions and preparation of amendments" in the biennial agenda of the PPR Sub-Committee and the provisional agenda of PPR 3, with a target completion date of 2018, based on a proposal submitted by Germany et al. (MEPC 68/17/2).

4.3 The Sub-Committee considered document PPR 3/4 (Norway), elaborating on the proposed amendments to MARPOL Annex II regarding the discharge requirements related to the cleaning and discharge of tank washings containing high-viscosity, solidifying and persistent floating products.

4.4 In general, the delegations that spoke concurred that measures were needed to address the issue, but emphasized the need for a pragmatic approach, noting that a range of options should be considered.

4.5 Regarding the options presented in the document submitted by Norway, there was general support for the proposed changes to the definitions of high-viscosity and solidifying substances and the requirement for a pre-wash that would be introduced by these modified definitions. The Sub-Committee did, however, recognize that the adequacy of reception facilities would present a significant challenge, given the number of products that would be captured by such an amendment.

4.6 While the majority of the delegations that spoke did not generally support the proposal for the establishment of a special area to address the problem, some delegations were of the view that this option should also be considered.

4.7 Some delegations expressed concern about the impacts the proposal may have on the vegetable oil industry, given the number of vegetable oils that would be covered by the proposed MARPOL amendments, and emphasized that the impacts would need to be assessed before the introduction of any new amendments, to avoid unintended consequences.

4.8 In considering the proposal to eliminate the exemption set out in regulation 4.1.3 of MARPOL Annex II that had been established to facilitate the carriage of larger volumes of vegetable oils in excess of the 3000 m^3 tank size limit of ship type 2 vessels, the Sub-Committee noted indications from a number of delegations that this exemption was still widely used in their respective countries.

4.9 Further to the comments set out above, and noting that it could not arrive at clear conclusions on any of the options presented in document PPR 3/4, the Sub-Committee agreed to refer the document to the ESPH Working Group for further consideration of the proposals contained therein, taking into account the comments raised in plenary.

Instructions to the ESPH Working Group

4.10 Based on the comments raised in plenary, the Sub-Committee instructed the ESPH Working Group, established under agenda item 3, to:

.1 develop relevant amendments to MARPOL Annex II, taking into account document PPR 3/4;

.2 consider the impacts of the proposed amendments; and

.3 report back with the results of its discussions and a provisional timeline for the completion of this work.

Report of the ESPH Working Group

4.11 Having considered the relevant part of the report of the ESPH Working Group (PPR 3/WP.3, paragraphs 9.1 to 9.10), the Sub-Committee noted the group's initial discussions with regard to the proposed amendments to MARPOL Annex II to address issues related to the discharge of high-viscosity, solidifying and persistent floating products.

4.12 Having noted that a range of issues and possible options had been considered during the discussion and that, in order to progress this work and assess the possible impacts of any related amendments to MARPOL Annex II, the group would need more information, the Sub-Committee invited interested delegations to submit comments and proposals on the matter to ESPH 22.

5 CODE FOR THE TRANSPORT AND HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID SUBSTANCES IN BULK ON OFFSHORE SUPPORT VESSELS

5.1 The Sub-Committee recalled that PPR 1 had referred a number of chapters of the draft OSV Chemical Code to the SDC and SSE Sub-Committees for advice and input.

5.2 The Sub-Committee recalled also that PPR 2 had instructed the ESPH Working Group to review the draft text of chapter 16 on backloading of contaminated bulk liquids. Having noted that the group had agreed, in principle, that carriage requirements were needed for contaminated backloads, PPR 2 had invited interested Member Governments and international organizations to submit any available information on the composition of contaminated backloads to assist in developing special requirements under chapter 15 of the IBC Code to ESPH 21. The Sub-Committee noted that no documents had been submitted to ESPH 21 on this matter.

5.3 The Sub-Committee further recalled that PPR 2 had re-established the correspondence group and had instructed it to finalize the text of the draft OSV Chemical Code.

5.4 The Sub-Committee had for its consideration the following documents:

.1 PPR 3/5 (Secretariat), providing the outcome of SDC 2, SSE 2 and CCC 2 related to the development of the draft OSV Chemical Code, in particular concerning the consideration of draft chapter 2 on ship survival capability and location of cargo tanks, chapter 5 on cargo transfer and chapter 8 on firefighting requirements; and

.2 PPR 3/5/1 and PPR 3/INF.2 (Denmark), providing the report of the correspondence group and the text of the draft Code developed by the group, also including comments received during its deliberations.

5.5 With regard to the draft text of chapter 2 on ship survival capability and location of cargo tanks, as revised by SDC 2, the Sub-Committee noted the support expressed by two delegations for the proposed quantity threshold values (i.e. 150 m^3, 800 m^3 and 1200 m^3) in sections 2.6 and 2.7, concerning damage assumptions and standard damage, respectively.

Establishment of a Working Group on the OSV Chemical Code

5.6 The Sub-Committee established a Working Group on the OSV Chemical Code and instructed it, on the basis of the report of the correspondence group (PPR 3/5/1 and PPR 3/INF.2) and taking into account the outcome of SDC 2, SSE 2 and CCC 2 (PPR 3/5) as well as the comments made in plenary, to:

.1 further develop the text of the draft OSV Chemical Code; and

.2 consider whether the correspondence group needs to be re-established and, if so, develop draft terms of reference for the group.

Report of the Working Group

5.7 Having considered an oral report by the Chairman of the Working Group, the Sub-Committee expressed its appreciation to the group and its Chairman for the progress achieved and noted that a written report, including the draft text of the OSV Chemical Code, would be submitted to PPR 4.

5.8 In this connection, the Sub-Committee noted that the group had finalized chapters 3 to 9 and 11 to 14 on ship design, special requirements, cargo containment, cargo transfer, cargo tank venting, electrical installations, firefighting, mechanical ventilation, instrumentation and automation systems, pollution prevention and personnel protection, respectively, subject to final review by PPR 4; and had further developed chapters 1, 2, 15, 16 and 17 on general, ship survival capability and location of cargo tanks, operational requirements, backloading of contaminated bulk liquids and discharging/loading of portable tanks on board, respectively.

5.9 The Sub-Committee reiterated its invitation to Member Governments and international organizations to submit relevant data and technical information on the backloading of contaminated bulk liquids to ESPH 22 and PPR 4, with a view to facilitating the development of carriage requirements for contaminated bulk liquids carried on OSVs (see paragraph 3.25).

Re-establishment of the correspondence group

5.10 The Sub-Committee re-established the Correspondence Group on the Development of the OSV Chemical Code, under the coordination of Denmark[1], and instructed it to:

.1 finalize the text of the draft OSV Chemical Code, on the basis of the text of the Code prepared by the Working Group on the OSV Chemical Code established at PPR 3; and

.2 submit a written report to PPR 4.

6 REVISED GUIDANCE ON BALLAST WATER SAMPLING AND ANALYSIS

6.1 The Sub-Committee recalled that PPR 2 had agreed to amendments to the *Guidance on ballast water sampling and analysis for trial use in accordance with the BWM Convention and Guidelines (G2)* (BWM.2/Circ.42), which were subsequently approved by MEPC 68 and issued as a revision of the Guidance (BWM.2/Circ.42/Rev.1). The Sub-Committee also recalled that PPR 2 had invited Member Governments and international organizations to submit further information and proposals related to ballast water sampling, analysis and contingency measures to future sessions, with a view to further developing and improving the relevant guidance documents and guidelines.

6.2 The Sub-Committee noted the information regarding a new method for in-line ballast water sampling submitted in documents PPR 3/6 and Corr.1 (Republic of Korea) and the intention of the Republic of Korea to submit draft amendments to the Guidance (BWM.2/Circ.42/Rev.1) to PPR 4, with a view to possible inclusion of the new sampling method. In this connection, the Sub-Committee agreed that further consideration, in particular regarding the safety aspect of the said sampling method, was needed.

6.3 The Sub-Committee reiterated its invitation to Member Governments and international organizations to submit further relevant information and proposals to future sessions (see paragraph 6.1).

[1] **Coordinator**:
Ms. Clea Henrichsen
Danish Maritime Authority
Regulation, Manning and Certification
Carl Jacobsens Vej 31
2500 Valby
Denmark
Tel.: +45 91376369
Email: cge@dma.dk

7 PRODUCTION OF A MANUAL ENTITLED "BALLAST WATER MANAGEMENT – HOW TO DO IT"

7.1 The Sub-Committee recalled that, following consideration of the first draft of the manual entitled "Ballast Water Management – How to do it" (PPR 2/6), PPR 2 had invited IMarEST and the Secretariat to continue with the development of the manual and Member Governments and international organizations to continue supporting this activity, with a view to submission of the final version to the current session for consideration. The Sub-Committee also recalled that, in view of the above, MEPC 68 had extended the target completion year for this output to 2017.

7.2 The Sub-Committee had for its consideration document PPR 3/7 (IMarEST) containing the second draft of the manual, and noted that IMarEST had engaged with the Secretariat, its own expert members and with representatives of Singapore to develop this draft. The Sub-Committee expressed its appreciation to IMarEST for providing the draft of the manual and to Singapore and the Secretariat for their contribution to its development.

7.3 In the ensuing discussion, all the delegations and observers that spoke expressed their general support for the draft manual, while some specific comments and suggestions were made, including the following:

.1 a need for improvements to section 9.5 was identified, with regard to a reference to the ISM Code in the context of the approval of ballast water management plans which was considered not appropriate;

.2 a similar need was identified to improve section 9.6 with regard to the requirement for retention on board of the ballast water record book;

.3 chapters 4 and 5 should be reviewed with regard to the discussion therein of topics such as jurisdiction, obligations of stakeholders, and others;

.4 the need to retain chapters 20 and 21, dealing with organizational matters of maritime administrations and delegation of duties, should be considered by the drafting group, as these topics are already covered by the RO and III Codes;

.5 the manual should also address contingency measures, following the decision by MEPC 68 to develop guidance on this topic;

.6 concerns were expressed regarding non-compliance and resulting actions, in particular the criminalization of seafarers;

.7 the final text of the manual should ensure consistency with the requirements of the BWM Convention; and

.8 references in the manual to IMO instruments should be clearly marked and quoted text highlighted.

7.4 Recognizing the ongoing work by the MEPC on a number of ballast water management-related topics, such as the development of guidance on exceptions and exemptions, the amendment of regulation B-3 of the BWM Convention and the review of the *Guidelines for approval of ballast water management systems (G8)*, the Sub-Committee agreed to keep sections 8.3, 8.4 and 9.1 and chapter 14 of the manual in square brackets for the time being, to be revisited with a view to finalization after the Committee has completed its work on these topics.

Establishment of a drafting group

7.5 The Sub-Committee established the Drafting Group on Production of a Manual Entitled "Ballast Water Management – How to do it" and instructed it, taking into account the comments and proposals made in plenary, to prepare the final text of the manual, excluding sections 8.3, 8.4 and 9.1 and chapter 14 (see paragraph 7.4).

Report of the drafting group

7.6 Having considered an oral report by the Chairman of the drafting group, the Sub-Committee expressed its appreciation to the group and its Chairman for the progress achieved and noted that the written report of the group, including the draft text of the manual, would be submitted to PPR 4.

8 CONSIDERATION OF THE IMPACT ON THE ARCTIC OF EMISSIONS OF BLACK CARBON FROM INTERNATIONAL SHIPPING

Background

8.1 The Sub-Committee recalled that MEPC 68 had approved the Bond et al. definition for Black Carbon for international shipping, for the primary reason that this definition is measurement-method neutral and widely supported by the scientific community.

8.2 The Sub-Committee also recalled that MEPC 68 had noted that there is a need for Black Carbon measurement studies to be conducted so as to gain experience in applying the definition and measurement methods to enable comparison of the measurement methods and to assess the scale of possible variation in the data collected; and had invited interested Member Governments and international organizations to submit additional relevant proposals/information to PPR 3.

8.3 The Sub-Committee noted that MEPC 68 had agreed to the need for a protocol to govern any voluntary measurement studies used to collect data, with the focus on using the agreed definition of Black Carbon to support data collection and to identify the most appropriate measurement method(s) of Black Carbon emissions from international shipping.

Consideration of documents

8.4 The Sub-Committee had for its consideration the following documents:

.1 PPR 3/8 (Germany and EUROMOT), proposing a harmonized protocol for voluntary Black Carbon measurement studies under consideration of effective application of the four measurement methods, namely Laser Induced Incandescence (LII), Filter Smoke Number (FSN), Photo-Acoustic Spectrometry (PAS) and Multi-Angle Absorption Photometry (MAAP);

.2 PPR 3/8/1 and PPR 3/INF.5 (Japan), presenting findings from measurements of Black Carbon in exhaust gases, both in laboratories and on board a ship. Based on these findings, Japan has concluded that further consideration may be necessary as to what kind of methods should be appropriate to measure Black Carbon complying with the four factors included in the definition by Bond et al.; and

.3 PPR 3/8/2 (Canada), commenting on document PPR 3/8 and suggesting that the protocol proposed by Germany and EUROMOT should be clearly identified as a reporting protocol rather than as a measurement protocol.

8.5 The Sub-Committee noted the information contained in documents:

.1 PPR 3/INF.6 (Canada), presenting a research plan for the evaluation of Black Carbon measurement methods on a laboratory bench-tested marine engine; and

.2 PPR 3/INF.7 (Canada and Netherlands), providing a summary of the proceedings of a technical workshop on marine Black Carbon emissions, held in Utrecht, Netherlands, from 16 to 17 September 2015.

8.6 In the ensuing discussion, the following comments were, inter alia, made:

.1 the Bond et al. definition of Black Carbon, as approved by MEPC 68, describes the four physical properties that uniquely define Black Carbon and its importance as an environmental pollutant. The definition is not prescriptive in that it does not impose the need to measure all the properties in order to make a valid measurement of Black Carbon. Measurement methods rely on a sensitivity to any of the four properties in order to make a valid measurement of Black Carbon;

.2 the Black Carbon reporting scheme for international shipping is intended to be voluntary, a point which should be made clear in any measurement protocol, to avoid causing confusion for parties that wish to voluntarily report their Black Carbon emissions but may be hesitant to do so because they were unable to obtain all the data required in document PPR 3/8;

.3 it is not possible to estimate the accuracy of Black Carbon measurement because the measurement method itself is still under consideration. Given that the four priority measurement methods (Laser Induced Incandescence, Filter Smoke Number, Photo-Acoustic Spectrometry and Multi-Angle Absorption Photometry) cannot directly measure the physical features of Black Carbon as described in Bond et al., further research and experience is necessary for accurate measurement and to understand the capabilities of the measurement methods under consideration;

.4 MEPC 68 adopted the Bond et al. definition in part because it is measurement-method neutral, and the establishment of sampling conditioning and pre-treatment protocols was not included;

.5 standardization of instrument calibration methods and sampling and measurement protocols is important to address variations and enable comparison of results. However, concern was expressed that standardizing sampling conditioning and pre-treatment methods could result in too onerous and expensive measurement protocols; and

.6 a single measurement protocol should be developed, but the measurement methods under discussion require different pre-treatment methods, thus preventing standardization.

Establishment of the Working Group on Prevention of air pollution from ships

8.7 Following discussion, the Sub-Committee established the Working Group on Prevention of Air Pollution from Ships and instructed it to develop a draft protocol for any voluntary measurement studies to collect data, focusing on using the definition of Black Carbon to support data collection, taking into account the documents submitted to this session and comments made in plenary.

Report of the working group

8.8 Having considered the relevant part of the report of the working group (PPR 3/WP.4, paragraphs 4 to 9), the Sub-Committee approved the report in general and took action as described in the following paragraphs.

8.9 The Sub-Committee noted that in addition to those listed in paragraph 2 of document PPR 3/WP.4, the delegations of Italy and Spain also attended the group.

8.10 The Sub-Committee noted the group's discussion on the development of a measurement reporting protocol for voluntary data collection of Black Carbon and that the group had prepared a draft protocol, as set out in annex 1 of document PPR 3/WP.4. Consequently, the Sub-Committee invited interested Member Governments and international organizations to use the protocol and submit data derived from its application to PPR 4.

9 DEVELOPMENT OF STANDARDS FOR SHIPBOARD GASIFICATION WASTE TO ENERGY SYSTEMS AND ASSOCIATED AMENDMENTS TO REGULATION 16 OF MARPOL ANNEX VI

9.1 The Sub-Committee recalled that MEPC 68, having considered document MEPC 67/16 (Canada) proposing to develop standards that would allow the use of emerging waste to energy technology, had agreed to include an output on "Development of standards for shipboard gasification waste to energy systems and associated amendments to regulation 16 of MARPOL Annex VI" in the biennial agenda of the Sub-Committee and the provisional agenda of this session, with a target completion date of 2017.

9.2 The Sub-Committee noted that, while no relevant documents had been submitted to this session, document MEPC 67/16, in its annex 3, contained draft amendments to regulation 16 of MARPOL Annex VI and draft standards for shipboard gasification waste to energy systems.

9.3 Consequently, the Sub-Committee instructed the Working Group on Prevention of Air Pollution from Ships, established under agenda item 8, to develop draft standards for shipboard gasification waste to energy systems and associated amendments to regulation 16 of MARPOL Annex VI, using annex 3 to document MEPC 67/16 as the basis.

Report of the working group

9.4 Having considered the relevant part of the report of the working group (PPR 3/WP.4, paragraphs 10 to 14), the Sub-Committee took action as described in the following paragraphs.

9.5 The Sub-Committee noted the group's discussion on the development of draft standards for shipboard gasification waste to energy systems and the associated amendments to regulation 16 of MARPOL Annex VI.

9.6 The Sub-Committee also noted that the group considered that the current title of the output would limit the standards to shipboard gasification waste to energy systems only and would potentially exclude shipboard gasification of waste systems that do not have an energy recovery element. Following consideration of the recommendation by the group to amend the title accordingly, the Sub-Committee agreed to request MEPC 70 to approve a change in the title of the output to "Development of standards for shipboard gasification of waste systems and associated amendments to regulation 16 of MARPOL Annex VI".

9.7 In this connection, the delegation of the Bahamas expressed the view that the working group's discussion with regard to the title of the output (PPR 3/WP.4, paragraph 12) might constitute a policy matter which was outside the group's terms of reference and that, therefore, the Sub-Committee should instead invite interested Member States to submit a proposal to the Committee for amending the title of the output.

Establishment of a correspondence group

9.8 The Sub-Committee established a correspondence group on prevention of air pollution from ships, under the coordination of the United States[2], and instructed it, taking into account the comments made and views expressed at PPR 3, to:

.1 further develop draft standards for shipboard gasification waste to energy systems and associated amendments to regulation 16 of MARPOL Annex VI, using annex 3 to document MEPC 67/16 as the basis; and

.2 submit a written report to PPR 4.

10 AMENDMENTS TO BUNKER DELIVERY NOTE TO PERMIT THE SUPPLY OF FUEL OIL NOT IN COMPLIANCE WITH REGULATION 14 OF MARPOL ANNEX VI

10.1 The Sub-Committee recalled that PPR 2 had instructed the Working Group on Prevention of Air Pollution from Ships to prepare draft amendments to appendix V of MARPOL Annex VI, including possible consequential amendments to regulation 18 of MARPOL Annex VI, taking into account documents MEPC 67/12/7 (Austria et al.) and PPR 2/2/2 (IMarEST).

10.2 The Sub-Committee also recalled that PPR 2 had noted that the working group had agreed that the provisions of MARPOL Annex VI should be amended to clarify that fuel oil, other than that meeting the sulphur limit values set out in regulation 14 of MARPOL Annex VI, can continue to be supplied to a ship for use with an equivalent method allowed under regulation 4 and, while it had recognized that amendments to appendix V of MARPOL Annex VI were required, had not been able to agree on the text of such amendments.

10.3 The Sub-Committee noted that MEPC 68, having considered the outcome of PPR 2 on this matter together with paragraphs 3 and 4 of document MEPC 68/12/14 (India), had instructed PPR 3 to further consider this issue, taking into account the relevant parts of document MEPC 68/12/14, and report back to MEPC 70 (MEPC 68/21, paragraph 3.35).

[2] **Coordinator**:
Mr. W. M. Lundy
Marine Safety, Security and Stewardship
Systems Engineering Division
U.S. Coast Guard
Tel.: +1 202 372-1379
Email: Wayne.M.Lundy@uscg.mil

10.4 The Sub-Committee considered document PPR 3/10 (Austria et al.), providing draft amendments to appendix V of MARPOL Annex VI on "Bunker delivery note to permit the supply of fuel oil not in compliance with regulation 14 of MARPOL Annex VI".

10.5 The Sub-Committee noted the view expressed by one delegation that fuel oils used on board ships that are exempted under regulation 3 of MARPOL Annex VI from specific provisions should be also included in appendix V of MARPOL Annex VI.

Instructions to the Working Group on Prevention of Air Pollution from Ships

10.6 Following consideration, the Sub-Committee instructed the Working Group on Prevention of Air Pollution from Ships, established under agenda item 8, to finalize draft amendments to appendix V of MARPOL Annex VI, taking into account the comments made in plenary and documents MEPC 68/12/14 (paragraphs 3 and 4) and PPR 3/10.

Report of the working group

10.7 Having considered the relevant part of the report of the working group (PPR 3/WP.4, paragraphs 15 to 19), the Sub-Committee agreed to draft amendments to appendix V of MARPOL Annex VI, as set out in annex 3, for submission to MEPC 70 for approval with a view to subsequent adoption.

Completion of the work on the output

10.8 The Sub-Committee invited the Committee to note that the work on this output had been completed.

11 GUIDELINES FOR ONBOARD SAMPLING AND VERIFICATION OF THE SULPHUR CONTENT OF THE FUEL OIL USED ON BOARD SHIPS

11.1 The Sub-Committee noted that MEPC 68, following the consideration of document MEPC 68/3/18 (Denmark and Norway), proposing draft amendments to MARPOL Annex VI and draft *Guidelines for onboard sampling and verification of the sulphur content of the fuel oil used on board ships*, had:

.1 instructed PPR 3 to initiate the work on the development of *Guidelines for onboard sampling and verification of the sulphur content of the fuel oil used on board ships*; and

.2 agreed that the proposal for associated amendments to MARPOL Annex VI would constitute a new output and would, therefore, require a relevant proposal from a Member Government, in accordance with the Committees' Guidelines (MSC-MEPC.1/Circ.4/Rev.4).

11.2 The Sub-Committee considered document PPR 3/11 (Austria et al.) addressing the proposal in document MEPC 68/3/18 and providing draft *Guidelines for onboard sampling and verification of the sulphur content of fuel oil used on board ships*.

11.3 In the ensuing discussion, the following views were expressed:

.1 onboard sampling should be based on clear grounds, should not cause any undue delay for ships, and should be considered an exception rather than normal practice;

.2 the main objective of onboard sampling guidelines is to enhance compliance with the requirements in regulation 14 of MARPOL Annex VI and to provide guidance for conducting sampling in a safe and consistent manner; the issue of clear grounds or justification is a separate issue and does not need to be addressed in these guidelines;

.3 the onboard sampling guidelines would provide additional guidance to that contained in the *2009 Guidelines for port State control under the revised MARPOL Annex VI* (resolution MEPC.181(59)); and the *2009 Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI* (resolution MEPC.182(59));

.4 costs related to onboard sampling and analysis should not be used as a revenue stream by Administrations and fees should not be charged to shipowners for having fuel sampled;

.5 the structural features of the ship should be taken into account to ensure that onboard sampling does not cause any interruption to the normal operation of the ship;

.6 due to the risk of fire and explosion in a high temperature environment and high pressure of fuel oil, the sampling location has to be carefully considered to prevent leakage of fuel oil;

.7 consideration should be given to where the samples are kept;

.8 in the absence of a dedicated sampling point on existing ships, those ships should not be required to have one fitted;

.9 focus should also be placed on adequate regulatory and quality controls of marine fuel oil suppliers; and

.10 verification provisions should be included in the main text, not in footnotes, and fuel oil test laboratories should be accredited by national accreditation authorities.

Instructions to the Working Group on Prevention of air pollution from ships

11.4 Following discussion, the Sub-Committee instructed the Working Group on Prevention of Air Pollution from Ships, established under agenda item 8, to finalize the draft *Guidelines for onboard sampling and verification of the sulphur content of fuel oil used on board ships*, taking into account the comments made in plenary and using the annex to document PPR 3/11 as the basis.

Report of the working group

11.5 Having considered the relevant part of the report of the working group (PPR 3/WP.4, paragraphs 20 to 33), the Sub-Committee took action as described in the following paragraphs.

Discussion on sampling and verification

11.6 The delegations of the Bahamas and Panama, noting that the instruction by the Committee had been to develop guidelines for onboard "sampling and verification" of the sulphur content of the fuel oil used on board ships, expressed the view that the work on this

output had not been completed, as the draft guidelines did not address verification and the discussion in the working group about the scope of the draft guidelines (PPR 3/WP.4, paragraphs 21 to 24) had not been part of its terms of reference; therefore the Sub-Committee should note the discussion and invite further proposals. The observer from IACS confirmed, from a technical point of view, that the draft guidelines do not address verification, but stated that this should not mean that verification should be removed from the title and scope of the output.

11.7 The delegation of Spain expressed the view that the suggested amendment to the title of the draft guidelines was reasonable and editorial in nature, made to reflect their content, which did not include verification as that was already provided for by appendix VI of MARPOL Annex VI (Fuel verification procedure for MARPOL Annex VI fuel oil samples).

Draft guidelines

11.8 The Sub-Committee considered the draft MEPC circular on "Guidelines for onboard sampling for the verification of the sulphur content of fuel oil used on board ships", in particular paragraph 2.2.3, which the working group had left in square brackets for decision by the Sub-Committee.

11.9 In the course of the discussion the majority of the delegations that spoke supported the deletion of the words "from or" and the square brackets around them for the following reasons:

.1 a representative fuel oil sample cannot be taken from the service tank;

.2 in order to be representative, a fuel oil sample should be drawn as close to the fuel oil combustion machinery as possible; and

.3 the location where the sample is drawn has to take account of possible fuel oil cross-contamination in the absence of fully segregated fuel service systems or in the case of multiple service tank arrangements.

11.10 A number of other delegations supported the deletion of the square brackets and the retention of the text for the following reasons:

.1 safety must be paramount and the introduction of sampling points into a fuel pipeline that is pressurized introduces a risk of fire and explosion that the draft guidelines do not adequately address, and therefore the draft guidelines should be considered by the Maritime Safety Committee;

.2 a representative sample can be drawn from the service tank and a competent port State control officer would be able to distinguish the fuel types being used by their temperature, and so recognize the service tank from which a fuel oil is being used; and

.3 the draft guidelines developed should recognize knowledge of ship operation, and Member States, especially those in Emission Control Areas, should ensure that fuel oil is supplied which is compliant with the SOLAS requirement for a 60°C flashpoint, so as not to exacerbate the risk.

11.11 Following the discussion, the Sub-Committee agreed to delete the text in square brackets and consequently agreed to the draft MEPC circular on "Guidelines for onboard sampling for the verification of the sulphur content of fuel oil used on board ships", as set out in annex 4, for submission to MEPC 70 with a view to approval.

Completion of the work on the output

11.12 The Sub-Committee invited the Committee to note that the work on this output had been completed.

12 GUIDELINES FOR THE DISCHARGE OF EXHAUST GAS RECIRCULATION BLEED-OFF WATER

12.1 The Sub-Committee noted that MEPC 68, having considered document MEPC 68/3/13 (Denmark et al.) proposing to develop guidelines for the discharge of bleed-off water from exhaust gas recirculation (EGR) NO_X emission reduction systems, had agreed to a relevant new output for inclusion in the biennial agenda of the Sub-Committee and the provisional agenda for this session and had instructed PPR 3 to commence the development of such guidelines.

12.2 The Sub-Committee considered document PPR 3/12 (Japan), providing text for draft guidelines for the discharge of exhaust gas recirculation (EGR) bleed-off water, and noted document PPR 3/INF.4 (Denmark), providing information on the EGR process and the related water handling system on engines complying with the NO_X Tier III requirements.

Instructions to the Working Group on Prevention of Air Pollution from Ships

12.3 Following consideration, the Sub-Committee instructed the Working Group on Prevention of air pollution from ships, established under agenda item 8, to finalize the draft *Guidelines for the discharge of exhaust gas recirculation (EGR) bleed-off water*, using the annex to document PPR 3/12 as the basis and taking into account document PPR 3/INF.4.

Report of the working group

12.4 Having considered the relevant part of the report of the working group (PPR 3/WP.4, paragraphs 34 to 40), the Sub-Committee noted the group's discussion on the draft *Guidelines for the discharge of exhaust gas recirculation bleed-off water* and the need for further work on the matter.

12.5 To expedite the work intersessionally, the Sub-Committee instructed the Correspondence Group on Prevention of Air Pollution from Ships, established under agenda item 9 (see paragraph 9.8), to further develop the draft *Guidelines for the discharge of exhaust gas recirculation (EGR) bleed-off water*, using annex 4 to document PPR 3/WP.4 as the basis and taking into account the comments and views expressed at PPR 3.

Extension of the target completion year

12.6 In view of the above, the Sub-Committee invited the Committee to extend the target completion year for the output to 2017.

13 IMPROVED AND NEW TECHNOLOGIES APPROVED FOR BALLAST WATER MANAGEMENT SYSTEMS AND REDUCTION OF ATMOSPHERIC POLLUTION

The Sub-Committee, having noted that no relevant submissions had been received for consideration at this session, invited Member Governments and international organizations to submit to PPR 4 information on improved and new technologies approved for ballast water management systems and reduction of atmospheric pollution, with a view to promoting and encouraging the use of the best available environmental technology not entailing excessive costs in shipping, in line with the goal of sustainable development.

14 REVISED SECTION II OF THE MANUAL ON OIL POLLUTION CONTINGENCY PLANNING

14.1 The Sub-Committee recalled that PPR 2 had established an intersessional correspondence group under the overall coordination of the United States, instructing it, inter alia, to prepare a final draft of section II of the Manual on Oil Pollution – Contingency Planning, for submission to this session for consideration.

Report of the correspondence group

14.2 In considering the report of the correspondence group (PPR 3/14) submitted by the United States, the Sub-Committee noted the significant progress made by the group in finalizing the draft section II of the Manual on Oil Pollution – Contingency Planning and extended its appreciation to both the Regional Activity Centre/Regional Marine Pollution Emergency Information and Training Centre (RAC/REMPEITC-Caribe), acting as the coordinator of this work, and the group as a whole.

14.3 In the ensuing discussion, a number of delegations expressed their appreciation for the valuable work undertaken by the correspondence group, highlighting the importance of maintaining and improving spill response preparedness capacity and encouraging the development of further guidance documents in this subject area, particularly in relation to preparedness for and response to spills involving hazardous and noxious substances.

Establishment of a drafting group on OPRC-related manuals, guidelines and guidance

14.4 Following the discussion, the Sub-Committee established a drafting group on OPRC-related manuals, guidelines and guidance and instructed it to finalize section II of the Manual on Oil Pollution – Contingency Planning, using document PPR 3/14 as the basis.

Report of the drafting group

14.5 Having considered the relevant part of the report of the drafting group (PPR 3/WP.5, paragraphs 4 and 5), the Sub-Committee approved it in general and took action as indicated hereunder.

14.6 In considering the final draft of the text prepared by the group, the Sub-Committee noted that the group had agreed to a number of modifications to the text, including incorporating further reference to the health and safety aspects of oil spill response and to the importance of record keeping in assisting any subsequent review of the effectiveness of the response operation.

14.7 Following consideration, the Sub-Committee agreed to the final draft of section II of the Manual on Oil Pollution – Contingency Planning, as set out in annex 5, for submission to MEPC 70 with a view to approval and subsequent publication.

14.8 In this connection, the Sub-Committee invited MEPC 70 to authorize the Secretariat, when preparing the final text of section II of the Manual, to effect any editorial correction that may be identified as appropriate.

Completion of the work on the output

14.9 The Sub-Committee invited the Committee to note that the work on this output had been completed.

15 GUIDE ON OIL SPILL RESPONSE IN ICE AND SNOW CONDITIONS

15.1 The Sub-Committee recalled that PPR 2 had invited interested Member Governments and international organizations to conduct a final review of the draft *Guide on oil spill response in ice and snow conditions*, prior to submission of the final draft to this session for consideration.

15.2 In considering document PPR 3/15 (Norway) containing an update on the work carried out since PPR 2, as well as the final draft of the guide, the Sub-Committee, having noted the significant progress made, expressed its appreciation to Norway for leading this work and to Norway and Canada for continuing to fund the engagement of a consultant to further progress matters. Several delegations welcomed the impending finalization of the guide, which they considered would be highly beneficial for international shipping.

Instructions to the Drafting Group on OPRC-related Manuals, Guidelines and Guidance

15.3 Consequently, the Sub-Committee instructed the Drafting Group on OPRC-related Manuals, Guidelines and Guidance, established under agenda item 14, to finalize the *Guide on oil spill response in ice and snow conditions*, using the annex to document PPR 3/15 as the basis.

Report of the drafting group

15.4 Having considered the relevant part of the report of the drafting group (PPR 3/WP.5, paragraphs 6 to 8), the Sub-Committee agreed to the final draft of the *Guide on oil spill response in ice and snow conditions* as set out in annex 6 (PPR 3/22/Add.1), for submission to MEPC 70, with a view to approval and subsequent publication.

15.5 In this connection, the Sub-Committee invited MEPC 70 to authorize the Secretariat, when preparing the final text of the Guide, to effect any editorial correction that may be identified as appropriate.

Completion of the work on the output

15.6 The Sub-Committee invited the Committee to note that the work on this output had been completed.

16 UPDATED IMO DISPERSANT GUIDELINES (PART IV)

16.1 The Sub-Committee recalled that PPR 2 had established an intersessional correspondence group under the overall coordination of the United States (see paragraph 14.1), and instructed it, inter alia, to develop a draft of part IV of the *Guidelines for the use of dispersant for combatting oil at sea* (IMO Dispersant Guidelines), devoted to sub-sea dispersant application.

16.2 The Sub-Committee, having considered the report of the correspondence group (PPR 3/16, submitted by the United States), noted the progress made on the development of part IV of the IMO Dispersant Guidelines and instructed the group[3] to continue its work and submit a report to PPR 4, in accordance with the terms of reference agreed at PPR 2.

17 UPDATED OPRC MODEL TRAINING COURSES

17.1 The Sub-Committee recalled that PPR 2 had noted the progress made on the revision of the OPRC Model Training Courses.

17.2 In considering document PPR 3/17 (Secretariat), containing an update on the progress of the revision process concerning the drafts of the course outline, instructor's and participant's manuals of the OPRC Model Training Course, levels 0, 1 and 2, the Sub-Committee noted the significant progress made in the revision of the course materials.

17.3 In this regard, the Sub-Committee noted the view expressed by a delegation that all the course presentation materials, including any PowerPoint presentations, should be made available to delegations for consideration; the model courses should provide scenarios for exercises and topics for group discussions; they should include details on the role of fishing vessels in oil spill response operations; an overview of field exercises should be included; and lists of equipment required for proposed field exercises and demonstrations should also be included.

Instructions to the Drafting Group on OPRC-related Manuals, Guidelines and Guidance

17.4 Consequently, the Sub-Committee instructed the Drafting Group on OPRC-related Manuals, Guidelines and Guidance, established under agenda item 14, to finalize the course outline, instructor's and participant's manuals of the OPRC Model Training Course levels 0, 1 and 2, on the basis of the annex to document PPR 3/17 (Secretariat), taking into account the comments and proposals made in plenary, and to provide guidance on how best to proceed in order to complete the revision of the course.

Asia-Pacific Oil Spill Prevention and Preparedness Conference 2016

17.5 Following consideration of document PPR 3/17, the Sub-Committee noted information provided by the delegation of Australia on the Asia-Pacific Oil Spill Prevention & Preparedness Conference, "Spillcon 2016", which will be held in Perth, Western Australia, from 2 to 6 May 2016. In keeping with its theme of "Global, Regional and Local", the Sub-Committee was informed that the Conference aims to bring together local, regional and global environmental and shipping representatives to discuss issues including cause, prevention, preparedness, response management and environmental issues related to oil spills, with further detailed information available on the conference website www.spillcon.com.

Report of the drafting group

17.6 Having considered the relevant part of the report of the drafting group (PPR 3/WP.5, paragraphs 9 to 11), the Sub-Committee took action as indicated below.

---

[3] **Coordinator**:
CDR Tom Ottenwaelder
United States Coast Guard,
Office of Marine Environmental Response International and Domestic Preparedness Division
Tel: +1 202-372-2264
Email: thomas.a.ottenwaelder@uscg.mil

17.7 The Sub-Committee, having noted that, due to time constraints, the group had not been able to complete the review of all the materials provided in the annex to document PPR 3/17, agreed that the Secretariat should be provided with further comments on the course materials in the weeks following the current meeting, in order to have a complete indication of the content, level of detail and focus of the various course levels expected by the group. These comments would then be incorporated to produce a final draft of all course materials and presentation slides, in order to afford interested delegations the opportunity to review and provide comment on the final draft materials. Following this review, the Secretariat would finalize the courses, based on any further comments provided at that stage, for submission of a final draft of the Model Course to PPR 4 for consideration.

17.8 The Sub-Committee invited delegations interested in participating in the review to contact the Secretariat[4] directly before the end of March 2016 so that they could be provided with the finalized draft courses, in their entirety, for consideration.

17.9 In this connection, the Sub-Committee requested the Secretariat to finalize the update of the OPRC Model Training Courses, based on the comments provided by the drafting group and interested delegations (see paragraphs 17.7 and 17.8) and submit the final text to PPR 4 for consideration.

Extension of the target completion year

17.10 In view of the above, the Sub-Committee invited the Committee to extend the target completion year for the output to 2017.

Expression of appreciation

17.11 Following consideration of all four OPRC-related agenda items (14 to 17), the Sub-Committee noted the comments made by the delegation of France, which expressed its gratitude in respect of the work done to finalize section II of the Manual on Oil Pollution – Contingency Planning and the *Guide on oil spill response in ice and snow conditions* and emphasized the importance of the Sub-Committee's work on pollution response. It was further noted that there was still more work to be done to ensure that a full collection of guidance and tools was developed to assist those involved with responding to future oil spill incidents.

18 UNIFIED INTERPRETATION TO PROVISIONS OF IMO ENVIRONMENT-RELATED CONVENTIONS

Unified Interpretations to facilitate implementation of the NO_X Technical Code 2008 and resolution MEPC.198(62*)*

18.1 The Sub-Committee considered document PPR 3/18 (IACS), which provided for consideration 20 IACS Unified Interpretations (UIs) intended to facilitate implementation of the NO_X Technical Code 2008 and the *2011 Guidelines addressing additional aspects to the NO_X Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) Systems* (resolution MEPC.198(62), as amended by resolution MEPC.260(68)) in relation to the approval of SCR systems. IACS clarified that these Unified Interpretations are not solely focused on Scheme B approval under the 2011 Guidelines.

[4] **IMO Secretariat**:

Ms. Colleen O'Hagan
Technical Officer
Tel: +44 (0) 20 7463 4023
Email: cohagan@imo.org

Ms. Laura Mateos Moya
Administrative Assistant
Tel: +44 (0) 20 7587 3272
Email: lmateos@imo.org

18.2 In this regard, the Sub-Committee also considered document PPR 3/18/2 (United States), commenting on document PPR 3/18, expressing the view that many of the UIs proposed by IACS constitute amendments to the 2011 Guidelines and/or the NO_X Technical Code 2008 rather than interpretations and proposing additional amendments to the 2011 Guidelines.

18.3 In the ensuing discussion, the following views were, inter alia, expressed:

.1 noting that Tier III NO_X emission standards entered into effect on 1 January 2016, there is a practical and urgent need for clarity on the issues raised in document PPR 3/18;

.2 the Unified Interpretations should not seek to amend the provisions of MARPOL Annex VI or the NO_x Technical Code 2008 and if this is required, a new output needs to be considered by the Committee;

.3 Scheme A and Scheme B should be considered equivalent and the UIs should not go beyond clarification and should not limit the use of Scheme B as this could restrict the market availability of technologies for achieving compliance;

.4 consideration should be given to requiring confirmation tests under both Scheme A and Scheme B;

.5 the matters related to the use of continuous NO_X monitoring and confirmation test for both Scheme A and Scheme B proposed in document PPR 3/18/2 had already been considered and decided by MEPC, and therefore the Sub-Committee should not re-open the discussion; and instruments installed for closed-loop control of SCR are not as robust as those required for continuous monitoring;

.6 the proposed UIs clarify uncertainties with regard to the 2011 Guidelines, and therefore the Sub-Committee should consider amending the Guidelines at PPR 4;

.7 the proposed UIs should be applied to both Scheme A and Scheme B;

.8 the proposed UIs should be categorized as follows: UIs which can be agreed; UIs which can be agreed but necessitate amendments to the NO_X Technical Code 2008 and/or the 2011 Guidelines; and UIs which cannot be agreed; and

.9 the core principle of the NO_X Technical Code 2008 is that the NO_x reducing device is part of the overall marine diesel engine package, and this principle is reflected in annex 1 of document PPR 3/18 (MPC 107).

18.4 The Sub-Committee recalled that, in accordance with paragraph 5.11 of the Committees' Guidelines (MSC-MEPC.1/Circ.4/Rev.4), subsidiary bodies should avoid developing unified interpretations of Guidelines.

Instructions to the Working Group on Prevention of Air Pollution from Ships

18.5 Noting the need for some clarification, the Sub-Committee instructed the Working Group on Prevention of Air Pollution from Ships, established under agenda item 8, taking into account the comments made in plenary, to:

.1 prepare a justification for a new output on the revision of the NO_X Technical Code 2008, as amended, and/or the *2011 Guidelines addressing additional aspects to the NO_X Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) Systems* (MEPC.198(62), as amended by MEPC.260(68)), for approval by MEPC 70 in accordance with the Committees' Guidelines;

.2 undertake a categorization of the elements identified in documents PPR 3/18 and PPR 3/18/2 that may require further clarification, and make recommendations on what action, if any, should be taken; and

.3 consider the need for the establishment of a correspondence group and, if required, develop associated terms of reference.

Unified interpretation to regulation 36 of MARPOL Annex I

18.6 The Sub-Committee considered document PPR 3/18/1 (OCIMF) seeking clarification with regard to the appropriate cargo/ballast operation category of offshore terminal line flush seawater which occurs during routine cargo transfer operations on board an oil tanker and proposing to categorize flush water as "disposal of residues" under regulation 36.2.10 of MARPOL Annex I and to record such operation as an entry under item J in the Oil Record Book (part II).

18.7 While the Sub-Committee noted general support for the need to address the issue described in the document, a number of delegations expressed concerns about the proposals, as they were of the view that terminal line flushing is a terminal operation rather than a cargo/ballast operation and that categorizing flush water as "disposal of residues" might have various undesirable commercial liability implications.

18.8 Following discussion, the Sub-Committee, having agreed that the issue should be clarified, invited interested Member Governments and international organizations to work together intersessionally and submit a revised proposal to PPR 4 or, in case a new output was needed, to submit a relevant proposal to the Committee in accordance with the Committees' Guidelines.

Report of the Working Group on Prevention of Air Pollution from Ships

18.9 Having considered the relevant part of the report of the Working Group on Prevention of Air Pollution from Ships (PPR 3/WP.4, paragraphs 41 to 45), the Sub-Committee took action as described in the following paragraphs.

18.10 The Sub-Committee noted corrections to document PPR 3/WP.4 as follows:

.1 in paragraph 46.9, the reference to "MEPC3/18/2" is replaced by "PPR 3/18/2";

.2 in paragraph 12 of annex 6, at the end of sentence, the words "and associated comments annexed to this Justification" are added; and

.3 in the first sentence of the comments on Annex 16 (MPC 122) at the end of annex 6, the word "synthetic" is inserted before the words "exhaust gas".

18.11 The Sub-Committee noted the group's discussion on the categorization of the UIs set out in the annexes to document PPR 3/18 and the recommendation regarding the elements of those UIs that could be developed as part of a new output (PPR 3/WP.4, paragraph 41, table 1).

18.12 The Sub-Committee agreed to a draft MEPC Circular on "Unified interpretations to the NO_X Technical Code 2008 related to the approval of SCR systems", as set out in annex 7, for submission to MEPC 70 for approval.

18.13 The Sub-Committee noted the group's discussion on the additional proposals concerning on-board testing of SCR systems and continuous monitoring set out in paragraphs 19 and 20 of document PPR 3/18/2 and concurred with the group's agreement not to take these proposals forward.

Proposal for a new output

18.14 The Sub-Committee agreed to the draft justification for a new output on the revision of the *2011 Guidelines addressing additional aspects to the NO_X Technical Code 2008 with regard to particular provisions related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) Systems* (MEPC.198(62), as amended by MEPC.260(68)), as set out in annex 8, for submission to MEPC 70, with a view to approval, together with the associated comments prepared by the group (PPR 3/WP.4, annex 6).

18.15 The Sub-Committee noted that the observer from IACS would review the possibility of a submission to MEPC 70 providing draft amendments to the 2011 SCR Guidelines. The submission would include the elements of UIs that were supported for further consideration but might also include reformulated elements of those UIs that were not supported for further consideration, taking into account comments made at PPR 3.

19 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR PPR 4

Biennial status report

19.1 The Sub-Committee recalled that MEPC 68 had approved the Sub-Committee's biennial agenda for 2016-2017 and the provisional agenda for PPR 3 (MEPC 68/21, annex 18).

19.2 Taking into account the progress made at this session, the Sub-Committee prepared the biennial status report and the provisional agenda for PPR 4, as set out in annexes 9 and 10, respectively, for approval by MEPC 69.

Correspondence groups established at the session

19.3 The Sub-Committee established correspondence groups on the following subjects, due to report to PPR 4:

.1 development of the OSV Chemical Code (see paragraph 5.10);

.2 prevention of air pollution from ships (see paragraphs 9.8 and 12.5); and

.3 development of OPRC-related manuals, guidelines and guidance (see paragraph 16.2).

Arrangements for the next session

19.4 The Sub-Committee agreed to establish at its next session working/drafting groups on subjects to be selected from the following:

.1 Safety and pollution hazards of chemicals and preparation of consequential amendments to the IBC Code; Review of MARPOL Annex II requirements that have an impact on cargo residues and tank washings of high viscosity and persistent floating products;

.2 Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels;

.3 Revised guidance on ballast water sampling and analysis; Production of a manual entitled "Ballast Water Management – How to do it";

.4 Consideration of the impact on the Arctic of emissions of Black Carbon from international shipping; Development of standards for shipboard gasification waste to energy systems and associated amendments to regulation 16 of MARPOL Annex VI; Guidelines for the discharge of exhaust gas recirculation bleed-off water; and

.5 Updated IMO Dispersant Guidelines (Part IV); Updated OPRC Model training courses.

In this connection the Chairman, taking into account the submissions received on the respective subjects, would advise the Sub-Committee well in time before PPR 4 on the final selection of groups.

Intersessional meeting

19.5 The Sub-Committee invited MEPC 69 to approve the holding of an intersessional meeting of the ESPH Working Group in 2017.

Date of next session

19.6 The Sub-Committee noted that the fourth session of the Sub-Committee was tentatively scheduled to take place from 16 to 20 January 2017.

20 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2017

In accordance with the Rules of Procedure of the Marine Environment Protection Committee, the Sub-Committee unanimously re-elected Mr. S. Oftedal (Norway) as Chairman and Dr. F. Fernandes (Brazil) as Vice-Chairman, both for 2017.

21 ANY OTHER BUSINESS

The Sub-Committee noted that no submissions had been received under this agenda item and that no other matters had been raised by delegations during its consideration.

22 ACTION REQUESTED OF THE COMMITTEES

22.1 The Marine Environment Protection Committee, at its sixty-ninth session, is invited to:

.1 note the biennial status report of the Sub-Committee for the current biennium (paragraph 19.2 and annex 9);

.2 approve the provisional agenda for PPR 4 (paragraph 19.2 and annex 10); and

.3 approve the holding of an intersessional meeting of the ESPH Working Group in 2017 (paragraph 19.5).

22.2 The Marine Environment Protection Committee, at its seventieth session, is invited to:

.1 approve the draft MSC-MEPC circular on "Example of a Certificate of Protection for products requiring oxygen-dependent inhibitors", subject to concurrent approval by MSC 96 (paragraph 3.3.2 and annex 1);

.2 endorse the evaluation of products and their respective inclusion in lists 1, 2 and 3 of MEPC.2/Circ.21, with validity for all countries and with no expiry date (paragraph 3.3.3);

.3 endorse the addition of four new bio-fuels to the list of recognized bio-fuels set out in annex 11 of MEPC.2/Circ.21 (paragraph 3.3.4);

.4 endorse the evaluation of cleaning additives and their inclusion in MEPC.2/Circ.21 (paragraph 3.3.6);

.5 endorse the evaluation of cleaning additives and their inclusion in the next revision of the MEPC.2/Circular, i.e. MEPC.2/Circ.22 in December 2016 (paragraph 3.18);

.6 note that the Sub-Committee has developed a measurement reporting protocol for voluntary data collection of Black Carbon and has invited interested Member Governments and international organizations to use the protocol and submit data to PPR 4 (paragraph 8.10);

.7 approve the modification to the title of output 7.3.1.2 to read "*Development of Standards for shipboard gasification of waste systems and associated amendments to regulation 16 of MARPOL Annex VI*" (paragraph 9.6);

.8 approve the draft amendments to appendix V of MARPOL Annex VI with a view to subsequent adoption (paragraph 10.7 and annex 3);

.9 approve the draft MEPC circular on "Guidelines for onboard sampling for the verification of the sulphur content of fuel oil used on board ships", taking into account the Sub-Committee's deliberation on the title and paragraph 2.2.3 of the Guidelines (paragraphs 11.6 to 11.11 and annex 4);

.10 approve the draft section II of the Manual on Oil Pollution – Contingency Planning for subsequent publication and authorize the Secretariat, when preparing the final text of the Manual, to effect any editorial correction that may be identified, as appropriate (paragraphs 14.7 and 14.8 and annex 5);

.11 approve the draft *Guide on oil spill response in ice and snow conditions* for subsequent publication and authorize the Secretariat, when preparing the final text of the Guide, to effect any editorial correction that may be identified, as appropriate (paragraphs 15.4 and 15.5 and annex 6);

.12 approve the draft MEPC Circular on "Unified interpretations to the NO_X Technical Code 2008 related to the approval of SCR systems" (paragraph 18.12 and annex 7);

.13 approve the new output on the revision of the *2011 Guidelines addressing additional aspects to the NO_X Technical Code 2008 with regard to particular provisions related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) Systems* (MEPC.198(62), as amended by MEPC.260(68)), for inclusion in the Sub-Committee's biennial agenda for 2016-2017 and the provisional agenda for PPR 4, taking into account the justification for such a new output (paragraph 18.14 and annex 8); and

.14 approve the report in general.

22.3 The Maritime Safety Committee, at its ninety-sixth session, is invited to approve the draft MSC-MEPC circular on "Example of a Certificate of Protection for products requiring oxygen-dependent inhibitors", subject to concurrent approval by MEPC 70 (paragraph 3.3.2 and annex 1).

***

ANNEX 1

DRAFT MSC-MEPC CIRCULAR

EXAMPLE OF A CERTIFICATE OF PROTECTION FOR PRODUCTS REQUIRING OXYGEN-DEPENDENT INHIBITORS
(as required by paragraph 15.13.3 of the IBC Code)

1 The Marine Environment Protection Committee at its [seventieth session (24 to 28 October 2016) and the Maritime Safety Committee at its ninety-sixth session (11 to 20 May 2016)] approved the *Example of a certificate of protection for products requiring oxygen-dependent inhibitors (as required by paragraph 15.13.3 of the IBC Code),* prepared by the Sub-Committee on Pollution Prevention and Response, at its third session, as set out in the annex.

2 Member Governments are invited to bring the attached Example to the attention of Administrations, recognized organizations, port authorities, shipowners, ship operators, shipper/manufacurers and other parties concerned.

ANNEX

EXAMPLE OF A CERTIFICATE OF PROTECTION
(As required by paragraph 15.13.3 of the IBC Code)

INHIBITED CARGO CERTIFICATE of PROTECTION	
Contact information	
Shipper/manufacturer	
Contact details	
Load port/berth	
Date/Time	
Shipping information	
Ship name	
Trade name of cargo	
IBC Code Product Name	
Inhibitor details	
Name of inhibitor	
Amount added/concentration	
Inhibitor added date	
Duration of effectiveness	
Is inhibitor oxygen–dependent?	Yes / No (circle one)
- If yes, the minimum level of oxygen required in the vapour space for the inhibitor to be effective. (Include any preferred oxygen ranges)	
- Temperature limitation qualifying the inhibitors effective lifetime	
Expected duration of voyage	
Extra inhibitor supplied	
Additional information	
Action to be taken should the length of the voyage exceed the effective lifetime of the inhibitor	
Comments	
Date	
Name (shipper/manufacturer)	
Signature	

***

ANNEX 2

PROVISIONAL AGENDA FOR ESPH 22

1	Introduction
2	Decisions of other bodies
3	Evaluation of products
4	Evaluation of cleaning additives
5	Review of MEPC.2/Circular – Provisional classification of liquid substances transported in bulk and other related matters
6	Revision of the IBC Code – Chapters 17, 18 and 21
7	Revision of MEPC.1/Circ.512 – *Guidelines for the provisional assessment of liquid substances transported in bulk*
8	Development of minimum carriage requirements for contaminated bulk liquids carried in OSVs
9	Guidance for the assessing and classifying products under Annexes I and II of MARPOL
10	Amendments to MARPOL Annex II related to the discharge of cargo residues and tank washings of high viscosity, solidifying and persistent floating products
11	Proposed provisional agenda for ESPH 23
12	Report to the Sub-Committee

***

ANNEX 3

DRAFT AMENDMENTS TO APPENDIX V OF MARPOL ANNEX VI

Information to be included in the bunker delivery note (regulation 18.5)

1 The items listed in the Appendix are numbered from 1 to 9.

2 In item 7, the comma after "15˚C" is deleted and brackets are added around "kg/m³".

3 Item 9 is replaced with the following:

"A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with regulation 18.3 of this Annex and that the sulphur content of the fuel oil supplied does not exceed:

☐ the limit value given by regulation 14.1 of this Annex;

☐ the limit value given by regulation 14.4 of this Annex; or

☐ the purchaser's specified limit value of _____ (% m/m).
As completed by the fuel oil supplier's representative and on the basis of the purchaser's notification that the fuel oil is intended to be used:

.1 in combination with an equivalent means of compliance in accordance with regulation 4 of this Annex; or

.2 is subject to a relevant exemption for a ship to conduct trials for sulphur oxides emission reduction and control technology research in accordance with regulation 3.2 of this Annex.

This declaration shall be completed by the fuel oil supplier's representative by marking the applicable box(es) with a cross (x)."

***

ANNEX 4

DRAFT MEPC CIRCULAR

GUIDELINES FOR ONBOARD SAMPLING FOR THE VERIFICATION OF THE SULPHUR CONTENT OF THE FUEL OIL USED ON BOARD SHIPS

1 The Marine Environment Protection Committee, at its [seventieth session (31 October to 4 November 2016)], recognizing the need to establish an agreed method for sampling to enable effective control and enforcement of liquid fuel oil being used on board ships under the provisions of MARPOL Annex VI, approved the *Guidelines for onboard sampling for the verification of the sulphur content of the fuel oil used on board ships*, as set out in the annex.

2 Member Governments are invited to bring the annexed Guidelines to the attention of Administrations, industry, relevant shipping organizations, shipping companies and other stakeholders concerned.

ANNEX

GUIDELINES FOR ONBOARD SAMPLING FOR THE VERIFICATION OF THE SULPHUR CONTENT OF THE FUEL OIL USED ON BOARD SHIPS

1 Preface

The objective of these Guidelines is to establish an agreed method for sampling to enable effective control and enforcement of liquid fuel oil being used on board ships under the provisions of MARPOL Annex VI.

2 Sampling location

2.1 The onboard representative sample or samples should be obtained from a designated sampling point or points as agreed by the Administration taking into account the criteria as given in paragraphs 2.2.1 to 2.2.5 of these Guidelines.

2.2 In the absence of the sampling point or points referred to in paragraph 2.1, the fuel sampling point to be used should fulfil all of the following conditions:

.1 be easily and safely accessible;

.2 take into account different fuel oil grades being used for the fuel oil combustion machinery item;

.3 be downstream of the in use fuel oil service tank;

.4 be as close to the fuel oil combustion machinery as safely feasible taking into account the type of fuel oil, flow-rate, temperature, and pressure behind the selected sampling point;

.5 the sampling point should be located in a position shielded from any heated surface or electrical equipment so as to preclude impingement of fuel oil onto such surface or equipment under all operating conditions; and

.6 be proposed by the ship's representative and accepted by the inspector.

2.3 Fuel oil samples may be taken at more than one location in the fuel oil service system to determine whether there is a possible fuel cross-contamination in the absence of fully segregated fuel service systems, or in case of multiple service tank arrangements.

3 Sample handling

The sampling connection* should be thoroughly flushed through with the fuel oil in use prior to drawing the sample. The sample or samples should be collected in a sampling container or containers and representative of the fuel oil being used. The sample bottles should be sealed by the inspector with a unique means of identification installed in the presence of the ship's representative. The ship should be given the option of retaining a sample. The label should include the following information:

.1 sampling point location where the sample was drawn;

.2 date and port of sampling;

* The sampling connection is the valve and associated pipework designated for sample collection which is connected to fuel oil service system.

.3 name and IMO number of the ship;

.4 details of seal identification; and

.5 signatures and names of the inspector and the ship's representative.

***

ANNEX 5

DRAFT MANUAL ON OIL POLLUTION – SECTION II – CONTINGENCY PLANNING – 4TH EDITION

Manual on Oil Pollution

Section II – Contingency Planning

4th Edition

DRAFT

Preface

The Marine Environment Protection Committee (MEPC), at its sixty-fifth session, approved the revision of Section II of the Manual on Oil Pollution to update the previous edition and incorporate new information related to contingency planning for offshore installations, sea ports and oil handling facilities. This edition of Section II builds upon three earlier editions, first published in 1978, and provides a concise summary of the best practices for governments to follow when establishing a national response system and developing or revising their national oil spill contingency plans.

The Manual on Oil Pollution consists of five sections:

Section I	Prevention (2011 edition)
Section II	Contingency Planning (this publication)
Section III	Salvage (1997 edition)
Section IV	Combating Oil Spills (2005 edition)
Section V	Administrative Aspects of Oil Pollution Response (2009 edition)
Section VI	IMO Guidelines for Sampling and Identification of Oil Spills (1998 edition)

Acknowledgements

This edition of Section II of IMO's Manual on Oil Pollution is the result of the co-operative efforts of many delegates and international experts. Paul Lattanzi of the United States Coast Guard, serving as a consultant to the Regional Activity Center / Regional Maritime Pollution Emergency Information and Training Center (RAC REMPEITC - Caribe), has served as a contributor and editor of this edition with the support of the IMO Secretariat. He would like to express his sincere appreciation to the following individuals for their considerable efforts and contributions throughout the process:

Burkan Aykan (UDHB, Turkey)

Ole Kristian Bjerkemo (NCA, Norway)

Anne Carnegie (IHMA, United Kingdom)

Romain Chancerel (ITOPF, United Kingdom)

Marty Cramer (ConocoPhillips, United States)

Mark Dix (NOAA, United States)

Roxanne Jensen (USCG, United States)

Guo Jing (SZMSA, China)

Scott Lundgren (USCG, United States)

John McMurtrie (ISCO, United Kingdom)

Miguel Moyano (ARPEL, Uruguay)

Annabelle Nicolas-Kopec (ITOPF, United Kingdom)

Christophe Rousseau (CEDRE, France)

Philip Ruck (IPIECA, United Kingdom)

Robert Service (MNZ, New Zealand)

Kenichiro Maruyama (JCG, Japan)

Thomas Ottenwaelder (USCG, United States)

Elliott Taylor (PAS, United States)

Tim Wadsworth (ITOPF, United Kingdom)

Wei Kaikai (SZMSA, China)

Contents

Introduction

There are several publications that contain marine oil spill contingency planning guidance for organizations that produce, handle, transport, or store oil products. This revised edition of Section II of the International Maritime Organization's (IMO) *Manual on Oil Pollution* is published to assist governments in establishing a National Response System and preparing a National Contingency Plan. With a well-developed National Response System, clearly defined policies and responsibilities, and a regularly exercised National Contingency Plan, a country may encourage development of oil infrastructure while reducing potential consequences of oil spills that might occur during the exploration, production, transport, transfer, or storage of crude oil and refined oil products.

Taking into consideration the latest developments in knowledge, regulations, and practices established at the IMO and other global and national organizations, this edition is comprised of five chapters and seven appendices. The chapters and appendices are written and organized for governments that are establishing new National Response Systems and contingency plans. However, there is value herein for refining even the most established National Response System or contingency plan.

This revised edition is intended to be a concise guideline to assist governments in developing National Response Systems, preparedness standards, and national oil spill contingency plans. Appendix 7 provides a list of relevant documents for a more exhaustive examination of many of the topics addressed herein.

Definitions

Assisting Country: A country that provides oil spill response assistance at the request of a lead country.

Claim: A request, made in writing for a certain sum (specific financial amount), for compensation for damages or removal costs resulting from an oil spill incident.

Coastal State: The term provided to countries that have jurisdiction over offshore drilling operations or whose waters a ship or mobile offshore facility may engage in innocent passage, trade or service.

Competent National Authority: The authority within the national government designated as having overall responsibility for response to oil spill emergencies and having the authority to make and implement decisions to mitigate the threat of such emergencies. In many case, the authority responsible for the National Oil Spill Contingency plan

Convention: An agreement between sovereign states, which, like a treaty, is open for adoption by any state that desires. It usually takes a domestic statue to give effect to a convention, which does not come from ratification alone.

Exclusive Economic Zone (EEZ): A concept adopted at the Third United Nations Conference on the Law of the Sea (1982), whereby a coastal State assumes jurisdiction over the exploration and exploitation of marine resources in its adjacent section of the continental shelf, taken to be a band extending up to 200 nautical miles from shore.

Flag State: The term provided to countries under which a ship or mobile offshore facility may be registered. It is generally the Flag State that is responsible for compliance with applicable international conventions and domestic laws of the Flag State.

Hazardous and Noxious Substance: As defined by the OPRC-HNS Protocol, any substance which, if introduced into the marine environment, is likely to create hazards to human health, to harm living resources and marine life, to damage amenities, or to interfere with other legitimate uses of the sea.

Industry: Organizations that produce, handle, transport, or store oil products. These organizations maybe state-owned or privately -owned.

Lead Country: The country in whose waters the spill occurred, or the nearest coastal State if the spill occurred in international waters, and who exercises operational coordination of a joint response involving assisting states or organizations

Mystery or Orphan Spill: An oil spill for which no source has been identified.

National Oi Spill Contingency Plan: A national level plan that outlines the National Preparedness and Response system, including both private and public resources for response to emergencies which could result in an oil spill in the marine environment. It ensures critical information, operational plans, and oil spill response management structures have been established and are readily available prior to a major oil spill.

National Preparedness and Response System: A system of authorities, regulations, plans and capabilities, usually codified in law, created to ensure preparedness for safe, effective, and efficient responses to oil spills by private organizations, local or national government. It outlines the structure and organization, including roles and responsibilities, to be followed by entities engaged in preparing for, or responding to an oil spill incident.

Net Environmental Benefit Analysis (NEBA): A process used to select the most appropriate response techniques to minimize the impacts of an oil spill on people and the environment.

Net Environmental Economic Benefit Analysis (NEEBA): A modification of the NEBA concept that also takes into account economic impact considerations.

Offshore Oil Installations: means any fixed or floating structure, and any integral part thereof, that is engaged in activities, including drilling rigs, production platforms, subsea completions, offshore buoy mooring and loading systems, subsea pipelines.

Oil Handling Facility: Any structure, group of structures, equipment, or device (other than a vessel) which is used for one or more of the following purposes: exploring for, drilling for, producing, storing, handling, transferring, processing, or transporting oil.

Oil Spill: The release of a petroleum hydrocarbon into the environment due to human activity or natural disaster, and is a form of pollution. Marine oil spills may be due to releases from ships, offshore platforms, drilling rigs, wells, storage tanks, and pipelines. Potential petroleum hydrocarbons released include crude oil as well as refined products (such as gasoline, diesel, and heavy fuel oil) as well as other materials such as bitumen and waste oil.

Oil Spill Response Organization (OSRO): Known by various names throughout the world (such as Ship Pollution Response Organizations (SPRO) in China), an OSRO is a company that specializes in cleaning up oil spills. OSROs often serve as contractors or subcontractors for spill response efforts of the owner.

On-Scene Commander (OSC): The person responsible for organizing the local response and coordinating the deployment of required resources.

Owner: The person, business, or entity that has been identified as owning the vessel or facility from which the spill occurred. Not all incidents have a designated responsible owner; these spills are called mystery or orphan spills.

Protection and Indemnity (P&I) Club: Insurer of a vessel's third party liabilities, and usually the primary source of compensation for pollution damage caused by oil from a ship.

Party to a Convention: A country that has ratified or acceded to a particular convention, and is therefore legally bound by the provisions of the instrument.

Port State: The term provided to countries that have jurisdiction over the waters in which a ship or mobile offshore facility may be operating. Port States conduct inspections to ensure

compliance with both international conventions and domestic laws of the Port State with which the ship or facility should comply.

Special Drawing Rights (SDR): An international reserve asset, created by the International Monetary Fund (IMF) in 1969 to supplement its member countries' official reserves. Its value is based on a basket of four key international currencies; SDRs can be exchanged for freely usable currencies. The daily conversion rates for Special Drawing Rights (SDRs) can be found on the International Monetary Fund website at http://www.imf.org/

Support Agency: Any organization assigned specific tasks under the national oil spill response plan in support of the response.

Sensitivity Map: Also known as "vulnerability atlas" and "environmental sensitivity index" maps,sensitivity maps provide a concise summary of coastal resources that are at risk if an oil spill occurs nearby. Examples of at-risk resources include biological resources, such as birds and shellfish beds, sensitive shorelines such as marshes and tidal flats, and human-use resources such as public beaches and parks. Potential for damage to economic activities, such as tourism, fish farming, operation of desalination plants and extraction of cooling water by coastal power stations, should also be included.

Chapter 1 – Establishing a National Preparedness and Response System

So long as oil resources are explored, produced, transported, and stored on or in the marine environment, there will be an inherent risk of oil spills. Since the adoption of preventative and response measures required by the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), , Standards of Training, Certification and Watchkeeping (STCW 95), and other international conventions, there has been a significant decrease in world-wide oil spills despite an ever increasing volume of seaborne oil trade and the expansion of offshore oil exploration and production. Yet despite these notable improvements, oil spills continue to occur throughout the world. It is imperative that governments, with jurisdiction where these activities occur, are prepared to respond to oil spills. Flag States, Port States, Coastal States, and countries with offshore oil exploration and production need clear legislation and regulations, a predetermined oil spill response management system, and careful planning to ensure rapid, efficient, and effective oil spill response when oil is spilled. The legislation, designation of national authorities, contingency plan, international cooperation, training and exercises and response equipment available for responses to oil spills are the main elements of a National Response System. This chapter is written to assist countries in developing a National Response System for oil spills by identifying and describing the primary elements and issues that should be included or considered.

Each National Response System will be unique to the specific needs and situation of the country for which it is developed, yet there are certain elements that are universal to all effective oil spill response systems. Parties to the 1990 OPRC Convention are obligated to develop and implement many of these universal elements. Sample legislation establishing a National Response System may be found in Appendix 1.

1.1 International conventions

The first step in developing a national response system is to ratify applicable international conventions. These conventions provide well-established and broadly accepted standards for oil spill preparedness, response and compensation. Oil producers and transporters are accustomed to working within the standards of these conventions. Accordingly, a government that is party to these conventions and implements the standards required of each, provides a familiar and uniform operating environment for oil producers and transporters. Further, the implementation requirements set forth for parties to the conventions provides a solid foundation for any National Response System.

The international conventions applicable to oil spill contingency planning and response are:

- International Convention on Oil Pollution Preparedness, Response, and Co-operation, 1990 (OPRC);
- Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol);
- International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL);
- Civil Liability Convention, 1992 (CLC);
- Fund Convention, 1992;
- Supplementary Fund Protocol, 2003;
- Bunkers Convention, 2001;
- Convention on Limitation of Liability for Maritime Claims (LLMC 1976);

- Nairobi International Convention on removal of wrecks (2007)
- Intervention Convention
- Salvage Convention.

Each of these conventions are examined in detail in Chapters 4 and 5 of this Section. Some Countries may choose to make reservations to International Conventions they enact, or instead, choose to enact specific national legislation.

In addition to these international Conventions, Coastal States should be actively engaged in bi- and multi-national oil spill preparedness and response efforts with neighboring countries, as discussed in Chapter 4. Regional agreements have already been established in various areas of the world to facilitate cooperation between neighboring countries in the fields of preparedness and response to marine oil spills through effective notification and communication procedures, coordinated exercises or responses to large spills, and sharing of response resources with expedited customs and immigration procedures. Some regional frameworks have been established through the United Nations Environmental Programme (UNEP) Regional Seas Programme. It is recommended that governments refer to common standards established through the Regional Seas Programme when developing their own national legislation, regulations, and guidelines.

1.2 National legislation and regulations

National legislation and regulations establish the requirements for overall oil spill preparedness and response capability and will be essential to building a framework in which the National Response System and industry's preparedness requirements will integrate. Each country should develop clear policies regarding oil pollution preparedness and response. These policies, which should be documented in the National Contingency Plan, will provide industry with the information required to make plans according to the requirements of the country in which they are operating. Further, these clear policies will provide the Competent National Authority and any supporting agencies with the information required for them to ensure correct plan implementation and response operations.

Other policies that may be established include waste management requirements (i.e. preferred method of disposal, storage sites and transportation) and pre-authorization or prohibitions, if any, of response tactics such as in-situ burning, dispersants, surface washing agents, or bioremediation.

1.3 Designated Competent National Authority

The designation of a Competent National Authority or Lead Agency is one of the most significant steps in establishing a National Response System. A rigorous selection process should be followed when identifying the most appropriate Competent Authority or Lead Agency. Ideally, the Agency will possess or have knowledge of many of the following skill sets:

- oil spill response strategies
- marine salvage
- ship operations
- meteorology and oceanography
- aircraft operations
- petroleum and environmental scientific expertise

- satellite spill monitoring
- fisheries management
- environment protection
- legal
- logistics
- customs and immigration arrangements
- health and safety
- training and exercises
- communications
- waste handling and disposal

No single Competent National Authority or Lead Agency will possess all of these skills, so it is essential that the designated Competent National Authority or Lead Agency has the authority and ability to coordinate the efforts and input from various Supporting Agencies that do possess the supplemental skill sets. It is also essential that the designated Authority or Agency have jurisdiction and the ultimate decision making authority for oil spill preparedness and response and that the Supporting Agencies do not have overlapping or duplicative authorities that can lead to contradictory directives or requirements to industry. Typical National Competent Authorities and Lead Agencies include:

- Defense Agency;
- Maritime Transport (Civil) Agency;
- Environmental Protection Agency;
- Coast Guard;
- National Committee designated for response; or
- Disaster Management Agency.

Depending on the size of the country, number of regional ports, diversity of oil related facilities, and/or other activities that may result in oil spills, responsibility for oil pollution preparedness and response may need to be assigned at a regional and/or local level. In this case, the national plan would be developed at a higher management or organizational level. Regional or local plans would be prepared by the associated jurisdictional authorities and contain more detailed information on coordinating on-scene response efforts at the beginning of an incident. These plans, however, must be subordinate to, and consistent with, the policies and programmatic requirements of the National Contingency Plan and Response System.

1.4 National operational contact point

A rapid, appropriately sized response to an oil spill incident may reduce the amount of oil spilled and/or mitigate the impacts of the spill to the environment, economy, and public trust. Establishing a clear oil spill reporting system and clear reporting requirements enables timely notification to the appropriate authorities and the subsequent responses to oil spills. Critical elements to an effective national oil spill reporting system include:

- designation of a national operational contact point, which shall be responsible for the receipt and transmission of oil pollution reports;
- an established procedure for receiving and disseminating reports of oil pollution;

- procedures for notifying applicable government agencies, officials and other relevant organizations and international parties;
- clear standards for what must be reported and when;
- spill notification forms or checklists; and
- reporting of point of contact and key personnel involved in the response.

Legislation should specify minimum reporting standards as well as penalties for failure to report oil spills per prescribed national standards.

1.5 Requesting or rendering assistance

As discussed in 1.1, there are international and regional agreements (both multilateral and bi-lateral) established for countries to either request or provide assistance to another country. Most of these agreements were established because two or more States may share borders or a specific or regional waterway, or because of a special relationship established between the States, for instance a kingdom and a territory. Recognizing that many States, especially developing ones, may not have oil spill response resources or expertise available, it is wise to establish in national legislation, an agency that has the authority to request assistance from another State or decide to render assistance following a request by another country.

This authority is usually delegated to the Competent National Authority. However, given the international nature, legal, and financial implications of such decisions, this authority may instead be given to a higher government body such as a parliament or executive body.

During a large oil spill response, especially one in a developing country, there may be many offers of assistance from international organizations or other states. Managing these offers can be challenging. The IMO has developed guidelines to be used as a tool to assist in managing a multitude of requests for, and offers of, assistance from other countries, regional coordinating bodies, or other entities. The *'Guidelines on International Offers of Assistance in response to a marine pollution incident'* may be utilized by IMO Member States, particularly those that are party to the OPRC Convention that requires States to establish procedures for international cooperation during pollution incidents.

1.6 National Oil Spill Contingency Plan

The cornerstone of any national response system, and this Section of IMO's Manual on Oil Pollution, is a National Oil Spill Contingency Plan. A National Contingency Plan, and area and local contingency plans where warranted, ensure critical information, operational plans, and oil spill response management structures have been established and are readily available prior to a major oil spill. Essential elements to a National Contingency Plan are:

- Competent National Authority or Lead Agency, Supporting Agencies, and responsibilities;
- Relevant national and international legislation;
- oil spill risk assessment;
- assessment and/or identification of places of refuge;
- notification and reporting procedures;
- oil spill assessment;
- oil spill response management system;
- response resources;
- sensitivity maps, vulnerability atlases or environmental sensitivity indices;

- response strategies;
- national policy for use of dispersants and other non-mechanical response technologies;
- waste management;
- decontamination;
- demobilization and termination of response;
- training, exercise and plan update requirements; and
- cost recovery.

Each of these elements is examined in detail in Chapter 2 of this Section.

1.7 Pre-positioned oil spill response equipment

Under the 1990 OPRC Convention, a State, either individually or through bilateral or multilateral agreements and in co-operation with the oil and shipping industries, port authorities and other relevant entities, should ensure the availability of pre-positioned oil spill response equipment. Whether or not minimum levels of pre-positioned equipment are codified in domestic regulations, the National Response System should contain provisions for certifying adequate oil spill response equipment, appropriate to the risk, is available and maintained in a serviceable condition.

One method for ensuring the availability of adequate response equipment is for states to set minimum levels of pre-positioned oil spill response equipment in nationally devised standards. On-site or immediately available oil spill response equipment enables the rapid response and containment of minor, most probable spills in the vicinity of oil handling operations. Personnel expected to deploy the equipment should be trained on its use and relevant safety precautions.

While governments may choose to purchase, maintain, and train on the use of oil spill response equipment, it is common practice to require the oil industry to maintain, or ensure the availability of, a minimum level of equipment. Standards should be set for oil recovery or containment capacity, recovered oil storage capacity, and response timelines.

Recognizing that oil spills are an infrequent event and stockpiling response equipment is expensive for a national authority, alternative means, such as co-operatives and private oil spill response organizations, may be utilized to ensure response equipment availability in the unlikely case of an oil spill.

1.8 Exercises, training and health and safety

Each State, either individually or through bi-lateral or multilateral agreements and in co-operation with the oil and shipping industries, port authorities, and other relevant entities, should establish a program of exercises for owners and oil spill response organizations and training of relevant personnel based on IMO model courses.

Standardized training and exercise requirements may be codified in legislation and regulations to ensure that owners and organizations expected to conduct oil spill response operations are proficient at the time of an actual spill and are familiar with national and local response plans. On-scene commanders should be trained in the relevant spill response management system and supervisors must fully understand the operational requirements, limitations, and safe operating requirements of oil spill response equipment.

Required exercises may include tabletop, drill, and functional deployment exercises. No matter the format, exercises are an ideal time for government and industry to jointly test and verify their respective contingency plans and procedures as well as verify the role and expectations of the various parties involved. Tabletop exercises and equipment deployment drills should be conducted periodically (at least once a year), and ideally conducted jointly with industry. Further useful information may be found in *Oil spill exercises – Good practice guidelines for the development of an effective exercise programme* (IPIECA IOGP 2014)Health and safety of oil spill response personnel is of paramount importance and should be addressed within the national contingency plan and practiced through exercises and training. Further useful information may be found in *Oil Spill Responder Health and Safety* (IPIECA IOGP 2012).

1.9 Industry oil pollution contingency plans

Each State, either individually or through bi-lateral or multilateral agreements and in co-operation with the oil and shipping industries, port authorities, and other relevant entities, should establish detailed plans and communication capabilities for responding to an oil pollution incident.

In accordance with MARPOL Annex 1, tank ships over 150 gross tons and all ships over 400 gross tons are required to carry a shipboard oil pollution emergency plan. Whether acting as a Flag State or Port State, States should ensure these plans are complete and should address communication capabilities required to adequately respond to an oil spill.

The requirements for contingency plans for ships will be determined similarly in part by national legislation and by international conventions. The majority of ships operating commercially are required to comply with the provisions under MARPOL to have on-board a Ship Oil Pollution Emergency Plan (SOPEP) describing the actions to be taken following a pollution incident, including the procedures for reporting to an authority on-shore, and places a complimentary requirement on Signatory States to make arrangements for receiving and acting on such notifications. These requirements are reinforced within the separate OPRC Convention).

The requirements under MARPOL, as well as under SOLAS, are expanded under the IMO Polar Code for ships operating in Antarctica and the Arctic, that require a ship to have on-board a Polar Water Operations Manual (PWOM). The PWOM includes the specific procedures to be followed in the event of an incident in polar waters, including the procedures for contacting emergency response providers for salvage, search and rescue, spill response, etc., as applicable.

Operators of offshore installations under the jurisdiction of a Coastal State are required to have oil pollution emergency plans, which are coordinated with the national system for responding to oil pollution incidents, approved in accordance with procedures established by the competent national authority. These plans often contain information on how communications will be facilitated during response.

Authorities or operators in charge of sea ports and oil handling facilities under the jurisdiction of Parties are also required to have oil pollution emergency plans or similar arrangements which are coordinated with the national oil pollution response system.

These plans are discussed in detail in Chapter 3.

1.10 Oil spill response resource coordination

As discussed in 1.7, industry may maintain and operate the appropriate initial oil spill response equipment and resources for small and most probable spills. When the spills are larger in magnitude, then pre-established mechanisms or arrangements should be in place to ensure adequate oil spill response equipment and resources are available within an effective timeframe.

There is no international requirement for the coordination of provisioning oil spill response resources between industry, spill response organizations and possibly governments. Where these coordination arrangements do exist, they are typically made by a contract between ships, offshore units, or oil handling facilities and an oil spill response organization that maintains a stockpile of equipment, trained oil spill response experts, and the logistical support to deliver both to the location of a larger spill.

1.11 Tiered response

Examined in detail in the 2010 IMO Manual on Oil Spill Risk Evaluation and Assessment of Response Preparedness and the IPIECA/IOGP Tiered Preparedness and Response Good Practice Guide, tiered response has become a widely accepted operational concept that provides a convenient categorization of response levels and a practical basis for planning. Tiered response may also be incorporated into the development of planning, equipment and operational preparedness requirements for ships, offshore installations, and oil handling facilities operating within the jurisdiction of a State. Tiered response systems are based on the concept that the response to spills may be categorized into the following three tiers:

- Tier 1 - preparedness and response capability for small spills within the purview of an individual facility or harbor authority that may be mitigated by locally available resources.
- Tier 2 - preparedness and response capability for spills that require equipment and personnel resources beyond those available locally (Tier 1). For a Tier 2 response, assistance can come from a number of entities outside the immediate geographic area including national resources.
- Tier 3 - preparedness and response capability for major spills, including those of national or international significance, requiring the mobilization of national and international resources. It is imperative that customs and immigration procedures have been streamlined ahead of time to expedite the importation of international resources should they be required to facilitate an effective response.

Some countries do not have Tier 2 oil spill response equipment or capability, and few countries have Tier 3 resources. While it is generally recommended that countries ensure Tier 1 level response equipment and capabilities are on-site or immediately available, there is the understanding that Tier 2 and, if needed, Tier 3 level resources will “cascade” in over time. Integration of additional resources that may be needed should be planned for and integrated into oil spill contingency plans.

Further, response capabilities required over the course of an oil spill will vary, requiring mobilization and demobilization of equipment and personnel as dictated by the changing requirements of the spill. Response impacts and costs can be greatly reduced by rapid mobilization and effective use of resources and demobilizing those that are no longer needed. It is a best practice for planners and response organizations to have a bias toward

a proactive response in the early stages of a spill, especially when the extent of spill may not be fully realized. Early response is generally more effective than later response (i.e. secure the source of the spill, take a vessel in tow before it grounds, etc.). Planners and responders should mobilize resources early as it better to stand down resources if not needed than to lose an opportunity to mitigate a spill early in the response for want of resources.

1.12 National oil spill response management system

Effective responses to major oil spills are complex operations that require the seamless integration of material resources, operational processes, and personnel from many different organizations, under a commanding team qualified to lead the response. This integration is made possible by establishing and operating within a national oil spill response management system. The response management system must be flexible enough to rapidly expand or contract to effectively manage the oil spill throughout the entire course of the response.

IMO have published a *Guidance on the Implementation of an Incident management system (IMS)* (IMO 2012), such systems may be adopted by countries when developing their particular response management system. Other government and industry organizations, including the United States Federal Emergency Management Agency Incident Command System (ICS) Resource Center, International Tanker Owners Pollution Federation (ITOPF), and the oil industry itself in the IPIECA/IOGP IMS Good Practice Guide (Report number 517), have also presented similar recommendations for effective response management systems. What is most important is that a country adopts a single response management system and requires its use during training, exercises, and responses by all agencies and all oil spill response plan holders. An incident management system that is flexible and robust and is shared by all oil spill response plan-holders will facilitate integration of government and industry response resources and will help ensure the most effective response.

1.13 Assessing oil spill response preparedness

Whether developing or improving a national response system, it is important to periodically assess oil spill response planning and readiness and to identify challenges, information needs, and areas for improvement. Oil spill response assessment criteria are the foundation for a consistent approach to gauge the level of oil spill response planning and readiness. There are several tools and many organizations that can assist a government or industry to assess their oil spill response preparedness. One widely accepted assessment tool is the Readiness Evaluation Tool for Oil Spills (RETOS™), developed by the Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean, and freely available on their website (ARPEL, 2015).

Chapter 2 - A National Oil Spill Contingency Plan

Effective oil spill responses that minimize environmental, economic and health impacts are a result of significant advance planning and coordination between the government and owner/operators of ships and offshore and other oil handling facilities. This foundation for this planning and coordination is typically codified in a National Oil Spill Contingency Plan which describes the entire national preparedness and response system, including public, non-governmental organizations, and private resources, for responses to marine oil spills or spills that might affect other areas.

The primary objective of any National Oil Spill Contingency Plan should be to ensure a timely, coordinated, and effective response to oil spills. The plan should describe the government's roles and responsibilities as well as the procedures and processes that will be followed when responding to a spill. The plan should remain strategic. Tactical response information may be included but is typically covered in a country's regional or area contingency plans and/or contingency plans developed by ship and oil handling facility owners/operators.

Most countries have adopted the polluter pays principle wherein the party responsible for the spill must fund the response activities to the full extent of its legal liability. In some countries the polluter also arranges the response, in this case, the Competent National Authority or lead agency provides oversight to ensure the owner adequately executes the response and coordinates the activities of any involved supporting government agencies. In any case, a National Contingency Plan should focus on national policies and protocols for oil spill preparedness and response as a means of communicating the government's expectations on those issues to those implementing the response. This chapter will examine the critical elements of an effective National Contingency Plan. An outline of all the recommended elements of National Contingency Plan is provided in Appendix 2.

2.1 Responsibilities of the Competent National Authority

Once designated, as discussed in 1.3, the Competent National Authority has overall responsibility for response to oil spill emergencies and should be given the authority to make and implement decisions to mitigate the impacts of oil spills. The plan should define the national policy and responsibilities for oil spill preparedness, planning and response and cite legislation that authorizes the Competent National Authority or lead agency to prepare and implement the plan. The plan should also specify the position within the authority or lead agency that heads the national response organization and has ultimate authority and responsibility for managing and coordinating responses to oil spills (e.g., National Incident Commander, National On-Scene Coordinator, etc.). The geographic area within which the Competent National Authority is authorized to implement the plan should be clearly indicated, with reference made to supporting legislation and agreements.

The plan should expressly define the assigned tasks and responsibilities of the Competent National Authority or Lead Agency as well as those of other government and private agencies that may provide resources or technical and scientific advice during both the spill planning and operational phases. Items to be considered in inter-agency matters should include the following:

- how supporting agencies can work together collectively to help the spill response organization;
- the types of advisory and assessment responsibilities and technical tasks that such a support group can undertake;
- the organizational links by which their work can be delivered to the response managers; and
- the need for mechanisms by which disputes or conflicting priorities would be settled.

2.2 Oil spill risk assessment

Governments should begin development of their National Contingency Plan with an assessment of the risk of oil spills in the waters and, if applicable, terrestrial or other areas over which they have jurisdiction. To complete a risk assessment, a government will need to determine all of the operations that could result in the release of crude oil or refined oil products and then calculate the probability and consequences of the potential spills. The government must then ensure that the National Contingency Plan addresses each of these individual risks.

2.2.1 The oil spill risk assessment process requires that planners consider the following elements of potential oil spill releases from operations within their jurisdiction:

- facility or oil handling operation locations with a higher probability of impacting sensitive areas - would constitute a greater risk;
- likelihood of a spill – small, Tier 1 spills are the most likely spills;
- potential volume released and discharge rates – worst case scenarios (i.e. entire ship's cargo, uncontained well blow-out, etc.) should be considered;
- oil type and behavior of the oil once spilled (spreading, weathering, etc.) - some oils have greater environmental or health impacts than others;
- prevailing environmental conditions – they may preclude the use of many response options; and
- consequences of a spill – oil drift analyses are used to predict the impact area of potential spills and locations of particularly sensitive areas within the impact area are identified to assess the possible consequences.

2.2.2 Results of the assessment should be summarized and an explanation provided on how the results were used to inform the development of the National Contingency Plan and response policies. Further information may be found in the *Manual on oil spill risk evaluation and assessment of response preparedness* (IMO, 2010)

2.3 Notification, reporting, and alerting

Notification of a marine emergency which could result or has resulted in oil spillage can come from a number of sources and will typically need to be communicated to a variety of government agencies and representatives. To facilitate rapid communication of these incidents the plan should identify a single agency which will receive and disseminate such notifications or reports. The plan should also specify reporting content requirements that may include, but are not limited to, the following information:

- location (e.g. latitude and longitude or position relative to coastline);

- identification of the person reporting incident (See International Maritime Code of Signal or POLREP Appendix 5);
- date and time of observation;
- details of observation;
- source and cause of pollution (e.g. name and type of vessel, IMO number and circumstances of the spill);
- type and estimated quantity of oil spilled and the potential and probability of further pollution;
- weather and sea conditions;
- actions taken or intended to respond to the incident; and
- shipowner or operator.

Existing conventions that can be utilized to inform the development of reporting requirements include Article 8 and Protocol I of MARPOL 73/78 which establishes reporting requirements for masters or persons in charge of a ship, Article 4 of the OPRC Convention which contains similar requirements, and the IMO Polar Code.

2.3.1. In some cases, a ship message, Maritime Rescue Co-ordination Centre (MRCC) message, remote sensing by satellite, airborne or coastal radar, or other means may trigger the oil spill alerting system. The plan should describe how these inputs will be utilized to activate the alerting system and, due to the potential for false alarms, should include a confirmation step for each one.

2.3.2. Following the initial notifications, which are typically verbal, subsequent verbal or written reports are often required by the party responsible for, or who made the initial observation of, the oil spill. The plan should describe how these subsequent reports will be quickly disseminated to the lead and support agencies and other government representatives.

2.3.3 The National Contingency Plan should include the national incident management team alert and call-out procedures and identify specific actions that should be taken at an early stage for protection of vulnerable resources while taking account of any health and safety issues.

2.4 Oil spill assessment

A rapid assessment of an oil spill is of paramount importance in determining the most appropriate response tactics and strategies. Immediately following the discovery of a spill, arrangements should be made to estimate the volume and extent of the spill, conduct a health and safety hazard assessment posed by the floating oil and predict the spill's probable movement using drift or trajectory models and available meteorological and hydrographic data. The model results are then used to determine the likely spill migration path and potential impact area which are critical inputs into development of response strategies. Additionally, a spill surveillance and monitoring program should be implemented to validate the model results and determine the actual movement, extent, and characteristics of the slick. This can often be achieved by aerial observation.

The National Contingency Plan should include a section on spill assessment that summarizes the key components of an assessment and surveillance program similar to the above summary followed by a description of the assessment activities the government can

or will undertake following a spill. The latter should include the identification of assessment or surveillance resources the government owns or has access to (e.g., special radar equipped aircraft or vessels, access to satellite imagery, sampling equipment, etc.) as well as specialized skill sets such as trajectory modeling, trained spill observers, satellite imagery interpretation, and others. The plan should also identify the agencies that can provide assessment resources and capabilities and if the assessment activities will be conducted in support of, and in conjunction with, the owner's assessment activities or if they will be in parallel to assess response effectiveness.

The key components of a spill assessment and surveillance program that should be identified in a National Contingency Plan include:

- identification of the health and safety hazards of a spill to ensure safety of response personnel;
- determination of the spill size and procedures for estimating the volume;
- assessment of the properties of the spilt oil and procedures for assessing physical and chemical properties as well as changes over time due to weathering at sea and on the shoreline;
- surveillance of the movement and extent of the spilled oil; and
- modeling future movement of the spilled oil.

2.5 National oil spill response management organization

As discussed, a well-trained and exercised oil spill response management organization will greatly increase the potential for an organized and effective response. A National Contingency Plan should:

- explain the role of the Competent National Authority or lead government agency during a spill response (this may be a single national representative who is overall in charge);
- identify the various government agencies that could be involved in a response;
- explain delegated roles, responsibilities, and authorities of each participating agency/organization;
- identify the organizational structure to be used for incident management so that industry may align their response organization with it;
- describe roles and responsibilities of each position identified in the response system; and
- initial actions to be taken and by whom, and the location(s), such as an Emergency Operations Center, where they will assemble and conduct operations.

2.6 Sensitivity maps

In planning for responses to oil spills, knowledge of coastal environmental, socio-economic and cultural sensitivities in the threatened area is essential to the development of an effective response strategy. It will also facilitate the prioritization of the sensitive areas for protection which, in turn, will enable the most effective use of available response resources. Communication of coastal sensitivity information to decision makers is best achieved through the preparation of sensitivity maps (also known as vulnerability atlases) for the coastal or inland waters identified as higher risk areas in the aforementioned risk analysis. Therefore, a National Contingency Plan and/or associated legislation should mandate the

preparation of sensitivity maps as well as the government agency responsible for developing them. During a response operation, it is important to verify that the information provided in the sensitivity maps are accurate, up to date and applicable to the specific time of year. In the case that there is not enough response resources to protect all sensitive areas, the lead agency or agencies should have the authority and procedures in place to decide which priority areas should be protected.

2.6.1 The sensitivity maps should delineate the locations of sensitive areas and be accompanied by a table or narrative that ideally for each area includes:

- physical description;
- identification of environmental resources, receptors, habitats, etc., socio-economic factors or areas of special cultural significance;
- explanation of why each of the above are particularly sensitive to oil spills and the degree to which they are often impacted;
- estimations or actual data on the population or density of wildlife or cultural resources present or economic value provided;
- identification of seasonal factors that affect sensitivity to oil impacts, wildlife populations, cultural resources or economic value; and
- Protected areas.
- key economic activity areas

2.6.2 Some countries have incorporated sensitivity information and other spill response information as layers in a geographical information system (GIS) database. Example layers include pre-determined resource staging areas, oil spill response equipment stockpiles, coastal maps that can be overlain on base maps, along with the spill movement projections, to inform the development of the most effective response strategies. Further information can be found in the publication *Sensitivity mapping for oil spill response* (IPIECA, IMO, IOPG, 2012).

2.7 Response resources

Rapid access to response resources is critical to minimizing the spill impacts and implementing an effective response. The National Contingency Plan should describe the process by which response resources owned by, or available to, the government will be inventoried and available for rapid mobilization.

2.7.1 When drafting a National Contingency Plan, it is important to identify the process by which locations and inventories of government and industry owned oil spill response resources are accounted. For the different Tiers, typically subordinate government and industry plans will:

- Tier 1 – identify locations and inventories of government, industry and other resources that can be mobilized quickly to respond to localized spills in the vicinity of the resource caches
- Tier 2 – identify locations and inventories of regional or national caches of government and industry resources that may be called upon during a larger response
- Tier 3 – identify potential sources of third party resources that may come from international locations and describe the procedures for expediting the customs and

immigration processes to avoid delays in mobilizing the resources to the spill location.

2.7.2 Specialized resources such as aircraft and vessels for surveillance or dispersant application, remote sensing capabilities, wildlife response, sampling and monitoring equipment and personnel, should all be identified in subordinate plans. Inventoried support resources may also include non-government, non-specialized equipment such as vacuum trucks, excavation equipment, construction contractors, etc. (See Appendix 6). All responses require support, which may include services such as medical, transportation, cost documentation, scientific support, wildlife response support, public health and safety, and which should also be identified in the plan. Volunteer management may also be required, in which case further information may be found in the publication *Oil spill volunteer management manual* (POSOW, 2010)

2.8 Response strategies

A successful response strategy usually involves the use of multiple response techniques selected as being the most effective at containing and/or removing the oil, while minimizing the negative effects of the oil spill and response operations to the environment. National Contingency Plans or even national legislation do not generally describe or specify which response techniques or strategies should be used to respond to spills. They should, however, identify any policies or restrictions on, or preference for, the use of selected response techniques based on spill location, environmental conditions, proximity to sensitive areas, etc. The National Contingency Plan should also identify specific techniques, if any, that may be prohibited from use in jurisdictional waters.

If a government has granted pre-approval or conditions for the use of specific technologies, such as dispersants, they should be included in the National Contingency Plan, including locations where approval, conditional approval, or prohibition have been determined. Information regarding national policy for the use of dispersant may be found in the IMO dispersant guidelines (IMO 2011). Additionally, if government authorization is required for the use of one or more of these non-mechanical response techniques, the plan should clearly describe the process and any plans or information submittals required to obtain authorization. Given the short window to effectively employ certain techniques, such as use of dispersants or in situ burning, it is essential that any approval process must be efficient and rapid.

Other policies that may be established include the use of a Net Environmental Benefit Analysis, some countries also consider economic impacts (NEEBA) when developing response strategies, waste management requirements (i.e. preferred method of disposal, storage sites and transportation), and pre-authorization or prohibitions, if any, of response tactics such as in-situ burning, dispersants, surface washing agents, or bioremediation.

2.9 Waste management

A robust waste management program is paramount in achieving an efficient and effective spill response. Inadequate waste collection, transport or interim storage capabilities or uncertainty about waste treatment or disposal requirements can slow or even stop oil recovery and cleanup operations. Therefore, the National Contingency Plan should describe

the government's expectations for an effective waste management program and identify or reference any regulatory requirements or protocols associated with the characterization, storage, transport and treatment, recycling or disposal of oil spill wastes. The types or names of recycling, treatment, and disposal facilities approved to accept liquid and solid oil spill wastes should also be included in the plan. Additionally, any waste management resources or services that can be provided by the government should be identified in the plan.

Consideration should be given to including key criteria for an effective waste management program in the National Contingency Plan including:

- minimizing volume of waste created;
- treatment of oiled substrate in situ;
- segregation of waste; and
- reuse or recycling as much recovered material as possible.

More information regarding waste management may be found in *Chapter 9 of section IV of the IMO Manual on Oil Pollution* and the *Guidelines on Oil Spill Waste Management* (IMO, 2011)[CO1]

2.10 Demobilization and termination of response

The progress of the response and clean-up operations should be monitored and as the activities wind down, resources should begin to be demobilized, and ultimately, a decision should be made to terminate the response. When this decision is made, the response enters the remediation or restoration phase to monitor or enhance natural recovery of the impacted areas.

The National Contingency Plan should describe the general process for the demobilization of response equipment and other resources and what, if any, government approvals may be required for demobilizing key response resources. Response or cleanup end points should be determined early in a response through collaboration with relevant stakeholders. The plan should also outline a process for establishing cleanup/response endpoints. This will expedite the determination of appropriate endpoints and the identification of stakeholders that should be involved in the process. The Net Environmental Benefit Analysis (NEBA) is often utilized to establish the point when continued cleanup will cause more environmental damage than the remaining oil. Additional information on establishing endpoints can be found in Sergy and Owens (2007): Guidelines for Selecting Shoreline Treatment Endpoints for Oil Spill Response (See Appendix 7).

2.11 Restoration and post-spill monitoring

Upon completion of the clean-up operations, some monitoring of the ecosystems recovery and restoration of impacted areas may be necessary. The degree of restoration and post spill monitoring will be determined in collaboration with the lead agency, other agencies such as those representing environment, tourism, fishery, coastal industry, and ports, and the owner. Some examples of such restoration are replanting mangrove stands, marsh, and sea-grasses, and restocking aquaculture projects. For shoreline areas where the cleanup endpoints allow residual oil to be left in place, the areas may need to be monitored over time to document the natural degradation of the
remaining oil.

Although restoration and post-spill monitoring activities are often conducted under regulatory regimes that are separate from spill response, they can still be covered in the National Contingency Plan. In this case, the plan should generally describe the conditions or scenarios under which monitoring or restoration would be required or considered as well as a summary of the monitoring and restoration processes. Existing restoration or monitoring regulatory requirements, protocols or guidelines should also be referenced. Further useful information may be found in the *IMO/UNEP Guidance Manual on the assessment & restoration of environmental damage following marine oil spills (IMO, 2010)*

2.12 Training, exercising, record keeping and plan updating requirements

The National Contingency Plan should include a section describing the training and exercise program for the National response management organization (2.5) that is designed to ensure a high level of preparedness and build competency. It should be, to the extent practical, consistent with any training and exercise requirements imposed on industry as discussed in Chapter 3. The plan should also encourage the participation of the National organization and supporting agencies in the exercises and training events conducted by industry. Guidance and considerations on developing various aspects of a training and exercise program are provided below.

2.12.1 IMO provides guidance and training to developing nations through its Technical Cooperation Programme. One particularly well-established program is for oil spill response training. Training modules are available for first responders, incident commanders, as well as senior leaders of lead or supporting agencies.

2.12.2 It is essential to conduct annual drills and exercises to ensure all are familiar with the National, regional and local contingency plans. Where appropriate, these exercises are best coordinated with industry to provide an opportunity to learn how well different plans and organizations interface.

2.12.3 From time to time, such exercises should require mobilization and deployment of personnel, equipment, and materials to ensure their availability, performance, and the competency of those using such materials.

2.12.4 A national oil spill contingency plan should be reviewed regularly to incorporate experience gained from regular exercises and actual incidents. Regular updates of notification lists and response equipment information should also be made. Any organizational changes or legislative changes that modify the response organization or policies should be reflected in timely amendments to the affected plan and communicated to all relevant parties.

2.12.5 It is of a great importance to clearly identify in the national plan both who is responsible, and the mechanism to be employed, for the collection of detailed information and records concerning the response operation and decision making, at the early stage of an incident or even before the spill occurs. Record keeping is not only required to support claims (see section 5.4.6) it is also the basic source of information to conduct a review into the technical, operational and coordination aspects of a response, which can then be used to revise and improve the national plan accordingly.

Chapter 3 - Contingency plans for oil handling facilities, ports and offshore installations

Historically, oil spill incidents have occurred most frequently in port during ships' loading, discharging, and bunkering operations. The majority of these incidents result in comparatively small spill volumes. Overall, spill frequency and volumes have decreased over the last several decades through government and industry's increased emphasis on spill prevention. However, despite improvements in the prevention of oil spills, unanticipated events can and do still occur. These events can negatively affect health, safety, natural resources, property, tourism, and other regional community values.

Oil Pollution Emergency Plans or Contingency Plans for spills from oil handling facilities, and offshore installations (including oil exploration and production facilities) are essential components of a national or regional system to manage oil spill incidents. These industry generated plans should align and integrate with the plans of Port and Coastal states where a spill may occur and cover both minor and major spills. Countries are encouraged to develop national guidelines and/or minimum requirements for the scope and content of Oil Pollution Emergency or Contingency plans for operations within their jurisdictional area.

Oil industry groups have published various guidance documents for the development of oil spill contingency plans for ships, oil handling facilities, and offshore installations. One of the more recent and comprehensive guides for industry was produced by IPIECA and the IOGP in 2015, titled "Contingency Planning For Oil Spills On Water." This and other documents listed in Appendix 7 (References and further reading) are a good source for industry's best practices for developing contingency plans for oil handling facilities, and offshore installations.

While it is not recommended that governments become too prescriptive in their contingency plan content or formatting requirements, there are several key elements that should be incorporated into the facility or installation contingency plan development process and/or the plan itself. These essential elements are examined in greater detail in the following subsections and, along with the oil industry guidelines referenced above, can be used to inform the development of national oil spill contingency plan preparation guidelines or requirements.

3.1 Risk analysis

3.1.1 Oil spill risk is generally defined as the probability of a spill occurring from a specific source plus the consequences of the spill. The likelihood and consequences of an oil spill are determined by a risk analysis. Therefore, the risk analysis includes the identification of possible spill sources and the probability and estimated volumes associated with each source (i.e., spill scenarios). A consequence analysis is subsequently conducted for each scenario, or representative scenarios, to predict the area that could be affected along with an assessment of the potential impacts to ecological and socio-economic receptors located within the area. The probability of each scenario occurring, combined with the associated consequences, are then aggregated to provide an overall picture of the operation's spill risk. These analyses are typically part of a port or regional emergency response plan as well, but may be required by national authorities for oil spill emergency plans for oil handling facilities, or offshore installations.

Hazard identification is conducted to ensure that all the potential hazards that are inherent to the operations of the ship or facility are identified. For example, the amount being transported or handled, storage locations, extreme weather conditions, navigation hazards, or subsea geological faults are typical of the types of hazards that affect spill probabilities and volumes and are considered in oil spill emergency plans or contingency plans.

As part of the consequence analysis, the vulnerability assessment seeks to determine assets, resources, activities, and/or communities that may be affected by a spill. Such information enables responders to make well-informed decisions about protecting public health and welfare, and the environment. Lists of environmentally sensitive areas (or reference to documents that provide that information), municipal water supplies and other utilities, recreational area, facilities of special concern are among the information that should be made available during a risk assessment.

There is always some degree of uncertainty in the equation of risk assessment; however, the process of conducting a risk assessment is critical to ensuring a contingency plan appropriately addresses likely scenarios where a spill may occur.

3.1.2 There are many factors that will be unique to each spill (type of oil, proximity to vulnerable resources, proximity to international borders, etc.) and each country (availability of response resources) that may be considered when conducting a risk assessment, and later determining planning requirements for different tiers of response.

3.1.3 Scenario planning is particularly useful in oil spill and emergency response preparedness. Spill drift modeling is conducted for representative spill scenarios identified in the risk assessment to determine their potential impact areas. An environmental and socio-economic vulnerability assessment is conducted for the potential impact areas to determine the presence of areas that may be particularly sensitive to oil spills and that will need to be protected should a spill occur (consequence analysis).

A spill response strategy utilizing one or more tactics is then developed for each scenario that will minimize the overall spill impacts as well as specific impacts to the areas of higher vulnerability, taking account of the type and estimated volume of the spill and estimated time-frame before coastal resources are affected. The resources required to implement those strategies are identified and measures taken to ensure their availability within the appropriate time frames.

Additional information on this type of risk assessment and scenario-based planning, including the dimensioning of the required response resources is provided in the IPIECA-IOGP (2013a) document referenced in Appendix 7.

3.2 Tier definitions and minimum planning requirements

3.2.1 As discussed in 1.4, the principles of tiered response have become accepted practice among the world's oil spill response practitioners. While the concept of tiered response is well known, what remains to be established by each country are the tier definitions and the minimum planning requirements for ships, offshore installations, and oil handling facilities. Should a country choose to define the three tiers and their minimum planning requirements, the planning requirements should be based on the probability and consequences (risk) for each tier. By defining tiers and minimum planning requirements, a

country assists an industry in establishing their planning criteria within their response plans. Each country can define, and may codify in regulation:

- minimum response equipment/resources required for at least tier 1 spills; and,
- contractual agreements for providing tier 2, tier 3, and, potentially, tier 1 response equipment.

3.2.2 It is important to remember that the tiers are for planning purposes only, and in the event of a spill, an owner should mobilize whatever resources are necessary to adequately respond to the spill.

3.3 Incident reporting

As discussed in 1.2.2, timely reporting of an incident is critical to an appropriate response by the owner as well as government officials and other parties with a role to play in oil spill response. While various conventions put the onus of reporting on responsible parties, States must have in place arrangements to receive and act upon such reports.

3.3.1 In accordance with the OPRC Convention, responsible parties for an offshore installation are required to report without delay any event on their offshore installation involving a discharge or probable discharge of oil to the Coastal State to whose jurisdiction the unit is subject.

3.3.2 Industry contingency plans should include procedures for internal and external (governmental) notifications including contact details, forms, regulatory requirements, timelines and instructions. Flowcharts and diagrams are effective ways of displaying the flow of notifications that are required. It is also important to specify the management role responsible for ensuring notification and reporting requirements are met.

3.4 Response time frames

3.4.1 Not only is it important to establish planning and minimum response equipment/resource requirements for potential Tier 1 response capability, but to also provide maximum time frames for Tier 2 and Tier 3 response equipment to arrive on-scene. Again, this is a planning requirement only and should not be used as a performance standard as there are many factors such as weather, road conditions, customs requirements, etc. that are beyond the control of the owner and can result in the maximum time frames being exceeded. These planning requirements could, however, be used by industry and governments to decide in what time frames response equipment should be available for each tier. For example, a facility located in a remote area may be required to maintain a more sophisticated tier 1 response capability on-scene than a facility near a large port, due to extended response times for tiers 2 and 3 equipment.

3.4.2 Special consideration should be given to response time frames for remote areas or those with extreme weather conditions, such as polar or near-polar regions. The type of equipment and other resources, including personnel, as well as the logistical requirements for mobilization and staging need to be considered. Coordination with national and regional entities is particularly important in developing response time frames for these areas.

3.5 Spill response organization

3.5.1 It is important that oil spill contingency plans for oil handling facilities, ports and offshore installations describe the organization or team(s) that will be utilized to implement the tactical activities and manage the response. Facility owners/operators may have a multi-

level response organization consisting of one or more teams for each level. The first level is generally activated for all spills and subsequent levels activated as necessary to manage escalating incidents. Ideally they are organized around the three tier concept, as described below, to better align with other components of the plan. If a multi-level response organization is utilized, the plan should describe process for transitioning or escalating from one level or tier to the next.

3.5.2 For a facility operator, a Tier 1 response may be undertaken by in-house teams of workers trained in pollution response, supplemented by local contractors where necessary, to conduct the tactical activities such as containment boom and skimmer deployment and operation. An incident management team may consist of facility personnel to support the tactical operations. Government agencies will usually be notified and may contribute to the response.

3.5.3 The tier 2 response team may consist of the facility owner's/operator's corporate or regional incident management team that may be supplemented by contractors or subject matter experts with specific skill sets. The tier 2 incident management team may be mobilized to the site and will integrate with the tier 1 incident management personnel but may also perform their functions remotely. Regional or national contractors may also be mobilized to the site to supplement the tier 1 tactical team.

3.5.4 A tier 3 response is more likely to be overseen by a national government authority with support from the facility owner/operator and contractor incident management personnel to further expand the capabilities of the tier 2 resources. An incident affecting a number of countries may involve significant government resources of various nations. International response contractors may also be mobilized to further supplement the onsite tactical team.

3.6 Plan Implementation and Response Strategies

The requirements for contingency plans for oil handling facilities, ports and offshore installations will be determined in part by national legislation and by international conventions, primarily the 1990 OPRC Convention. As described in section 4.1, the OPRC Convention requires authorities or operators in charge of oil handling facilities, ports and offshore installations to have oil pollution emergency plans or similar arrangements which are coordinated with the national response system for preparedness and response, as deemed appropriate by the designated national authority of the signatory country to the Convention. In some countries, planning requirements are more comprehensive with specific obligations for pre-contracting resources and activation of the plan by designated local persons.

Plans for oil handling facilities, ports and offshore installations should describe the process for plan implementation that often utilizes the following sequence although many steps are conducted in parallel:

- initial spill and hazard assessment;
- notifications;
- initial response actions including controlling the source, securing the area, ensuring safety of responders and the public, and others;
- mobilization of resources;

- activation of response organization (tactical response and incident management teams);
- development and implementation of response strategies; and
- decontamination, demobilization and debrief.

All contingency plans should contain information on when and how the plan will be activated and who is responsible for overseeing plan activation. Similar to the government designating a Competent National Authority or Lead Agency with ultimate responsibility for oil spill preparedness and response, in some countries the facility owners/operators must also designate a position (e.g., a duty officer, Qualified Individual etc.) within their organization that has the authority and responsibility to implement the plan and manage the response. Additionally, the contingency plan should define the types of incidents and geographic area (scope) that it is intended to address and how it is integrated with other applicable response plans.

The plan should identify which response techniques should be used and in what circumstances. There are many response techniques, including mechanical containment and recovery as well as use of dispersants, burning or other non-mechanical response technologies. The plan should state the regulatory policy with regard to whether, where and when such non-mechanical response options may be used as well as a description of the required approval process, if any.

3.6.1 The plan should make provision for the various response options/techniques to be considered:

- if possible, prevent or reduce outflow of oil from the source;
- if marine or coastal resources are threatened, decide whether to begin response operations at sea and/or to protect sensitive shoreline areas by use of booms;
- whether to permit the use of dispersant, and if permitted, define the conditions under which dispersant may be used and provide and approved dispersant list;
- whether to permit use of in-situ burning method, and if use of in-situ burning method is acceptable, define condition of using in-situ burning method;
- if no marine or coastal resources are threatened or likely to be threatened, continue monitoring the movement and behavior of the oil slick; and
- if, due to weather conditions, response at sea and shoreline protection is not feasible or shoreline resources have already been affected, decide on shoreline clean-up priorities.

Details on response techniques may be found in section IV of the IMO Manual on Oil Pollution.

3.6.2 The selection of the most appropriate oil spill response techniques or options is not an exact science, and there will always be different opinions as to which techniques are most effective or have the greatest net environmental benefit. Ideally, planners should incorporate the Net Environmental Benefit Assessment (NEBA) process into the contingency plan development process to work with stakeholders to pre- identify the most appropriate response options (see IPIECA-IOGP (2014d) Net environmental benefit analysis in Appendix

7). If not, the plan should describe the NEBA process to be followed during the response to select the most appropriate response options and strategy.

3.6.3 Similar to using the above-mentioned NEBA process during contingency plan development to involve stakeholders in the pre-selection of response options, stakeholders should be involved in the prioritization of sensitive areas for protection. This will enable the priorities to be listed in the plan and cross-referenced to any coastal sensitivity maps. Such an order of priorities can reduce the risk of disagreement and indecision when faced with difficult choices during an oil spill emergency.

3.7 Waste management

3.7.1 The plan should identify resources to transport any recovered oil and oily debris to collection and disposal locations and identify equipment and temporary storage sites which can be used for collection and reception of recovered oil and oily debris. Final disposal of the recovered oil will depend on its nature and degree of contamination.

3.7.2 Disposal of oily debris and oiled shoreline substrate can present particular problems in handling due to the large quantities sometimes involved. It is recommended that suitable final disposal sites are identified in the plan in consultation with the relevant government agencies. More information regarding waste management may be found in Chapter 9 of section IV of the IMO Manual on Oil Pollution.

3.8 Decontamination

Decontamination of resources used in a response should be considered prior to a response and many decontamination facilities should be mobilized in the early stages of a response. Decontamination of response personnel, equipment, and affected resources will be required on a daily basis as well as at the end of a response. It is best to pre-identify locations and approved cleaning agents to be used in decontamination. Vehicles may require cleaning prior to leaving oiled areas to minimize secondary contamination. Similarly, oiled hulls of ships and workboats will need to be cleaned to ensure they do not trail pollution beyond the affected area.

3.9 Demobilization and termination of response

The progress of the clean-up operation should be monitored, using inputs from aerial surveillance and site supervisors, to reassess response decisions. Each area will require different standards of cleanliness; for example, amenity beaches are normally cleaned to a higher standard than exposed rocky headlands that may be cleaned naturally. The decision to terminate clean-up operations should be made by the On-Scene Commander in consultation with all other parties concerned, usually involving government officials. In general, termination is decided when further operations would be ineffective or the desired level of clean-up has been achieved.

3.10 Special considerations for offshore exploration and production installations

3.10.1 Offshore oil production and exploration installations require special consideration due to the potential for a large volume of oil to be released in cases where the spill source cannot be immediately secured. National authorities may require that an owner or operator of an offshore production or exploration installations develop a separate source control plan or section of the oil pollution emergency plan that describes how the owner or operator will control the source or a well blowout or other loss of well control event. In particular, the

source control plan should identify sources of well capping and containment equipment and associated resources (remotely operated vehicles, subsea dispersant application systems – if appropriate, debris removal equipment, etc.) as well as procedures for equipment mobilization and deployment.

3.10.2 Although generally addressed in the Risk Assessment, the total volume as well as the rate and duration of potential spills from an offshore production or exploration installation should be included in the contingency plans. The methods used for calculating these figures should also be included. The calculations for operational releases may include the capacity of one or more oil storage tanks and flow lines on the facility and the volume and release rate from possible ruptures in any pipelines connected to the facility.

3.10.3 The worst credible case discharge, for which oil pollution contingency plans are largely designed to address, should also be included. For oil production facilities, the scenario often includes riser or flow line rupture from the most productive well along with a failure in the well control valves. A daily discharge rate and total duration is calculated considering reservoir characteristics, reservoir pressure, historical rates of production, and casing/tube sizes as well as available well control or intervention/mitigation measures.

3.10.4 For oil exploration facilities, the daily discharge rate and duration is calculated for an uncontrolled well blowout, considering reservoir characteristics or analogous reservoirs in the same geographic area, reservoir depressurization, natural well bridging or obstructions (drill pipe) in the well that will reduce the rate, etc. The duration is often based on the time required to drill a relief well or to mobilize and deploy a well capping or containment system.

3.10.5 In the absence of specific national guidelines or requirements, approved industry-association guidelines on oil pollution response from oil exploration and production facilities should be consulted, such as those developed by IPIECA and IADC.

3.11 Integration of industry and government response management structures

A co-operative approach with the oil industries operating within the area of the plan is key to the establishment and sustainment of an effective response system. It is Government's role to establish the legal and organizational framework for this relationship. Whatever relationship is established, the roles of Government and industry should be clearly defined. It is essential that industry contingency plans should comply and align with national regulations. In many jurisdictions, the government will be the lead responder whereas in others, the facility owner may be required by legislation to respond.

3.11.1 Co-ordination and co-operation at local and national levels amongst government agencies and industry, is essential to all preparedness and response actions. Entities which should be included in the process of drafting the plan to ensure they are familiar with and capable of achieving their role include:

- port or maritime authorities;
- facility and terminal operators;
- fire departments;
- local police;
- health and safety officials;
- industry and commercial contractors;
- archeological and cultural experts;

- municipal, local, regional, tribal and national government authorities;
- fisheries officers;
- wildlife response organizations
- environmental specialists; and
- oil spill response and waste contractors.

3.11.2 Industry's oil spill response contingency plans should take into account National Response Systems as well as acknowledge the roles of other agencies and parties, such as salvors, insurance agencies, etc. Industry's oil spill contingency plans should facilitate the integration of these parties, as appropriate, during the course of an oil spill response. Local spill response plans of ports, oil depots, power stations, and other entities with significant oil spill risk exposure should also integrate with and be compatible with the National Response System. Having a common incident management system, as described in Section 1.5, will substantially facilitate this integration, cooperation and coordination.

3.12 Contingency plan testing and update requirements

After an oil spill contingency plan has been developed, it is important that the elements of the plan are tested regularly to ensure that planning assumptions are correct and that the plan works as anticipated. Drills and exercises developed around scenarios developed by the risk assessment process work particularly well to examine oil spill contingency plan components and to test their viability.

3.12.1 Drills typically evaluate a specific element of a plan such as communications procedures or equipment deployment. Emergency notification drills are frequently used to ensure that the plan not only identifies appropriate persons to be contacted in the event of a spill but that the list of individuals or organizations to be notified and their contact information is current.

3.12.2 Exercises usually evaluate an entire plan and can last from a few hours to several days. The hierarchy for exercises includes tabletop exercises, functional exercises, and full-scale exercises.

- Tabletop exercises are sessions during which participants meet in an informal setting to discuss their roles during a spill and their response to a particular situation. Typically, a facilitator guides the discussion through one or more scenarios. The duration of the tabletop exercise is largely dependent on the complexity of the scenario, but most can be conducted in a few hours.
- Functional exercises help validate a plan by allowing personnel involved in a spill response to perform their duties in a simulated operational environment. Functional exercises are scenario-driven and are designed to exercise specific team members, procedures, and resources. This can include simple equipment deployment exercises used to promote familiarity with the equipment as well as ensure it is working properly.
- Full-scale exercises are designed to simulate a real world situation as closely as possible. They are typically conducted by public agencies to test the effectiveness and interoperability of the hierarchy of plans that may be in effect in the event of a Tier 2 or Tier 3 spill. Full-scale exercises usually involve the physical deployment of resources and personnel from both the public and the private sector.

3.12.3 The frequency and type of drills and exercises may be specified by national authorities, but in the absence of such national requirements, operators should establish a drill and exercise program of sufficient frequency and type to ensure adequate review of the oil spill emergency plan. Typically, drills could be held quarterly and exercises annually.

3.12.4 Contingency plans should be reviewed and updated regularly. Personnel responsible for maintaining plans should periodically consider any changes that may affect the operation of the plan, for example changes in legislation that introduce different response requirements, changes in the risk (new shipping routes, new oils carried), changes in operations, reorganization of jurisdictional government departments, changes in contact details etc. Changes to a plan should be made in consultation with all plan holders. It may be appropriate to develop regulations requiring periodic review and update of industries' contingency plans.

Chapter 4 – International co-operation

This chapter provides brief summaries of two of the international conventions and the one code applicable to oil spill response. The conventions applicable to liability and compensation are covered extensively in Chapter 5; as such they are omitted here. This chapter also identifies those elements that a government should consider when developing mechanisms of cooperation in the field of multilateral preparedness and response with regional partners and governments. These multilateral plans and agreements ensure that general arrangements between governments to co-operate in responding to oil pollution, or the threat of oil pollution, are in place at the operational level. These elements may be expanded and used for the development of specific plans under the framework of regional, sub-regional, or bi-lateral agreements and are not intended to replace existing contingency plans. This chapter is principally intended to assist developing countries in establishing operational arrangements between neighboring states. It is recommended that participating governments begin such activities on a modest scale within their national capabilities.

It is strongly recommended that each Government that intends to participate in multilateral co-operation ratifies applicable international conventions and develops and implements a national response system and plan as discussed in Chapter 2.

4.1 Applicable international agreements and code

4.1.1 International Convention on Oil Pollution Preparedness, Response, and Co-operation, 1990

Parties to the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) are required to establish measures for dealing with pollution incidents, either nationally or in co-operation with other countries.

Ships, oil handling facilities, and offshore installations are required to report incidents of pollution to coastal authorities; the convention details the actions to be taken. The Convention calls for the establishment of stockpiles of oil spill combating equipment, the holding of oil spill combating exercises, and the development of detailed plans for dealing with pollution incidents.

Parties to the convention are required to provide assistance to others in the event of a pollution emergency and provision is made for the reimbursement of any assistance provided.

4.1.2 International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL)

MARPOL is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.

The MARPOL Convention was adopted on 2 November 1973 at IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI was added which entered into force on 19 May 2005. MARPOL has been updated by amendments through the years.

The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.

Annex I Regulations for the Prevention of Pollution by Oil covers prevention of pollution by oil from operational measures as well as from accidental discharges; the 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls and implemented a phase-in schedule for existing tankers to fit double hulls, which was subsequently revised in 2001 and 2003. One of the most applicable provisions of MARPOL is the requirement for ships to report oil spill incidents to Coastal States and for States to have in place a system to receive and process such reports. Further, MARPOL requires certain ships to carry a shipboard oil pollution emergency plan.

Operators of offshore installations under the jurisdiction of Parties are also required to have oil pollution emergency plans or similar arrangements which must be coordinated with national systems for responding promptly and effectively to oil pollution incidents.

4.1.3 International Code for Ships Operating in Polar Waters

The IMO has adopted the *International Code for Ships Operating in Polar Waters (Polar Code)* and related amendments to make the Code mandatory under both SOLAS and MARPOL. The Polar Code applies to ships constructed after 1st January 2017. Ships constructed before 1st January 2017 will be required to meet the relevant requirements of the Polar Code by the first intermediate or renewal survey, whichever occurs first, after 1st January 2018.

The Polar Code is intended to cover the full range of shipping-related matters relevant to navigation in waters surrounding the two poles – ship design, construction and equipment; operational and training concerns; search and rescue; and the protection of the environment and ecosystems of the Polar Regions.

Ships will need to carry a Polar Water Operational Manual (PWOM), to provide the Owner, Operator, Master and crew with sufficient information regarding the ship's operational capabilities and limitations in order to support their decision-making process.

4.2 Co-operation between participating governments

OPRC requires that Parties co-operate and provide advisory services, technical support, and equipment for the purpose of responding to an oil pollution incident upon the request of any Party affected or likely to be affected by such incident. For many regions, this cooperation takes the form of regional agreements and bi-lateral or multilateral agreements including their associated instruments such as Regional contingency plans and regional coordination centers.

4.2.1 Multilateral agreements and plans are intended to establish a framework within which two or more Governments can co-operate to facilitate certain operational aspects of oil spill response. These plans and agreements can include, but are not limited to the following areas of cooperation:

- the exchange of information regarding preparedness and response to pollution incidents, including pollution notification and reporting procedures (see Appendix 5), relevant national legislations and policies, national authorities, resources available, etc.;
- the requests of assistance during an oil spill incident;
- the strengthening of cooperation mechanisms between the national emergency response centers in order to ensure a good coordination of response activities during a pollution incident;
- the harmonization of national response strategies concerned by joint response operation such as custom and immigration procedures, national dispersant policies and liability and compensation issues;
- in the case where a multilateral contingency plan has been adopted, the implementation of its provisions concerning the operational procedures and the command structure for oil spill response operations; and
- the participation in other collaborative initiatives, which may include, but are not limited to:
    - working visits between national coordinators and other regional stakeholders;
    - joint trainings and exercises;
    - the exchange of relevant information; and
    - the sharing of technical expertise;

4.3 Reporting international oil spills and related communications

4.3.1 A multilateral oil spill plan should include agreed lists for each individual State, detailing the authorities or organizations assigned responsibility under their National Contingency Plan. These lists should identify contact points with appropriate telephone and email contact information, which must be available on a 24-hour basis as well as existing facilities, such as defense, coast guard, coastal administration or police headquarters, which could be used to receive and disseminate reports.

4.3.2 A state in whose zone of responsibility a spill or a serious threat thereof arises should immediately inform any neighboring State(s) if it appears likely that it may affect their

sea areas and shorelines, giving as much detail as possible about the incident. In the event that a spill has occurred, notification information should include:

- source;
- date time;
- position;
- type and amount of oil spilled;
- likelihood of further spillage;
- the prevailing and forecast weather conditions; and
- proposed actions.

Prepared standards for sharing information might be developed. As the situation develops, information provided to these States should be updated continuously and a regular synopsis provided to keep them informed. Examples of report formats appear at Appendix 6. Transmission of such reports should not be delayed if complete information is not immediately available.

4.3.3 Available meteorological and hydrographic data should be used to give approximate early predictions of general spill movement. More sophisticated methods of prediction of spill movement may subsequently be used. However, visual observation of any spill is essential and the responsible authority under the appropriate National Contingency Plan should use those resources already identified, such as charter, military or commercial aircraft, for surveillance. It is essential that the results of such observation and prediction be transmitted to other States which may be affected by the spilled oil until it no longer threatens any State in the area covered by the plan.

4.4 Logistics of multilateral agreements

4.4.1 A multilateral oil spill agreement should contain contact information to acquire response equipment and specialist personnel available through each national authority, procedures for mobilizing equipment and materials, and the respective relevant charges. Guidelines for identifying response resources may be found in Appendix 6. The resources of national governments, industry and commercial companies available for assistance within a region may still be found to fall short of what is desired. It may, therefore, be necessary to agree upon an increase in individual holdings or, alternatively, to make arrangements to maintain a common supplemental holding or stockpile of equipment and materials. The multilateral oil spill plan should also consider commercial and government resources which may be readily available from outside the region, so that a reasonable response to worst-case situations can be mounted. All states would nevertheless maintain control over the commitment of their national spill-response resources.

4.4.2 It is vital for the implementation of multilateral oil spill plans to be able to move equipment, materials, and personnel to the places where it is needed without undue delay or formality. It is, therefore, essential that each State participating in a multilateral oil spill plan make administrative arrangements (“emergency procedures”) to expedite customs, immigration, and other control of material and personnel entering or leaving its territory for the purposes of assisting it or another State in combating oil pollution.

4.4.3 Details of such arrangements should be included in the multilateral contingency plan and promulgated by all States participating in this plan throughout their respective Governments. International organizations or other States which may be called upon to

assist in the case of an oil pollution incident should also be made aware of the arrangements. Such details should include the essential information required by the appropriate national authority (customs, immigration, etc.) in order to facilitate special arrangements. Ideally, such arrangements should include provisions for the rapid granting of entry visas as well as the temporary importation of oil spill clean-up equipment and material free of duty or import taxes.

4.4.4 Specific agreements should be made for funding joint response operations and for the loan of resources. Participating States should be aware of international regimes and voluntary schemes applicable in the region for obtaining compensation for oil spill clean-up costs. Specifically, States should refer to and, to the maximum extent possible, use the annex to the OPRC Convention on reimbursement of assistance costs as a basis for funding international assistance.

4.4.5 Each State should maintain individual records of action taken and of equipment and other resources used to respond to the incident. These records can be utilized both to support claims for compensation and for subsequent analysis of actions taken during the spill incident to upgrade the multilateral contingency plan.

4.5 Administration

4.5.1 Each Government may provide the following information to the multilateral plan:

- identification of the Competent National Authority and national operational contact point responsible for oil spill matters (OPRC Article 6(1)(a));
- description of the national oil spill response organization and, if available, the national plan;
- types of oil spill response resources, if any, and the proper method to request them as outlined in the International Offers of Assistance (IOA) Guidelines;
- country available for response; and
- identification of storage for recovered oil and disposal methods.

4.5.2 National arrangements should be consistent with any multilateral oil spill plan or agreement. It is also suggested that a summary of the possible sources of oil spills, resources at risk, and priorities for protection is prepared for the geographic area covered by the multilateral contingency plan, drawing on the information provided in the national plans.

4.5.3 Multilateral oil spill plans must remain simple and easy to operate. However, mechanisms should be established to permit activation by stages, on a set of prearranged signals and procedures whereby States may initiate the appropriate levels of action.

4.5.4 The geographical area covered by any international oil spill plan should be clearly defined. Areas in which individual states or several states jointly may be responsible for taking actions such as surveillance, reporting, alerting, and response activities should also be clearly defined. The geographical area may be identified by use of suitably annotated maps attached to the plan, latitude and longitude coordinates, or both.

4.5.5 Typically, the State in whose zone of responsibility the spill occurs assumes the lead role and is initially responsible for all of the actions taken related to both tracking the spill and any necessary response. The basis on which responsibility is transferred from one State to another must be clearly defined in any international oil spill plan. Any State involved

may escalate the response activities to call upon assistance from other States participating in the plan or from States or organizations not participating in the plan.

4.5.6 Procedures should be developed for requesting, offering, and accepting assistance in the event of a spill incident. Procedures are provided in IMO's International Offers of Assistance guidelines.

4.5.7 Multilateral oil spill plans should include policies regarding waste generated during an international response, bearing in mind the Basel Convention restricting the international movement of waste.

4.6 Review and update of a Multilateral Contingency Plan

A multilateral contingency plan should be reviewed at least once a year to incorporate experience gained from regular exercises and actual incidents in the region. Periodic updates of points of contact and equipment inventories should be made, using the information provided by individual States.

Chapter 5 – Intervention and cost recovery

This chapter addresses the legal basis for a national State to intervene in an incident involving a ship which threatens to cause, or results in, an oil spill, and the means by which the costs incurred by the implementation of the measures to prevent, assess, or mitigate the effects of such incident may be compensated. This chapter does not address spills arising from other sources, such as exploration or drilling rigs, pipelines, or storage tanks. In such cases many operators are self-insured, with compensation paid directly by the operator causing the pollution. Within Northwest Europe, the Offshore Pollution Liability Association (OPOL) is a scheme supported by offshore operators active in the area, to provide an additional source of funds in certain circumstances. For more information regarding compensation for ship and non-ship sources, refer to the IOGP/IPIECA Good Practice Guide on Economic Assessment and Compensation for Marine Oil Releases.

5.1 National considerations

5.1.1 Intervention

The United Nations Convention on the Law of the Sea (UNCLOS) came into force in 1994 and defines the rights and responsibilities of nations with respect to their use of the world's oceans. Parties to UNCLOS have the obligation to protect and preserve the marine environment. Coastal States are empowered to take and enforce measures within their territorial waters and Exclusive Economic Zone to protect their coastline or related interests, including from pollution or the threat of pollution following a maritime incident.

The basis for a coastal State to intervene in a pollution incident on the high seas, i.e. outside their territorial waters and Exclusive Economic Zone, is provided through the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (Intervention Convention) that entered into force in 1975. Under certain conditions, State parties to the Convention are empowered to take measures on the high seas as may be necessary to prevent, mitigate, or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil. A protocol to the Convention was later adopted to extend its scope to substances other than oil.

The separate International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC 90) requires signatory States to establish a national system for responding to oil pollution incidents and to have resources available to effectively and promptly respond to marine oil spills. Signatories to OPRC 90 shall take all necessary action to assess the incident and its possible consequences, and inform without delay all States whose interests are likely to be affected.

The responsibility of the vessel master during an incident is defined under MARPOL 73/78, which states that every oil tanker of 150 gross tonnage and above, and every ship other than an oil tanker of 400 gross tonnage and above, shall carry on board a shipboard oil pollution emergency plan (SOPEP). Under this convention, the master of the casualty vessel should take immediate action to ensure the safety of the crew and the preservation of the ship and cargo.

5.1.2 Identification of the polluter

In many oil spills, the identification of the source of the oil is straightforward. However, in some situations, the source of the spilled oil may not be clear, with a number of potential

sources identified. Good practice calls for samples of the spilled oil and oil from potential sources (e.g. vessel tanks and machinery spaces, terminals, and other shore-based sources) to be taken as soon as practicable. Samples should be appropriately handled, stored, and labeled ensuring that at all times a clear custodial chain can be proven in court. Correct procedures for sampling and storage of samples must be followed.

5.1.3 Places of refuge: a case-by-case decision

IMO Assembly Resolution A.949(23) - Guidelines on Places of Refuge for Ships in need of Assistance, was adopted in November 2003. This Resolution, although not a binding instrument, provides a framework for governments, shipmasters, companies, and salvors to respond effectively, and in a complementary manner. These guidelines address situations when a ship has suffered an incident and the best way of preventing damage or pollution from the vessel's progressive deterioration is to transfer its cargo and bunkers, and to repair the casualty and for which such an operation may be best carried out in a place of refuge. The IMO Resolution on Places of Refuge recommends that coastal States endeavor to establish procedures by which requests for assistance are received and acted on with a view toward authorizing, where appropriate, the use of a suitable place of refuge.

5.2 Regulatory framework for Liability and Compensation

An oil spill may result in a financial loss to governments, individuals, companies, and other organizations. The costs of a clean-up response and pollution damage may result in one or more claims for compensation. Liability for the costs of a pollution incident will generally be set-out in civil law, as opposed to criminal law, in relevant national legislation. As a consequence, liability and the availability of compensation can vary widely around the world.

"The Polluter pays" is a concept that is generally well-accepted throughout the world, but should be established in formal legislation or policy. In practice, the policy requires that whoever caused the pollution to pay for the response and remediation efforts in accordance with the polluter's legal liability. In cases where there is no owner, such as a mystery spill, or in cases where the polluter is unable to pay for the response, the government will usually pay for the response and then seek remuneration from a national pollution response fund where available or in accordance with international liability and compensation conventions to which the government is party.

To ensure claimants obtain prompt and adequate compensation following a release of oil from a ship, many countries have signed a number of International Conventions. These Conventions provide uniform rules and criteria for the owners of ships and for those affected by an oil release in those countries that have signed the appropriate Convention and in which the oil release occurred. In contrast, releases of oil from sources other than ships are not the subject of International Conventions currently in force.

As a consequence, the payment of compensation following a release, or the threat of a release, is dependent upon two primary factors; the jurisdiction in which the incident or impact occurred and the source of the released oil. This section of the document considers the availability of compensation for incidents involving ships, considering the legal basis on which liability is imposed on the ship owner, and the potential sources of payment of compensation.

5.2.1 The 1992 Civil Liability Convention (CLC)

The 1969 CLC entered into force in 1975 to provide compensation for spills of persistent oil from tankers. This was superseded by the 1992 CLC which expanded the scope of available compensation. Under the 1992 CLC, the tanker owner has strict liability for pollution damage and is able to limit liability to an amount of money dependent upon the size of the tanker, currently up to a maximum of 89.77 million Special Drawing Rights (SDR), paid by the vessel's owner or insurer. The Convention requires tanker owners to maintain compulsory insurance cover for ships carrying more than 2,000 tons of persistent oil in bulk as cargo. Compensation under the CLC is paid by the vessel's owner but who is backed by their insurer, usually a Protection and Indemnity (P&I) Club. Claimants also have a right of direct action against the insurer under the Convention if the vessel owner does not pay. The CLC is often referred to as the first tier of compensation for tanker spills.

5.2.2 The 1992 Fund Convention and Supplementary Fund Protocol

The 1992 Fund Convention came into force in 1995 to provide a supplement to the 1992 CLC when compensation is not available from the ship owner or the money available under the CLC is inadequate to pay claims resulting from spills of persistent oil from tankers. This second tier of compensation provides up to 203 million SDR (including the amounts payable under the 1992 CLC) and is paid by receivers of oil in countries that have signed the 1992 Fund Convention. A Supplementary Fund is available providing a third tier of compensation up to 750 million SDR (approximately US$1.1billion), including the amounts payable under the 1992 CLC and Fund Conventions, in countries that have signed the Supplementary Fund protocol. The International Oil Pollution Compensation Fund - and the Supplementary Fund, are administered by a secretariat based in London.

5.2.3 Bunker Convention

The 2001 Bunkers Convention came into force in 2008 and applies to spills of hydrocarbon mineral oils, including lubricating oil, used for the operation or propulsion of a ship. The Bunker Convention is modeled on the 1992 CLC to provide compensation for pollution response and pollution damage. The provisions of this Convention do not affect the right of the ship owner or its insurer to limit liability under the applicable national or international limitation regime. The Convention requires the registered owner of a ship having a gross tonnage greater than 1000 tons to maintain compulsory insurance equal to the limit of liability calculated in accordance with the separate Limitation of Liability of Maritime Claims Convention (LLMC), as amended. As with the CLC, compensation under the Bunkers Convention is paid by the vessel's owner backed by their insurer, usually a Protection and Indemnity (P&I) Club, in the same manner described in Section 5.2.2 above.

5.2.4 The Hazardous and Noxious Substances Convention (HNS Convention)

The International Convention on Liability and Compensation for Damage, in connection with the Carriage of Hazardous and Noxious Substances by Sea (The HNS Convention 1996, amended by the HNS Protocol in 2010), is modeled on the two tier compensation regime of the Civil Liability and Fund Conventions. The ship owner or insurer is strictly liable to pay claims under the first tier up to a limit of liability determined by the size of the vessel, with compensation paid by the vessel's insurer, usually a P&I Club. The second tier, providing compensation up to a maximum of 250 million SDR, is paid from a fund established by receivers of HNS in countries that have signed the Convention. The Convention covers both

pollution damage and damage caused by other risks (e.g. fire and explosion), including loss of life.

The ship owner is entitled to limit liability under this Convention in respect of any one incident to 11.5 million SDR for a ship not exceeding 2,000 tons. For larger ships, an aggregate calculated on the basis of the tonnage of the ship is added to that amount, and provides compensation up to 100 million SDR for bulk goods, and 115 million SDR for packaged goods.

A substance is classified as HNS under the Convention if it is included in one or more lists of IMO Convention and Codes designed to ensure maritime safety and prevention of pollution. HNS includes non-persistent hydrocarbon oil, bulk cargoes (solid, liquids or liquefied gasses) and packaged goods. However, as of the publishing of this Section, the HNS Convention is not yet in force as an insufficient number of countries have ratified the Convention.

5.2.5 Convention on Limitation of Liability for Maritime Claims (LLMC)

Under the 1976 LLMC Convention, the limit of liability is specified for a wide variety of claims.

The Convention provides for a virtually unbreakable system of limiting liability. Ship owners and salvors may limit their liability except if "it is proved that the loss resulted from his personal act or omission, committed with the intent to cause such a loss, or recklessly and with knowledge that such loss would probably result."

The LLMC does not apply in the case of pollution damage covered by the 1992 CLC or HNS Convention when entered into force. It should also be noted that while the LLMC may apply to wreck removal in some jurisdictions, the LLMC is not universally adopted and other limitation regimes may apply (e.g. under the Bunkers Convention) depending on the law of the state in which the spill occurs.

5.2.6 Wreck Removal Convention

The Nairobi International Convention on the Removal of Wrecks, entered into force in April 2015, to provide a legal basis for States to remove, or have removed, shipwrecks located within their Exclusive Economic Zone (EEZ) that may have the potential to affect adversely the safety of lives, goods, and property at sea, as well as the marine and coastal environment. Among several provisions, the Convention places financial responsibility with ship owners for locating, marking, and removing certain wrecks posing a hazard to the affected State.

5.2.7 Liability and compensation in States that have not ratified the international conventions

In countries that have not signed an applicable convention, or when the convention is not yet in force, liability for pollution response costs and pollution damage, and the availability of compensation will depend upon legislation developed nationally.

5.3 Liability and compensation – Core principles

5.3.1 Strict liability

Under the international oil spill compensation conventions, the ship owner has strict liability for pollution damage caused by the escape or discharge of oil from the ship. This means that the ship owner is liable even in the absence of fault on their part. The ship owner is exempt from liability only if it is proven that:

- the damage resulted from an act of war, hostilities, civil war, insurrection, or a natural phenomenon of an exceptional, inevitable, and irresistible character;
- the damage was wholly caused by an act or omission done with the intent to cause damage by a third party; or
- the damage was wholly caused by the negligence or other wrongful act of any Government or other authority responsible for the maintenance of lights or other navigational aids in the exercise of that function.

5.3.2 Limitation of liability

Under the international oil spill compensation conventions, ship owners may limit their liability, except if it is proven that the incident resulted from their personal act or omission, committed with the intent to cause such an incident, or recklessly and with knowledge that such incident would probably result. The limitation of liability is usually derived from the tonnage of the vessel in accordance with the regime of the incident as defined in the international conventions such as the CLC, BUNKER, and HNS Conventions.

5.3.3 Admissibility of the claim

To be entitled to compensation, the expense or loss caused by an oil spill must be measurable and quantifiable. The onus rests with the claimant to prove the link of causation, and the claimant must be able to provide appropriate evidence supporting the amount claimed for the expenses or loss. The ship owner's insurer, and the IOPC Fund if involved, usually appoints experts, often on a joint basis, to investigate the technical merits of claims and to make independent assessments of the expenditure or losses.

5.3.4 Reasonableness

It is important to note that under the international oil spill compensation conventions, the amount claimed should be reasonable. In general, the reasonableness of a claim for preventive measures, including clean-up is assessed in terms of the rates charged, the resources deployed, and the activities claimed. The assessment of claims for pollution damage takes account of the value of the property affected, the economic loss incurred, and costs of reinstatement. These concepts of 'reasonableness' are set out in the IOPC Fund's Claims Manual for the purposes of the CLC and Fund Convention.

5.3.5 Time bar

Claimants should submit their claim as soon as possible after the damage has occurred or, if for any reason a formal claim cannot be submitted shortly after the incident, the claimant should notify the liable organization of an intention to submit a claim as soon as possible. Under the international oil spill compensation conventions, the claimant may lose the right to compensation unless an action is brought against the liable organization in a court within a specified period after the date of the incident or the date on which the damage occurred.

5.4 Preparation of Claims from Oil Pollution

5.4.1 Prevention and clean-up

For many oil spills, significant costs will be incurred in the initial emergency phase of a response as a result of deploying resources to prevent further spills, protect sensitive areas and to recover the oil. Consequently, it is important that an orderly system for logging and filing associated records is established as quickly as possible after the response commences. Accurate records are vital since reliance on memory for subsequent claims compilation is unrealistic, particularly during a lengthy and fast-moving response.

Daily worksheets should be compiled by supervisory personnel, describing the operations in progress describing the equipment in use, where and how it is being used, the number of personnel employed, how and where they are deployed, and the materials consumed. Recording such information is facilitated by the use of standard electronic worksheets.

Costs for many items used in a response will be calculated as the sum of the period worked and the rate for that period; for example, an aircraft used for surveillance for a number of hours or a worker employed on a beach for some days, are best entered and submitted in electronic format, preferably using spreadsheets. In addition to itemizing costs, a claim should include as much information as possible to explain the reason for the work, such as records of decision, meetings, and records of the activity undertaken to recover and clean-up the oil, such as vessel logs, personnel timesheets, and worksite reports and worksite reports. Early participation of the P&I Club or insurer in the management of the incident and their co-approval of expenditure related to the response is recommended.

Waste transport, storage, treatment, and disposal can often be the most expensive component of a response and accurate recording of volumes and weights handled are important.

In summary, below is a non-exhaustive list of supporting information required:

- Summary of events, including a description of the work carried out in different areas and of the working methods chosen in relation to the circumstances prevailing during the incident.
- Delineation of the area affected, describing the extent of pollution, and identifying those areas most heavily contaminated. This should be presented in the form of a map or chart supported by photographs or video.
- Analytical and/or other evidence linking the oil pollution with the ship involved in the incident (e.g. chemical analysis; wind, tide and current data; observation and plotting of movement of floating oil).
- Dates on which work was carried out (with weekly or daily costs).
- Labor and administrative costs (number and categories of response personnel; regular and overtime rates of pay; days/hours worked).
- Equipment and material costs (types of equipment used; rate of hire; consumable material quantity and cost).
- Transport costs (number and types of vessels, aircraft, vehicles used; number of days/hours operated; rate of hire or operating cost).
- Costs of temporary storage (if applicable) and final disposal of recovered oil and oily material.

page 46

5.4.2 Property damage

Claims for damage to property may be made by the public as well as the private sector, such as fishermen, pleasure-boat owners, marina operators, and port authorities. In this case, it may be desirable to arrange, through the ship owner's insurer, to appoint insurance adjusters to whom claimants may be referred. In some incidents, a special telephone number and office have been established to process claims, and the public is advised through the media that this service is available.

Items affected commonly include: hulls of fishing vessels and pleasure craft; fishing gear, such as nets and traps; and mariculture structures, such as fish farms, mussel rafts, and oyster trestles. Property damage claims may also arise as a result of clean-up activity; for example, damage to roads or paths used for access by workers and vehicles.

As a minimum, photographs of the property before and after restoration should be provided in support of a claim. However, for many property damage claims, a survey, usually undertaken jointly with representatives of the organization paying compensation, will be necessary prior to the commencement of work to restore the property. Surveys are necessary to confirm the link of causation to the incident, to corroborate the level of contamination or other damage claimed, and to advise on the appropriate work to be undertaken. In any case, the claim should mention the extent of pollution damage to the property, the description of items destroyed, damaged or needing replacement or repairs (e.g. boat, fishing gear and clothing) including their location. In order to facilitate the assessment, the cost of repair work or replacement of item should be mentioned as well as the age of item to be replaced in order to take into consideration the depreciation.

5.4.3 Economic losses

Contamination of fishing vessels, other fishing gear, mariculture facilities, or tourism assets may prevent their subsequent use. Income lost while the polluted or damaged items are cleaned or replaced may form the basis of a claim for consequential economic loss. In addition to the documentation required to support the property damage, evidence of the ensuing loss of income will also be required. Claims may be accepted for the costs of measures taken to prevent or minimize pure economic loss. Economic losses can include but are not limited to: restriction of fishing activity, closure of coastal industrial and processing installations, or marketing campaigns and loss of income by resort operators (hotel owners and restaurateurs). In many cases, the financial records for previous years may be readily available, although difficulties may arise in distinguishing losses caused by the oil spill from those caused by other unrelated factors such as bad weather or overfishing.

Claims for pure economic loss can also arise even though no damage to property has occurred; for example, if a fishing fleet is unable to depart port. Media reports of an oil spill may also result in a loss of market confidence, which might deter tourists from visiting a coastal area or the public from purchasing seafood perceived to be contaminated by oil. Pure economic losses can more easily be seen on a balance sheet only, rather than as a consequence of damage to property. Therefore, for many economic loss claims, the most important supporting documentation will be copies of company accounts, trading records, invoices, or other financial statements. Although accepted in principle under the

international compensation regimes, in some national jurisdictions claims for pure economic loss are inadmissible.

When dealing with artisanal fisheries, formal records may not be available and some other form of assessment may be required. Subsistence or artisanal fishing involves the provision of daily food or seafood for barter that may not include financial transactions. The assessment of claims from such fisheries may be problematic as supporting documentation is often unavailable and only verbal reports of activities can be provided. Experts are available to work with the claimants to determine accurate losses. Also, there could be additional indirect expenditures incurred by the local authorities in providing alternate protein sources for the coastal communities affected by the spillage; this should be documented. Guidelines available from the IOPC Fund may assist in this area.

Supporting information relative to economic claims may include, but are not limited to, the description of the nature of the loss, including demonstration that loss resulted directly from the incident, the comparative figures for profits earned in previous periods, and for the period during which such damage was suffered, and the comparison with similar areas outside the area affected by the spill together with the method of assessment of loss.

More specifically for fisheries, the claims should include the costs of inspecting and monitoring the presence of oil in potentially impacted fisheries areas and the subsistence foods as well as the government costs of monitoring and responding to native food issues.

5.4.4 Environmental damage

To facilitate decision-making, monitoring programs may be undertaken, necessitating surveys and the collection and analysis of oil, water, sediment, or biota for chemical analysis. Claims for sampling should include the rationale for the work and information on the sample collected and analyzed. It can include environmental assessments of the effects of the spill, including both field work and report preparation, often after the clean-up has stopped. It is highly recommended to involve the vessel's insurers or the IOPC Funds before the beginning of such programs in order to later facilitate the claim assessment of those studies.

Claims for work done to restore damaged resources and encourage natural recovery are acceptable under the International Conventions only if certain criteria are met; for example, the work should significantly accelerate natural recovery. Costs should be itemized to clearly explain the work done.

However, claims based on calculations made according to theoretical models and claims for compensation for loss of function of the environment are inadmissible under the International Conventions, although they are recognized under some national legislation.

5.4.5 Other types of claims

The foregoing are the principal categories of claims which are likely to prove acceptable; however, there may be other categories of claims eligible under national and regional compensation schemes. In all cases, the claim should be presented clearly and in sufficient detail so that it is possible to assess the amount of damage suffered on the basis of the facts and the documentation presented. It should be noted that each item of the claim must be

supported by an invoice or by other relevant documentation such as daily worksheets and explanatory notes.

5.4.6 Importance of recordkeeping

The type of information required to support a claim depends upon the type of loss, in particular, whether the loss is incurred as a result of the cost of responding to the incident or as a result of the effects of the oil on, for example, tourism or fisheries businesses. However, the quality of this documentation and other information required depends to a large extent upon the measures taken to record and preserve this information at the time the loss is incurred. As time passes, and unless records are meticulous, the availability of information to support claims, verify losses, and answer questions is likely to diminish. Settlement of a claim may require time, and if key personnel are no longer available to answer queries during this period, the records may be the sole source of information. Similarly, unless evidence is preserved correctly, substantiation of a subsequent claim may not be possible.

A wide variety of organizations such as salvage companies, government agencies, waste contractors, and wildlife charities may be involved in a response. In addition to utilizing owned resources, each organization may spend large amounts of money to purchase or contract-in goods and services. The resulting trail of expenditure can include hire agreements, contracts, invoices, receipts, and many other individual documents.

5.5 Submission, assessment and settlement of the claim

5.5.1 Who can claim and to whom?

Anyone who has been involved in prevention or clean-up operations, or anyone who has suffered measurable damages to a pollution incident, can submit a claim. Claimants may be private individuals, companies, private organizations, or public bodies, including States or local authorities. For convenience, claims can be grouped together in order to facilitate their assessment by the liable party or organization.

The insurer of the vessel owner's third party liabilities is typically a Protection and Indemnity (P&I) Club. As noted above, under some conventions such as CLC and Bunkers claimants have a right of direct action against the insurer if the vessel owner is unable to pay. Pollution damage claims should be submitted to a vessel's P&I Club and/or the IOPC Fund for large incidents likely to exceed ship limitation. In situations where the ship owner is not known, or cannot pay, claims can be submitted to the International Oil Pollution Convention Fund, when relevant, or a national fund, if available.

Government and publically operated vessels, including warships and other vessels on military duty or charter, usually operate outside established P&I and other commercial insurance.

In the case of pollution damage within the meaning of 92 CLC, caused in a State that is Party to both the 1992 CLC and the 1992 Fund Convention, claims can be submitted to the 1992 Fund. However, the 1992 Fund typically begins to distribute compensation once the ship owner or its insurer has paid up to the limit of its liability, and therefore claims should be sent directly to the ship owner or its insurer who will channel the claim to the 1992 Fund when the limit of its liability has been reached.

5.5.2 Information to be provided

Regardless of the type of the claim, the documentation in support should contain the basic following information:

- the name and address of the claimant;
- identity of the ship involved in the incident;
- the date, place, and specific details of the incident;
- the type of loss or pollution damage sustained;
- supporting documents for each claimed item; and
- the amount of compensation claimed including taxes, profit, and any other extra costs where applicable.

5.5.3 Assessment and settlement of the claim

After receiving a claim, the owner, ship owner's insurer, and/or the IOPC Fund if involved, will assess the claim in order to determine its admissibility as well as the sum that is considered recoverable. To do so, the owner, the ship owner's insurer and/or the Fund may require the services of technical advisors that may have been present at the scene of the incident.

If the information provided by the claimant is not sufficient to verify the admissibility or the reasonableness of the claim, the Fund/responsible parties' insurer may query some of the claimed costs pending the provision of additional information. While a claim may have been considered admissible in principle, the burden of proving the claim rests upon the claimant, and thus, if the claim is not supported by the documentation submitted or is not technically reasonable, some or all of the costs may be rejected after all the queries have been exhausted.

In most incidents under the International Conventions, agreement on the amount of compensation to be paid is reached on an amicable basis, without the need for legal action and associated costs. If, however, such agreement is not possible, the claimant has the right to bring a claim to the court in the State in which the damage occurred but must do so before the applicable time bar date.

Appendix 1: Sample legislation establishing a National Response System

As discussed in Chapter 1 (especially Section 1.2) and Chapter 2, passing national legislation is an important step in establishing a National Response System. While each country will have its own particular way of drafting and approving legislation codifying the different aspects of a National Response System, this appendix provides potentially applicable sections of proven legislation from one nation. Below are excerpts from New Zealand's legislation that define requirements for:

- Obligations to protect the marine environment from harmful substances;
- Marine oil spill response strategy;
- Marine oil spill contingency plans;
- Shipboard and site marine oil spill contingency plans;
- Regional marine oil spill contingency plans;
- National marine oil spill contingency plans; and
- A national oil pollution fund.

The following legislation is very prescriptive and not all sections will be applicable to all countries (for instance the section on a national oil pollution fund), however it is included here as a sample of one country's legislation for the edification of those that may not be familiar with legislation establishing a National Response System.

Excerpts from New Zealand legislation:

Maritime Transport Act 1994

Public Act: 1994 No 104

Date of assent: 17 November 1994

Obligations to protect marine environment from harmful substances

226 Harmful substances not to be discharged into sea or seabed of exclusive economic zone or continental shelf

Harmful substances shall not be discharged or escape, otherwise than in accordance with the marine protection rules,—

(a) from any ship, offshore installation, or pipeline—

(i) into the sea within the exclusive economic zone of New Zealand; or

(ii) onto or into the seabed below that sea; or

(b) from any ship or offshore installation involved with the exploration or exploitation of the sea or the seabed, or any pipeline,—

(i) into the sea beyond the outer limits of the exclusive economic zone of New Zealand but over the continental shelf of New Zealand; or

(ii) onto or into the seabed below that sea; or

(c) from any New Zealand ship—

(i) into the sea beyond the outer limits of the exclusive economic zone of New Zealand; or

(ii) onto or into the seabed below that sea; or

(d) as a result of any marine operations,—

(i) into the sea within the exclusive economic zone of New Zealand or beyond the outer limits of that exclusive economic zone but over the continental shelf of New Zealand; or

(ii) onto or into the seabed below that sea.

227 Duty to report discharge or escape of harmful substances

(1) Notice of any discharge or escape of a harmful substance into the sea, or onto or into the seabed, in breach of section 226 of this Act or of section 15B of the Resource Management Act 1991 shall, forthwith after such discharge or escape, be given in accordance with the requirements of the marine protection rules (and whether or not any defence may be available under this Act or the Resource Management Act 1991) to the Director or, where a discharge or escape has occurred within the internal waters or the territorial sea of New Zealand, the Director or the regional council within whose region the discharge or escape has occurred.

(2) Each of the following persons shall be under a duty to give notice of a discharge or escape of a harmful substance in accordance with subsection (1), namely,—

(a) if the discharge or escape was from a ship, the owner and the master of the ship:

(b) if the discharge or escape was from an offshore installation, the owner of the offshore installation:

(c) if the discharge or escape was from a pipeline, the owner of the pipeline:

(d) if the discharge or escape was a result of any marine operations, the person in charge of and the person carrying on such operations.

(3) The giving of notice of a discharge or escape in accordance with subsection (2) by one person shall be sufficient to relieve every other person from a duty to give such notice in respect of that discharge or escape.

(4) Where any discharge or escape of a harmful substance in breach of section 226(c) occurs, the master of the ship shall, as soon as is practicable, report the discharge or escape to the appropriate authority of the nearest State.

New Zealand marine oil spill response strategy

283 Preparation and review of response strategy

The Director shall prepare, by a date specified by the Minister by notice in the *Gazette*, the New Zealand marine oil spill response strategy and shall review that response strategy at least once every five years.

284 Purpose and contents of response strategy

(1) The purpose of the New Zealand marine oil spill response strategy is to—

(a) describe the action to be taken, and by whom the action is to be undertaken, in response to a marine oil spill in New Zealand marine waters; and

(b) promote a standard response to marine oil spills in New Zealand; and

(c) promote the co-ordination of marine oil spill contingency plans and the action taken in response to marine oil spills under such plans.

(2) The New Zealand marine oil spill response strategy shall include such matters as the Director considers appropriate to achieve its purpose as specified in subsection (1) and any other matters that the marine protection rules require to be included in the response strategy.

Marine oil spill contingency plans

286 Purpose of marine oil spill contingency plans

The purpose of marine oil spill contingency plans is to—

(a) promote in New Zealand planned responses to marine oil spills at shipboard, site, regional, and national levels; and

(b) specify the functions and responsibilities of persons at shipboard, site, regional, and national levels, with respect to responses to marine oil spills.

Shipboard and site marine oil spill contingency plans

287 Preparation, review, and keeping of shipboard and site marine oil spill contingency plans

Shipboard and site marine oil spill contingency plans shall be prepared, reviewed, and kept in accordance with the provisions of the marine protection rules.

Regional marine oil spill contingency plans

288 Purpose of regional marine oil spill contingency plan

The purpose of a regional marine oil spill contingency plan is to promote a planned and regionally co-ordinated response to any marine oil spill within a region that is beyond the resources of the persons who have caused the marine oil spill or that has not been appropriately responded to by such persons.

National marine oil spill contingency plan

296 Purpose of national marine oil spill contingency plan

The purpose of the national marine oil spill contingency plan is to promote a planned and nationally co-ordinated response to any marine oil spill that—

(a) is beyond the resources of the regional council within whose region it is located; or

(b) is outside the region of any regional council, but within the exclusive economic zone of New Zealand, and is an oil spill for which the Director considers that a national response is required.

300 Function of regional on-scene commanders after notification

(1) Subject to section 313, if a regional on-scene commander is notified or otherwise becomes aware, of a marine oil spill within the region of the council by whom that on-scene commander is appointed, he or she shall decide whether or not it is appropriate for any action to be taken in response to that marine oil spill, including the taking of any measures under the regional marine oil spill contingency plan or the exercise of any powers under this Act.

(2) Subject to section 313, if, in the opinion of any regional on-scene commander, containing and cleaning up any marine oil spill within the region of that regional council is or may be beyond the capacity of the resources available to that regional council, that regional on-scene commander shall forthwith notify the Director that assistance is or may be sought from the Authority.

(3) Notification by the regional on-scene commander of the Director under subsection (2) shall not relieve a regional council from its obligations under section 313 to comply with its regional marine oil spill contingency plan.

301 Function of National On-Scene Commander after notification

(1) If a National On-Scene Commander is notified by the Director or otherwise becomes aware of a marine oil spill, he or she shall decide whether or not it is appropriate for any action to be taken in response to that marine oil spill, including the taking of any measures under the national marine oil spill contingency plan or the exercise of any powers under this Act.

(2) If, in the opinion of the Director, containing and cleaning up any marine oil spill is beyond the capacity of the Authority, the Director may seek assistance from other States or persons in accordance with the national marine oil spill contingency plan.

Obligations and offences in respect of marine oil spill contingency plans

313 Compliance with marine oil spill contingency plans

(1) In the event of a marine oil spill from a ship, an offshore installation, or an oil transfer site in respect of which there has been prepared under the marine protection rules a shipboard or site marine oil spill contingency plan, as the case may be, the provisions of the relevant shipboard or site marine oil spill contingency plan shall be complied with except to the extent that a person is directed otherwise by an on-scene commander.

(2) In the event of a marine oil spill within the region of a regional council, the regional marine oil spill contingency plan shall be complied with except to the extent that a person is directed otherwise by the National On-Scene Commander.

324 Director responsible for training

The Director shall be responsible for the development and co-ordination of training necessary to successfully implement a marine oil spill response under the New Zealand marine oil spill response strategy.

New Zealand Oil Pollution Fund

330 New Zealand Oil Pollution Fund

(1) The Authority shall establish and administer a fund to be known as the New Zealand Oil Pollution Fund.

(2) The oil pollution levies payable under section 333, and any other money that is lawfully payable to the Fund, shall be paid into the Fund.

(3) All money payable to the Fund shall be paid to the credit of a bank account established under section 158(1) of the Crown Entities Act 2004 for the purpose.

(4) The Authority shall invest the Fund in accordance with its investment powers, but subject to the restrictions in section 161 of the Crown Entities Act 2004.

(5) All income of the Fund shall be added to and form part of the Fund.

(6) There may from time to time be paid out of the Fund any money that may lawfully be paid out of the Fund under this Act or any other enactment.

(7) The financial statements of the Fund shall form part of the financial reports of the Authority.

331 Application of money in New Zealand Oil Pollution Fund

(1) Subject to the provisions of this Act, the Authority shall apply the New Zealand Oil Pollution Fund only for the following purposes:

(a) to meet the costs of the Oil Pollution Advisory Committee:

(b) to purchase plant, equipment, or any other thing to make preparations for, or to implement, or assist in implementing, any responses to marine oil spills:

(c) to meet the reasonable costs of the Authority (including the costs incurred by the Director and the National On-Scene Commander) in controlling, dispersing, and cleaning up any marine oil spill:

(ca) to meet the costs of services associated with planning and responses for marine oil spills that are services provided under a contract or arrangement with the Authority or the Director:

(d) to meet the costs of the Authority in—

(i) the performance of the other functions and duties and the exercise of other powers of the Authority, the Director, and the National On-Scene Commander under Part 23; and

(ii) taking measures to avoid marine oil spills:

(e) to meet the reasonable costs of a regional council (including the costs of its regional on-scene commander) in investigating a suspected marine oil spill and in controlling, dispersing, and cleaning up any marine oil spill:

(f) to meet the reasonable costs of any regional council in—

(i) the performance of the other functions and duties and the exercise of the powers of the regional council and its regional on-scene commander under Part 23; and

(ii) taking steps to avoid marine oil spills:

(g) to meet the reasonable costs incurred by any person, in assisting any animal or plant life affected by any marine oil spill, with the consent or in accordance with the requirements of an on-scene commander:

(h) to meet any other expenditure for which this Act contemplates that reimbursement may be made from the Fund:

(i) such other expenditure, or classes of expenditure, related to marine oil spills, as may from time to time be approved by the Governor-General by Order in Council.

(2) The following provisions apply to payments made under either or both of paragraphs (c) and (e) of subsection (1), and to payments made under paragraph (g) of that subsection for the purpose of assisting any wildlife:

(a) the payments may be made if, and to the extent that, the costs for which the payments may be made have not been recovered from the person who caused the oil spill:

(b) the recipient must make all reasonable efforts to recover those costs from that person:

(c) payments may be made on an interim or periodic basis; and each time it recovers money from the person who caused the oil spill, the recipient must pay the Fund a proportionate amount.

page 56

Appendix 2: Sample outline of a national oil pollution contingency plan

This appendix provides a sample outline and suggested content for a National Contingency Plan. Detailed discussion regarding the development of a National Contingency Plan may be found in Chapter 2.

1 Introduction

1.1 Authority – cite the legislation authorizing development of an NCP.

1.2 Purpose and Scope – describe the purpose and intended use of the NCP as well as what it covers and what it does not cover.

1.3 Competent National Authority – identify the lead government agency or position within the agency that has the ultimate authority and responsibility for managing and coordinating the response to oil spills

1.4 Relationship to Other Government Emergency Response Plans – list any other government emergency plans and explain how they relate to the NCP.

1.5 Plan Review and Revision – describe the plan review and revision process and frequency.

1.6 Abbreviations and Definitions – provide list of abbreviations and technical terms and their definitions that were used in the NCP.

2. Risk Assessment

2.1 Introduction – explain that risk assessments are necessary to identify the higher oil spill risk areas and operations to ensure the NCP adequately addresses those risks.

2.2 Process – describe the process used for the risk assessment to determine the country's spill risks and their probabilities and consequences. Consider categorizing by Tier.

2.3 Results – summarize the results and explain how they were used to inform the development of the NCP and response strategies.

3 Tiered Response Planning System –

3.1 Describe the tiered system to be used by government agencies for response planning to ensure adequate procedures, strategies, and resources are available to mitigate the range of potential spills identified in the risk assessment.

4 Oil Spill/Emergency Response Management Organization

4.1 Introduction – explain the need for a robust management system and a clear definition of responsibilities and describe the various system components.

4.2 Competent National Authority – explain role of the organization or position in spill/emergency response.

4.3 Responsibilities – identify the various government agencies that could be involved in a response, explain the delegated roles, responsibilities, and authorities of each and ensure there are no, or only limited, overlaps.

4.4 Organization Structure – describe the overall structure to be used for incident management and coordination. Include organograms/organization chart(s).

4.5 Position Descriptions – describe roles and responsibilities of each position or organization identified in the structure.

4.6 Mobilization – describe the procedure to be followed in activating and mobilizing the various agencies and personnel that make up the response organization

5. Notifications, Alerts and Reporting

5.1 Introduction – explain the need for prompt and accurate notifications or alerts that a spill has occurred and subsequent reporting (consider including a notification decision guide). Also identify the various parties that may be making notifications and the means by which notifications or alerts are received.

5.2 Discovery – describe the initial notification process, time frames and the government agency, or agencies that must be contacted by the party discovering a spill. Also describe the information that should be provided when making the notifications

5.3 Supplemental Notifications – describe the process and responsibilities for making supplemental inter-agency notifications following the initial notifications from the party discovering a spill.

5.4 Reporting – identify requirements and responsibilities for providing more detailed verbal or written reports as a follow-up to the verbal notifications.

6. Oil Spill Assessment

6.1 Introduction – explain the need to assess both the hazards presented by the spill and the spill size, characteristics, and projected movements to inform response strategy development.

6.2 Hazard Assessment – describe procedures for assessing the spill's health and safety hazards to ensure it is safe to respond and identify the government agency or agencies with the expertise and equipment that could be utilized to assess the hazards.

6.3 Spill Volume, Aerial Extent and Characteristics – describe procedures for determining or estimating the spill volume as well as the area covered and physical and chemical characteristics. Also identify the government agency or agencies with the expertise and equipment to perform these tasks.

6.4 Spill Movements – describe need to predict spill movements through drift or trajectory modeling and identify the government agency with the expertise to conduct the modeling.

6.5 Spill Surveillance – identify the spill surveillance technologies (special radar, IR cameras, satellite imagery, etc.) and platforms (aircraft, vessels, satellites) the government owns or has access to and how they will be utilized in a response to monitor and document spill size, movements and characteristics as well as the agency or agencies that will conduct the surveillance activities.

7. Response Resources

7.1 Introduction – explain that rapid access to response resources is critical to minimizing spill impacts and implementing an effective response and that the resources should be categorized by tier. Also distinguish between situations where the responsible party will provide the majority of response resources, but may need to be supplemented with government equipment and personnel and where the relevant government authority or agency will do so.

7.2 Tier 1 Resources – identify locations, types, and potentially the inventories of government and other resources that can be mobilized quickly to respond to localized spills in the vicinity of the resource caches (consider also including an explanation of how to mobilize the resources).

7.3 Tier 2 Resources – identify locations, types, and potentially the inventories of regional caches of government owned and other resources or those that the

government has access to (consider also including an explanation of how to mobilize the resources).

7.4 Tier 3 Resources – identify potential sources of international third party resources and describe the procedures for expediting the customs and immigration process to avoid delays in mobilizing the resources to the spill location.

7.5 Support Resources – identify sources of government and private sector support resources such as aircraft for aerial surveillance and search and rescue, vessels, remote sensing, sampling and monitoring equipment/personnel, etc.

7.6 Support Services – identify government agencies and private sector organizations that could provide support services such as medical, transportation, volunteer management, weather, scientific support, etc.

8 Response Strategies

8.1 Introduction – explain that a successful response strategy typically involves the use of multiple response tactics selected as being the most effective while minimizing environmental and socio-economic impacts. Also explain that this section is intended to provide information on government policies and any restrictions, prohibitions, preferences, authorization requirements, etc. on the use of individual response techniques, where applicable.

8.2 Net Environmental Benefit Assessment (NEBA) – explain that any response strategy development should incorporate the NEBA process to ensure the selected tactics will result in a net benefit to the environment and socio-economic values and describe the NEBA process.

8.3 Response Tactics – provide a list of the response techniques or tactics that are authorized for use in the country and include a brief description of each along with any restrictions, preferences or prohibitions for their use.

8.4 Non-Mechanical Recovery Technique Authorization– describe the requirements and processes for obtaining government authorization for the use of dispersants, in situ burning, surface washing agents, herders and other non-mechanical tactics and identify areas where specific techniques may be pre-approved or prohibited for use.

9 Waste Management

9.1 Introduction – describe the need to establish requirements and processes for management of oil spill wastes to avoid any delays or impediments to response activities.

9.2 Waste Designation – describe the regulations/requirements governing the designation of oil spill wastes and the different designations (general, special, hazardous, etc.) as well as the requirements, if any, for characterizing the wastes to determine the most appropriate designation.

9.3 Waste Handling, Interim Storage, and Transport – describe the regulations/requirements, if any, for handling wastes generated during a spill response, their interim storage (storage pits, container types, permits, etc.), and transportation (container types, licensed transporters, etc.).

9.4 Waste Re-Use, Treatment and Disposal – describe the regulations/requirements for re-use, treatment and disposal of oil spill wastes divided by waste designation, and including the names or types of facilities that are approved to handle such wastes.

10 Demobilization and Response Termination

10.1 Introduction – explain the need to develop a demobilization plan covering when and how key resources are demobilized and to establish end points to determine when the response is complete.

10.2 Demobilization – describe the process and include guidelines for demobilizing key resources including approvals needed, prioritization, equipment decontamination, and inspection to ensure an orderly de-escalation of the response.

10.3 End Points – explain the need, and describe the process for establishing end points for various aspects of the response (floating oil/sheen on water, stranded oil on shorelines, residual oil on land, etc.) to determine when the response is complete.

10.4 Post Spill Assessments – explain the need, and describe the process for post spill assessments, whether to determine efficacy of response techniques, assess natural resource damages, or efficacy of natural attenuation.

10.5 Termination – describe the process to confirm the above end points have been achieved and to obtain consensus from all involved parties to terminate the response.

10.6 Cost Recovery – describe the process specific to the state for recovering the cost of the oil spill response.

10.7 Debrief – describe the benefits of, and process for, conducting a post-incident debrief from all involved parties to capture lessons learned which, in turn, will be used to improve processes, contingency plans, regulations, and requirements.

Appendix 3: Sample outline of an industry contingency plan

As discussed in the introduction to this Section of IMO's Manual on Oil Pollution, there are several excellent publications that contain marine oil spill contingency planning guidance for organizations that produce, handle, transport, or store oil products. One such document is "Contingency planning for oil spills on water" produced as part of the IPIECA-IOGP Good Practice Guide Series. This appendix is an excerpt from that document and provides a thorough outline for an oil spill contingency plan that should be developed, followed, and exercised by any organization that poses a risk of oil spill due to their production, handling, transporting, or storing of oil products. Full reference details may be found in Appendix 7.

Excerpt from IPIECA-IOGP Good Practice Guide Series:

The format of a contingency plan should be in compliance with existing:

- local legislation and regulations;
- company policy and standards; and
- the respective national contingency plan.

In the absence of prescriptive content defined by government regulations or company standards, the format presented in this Annex may be used as a guideline. The content of an oil spill contingency plan is intended to provide instructional actions specific to initiating and conducting a response. If a large volume of material creates difficulties in navigating the core procedures and information in the main body of the plan, it may be better to include some material as appendices or as separate plans (supporting documents). Examples of such material include sensitivity maps, tactical plans, directories and supporting elements. Material requiring frequent updates and redistribution (e.g. contact and resource directories, operational sensitivity maps, site-specific tactical plans) may benefit from separate document control and tracking. In some locations this may not be an issue; however, in developing regions, contact information, local supply services and logistics details will often need regular updating. Background information and capability justification, which has been compiled over the course of the planning effort, should be included as appendices or separate supporting documents.

There is no standard format for a contingency plan that meets the needs of all organizations; the format will vary depending on the scope of the plan and should be scaled accordingly, i.e. sections may be added or removed based on the level of risk and the need for the listed plan components. Planners should arrange the format in the most effective manner for the particular operation and in accordance with the local and national regulatory framework.

Simple techniques, such as the use of tabs, arranging pages into sections, and creation of a well-organized table of contents will help users to navigate to key information in the plan, and will also simplify the plan update process. Tables, flow charts and decision trees should be used as much as possible to simplify the presentation of material and facilitate the most efficient use of the plan in an emergency situation.

A suggested format for a contingency plan is summarized below.

1. INTRODUCTION
1.1 Overall response priorities and objectives
1.2 Plan scope (including a summary description of operations and risks)
1.3 Geographical area of coverage

1.4 Integration with other plans
1.5 Document control (plan custodian, distribution, review and update records)

2. INITIAL ACTIONS
2.1 Initial actions and strategy decision guide
2.2 Initial site safety and spill assessment
2.3 Initial response priorities and objectives
2.4 Initial action checklists for key personnel
2.5 Immediate notifications and reporting
2.6 Activation of response management team
2.7 Identification of environmental and socio-economic sensitivities
2.8 Immediately available Tier 1 resources and contacts
2.9 Activation and deployment of Tier 1 resources
2.10 Response escalation procedures
2.11 Key facility information

3. NOTIFICATIONS AND REPORTING
3.1 Internal requirements and procedures
3.2 External requirements and procedures
3.3 Supplemental notifications, if any
3.4 Contact details and forms (included either within the main body of the plan or as a separate directory for ease of frequent updating)

4. ASSESSMENTS
4.1 Site health, safety and security assessments
4.2 Spill surveillance methods (aerial surveillance, tracking buoys, etc.)
4.3 Spill observation and assessment guidance
4.4 Meteorological and hydrodynamic forecasting
4.5 Spill trajectory and modeling
4.6 Tier level assessment and escalation potential

5. RESPONSE RESOURCES
5.1 Resource inventories and services list including required logistics support, contact information and mobilization times (included either within the main body of the plan, or as a separate directory if lists are extensive and/or frequent updates are anticipated)
5.2 Resourcing procedures
5.3 Vessels of opportunity (required vessel specifications, lists of locally available vessels, etc.)
5.4 Local labor sources and volunteers
5.5 Subject matter experts or specialty expertise

6. RESPONSE MANAGEMENT
6.1 Response organization
6.2 Roles and responsibilities
6.3 Management processes and procedures
6.4 Response management facility activation and location

7. SENSITIVE AREAS
7.1 Identification of sensitivities

7.2 Protection priorities
7.3 Sensitivity maps (include either a full set of maps within the main body of the plan, or a reference list of maps that are supplied in a separate document or GIS; the best arrangement will depend on the volume, size and type of maps)
7.4 Operational sensitivity maps/site-specific tactical plans/geographical response plans (include a full set within the main body of the plan, or a reference list of maps/plans that are supplied in a separate document; the best arrangement will depend on the volume and size of the material)

8. RESPONSE STRATEGIES
8.1 Strategy decision guidance (flow charts, scenario matrix, NEBA decision guidance, etc.)
8.2 Scenario-specific response strategy summaries
8.3 Offshore, near-shore, shoreline and inland waterway response capabilities, as applicable
8.4 Regulatory pre-approvals and/or approval application procedures
8.5 General tactical plans, if any (included either within the main body of plan or as separate documents) see Annex 2 for detail

9. WASTE MANAGEMENT
9.1 Regulatory requirements
9.2 Procedures (including segregation, minimization, site removal, etc.)
9.3 Guidance for developing spill-specific waste management plan
9.4 Pre-designated temporary storage sites
9.5 Treatment and final disposal arrangements or options

10. DECONTAMINATION
10.1 Health and safety guidance
10.2 Procedures and approved cleaning agents
10.3 Pre-designated decontamination sites
10.4 Guidance for developing a spill-specific decontamination plan

11. DEMOBILIZATION
11.1 Procedures (final equipment and vessel inspections, personnel checkout, resupply of consumables, claims for repairs, return of hired gear, etc.)
11.2 Guidance for developing a spill-specific demobilization plan

12. TERMINATION OF RESPONSE
12.1 Guidance on establishing treatment end points and response termination criteria
12.2 Designation of the roles with authority to sign off on completed areas and approve termination of the response

13. RESPONSE DEBRIEF
13.1 Responsibilities and guidelines for conducting a post-spill analysis

Potential appendices or supporting documentation

A. General response information
- Health and safety guidelines
- In-field communications
- Documentation requirements and forms

B. Frequently updated information or large volumes of material
   - Resource and contact directories
   - Site-specific plans
   - Sensitivity maps and general tactical plans

C. Background information
   - Description of the facility and/or operations (including facility information, oil types/volumes handled, oil properties and weathering data, etc.)
   - Baseline environmental and socio-economic information
   - Meteorological and hydrodynamic information (including both prevailing and limiting/extreme conditions)

D. Specialized subject-specific plans
   - Shoreline assessment
   - Claims and compensation
   - Sampling and monitoring
   - Crisis (external) communications—public information, media, stakeholder engagement
   - Wildlife protection and response
   - Waste management

E. Finance and administration
   - Human resources procedures (hiring, managing and compensating local labour)
   - Financial responsibility and sources of funding
   - Contractual agreements
   - Plan justification and other preparedness material
   - Risk assessment and scenario planning

page 64

Appendix 4: Sample outline for an international oil spill cooperation plan

1 INTRODUCTION
1.1 Background
1.2 Purpose and objectives
1.3 Scope and geographic coverage
1.4 Definitions and abbreviations

2 POLICY AND RESPONSIBILITY
2.1 Exchange of information
2.2 Designation of national authorities and points of contact
2.3 Assumption of lead role
2.4 Response planning
2.5 Joint training and exercises

3 RESPONSE ELEMENTS AND PLANNING
3.1 Assumption of lead role
3.2 National On-Scene Commander (NOSC)/Supreme On-Scene Commander (SOSC)
3.3 Emergency Response Centres/Joint Emergency Response Centre
3.4 Support teams
3.5 Command structure
3.6 Communications arrangements
3.7 Response planning
3.8 Response strategy

4 RESPONSE OPERATIONS
4.1 Response phases
4.2 Spill surveillance and forecasting
4.3 Requests for assistance
4.4 Joint response operations
4.5 Use of non-mechanical response methods
4.6 Requests for additional assistance
4.7 Termination of joint operations and deactivation

5 REPORTS AND COMMUNICATIONS
5.1 Communications system(s)
5.2 Initial warning system
5.3 Pollution reports (POLREPs)
5.4 Post-incident reports

6 ADMINISTRATION AND LOGISTICS
6.1 Logistics
6.2 Funding
6.3 Customs, immigration and over-flight procedures
6.4 Health and safety
6.5 Documentation of clean-up costs
6.6 Revisions to the plan

7 PUBLIC INFORMATION/PROTOCOL
7.1 Public information office

Appendix 5: International pollution reporting systems

As discussed previously, communications about oil spills and potential oil spills are essential. Communications may be roughly divided into three types: communications required of responsible parties to notify affected governments, intergovernmental communications, and international communications. The first two types are discussed in Sections 2.1 and 1.2 respectively. This appendix addresses the communications between countries that share resources, responsibilities, or are potentially affected during an oil spill.

There are many systems of communication between countries that may be employed during an oil spill response. The best and most reliable systems are those that have been agreed upon and exercised prior to an oil spill that may cross international borders, or require one country to request the assistance of another.

This appendix provides an example of a well-established and exercised reporting system. The following sample report is used to share information between countries signatory to the Helsinki Convention, and Bonn and Copenhagen Agreements as well as the DENGER Plan (Denmark/Germany). The pollution reporting system employs a standardized report format referred to as a Pollution Report, or POLREP. The following serves an example only, as the reporting requirements under the Bonn Agreement may change in the future. The current reporting requirements under the Bonn Agreement may be found at the Bonn Agreement website, www.bonnagreement.org.

In accordance with the Bonn Agreement:

- the pollution reporting system shall contain all relevant information of the nature and extent of the casualty or pollution likely to constitute a threat to the coast or related interests of any other Contracting Party, or which could be perceived by the public as representing a serious threat;
- the POLREP shall be transmitted in English without delay through the national contact point of the Contracting Party informed of the casualty or pollution;
- the first POLREP on a pollution incident should be sent out not later than the first official press release concerning that incident; and
- a POLREP should, to all possible extent, be addressed to all Contracting Parties having an interest in the incident, whether directly threatened or not, and to the Secretariat of the Bonn Agreement.

POLREP SYSTEM

1 The pollution reporting system is for use between Contracting Parties for exchanging information when pollution of the sea has occurred or when a threat of such is present.

2 The POLREP is divided into three parts:

Part I: Pollution Warning (POLWARN) provides first information or warning of pollution or threat of pollution (Figures 1-5)

Part II: Pollution Information (POLINF) provides a detailed supplementary report as well as situation reports (Figures 40-60)

Part III: Pollution Facilities (POLFAC) deals with requests for oil spill response facilities or resources as well as operational matters (Figures 80-99).

3 The division into three parts is only for identification purposes. For this reason, consecutive figures are not used. This enables the recipient to recognize, merely by looking at the figures, whether they are dealing with Part I (1–5), Part II (40–60), or Part III (80–99). This method of division shall in no way exclude the use of all figures in a full report or the separate use of single figures from each part or the use of single figures from different parts mixed in one report.

4 When Part I is used as a warning in the Helsinki Convention, in the Copenhagen Agreement, or in the DENGER Plan, it shall always be transmitted with the traffic priority URGENT, but when used in the Bonn Agreement the priority URGENT is optional.

5 Part II is the logical consequence of Part I. Having transmitted Part I, the Contracting Party concerned can inform the other relevant Contracting Parties of its assessment of the nature and extent of the incident by using the appropriate figures from Part II.

6 Part III is for the request for assistance and related matters exclusively.

7 Detailed explanations of the different figures in Parts I, II and III are provided in Table 1.

8 One example of a POLREP in this system is given in Table 3.

9 It must be possible to identify each POLREP and the person who receives it must be able to check if he has received all of the reports concerning that particular pollution or threat in question.

10 The POLREP is to be identified by a serial number, e.g. ‘‘DK 2/3’’, which means that it is a POLREP from the Danish authorities. The report concerns the second pollution and it is the third report concerning this pollution.

11 The last and final POLREP will show as follows: ‘‘DK 2/5 FINAL’’, which means that this is the fifth and final report concerning the second pollution.

12 Concerning Figures 5, 60 and 99, it is emphasized that ACKNOWLEDGE is made by the Competent National Authority with reference to the serial number in question.

13 By answering a POLREP the serial number used by the transmitting country is to be used as reference in the answer. However, it is not necessary for countries to adhere to the POLREP system in responding to POLREPs.

14 If the POLREP is used in exercises, the text is to be introduced with the word EXERCISE and finished with this word three times. Each of the subsequent reports which relates to the exercise is to be introduced and finished in the same format.

page 68

TABLE 1: Summarized list of a POLREP

Address
Date Time Group
Identification
Serial number

Part I (POLWARN)

1	Date and time
2	Position
3	Incident
4	Outflow
5	Acknowledge

Part II (POLINF)

40	Date and time
41	Position
42	Characteristics of pollution
43	Source and cause of pollution
44	Wind direction and speed
45	Current or tide
46	Sea state and visibility
47	Drift of pollution
48	Forecast
49	Identity of observer and ships on scene
50	Action taken
51	Photographs or samples
52	Names of other States informed
53–59	Spare
60	Acknowledge

Part III (POLFAC)

80	Date and time
81	Request for assistance
82	Cost
83	Pre-arrangements for the delivery
84	Assistance to where and how
85	Other States requested
86	Change of command
87	Exchange of information
88–98	Spare
99	Acknowledge

Table 2: Further information regarding each figure:

POLREP BONN AGREEMENT DK 1/1 indicates the first report from Denmark of the pollution in question in the Bonn Agreement region.

POLREP BONN AGREEMENT DK 1/2 will, in accordance with the described system, then indicate the second report from the same pollution.

If the pollution caused by the incident splits up into clearly defined patches - in this example two - the wording POLREP BONN AGREEMENT 1, now splitting into POLREP BONN AGREEMENT 2 and POLREP BONN AGREEMENT 3, should be indicated in the last report in the incident identified by number 1 preceding the stroke. The first reports on the two patches originating from the incident first reported will then be numbered POLREP BONN AGREEMENT DK 2/1 and POLREP BONN AGREEMENT DK 3/1, and consecutive numbers after the stroke could then be used.

1 DATE AND TIME: The day of the month as well as the time of the day when the incident took place or, if the cause of the pollution is not known, the time of the observation should be stated using 6 digits. Time should be stated as GMT, for example 091900z (i.e. the 9th of the relevant month at 1900 GMT).

2 POSITION: Indicates the main position of the incident and longitude in degrees and minutes, and may in addition give the bearing of and the distance from a location known by the receiver.

3 INCIDENT: The nature of the incident should be stated here, such as BLOWOUT, TANKER GROUNDING, TANKER COLLISION, OIL SLICK, etc.

4 OUTFLOW: The polluting substance, such as CRUDE OIL, CHLORINE, DINITROL, PHENOL as well as the total quantity in tons of the outflow and/or the flow rate, and the risk of further outflow should be mentioned. If there is no pollution, but a threat of pollution, the words NOT YET followed by the substance (for example NOT YET FUEL OIL) should be stated.

5 ACKNOWLEDGE: When this number is used, the message (email or telefax) should be acknowledged as soon as possible by the Competent National Authority.

40 DATE AND TIME: No. 40 relates to the situation described in numbers 41 to 60 if it varies from Number 1.

41 POSITION AND/OR EXTENT OF POLLUTION ON/ABOVE/ IN THE SEA: Indicates the main position of the pollution in degrees and minutes of latitude and longitude, and may in addition give the distance and bearing of some prominent landmark known to the receiver if other than indicated in number 2. Estimated amount of pollution (e.g. size of polluted areas, number of tons of oil spilled if other than indicated in number 4, or number of containers, drums lost). Indicates length and width of slick given in nautical miles if not indicated in Number 2.

42 CHARACTERISTICS OF POLLUTION: Gives type of pollution, e.g. type of oil with viscosity and pour point, packaged or bulk chemical, sewage. For chemicals, the proper name or United Nations number, if known, should be given. Appearance, e.g. liquid, floating

solid, liquid oil, semi-liquid sludge, tarry lumps, weathered oil, discoloration of sea, visible vapor should also be given as well as any markings on drums or containers.

43 SOURCE AND CAUSE OF POLLUTION: Indicates the source of pollution e.g. from vessel or other undertaking. If from vessel, it should be notified whether the pollution is a result of a deliberate discharge or casualty. If the latter, a brief description should be given. Where possible the name, type, size, call sign, nationality and port of registration of polluting vessel should be mentioned. If the vessel is proceeding on its way, course, speed and destination should be indicated.

44 WIND DIRECTION AND SPEED: Indicates wind direction and speed in degrees and in m/sec. The direction always indicates from where the wind is blowing.

45 CURRENT DIRECTION AND SPEED AND/OR TIDE: Indicates current direction and speed in degrees and knots and tenths of knots. The direction always indicates the direction in which the current is flowing.

46 SEA STATE AND VISIBILITY: Sea state indicates the wave height in meters. Visibility should be indicated in nautical miles.

47 DRIFT OF POLLUTION: Indicates drift course and speed of pollution in degrees and knots or tenths of knots. In cases of air pollution (gas cloud), drift speed should be indicated in m/sec.

48 FORECAST OF LIKELY EFFECT OF POLLUTION AND ZONES AFFECTED: Results of mathematical models could indicate e.g. arrival on beach with estimated timing.

49 IDENTITY OF OBSERVER/REPORTER IDENTITY OF SHIPS ON SCENE: Identifies who has reported the incident. If it is a ship, the name, home port, flag and call sign must be given. Ships on-scene could also be indicated under this item by name, home port, flag and call sign, especially if the polluter cannot be identified and the spill is considered to be of recent origin.

50 ACTION TAKEN: Mentions action taken for the disposal of the pollution.

51 PHOTOGRAPHS OR SAMPLES: Indicates if photographs or samples from the pollution have been taken. Contact numbers (including telephone, email address, telefax, and telex numbers as appropriate) of the sampling authority should be given.

52 NAMES OF OTHER STATES AND ORGANIZATIONS INFORMED

53 - 59 SPARE FOR ANY OTHER RELEVANT INFORMATION: For example, results of sample or photographic analysis, results of inspections or surveyors, or statements of ship's personnel.

60 ACKNOWLEDGE: When this number is used, the telex/telefax/email should be acknowledged as soon as possible by the competent national authority.

80 DATE AND TIME: Number 80 is related to the situation described below, if it varies from Numbers 1 and/or 40.

81 REQUEST FOR ASSISTANCE: Type and amount of assistance required in form of:

- specified equipment.

- specified equipment with trained personnel.

81 CONTENTS REMARKS: Complete strike teams personnel with special expertise and indication of country requested.

82 COST: Information on cost of delivered assistance to be notified to requesting country.

83 PRE-ARRANGEMENTS FOR THE DELIVERY OF ASSISTANCE: Information concerning customs clearance, access to territorial waters in the requesting country.

84 TO WHERE ASSISTANCE SHOULD BE RENDERED AND HOW: Information concerning the delivery of the assistance, e.g. rendezvous at sea with information on frequencies to be used, call sign and name of Supreme On-Scene Commander of the requesting country or land-based authorities with contact numbers (including telephone, email address, telefax, and telex numbers as appropriate) and contact persons.

85 NAMES OF OTHER STATES AND ORGANIZATIONS: Only to be filled in if not covered by Number 81, e.g. if further assistance is later needed by other States.

86 CHANGE OF COMMAND: When a substantial part of an oil pollution or serious threat of oil pollution moves or has moved into the zone of another Contracting Party, the State which has exercised the supreme command or the operation may request the other party to take over the supreme command.

87 EXCHANGE OF INFORMATION: When a mutual agreement has been reached between two parties on a change of supreme command, the country transferring the supreme command should give a report on all relevant information pertaining to the operation to the country taking over the command.

88 - 98 SPARE FOR ANY OTHER RELEVANT REQUIREMENTS OR INSTRUCTIONS

99 ACKNOWLEDGE: When this number is used, the message (email or telefax) should be acknowledged as soon as possible by the competent national authority.

page 72

Table 3: Bonn Agreement POLREP Example

Address: From DK
To: DE and NL
Date time group: 181100z June
Identification: POLREP BONN AGREEMENT
Serial number: DK 1/2 (DK 1/1 for DE)

1	Date and Time	1 181000z
2	Position	2 55°33' N - 07°00' E
3	Incident	3 Tanker collision
4	Outflow	4 Crude oil, estimated 3,000 tonnes
41	Position and/or extent of pollution on the sea	41 The oil is forming a slick 0.5 nautical miles to the Southeast, Width up to 0.3 nautical miles.
42	Characteristics of pollution	42 Venezuela crude. Viscosity 3.780 Cs at 37.8°C. Rather viscous
43	Source and cause of pollution	43 Danish tanker ESSO BALTICA of Copenhagen 22,000 GRT call sign xxxx, in collision with Norwegian bulk carrier AGNEDAL of Stavanger, 30,000 GRT, call sign yyy. Two tanks damaged in ESSO BALTICA. No damage to the AGNEDAL
44	Wind direction and speed	44 270T 10m/sec
45	Current direction and speed and/or tide	45 180T 0.3 knots
46	Sea state and visibility	46 Wave height 2m. 10 nautical miles
47	Drift of pollution	47 13T 0.4 knots
48	Forecast of likely effect of pollution and zones affected	48 Could reach the island of Sylt, DE or further south, NL on the 23rd of this month
49	Identity of observer/reporter. Identity of ships on scene	49 Agnedal, number 43 refers
50	Action taken	50 2 Danish strike-teams with high mechanical capacity on route to the area
51	Photographs or samples	51 Oil samples have been taken. Telex 64471 SOK DK
52	Names of other states and organizations informed	52 DE
53	Spare	53 DENGER PLAN is activated
81	Request for assistance	81 DE is requested for 2 strike teams with high mechanical pick-up capacity
82	Cost	82 DE is requested for an approximate cost rate per day of assistance rendered
83	Pre-arrangements for the delivery of assistance	83 DE units will be allowed to enter Danish territorial waters for combating purposes or Danish harbors for logistics informing SOSC beforehand
84	To where assistance should be rendered and how	84 Rendezvous 57°30' N - 07°00' E. Report on VHF channels 16 and 67. SOSC, Lieutenant Commander Hansen in GUNNAR SEIDENFADEN, call sign OWAJ
99	ACKNOWLEDGE	99 ACKNOWLEDGE

Appendix 6: Guidelines for identifying response resources

The pre-identification of oil spill response equipment available to respond within a country or region is essential to facilitate rapid and effective oil spill responses. The appropriate response equipment will be determined by the risk assessment and subsequent strategic policy. It is important to keep in mind that some response techniques have only a brief window of opportunity to be utilized effectively before weathering processes, such as spreading and emulsification, render them ineffective.

It is a best practice for national authorities to develop and enforce legislation that establishes minimum response equipment inventories for oil handling operations. These requirements may be based upon various planning criteria, including NEBA, national legislations and economic considerations. The requirements can be scalable in recognition that equipment required to mount an effective response to a Type I (small spill effectively managed by the spiller alone) should be maintained on-hand, while response equipment required for Type II (multiple sources of response resources) or Type III (Regional/global resources required) spills will take time to be mobilized and transported to the spill.

Each ship, facility, national, or regional oil spill response plan should contain an up-to-date inventory of response equipment available for oil spill response. This appendix provides a general listing of the potential equipment to be inventoried and may be used in developing contingency plans.

	Tier I	**Tier II**	**Tier III**
Boom	Y	Y	Y
Skimmer	Y	Y	Y
Storage	Y	Y	Y
Shoreline Equipment	Y	Y	Y
Vessels	Y	Y	Y
Aircraft		Y	Y
Dispersants		Y	Y
In Situ Burning		Y	Y
Lightering/Salvage		Y	Y
Wildlife Recovery	Y	Y	Y
Communications	Y	Y	Y
Remote Sensing		Y	Y
Subsea equipment		Y	Y
Fast water equipment		Y	Y

The type of information that is useful to include with the above equipment inventories are listed in the following:

Conventional equipment	Booms	Skimmers	Storage	Shoreline equipment	Vessels
Types	X	X	X	X	X
Total dimensions	length	weight, size	weight, size, capacity		length, beam, draft, speed, endurance

Draught/Freeboard length and weight per unit	X	X	X	X	X
Additional support equipment necessary	X	X	X	X	X
Design or intended use (e.g. use in open sea or sheltered water operations)	X	X	X	X	X
Mobilization time	X	X	X	X	X
Means of transportation required	X	X	X	X	X
Available transportation	X	X	X	X	X
Personnel for handling/operating	X	X	X	X	X
Procurement cost versus rental cost	X	X	X	X	
Estimated daily rental cost	X	X	X	X	X
Available equipment, not dedicated to oil spill response, that can be used (pumps, excavators, etc.)	X	X	X	X	X

In certain circumstances (e.g. type of oil spilled, volume spilled, proximity to human settlements, etc.) the need for specialized equipment or service arises. In planning, due regard should be made to the type of specific features sought in the equipment or service. A partial list of the relevant features and considerations is found below each major heading.

Specialized equipment or service

Aircraft

Mission or purpose: dispersant application, transport, surveillance, spotting
Type: rotary/fixed wing/aerostat
Operating speed
Specialized equipment e.g. imaging, sensing
Endurance
Passenger capacity
Load capacity
Mobilization time
Fuel/ramp requirements
Estimated daily rental cost
Drones, UAVs

Dispersant Systems

Types, total stock of each type in litres
System of storage
Method of application
Approval data (e.g. country of approval, approval number)
Toxicity and efficiency data (e.g. tests applied and results obtained)
Types of spraying equipment required
Sources of supply and mobilization time

Means of transportation required, capacity of unit
Available transportation
Estimated price/litre
Monitoring equipment

Dispersant storage tanks
Total stocks, by type, capacity, and weight empty/full
Means of securing on board
Mobilization time†
Means of transportation required, weight per unit
Available transportation
Personnel for handling

Vessel and aircraft dispersant spraying equipment
Stocks held, by type and size
Whether suitable for dispersant concentrate and in what ratio
Design or intended use
Mobilization time
Means of transportation required, weight per unit†
Available transportation
Personnel for handling

Lightering and salvage equipment
Pumps, total stocks by type/capacity and weight including prime mover
Hoses, length, diameter and weight/section
Fenders, total stocks by type/size and weight
Personnel for handling
Estimated procurement cost
Estimated daily rental cost
Mobilization time
Submerged oil recovery devices
Cranes and lift equipment

In-situ burn methods
Fire boom, amount
Support equipment
Mobilization time
Transportation/delivery
Personnel for handling
Ignition methodology
Procurement cost
Weather and air monitoring equipment
Fire break equipment for terrestrial burns

Wildlife treatment/rehabilitation
Bird hazing devices
Recovery/handling equipment (nets)
Holding pens/facilities
Cleaning agents and supplies
Husbandry experts
Mobilization time
Transportation/delivery (boats/trailers)
Cost of operations
Mobile care facilities

Communications and auxiliary equipment
Equipment available
Mobilization time
Portable equipment (on board and ashore)
Frequencies
Types of emission
Power source
Estimated daily rental cost versus procurement cost
Geospatial Operational Display

Remote sensing/surveillance/tracking/detection equipment
Airborne Automatic Identification System (AIS)
Airborne laser fluorosensor
Autonomous underwater vehicle (AUV)
Electro optical/infrared (EO/IR) camera system
EO/IR video
Fixed and floating oil spill detection buoy
Fixed oil detection sensor
Global positioning system (GPS) tracking device
High-resolution digital photography camera
Line scanner: infrared/ultraviolet (IR/UV)
Microwave radiometer
Multi-spectral camera
Oil spill detection by satellite remote sensing
Satellite imagery
Side-looking airborne radar (SLAR)
Specialized software
Synthetic Aperture Radar (SAR)
Thermal imaging (infrared (IR)) camera
Video system for visual documentation

Subsea equipment
2D sonar "Blue View"

3D sonar "Blue View"
Autonomous underwater vehicle (AUV) (untethered/unmanned)
Capping stack (toolbox)
Debris clearing equipment
Deepwater well capping
High pressure/high volume (HP/HV) accumulator
Manned submarines
Remotely operated underwater vehicle (ROV)
Subsea dispersant hardware toolbox

Fast Water Equipment
Vanes and current diversion devices
Current measuring equipment
Outfall plugging devices
Boom rudders
Portable dams
Fast water skimmers
Anchoring systems

page 78

Appendix 7: References and further reading

API (2013). Guidelines for Offshore Oil Spill Response Plans. American Petroleum Institute Technical Report 1145. Washington, D.C. API Publishing Services.

AMSA (2015). Technical Guideline for the Preparation of Marine Pollution Contingency Plans for Marine and Coastal Facilities. Australian Maritime Safety Authority, January, 2015.

Anderson, C. M., Mayes, M. and LaBelle, R. (2012). Update of Occurrence Rates for Offshore Oil Spills. OCS Report. BOEM 2012-069. BSEE 2012-069. Herndon: Department of Interior Bureau of Ocean Energy Management and Department of Interior Bureau of Safety and Environmental Enforcement.

ARPEL (2005) "Effective Trans-boundary Movement of Equipment and Personnel during Oil Spill Response" - https://arpel.org/library/publication/328/

ARPEL (2015) - Manual and Tool to Evaluate Oil Spill Management Capabilities – RETOS V 2.0 [online]. Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean. www.arpel.org/library/publication/341/

Aurand, D., Walko, L. and Pond, R. (2000). Developing Consensus Ecological Risk Assessments: Environmental Protection In Oil Spill Response Planning, A Guidebook. United States Coast Guard. Washington, D.C.

EC publications

DECC (2012). Guidance Notes to Operators of UK Offshore Oil and Gas Installations (including pipelines) on Oil Pollution Emergency Plan Requirements. UK Government, Department of Energy & Climate Change. DECC/OPRC/OPEP Guidance, July 2012.

Hall, C. J., Henry, W. J. III and Hyder, C. R. (2011). Hopedale Branch: A Vessel of Opportunity Success Story. In International Oil Spill Conference Proceedings, March 2011, Vol. 2011, No. 1. pp. abs.407. http://ioscproceedings.org/doi/abs/10.7901/2169-3358-2011-1-407

IMO (1990). International Convention on the Oil Pollution, Preparedness, Response and Co-operation (OPRC). www.imo.org/About/Conventions/ListOfConventions/Pages/ International-Convention-on-Oil-Pollution-Preparedness,-Response-and-Co-operation-(OPRC).aspx

IMO (1995). Manual on Oil Pollution—Section II: Contingency Planning. International Maritime Organization. IMO (2010). Manual on Oil Spill Risk Evaluation and Assessment of Response Preparedness.

IMO (2011). Manual on Oil Pollution, Section IV, Combating Oil Spills, Chapter 7, 'Chemical Dispersion'. International Maritime Organization, London.

IMO (2012). Guidance Document on the Implementation of an Incident Management System (IMS).International Maritime Organization, IMO Publishing, UK.

IMO (2016). Guidelines on international offers of assistance in response to a marine oil pollution incident. (Pending)

IOPC Fund (2013) Claims Manual. International Oil Pollution Compensation Funds, London.

IPIECA (2012a) Sensitivity mapping for oil spill response, IPIECA IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 477.

IPIECA-IOGP (2012b). Oil spill responder health and safety. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 480.

IPIECA-IOGP (2013a). Finding 6: Oil spill risk assessment and response planning for offshore installations. Finding 6 of the IOGP Global Industry Response Group (GIRG) response to the Deepwater Horizon incident in the Gulf of Mexico in April 2010. IOGP-IPIECA Oil Spill Response Joint Industry Project (OSR-JIP).

IPIECA-IOGP (2013b). Finding 19: Guidelines on oil characterization to inform spill response decisions. Finding 19 of the IOGP Global Industry Response Group (GIRG) response to the Deepwater Horizon incident in the Gulf of Mexico in April 2010. IOGP-IPIECA Oil Spill Response Joint Industry Project (OSR-JIP).

IPIECA-IOGP (2013c). Finding 17: The use of decanting during offshore oil spill response operations. Finding 17 of the IOGP Global Industry Response Group (GIRG) response to the Deepwater Horizon incident in the Gulf of Mexico in April 2010. IOGP-IPIECA Oil Spill Response Joint Industry Project (OSR-JIP).

IPIECA-IOGP (2014a). Tiered preparedness and response: Good practice guidelines for incident management and emergency response personnel. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). OGP Report Number 526.

IPIECA-IOGP (2014b). Economic assessment and compensation for marine oil spills. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). OGP Report Number 524.

IPIECA-IOGP (2014c). Framework for oil spill preparedness and response. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 520.

IPIECA-IOGP (2014d). Net environmental benefit analysis (NEBA). IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 527.

IPIECA-IOGP (2014e). Finding 15: Volunteer management. Finding 15 of the IOGP Global Industry Response Group (GIRG) response to the Deepwater Horizon incident in the Gulf of Mexico in April 2010. IOGP-IPIECA Oil Spill Response Joint Industry Project (OSR-JIP).

IPIECA-IOGP (2014f). Oil spill waste minimization and management: Good practice guidelines for incident management and emergency response personnel. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 507.

IPIECA-IOGP (2014g). Wildlife response preparedness: Good practice guidelines for incident management and emergency response personnel. IPIECA-IOGP Good Practice

Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 516.

IPIECA-IOGP (2014h). Aerial observation of oil pollution at sea. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 518.

IPIECA-IOGP (2014i). Incident management system for the oil and gas industry. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 517.

IPIECA-IOGP (2014j). A guide to oiled shoreline assessment (SCAT) surveys. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 504.

IPIECA-IOGP (2014k). Oil spill training: Good practice guidelines on the development of training programmes for incident management and emergency response personnel. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 499.

IPIECA-IOGP (2014l). Oil spill exercises: Good practice guidelines for the development of an effective exercise programme. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). OGP Report Number 515.

IPIECA-IOGP (2015a). Contingency planning for oil spills on water. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). OGP Report Number 519.

IPIECA/IMO/IOGP (2012). Sensitivity mapping for oil spill response. IPIECA-IOGP Good Practice Guide Series, Oil Spill Response Joint Industry Project (OSR-JIP). IOGP Report Number 477.

ITOPF (2011a). Contingency Planning for Marine Oil Spills. ITOPF Technical Information Paper (TIP) 16.

ITOPF (2011b). Fate of Marine Oil Spills. ITOPF Technical Information Paper (TIP) 2.
IPIECA • IOGP 50

ITOPF (2011c). Disposal of Oil and Debris. ITOPF Technical Information Paper (TIP) 9.

ITOPF (2012a). Sampling and Monitoring of Marine Oil Spills. ITOPF Technical Information Paper (TIP) 14.

ITOPF (2012b). Preparation and Submission of Claims from Oil Pollution. ITOPF Technical Information Paper (TIP) 15.

ITOPF (2012c). Leadership, Command & Management of Marine Oil Spills. ITOPF Technical Information Paper (TIP) 10.

ITOPF (2014). Introduction to oil spills. (Film) www.itopf.com/knowledge-resources/library/video-library/video/1-introduction-to-oil-spills

Owens, E. H. and Taylor, E. (2007). Guidelines to Evaluate Oil Spill Contingency Plan Adequacy, Response Competency, and Sustained Readiness. Proceedings Asia Pacific Health, Safety, Security and Environment Conference and Exhibition, Society of Petroleum Engineers, Richardson, TX, 6 pp.

Parker, H.A., Knutson, S.R., Nicoll, A. and Wadsworth, T. (2014). International Offers of Assistance Guidelines – Developing an IMO Tool to "Internationalize" Oil Spill Readiness and Response. Proceedings of the International Oil Spill Conference: May 2014, Vol. 2014, No. 1, pp. 328–339.

Sergy, G.A. and Owens, E.H. (2007). Guidelines for Selecting Shoreline Treatment Endpoints for Oil Spill Response, October 2007 http://www.shorelinescat.com/Documents/Manuals/Environment%20Canada%202007%20Endpoint%20Guidelines.pdf

Taylor, E., Steen, A., Meza, M., Couzigou, B., Hodges, M., Miranda, D., Ramos, J. and Moyano, M. (2008). Assessment of Oil Spill Response Capabilities: A Proposed International Guide for Oil Spill Response Planning and Readiness Assessments. Technical Report IOSC-009. http://edocs.dlis.state.fl.us/fldocs/oilspill/federal/2008IOSC.pdf.

White, D. and Benns, G. (2011). The Oil Spill Contingency Planning Process; A Process Commonly Misunderstood. IOSC 2011. Proceedings of the International Oil Spill Conference: March 2011, Vol. 2011, No. 1, pp. abs126.

***

ANNEX 6

DRAFT GUIDE TO OIL SPILL RESPONSE IN SNOW AND ICE CONDITIONS

(The text of the draft Guide is contained in document PPR 3/22/Add.1.)

***

ANNEX 7

DRAFT MEPC CIRCULAR

UNIFIED INTERPRETATIONS OF THE NO_X TECHNICAL CODE 2008 RELATED TO THE APPROVAL OF SCR SYSTEMS

1 The Marine Environment Protection Committee, at its [seventieth session (24 to 28 October 2016)], approved Unified Interpretations to the NO_X Technical Code 2008 related to the approval of SCR systems, prepared by the Sub-Committee on Pollution Prevention and Response, at its third session, as set out in the annex.

2 Member Governments are invited to use the annexed unified interpretations as guidance when applying relevant provisions of the NO_X Technical Code 2008 and to bring them to the attention of all parties concerned.

***

DRAFT UNIFIED INTERPRETATIONS OF THE NO_X TECHNICAL CODE 2008 RELATED TO THE APPROVAL OF SCR SYSTEMS

Chapter 4
Approval for serially manufactured engines: engine family and engine group concept

1 Paragraph 4.4.6.1 of the NO_X Technical Code reads as follows:

"4.4.6.1 The engine group may be defined by basic characteristics and specifications in addition to the parameters defined in 4.3.8 for an engine family."

Interpretation:

Paragraph 4.4.6.1 cross references paragraph 4.3.8 which provides guidance for selection of an engine family. For engines fitted with SCR system to reduce NO_X emissions it is recognized that some of the parameters provided may not be common to all engines within a group, in particular paragraphs 4.3.8.2.3 and 4.3.8.2.4 state that:

".3 individual cylinder displacement:

- to be within a total spread of 15%

.4 number of cylinders and cylinder configuration:

- applicable in certain cases only, e.g. in combination with exhaust gas cleaning devices"

For engines fitted with SCR system to reduce NO_X emissions the number and arrangement of cylinders may not be common to all members of the engine group. These parameters may be replaced with new parameters derived from the SCR chamber and catalyst blocks, such as the SCR space velocity (SV), catalyst block geometry and catalyst material.

2 Paragraph 4.4.6.2 of the NO_X Technical Code reads as follows:

"4.4.6.2 The following parameters and specifications shall be common to engines within an engine group:

.1 bore and stroke dimensions;

.2 method and design features of pressure charging and exhaust gas system:
- constant pressure;
- pulsating system;

.3 method of charge air cooling system:
- with/without charge air cooler;

.4 design features of the combustion chamber that affect NO_X emission;

.5 design features of the fuel injection system, plunger and injection cam that may profile basic characteristics that affect NO_X emission; and

.6 rated power at rated speed. The permitted ranges of engine power (kW/cylinder) and/or rated speed are to be declared by the manufacturer and approved by the Administration."

Interpretation:

For engines fitted with SCR system to reduce NO_X emissions it is recognized that some of the parameters provided may not be common to all engines within a group and that new parameters derived from the SCR chamber and catalyst blocks may be used instead, such as the SCR space velocity (SV), catalyst block geometry and catalyst material.

Whilst the provisions of paragraph 4.4.6.2.1 should remain common to all engines within the group, the remaining parameters listed in paragraph 4.4.6.2 may be replaced by alternative SCR parameters, provided that the applicant is able to demonstrate that these alternative parameters are suitable for defining the engine group.

The applicant remains responsible for selecting the parent engine and demonstrating the basis of this selection to the satisfaction of the Administration.

***

ANNEX 8

JUSTIFICATION FOR A NEW OUTPUT ON REVISION OF THE 2011 GUIDELINES ADDRESSING ADDITIONAL ASPECTS TO THE NO_X TECHNICAL CODE 2008 WITH REGARD TO PARTICULAR REQUIREMENTS RELATED TO MARINE DIESEL ENGINES FITTED WITH SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEMS, AS AMENDED

Introduction

1 This justification has been developed in accordance with paragraph 4.8 of the annex and annex 1 of the *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.4/Rev.4), taking into account the Organization's objectives (resolutions A.900(21) and A.909(22)) and the High-level Action Plan for the Organization and priorities for the 2016-2017 biennium (resolution A.1098(29)).

Background

2 Based on the consideration of documents PPR 3/18 and PPR 3/18/2, a need for a review of the provisions regarding approval of selective catalytic reduction (SCR) systems in resolution MEPC.198(62) and guidance for the selection of an engine group on the NO_X Technical Code 2008 has been identified.

IMO's objectives

3 This proposal is considered to be entirely consistent with, and supportive of, the objectives of the Organization, as explained in resolutions A.900(21) and A.909(22), in particular:

> "*DIRECTS the Committees …:*
>
> *…*
>
> *.2 to focus their attention on:*
>
> *…*
>
> - *ensuring the effective uniform implementation of existing IMO standards and regulations relating to maritime safety and environmental protection, …;*
>
> - *addressing safety and environmental protection issues, to the extent feasible, by ship types, with particular emphasis on passenger ships (including high-speed passenger craft) and bulk carriers*
>
> *…*
>
> - *developing a safety culture and environmental conscience in all activities undertaken by the Organization;*
>
> *…*" (resolution A.900(21)).

4 The proposal is also aligned with Strategic Directions 2 (SD 2) and 7 (SD 7) of the Strategic Plan for the Organization for the six-year period 2016 to 2021 (resolution A.1097(29)) i.e.:

> "*SD 2 – IMO will foster global compliance with its instruments governing international shipping and will promote their uniform implementation by Member States.*"
>
> "*SD 7 – IMO will focus on reducing and eliminating adverse impacts by shipping on the environment by:*
>
> *.1 ….;*
>
> *.2 developing and facilitating the implementation of effective measures for mitigating and responding to the impact on the environment caused by shipping incidents and operational pollution from ships;*
>
> *.3 contributing to international efforts to reduce atmospheric pollution and address climate change;*
>
> *…*"

5 Taking into account SD 7 of the 2016-2021 Strategic Plan, it is noted that the twenty-ninth session of the Assembly adopted resolution A.1098(29) in which the following High-level Action and planned output for the 2016-2017 biennium were agreed:

> "*7.3 Contributing to international efforts to reduce atmospheric pollution and address climate change.*"
>
> "*7.3.1 Keep under review IMO measures to reduce atmospheric pollution.*"

Demonstrated need

6 Clarification is needed for certain aspects of testing, surveying and certification of engines equipped with SCR systems, as the 2011 Guidelines were adopted well before mainstream certification of these engines was performed and the process of testing and certifying these systems was not well-understood. Based on experience and feedback from industry and classification societies, it is believed that clarifications are needed on how to handle the certification of engines utilizing selective catalytic reduction (SCR), in order to have a consistent certification of engines across all certification regimes.

Analysis of the issue

7 It is considered that resolution of the issues discussed above would be practicable, feasible and proportional. Making the text clear would also satisfy the test of proportionality in that this action would not exceed that which is necessary to achieve the overall objective of providing clarity to all interested parties as to what is required.

Analysis of implications

8 The Committee is invited to note the information provided in Appendix B that provides the Checklist for Identifying Administrative Requirements and Burdens as referred to in paragraph 4.15.6 and footnote 4 of the Committees' Guidelines.

9 It is recognized that revision of the guidelines will have to be transferred into the national legislation of Member States in order to take legal effect on ships that fly the flag of that State. In this respect the anticipated outcome of this proposal will represent an administrative burden for Governments. However, for those Governments who regulate their ships by a system of primary and secondary legislation, it is hoped that the associated legislative burden will not be excessive.

Benefits

10 As explained above, the clear benefit in resolving this issue is that the revision or amendments of the 2011 SCR Guidelines will achieve a consistent and harmonized process of testing, survey, and certification of engines fitted with selective catalytic reduction systems.

Industry standards

11 There are no industry standards relevant to this issue.

Output

12 Consider the need for revision or amendments to the *2011 Guidelines addressing additional aspects to the NOx Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with selective catalytic reduction (SCR) systems* (resolution MEPC.198(62), as amended by MEPC.260(68)), taking into account annexes 2 to 12, 14, 16 and 17 to document PPR 3/18 identified in paragraph 41 of document PPR 3/WP.4 and associated comments annexed to this Justification.

Human element

13 The completed checklist as per the *Checklist for considering human element issues by IMO bodies* (MSC-MEPC.7/Circ.1) is attached at Appendix B.

Priority/urgency

14 The proposed output is considered a matter of urgency for the following reasons:

.1 the NO_X emission limits according to regulation 13.5.1 of MARPOL Annex VI which potentially require SCR units for compliance entered into force already and apply to engines installed on vessels constructed on or after 1 January 2016 operating within ECAs as defined in regulation 13.6 of MARPOL Annex VI; and

.2 a consistent and harmonized process of testing, survey, and certification of engines fitted with selective catalytic reduction systems is needed taking into account the provisions of the NO_X Technical Code 2008 and relevant guidelines.

15 It is proposed that consideration of this proposal could be referred to the session of the PPR Sub-Committee that it is expected will be held in 2017. It is anticipated that once the intent of what needs to be achieved has been agreed, the drafting of the necessary revisions or amendments can readily be finalized.

Action requested of the Committee

16 The Committee is invited to add to the biennial agenda of the PPR Sub-Committee a new output on revision or amendments to the *2011 Guidelines addressing additional aspects to the NO_X Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with selective catalytic reduction (SCR) systems* (resolution MEPC.198(62), as amended by MEPC.260(68)).

APPENDIX A

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS AND BURDENS

The Checklist for Identifying Administrative Requirements and Burdens should be used when preparing the analysis of implications required of submissions of proposals for inclusion of unplanned outputs. For the purpose of this analysis, the terms "administrative requirements" and "burdens" are defined as in resolution A.1043(27), i.e. administrative requirements are defined as an obligation arising from future IMO mandatory instruments to provide or retain information or data, and administrative burdens are defined as those administrative requirements that are or have become unnecessary, disproportionate or even obsolete.

Instructions:

(A) If the answer to any of the questions below is **YES**, the Member State proposing an unplanned output should provide supporting details on whether the burdens are likely to involve start-up and/or ongoing cost. The Member State should also make a brief description of the requirement and, if possible, provide recommendations for further work (e.g. would it be possible to combine the activity with an existing requirement?).

(B) If the proposal for the unplanned output does not contain such an activity, answer **NR** (Not required).

1. Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members, etc.	**NR**	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
2. Record keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education, etc.	**NR**	Yes □ Start-up □ Ongoing
Description: (if the answer is yes) Records of auditor training are already required to be maintained and kept.		
3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing, etc.	**NR**	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
4. Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs, etc.	**NR**	Yes □ Start-up □ Ongoing
Description: (if the answer is yes)		
5. Other identified burdens?	**NR**	Yes
Description: (if the answer is yes)		

APPENDIX B

CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

Instructions:
If the answer to any of the questions below is:

(A) **YES,** the preparing body should provide supporting details and/or recommendation for further work.
(B) **NO,** the preparing body should make proper justification as to why human element issues were not considered.
(C) **NA** (Not Applicable) the preparing body should make proper justification as to why human element issues were not considered applicable.

Subject Being Assessed: (e.g. Resolution, Instrument, Circular being considered)

2011 Guidelines addressing additional aspects to the NOx technical code 2008 with regard to particular requirements related to marine diesel engines fitted with selective catalytic reduction (SCR) systems

Responsible Body: (e.g. Committee, Sub-committee, Working Group, Correspondence Group, Member State)

Marine Environment Protection Committee and PPR Sub-Committee

1.	Was the human element considered during development or amendment process related to this subject?	❑Yes ❑No ✓NA
2.	Has input from seafarers or their proxies been solicited?	❑Yes ✓No ❑NA
3.	Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	✓Yes❑No❑NA
4.	Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	❑Yes ✓No ❑NA
5.	Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
	• Administrations?	❑Yes❑ No✓NA
	• Ship owners/managers?	❑Yes ❑No✓NA
	• Seafarers?	❑Yes❑No✓NA
	• Surveyors?	❑Yes❑No✓NA
6.	At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	❑Yes ❑No✓NA
7.	Does the solution address safeguards to avoid single person errors?	❑Yes ❑No ✓NA
8.	Does the solution address safeguards to avoid organizational errors?	❑Yes ❑No✓NA
9.	If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	❑Yes❑No✓NA
10.	Have human element experts been consulted in development of the solution?	Yes❑ ✓No ❑NA

11. **HUMAN ELEMENT: Has the proposal been assessed against each of the factors below?**	
❑ CREWING. The number of qualified personnel required and available to safely operate, maintain, support, and provide training for system.	❑Yes ❑No✓NA
❑ PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	❑Yes ❑No✓NA
❑ TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills, and abilities to achieve desired job/task performance.	❑Yes❑No✓NA
❑ OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	❑Yes ❑No ✓NA
❑ WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health, and comfort of those on working on board, such as noise, vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	❑Yes❑No✓NA
❑ HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury, or death in a catastrophic event such as fire, explosion, spill, collision, flooding, or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	❑Yes ❑No ✓NA
❑ HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive, and sensory abilities of the user population.	❑Yes❑No ✓NA
Comments:	

ANNEX

COMMENTS MADE IN THE WORKING GROUP ON PREVENTION OF AIR POLLUTION FROM SHIPS DURING PPR 3 FOR ANNEXES IDENTIFIED IN PARAGRAPH 12 OF THIS JUSTIFICATION

Annex 2 of document PPR 3/18 (IACS MPC 108)
The UI was an attempt to bring up that bypass arrangements as these should be considered, as this is out of scope of the applicant, and that a bypass arrangement could interfere with tier III compliance.

Annex 8 of document PPR 3/18 (IACS MPC 114)
One delegation considered that the UI attempts to control ammonia slip from SCR systems by setting a limit to the temperature at which the urea injection can start (300 degrees C) as there are other means to control ammonia slip (ammonia slip catalysts). It was argued that this limit would severely reduce the tier III stringency as temperatures of 300 degrees C are sometimes not seen until 50% load, which would prohibit the use of SCR in port areas, which is why the North American ECAs are in place. Certainly the concern for slip exists and is currently in the guidelines, and maybe there is a need to put on a limit for the ammonia emissions from slip, but the interpretation given in the UI seeks to address 1) reductant slip and 2) the temperature at which you can start to inject reductant. This UI does not do a good job of distinguishing between the two concerns and moving forward with this UI is not the right way to address it and would prefer a tail pipe or stack concentration limit.

Several delegations supported the need to clarify the issue of ammonia slip and the group agreed to take the matter forward. Other delegations responded that the interpretation in MPC 114 is plausible and technically justified for engine / SCR-systems used in marine applications.

Annex 9 of document PPR 3/18 (IACS MPC 115)
While considered this UI acceptable in principle there is a proposal that the performance criteria and checking procedures for NO_X measurement instrumentation used for the spot checks or monitoring associated with verifying that SCR units continues to function as required should be clearly aligned with those applicable to the Direct Measurement and Monitoring procedure (NTC 6.4 & Appendix VIII Section 2) rather than those applicable to test bed requirements – Appendix III and, by inference, Appendix IV.

Annex 11 of document PPR 3/18 (IACS MPC 117)
Some delegations considered this UI is limiting the use of Scheme B and an onboard emission test of the combined engine and SCR unit should be mandatory for both Scheme A and B certification. It was argued that this UI is a pragmatic approach and there should be a clear a distinction between this UI and possible changes to the certification schemes. Several delegations agreed to take the matter forward.

Annex 14 of document PPR 3/18 (IACS MPC 120)
The type of pressure loss sensor needs further clarification, the UI does not specify which sensor to use as there are alternative high pressure sensors that can be used and are equivalent to meet the requirements of the guidelines.

Annex 16 of document PPR 3/18 (IACS MPC 122)
This IU provides an exemption to synthetic exhaust gas components under Scheme B and a clear basis is required. Some of the components have no impact on the performance of the SCR and there are also problems with getting exact concentrations. If there is no quantifiable effect on SCR performance, then an exemption for that component concentration should be allowed

***

ANNEX 9

BIENNIAL STATUS REPORT 2016-2017

Sub-Committee on Pollution Prevention and Response (PPR)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment-related Conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		Ongoing		
2.0.1.2	Revised guidance on ballast water sampling and analysis	2017	MEPC	PPR		In progress		
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2016	MSC	HTW / PPR / SDC / SSE	CCC	N/A		No request received from CCC
5.2.1.15	Consequential work related to the new Code for ships operating in polar waters	2017	MSC / MEPC	PPR / SSE	SDC	N/A		No request received from SDC
7.1.2.1	Review of the guidelines for approval of ballast water management systems (G8)	2017	MEPC	PPR		N/A		No instruction received from MEPC
7.1.2.3	Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels	2017	MSC / MEPC	SDC / SSE	PPR	In progress		
7.1.2.5	Production of a manual entitled "Ballast Water Management – how to do it"	2017	MEPC	PPR		In progress		

Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)	Status of output for Year 1	Status of output for Year 2	References
7.1.2.6	Revised section II of the Manual on Oil Pollution-Contingency planning	2017	MEPC	PPR		Completed		
7.1.2.7	Guide on Oil Spill Response in Ice and Snow Conditions	2016	MEPC	PPR		Completed		
7.1.2.8	Updated IMO Dispersant Guidelines	2017	MEPC	PPR		In progress		
7.2.2.1	Safety and pollution hazards of chemicals and preparation of consequential amendments to the IBC Code~~, taking into account recommendations of GESAMP-EHS~~	Continuous	MEPC	PPR		Ongoing		
Notes: The following has been deleted from the description of the output ", taking into account recommendations of GESAMP-EHS", as by omission the change made in MEPC 68/21/Add.1 Annex 23 was not correctly reflected when reporting to A29.								
7.2.2.3	Review of MARPOL Annex II requirements that have an impact on cargo residues and tank washings of high viscosity, solidifying and persistent floating products and associated definitions, and preparation of amendments (2018)	2017	MEPC	PPR		In progress		
7.2.2.4	Guidance for exceptions and exemptions under regulations A-3 and A-4 of the BWM Convention	2017	MEPC	PPR		N/A		No instruction received from MEPC

Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)	Status of output for Year 1	Status of output for Year 2	References
7.2.3.2	Updated OPRC Model training courses	~~2016~~ 2017	MEPC	PPR		Postponed		Target completion year suggested to be extended to 2017
7.3.1.2	Development of standards for shipboard gasification waste to energy systems and associated amendments to regulation 16 of MARPOL Annex VI	2017	MEPC	PPR		In progress		
Note: Output is suggested to be amended to read "Development of Standards for shipboard gasification of waste systems and associated amendments to regulation 16 of MARPOL Annex VI"								
7.3.1.7	Amendments to bunker delivery note to permit the supply of fuel oil not in compliance with regulation 14 of MARPOL Annex VI	2016	MEPC	PPR		Completed		
7.3.1.8	Guidelines for onboard sampling and verification of the sulphur content of the fuel oil used on board ships	2016	MEPC	PPR		Completed		
7.3.1.9	Guidelines for the discharge of exhaust gas recirculation bleed-off water	~~2016~~ 2017	MEPC	PPR		Postponed		Target completion year suggested to be extended to 2017
7.3.2.2	Impact on the Arctic of emissions of Black Carbon from international shipping	2017	MEPC	PPR		In progress		

Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)	Status of output for Year 1	Status of output for Year 2	References
13.0.3.1	Improved and new technologies approved for ballast water management systems and reduction of atmospheric pollution	Annual	MEPC	PPR		Completed		
14.0.1.1	Analysis and consideration of recommendations to reduce administrative burdens in IMO instruments including those identified by the SG-RAR	2017	Council	III / HTW / PPR / CCC / SDC / SSE / NCSR	MSC / MEPC / FAL / LEG	N/A		No instruction received from MEPC

***

ANNEX 10

PROPOSED PROVISIONAL AGENDA FOR PPR 4

Opening of the session

1 Adoption of the agenda

2 Decisions of other IMO bodies

3 Safety and pollution hazards of chemicals and preparation of consequential amendments to the IBC Code

4 Review of MARPOL Annex II requirements that have an impact on cargo residues and tank washings of high viscosity and persistent floating products

5 Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels

6 Revised guidance on ballast water sampling and analysis

7 Production of a manual entitled "Ballast Water Management – How to do it"

8 Consideration of the impact on the Arctic of emissions of Black Carbon from international shipping

9 Development of standards for shipboard gasification waste to energy systems and associated amendments to regulation 16 of MARPOL Annex VI

10 Guidelines for the discharge of exhaust gas recirculation bleed-off water

11 Improved and new technologies approved for ballast water management systems and reduction of atmospheric pollution

12 Updated IMO Dispersant Guidelines (Part IV)

13 Updated OPRC Model training courses

14 Unified interpretation to provisions of IMO environment-related Conventions

15 Biennial agenda and provisional agenda for PPR 5

16 Election of Chairman and Vice-Chairman for 2018

17 Any other business

18 Report to the Marine Environment Protection Committee