NEWS BRIEF: PPR 8

The IMO Sub-Committee on Pollution Prevention and Response (PPR) held its 8th session from March 22 to 26, 2021. This Brief provides an overview of the more significant issues progressed at this session.

KEY DEVELOPMENTS

- Draft Guidelines for HFO in Arctic Waters
- Developing Standards for Ballast Water Compliance Monitoring Devices
- Revision of Biofouling Guidelines
- MARPOL IV – New Regulations on Sewage Treatment Plants

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- ABS Global Sustainability Services (link)
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HEAVY FUEL OIL IN ARCTIC WATERS

Measures to Reduce Risks of HFO in Arctic Waters

The Sub-Committee considered the report of a Correspondence Group which was tasked to develop guidelines which will be linked with the draft amendments to MARPOL Annex I which prohibit the use and carriage for use of HFO in Arctic waters. The Guidelines will be taken into account by Administrations of Arctic coastal states when considering issuance of waivers from the ban on use/carriage for use of HFO in Arctic waters, as permitted under the new MARPOL Annex I / Regulation 43A The Guidelines contain a set of practical recommendations for operators planning voyages in the Arctic using HFO, and for Administrations of the Arctic coastal States regarding what mitigation measures should be taken to minimize the risk of an HFO spill.

The draft Guidelines also provide recommendations to ship operators as well as Maritime Administrations on measures to reduce navigational risks for avoiding oil spills and to improve crew preparedness during navigation and bunkering operations for avoiding and responding to spills.

Because waivers granted under Regulation 43A.4 of MARPOL Annex I will no longer be possible after 1 July 2029, Member States considered whether there should be an expiration date of 1 July 2029 for the guidelines being developed. However, it was ultimately decided that the guidelines will not have an expiration date, since they may still be utilized after 1 July 2029 by Member States with Arctic coastlines to address ships which may not be subject to the HFO ban in MARPOL Annex I (ie. non-Convention ships, ships solely for domestic service, etc.).

> **Next Steps:** The Guidelines will be reviewed by the NCSR (Navigation, Communications and Search and Rescue) Sub-Committee for commentary on navigational guidance, and by the HTW (Human Element, Training and Watchkeeping) Sub-Committee for commentary on crew training that may be needed. These sub-committees will be asked to report back to the PPR 9 meeting (Spring 2022) where a drafting group will finalize the Guidelines.

REDUCTION OF IMPACT ON THE ARCTIC OF BLACK CARBON EMISSIONS FROM INTERNATIONAL SHIPPING

Development of a Standardized Sampling, Conditioning and Measurement Protocol

The Sub-Committee considered the report of a Correspondence Group which was tasked to progress the development of a standardized sampling, conditioning and

measurement protocol for Black Carbon (BC) emissions from Marine Engines. Many participants agreed on the importance of developing a standardized BC measurement system, for determining compliance with a control policy and also assessing the effectiveness of that control policy. Of the three previously identified BC measurement methods (Filter Smoke Number (FSN); Photo Acoustic Spectroscopy (PAS); and Laser Induced Incandescence (LII)), several participants supported FSN as the most consistent BC measurement method, although it may not be suitable for continuous monitoring equipment. Seven States and NGO Observers also shared information on their individual research projects regarding BC emissions, which are ongoing and could support development of a standardized BC measurement protocol in the future. The conditioning aspect of the protocol aims to reduce differences arising in BC instrument results due to different trapping efficiencies in the amount of organics in the particle phase. There was further discussion on the possibility on onboard BC monitoring equipment, but no conclusion was reached on this subject.

Next Steps: Member States have been invited to submit further studies on production and measurement of Black Carbon emissions to broaden the understanding of additional variables which may influence Black Carbon emission production. Submissions will be considered at PPR 9 (Spring 2022).

Research on Fuel Oil Quality and Black Carbon Emissions

The Sub-Committee also discussed a submission from two Member states regarding the results of an inspection campaign for assessing the impact of fuel oil quality on BC emissions. Among the variables investigated, the findings indicated that aromatic content and hydrogen-to-carbon (H/C) ratio of the fuel were the most significant factors in predicting BC emissions.

There was disagreement as to whether this study was sufficiently representative of equipment commonly used in international shipping. While the study submitted to this Sub-Committee session utilized a single cylinder 4-stroke medium-speed research engine during testing of fuel variables, some Member States emphasized that 2-stroke engines are more widely used in international shipping. Additionally, some Member States noted that more research was needed to better understand BC emissions from large, low-speed marine diesel engines at various engine load conditions to ensure that any BC control policy would be effective.

In general, numerous gaps in knowledge on this subject were identified by Member States, including what impact on BC emission levels is made by fuel composition (aromatics, paraffins, H/C ratio, metal content), engine type/load and engine tuning. It is also unclear what impact the installation of an Exhaust Gas Cleaning System (EGCS) would have on BC emissions, as EGCS use has grown in recent years.

Next Steps: Member States have been invited to submit other studies of the impact of fuel qualities and engine variables on the production of Black Carbon emissions. Submissions will be considered at PPR 9 (Spring 2022)

Measures to Reduce Black Carbon Emissions from Shipping

Considering the above sections, and the continued lack of agreement among Member States on the most appropriate regulatory steps to measure and reduce Black Carbon emissions from international shipping, it was proposed by the Chair of the Sub-Committee to develop guidelines on recommendatory goal-based control measures to reduce the impact on the Arctic of Black Carbon emissions from international shipping. This would be developed as a starting point, in order to make positive progress on this subject and better inform future regulatory developments on this subject. Subsequently, development of mandatory measures would be progressed separately and informed by further study and experiences in application of the recommendatory goal-based control measures.

Next Steps: MEPC 76 (June 2021) will discuss this approach to confirm the intent to first develop recommendatory guidelines and later develop mandatory measures for the reduction of Black Carbon emissions from international shipping. The technical subject matter will be further discussed at PPR 9 (Spring 2022) for

development of recommendatory goal-based control measures, based on what has been drafted so far by the Correspondence Group on this subject. The target completion year for this work will be extended to 2023.

BALLAST WATER MANAGEMENT

Verification of Ballast Water Compliance Monitoring Devices

As an important issue identified during the Experience-Building Phase of the implementation of the BWM Convention, the Sub-Committee opened discussion regarding standards for verifying the effectiveness and accuracy of ballast water compliance monitoring devices (CMDs). CMDs may be used during BWMS commissioning testing, compliance testing by Port State Control authorities, data-gathering during the Experience-Building Phase, or self-monitoring by shipowners. These devices are typically used for indicative analysis, which is relatively quick but less precise than detailed analysis. Despite this varied use of CMDs, and the various water conditions in which they may be used, there is no widely accepted protocol for validating such devices.

Building on discussions which began at MEPC 74 and PPR 6, a group of Member States and Industry observers has submitted a proposed protocol for the verification of Ballast Water CMDs (in the absence of formal approval requirements for such devices under the BWM Convention) for consideration by the Sub-Committee. The proposed protocol includes verification parameters of accuracy, precision and detection limits of CMDs, while also varying the salinity and the size of microbes of the laboratory-prepared challenge water.

There was disagreement on an earlier proposition that verification testing of CMDs should include onboard testing. Some Member States argued that laboratory testing was preferable because microorganism concentrations in the challenge water could be controlled and varied in a laboratory environment, while others argued that laboratory testing of such a device could not simulate the challenging and varying conditions seen in ballast water treatment onboard ships. The current draft of the protocol for verifying Ballast Water CMDs suggests using both laboratory and field tests.

There was also some disagreement on whether the IMO should pursue development of a verification standard, due to the fact that the ISO (International Organization for Standardization) was also pursuing development of a similar standard. However, most Member States agreed that because use CMDs are central to enforcement efforts of the BWM Convention, the Sub-Committee should continue to pursue development of this standard.

Next Steps: A re-established Correspondence Group will progress the development of a standard for verification of ballast water compliance monitoring devices and submit a report to PPR 9 (Spring 2022).

EVALUATION OF SAFETY AND POLLUTION HAZARDS OF CHEMICALS

Provisional Categorization of Liquid Substances in Accordance with MARPOL Annex II and the IBC Code (MEPC.2 Circular) – Evaluation of Products and Cleaning Additives

The Sub-Committee was presented with the report of the 26th session of the Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals (ESPH), which is tasked to regularly review safety and pollution prevention requirements for various chemical cargoes and chemicals used onboard ships. The Working Group is responsible for maintaining the MEPC.2 Circular, *Provisional Categorization of Liquid Substances in Accordance with MARPOL Annex II and the IBC Code*, to provide carriage guidance for substances which have not yet been fully categorized and reflected in the IBC Code.

In the course of the Working Group's activity:

1) 8 pure products and 3 trade-named products were added or revised in the MEPC.2 Circular;
2) 8 cargo tank cleaning additives were added in the MEPC.2 Circular.

Next Steps: The above assessment of products and cleaning additives will be reflected in the current MEPC.2/Circ.26.

Carriage of Waste Vegetable Oils Extracted from Effluent Water

A Member State submitted information regarding a product identified as "Palm oil mill effluent (POME) technical oil", which lacks any assigned carriage requirements but is regularly shipped under existing entries in the IBC Code which may not appropriately address the risks of this product. This product is a residual palm oil that is extracted from the effluent of the process used in the milling of palm oil, and it is increasingly being used as a feedstock for biofuel production. Because no shipowners or industry groups have submitted any proposed carriage requirements, the Sub-Committee agreed to a proposal to assign generic carriage requirements without supporting data. This will provide interim carriage requirements until interested industry members submit relevant information to justify other appropriate carriage requirements.

Next Steps: MEPC 76 will consider endorsing PPR 8's proposed inclusion of the carriage requirements for the product "Palm oil mill effluent (POME) technical oil" in the MEPC.2 Circular.

Assessment of Mixtures Against the New Discharge Criteria for Persistent Floating Products (MARPOL Annex II/Regulation 13.7.1.4)

The Sub-Committee discussed concerns which were raised by Member States regarding the recently adopted Regulation 13.7.1.4 of MARPOL Annex II which categorizes certain products as "persistent floaters" and requires that the residue/water generated during a required tank prewash must be discharged to a port reception facility. While the properties of pure substances may be well-known, it is less certain whether product mixtures would be categorized as "persistent floaters" and become subject to Regulation 13.7.1.4 of MARPOL Annex II.

Next Steps: The GESAMP/EHS Working Group will consider PPR 8's request to provide advice on how to best assess mixtures against the new discharge requirement in Regulation 13.7.1.4 of MARPOL Annex II.

REVIEW OF THE 2011 BIOFOULING GUIDELINES

Progress on Revision of the Biofouling Guidelines

The Sub-Committee considered the report of a Correspondence Group which was tasked to review the *2011 Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species (Resolution MEPC.207(62))*. In certain regions, the primary mode of transport for invasive species is biofouling, and therefore consideration is now being given to improve the consistency and increase the application of these Guidelines.

The majority of Correspondence Group participants were in favor of restructuring the Guidelines to follow the logical sequence of ship management (from start to finish of service life). Additionally, there was agreement that formal definitions should be provided for:

1) In-water ship grooming and in-water ship cleaning;
2) Definition of "Hull";
3) Improved definition of "niche areas"; and
4) Quantitative definitions of "microfouling" and "macrofouling".

Almost all participants were in agreement that quantitative definitions of microfouling and macrofouling could be made in terms of thickness and substances / species, and that simple and practical definitions could be relevant in providing consistent approaches to biofouling management. Additionally, almost all participants agreed that the

revised Guidelines should include acceptable hull inspection procedures for measurements of biofouling. It was pointed out that because the Guidelines are currently voluntary, it may not be suitable to advise on acceptance level criteria, but most participants were in favor of including such criteria for inspection procedures to measure, assess and describe the biofouling.

There was disagreement on an early proposition that macrofouling should only be cleaned in drydock, due to difficulty in capturing 100% of removed microorganisms. However, the opinion of numerous Member States was that macrofouling could indeed be successfully cleaned and captured during in-water cleaning. Two observing non-governmental organizations offered as an example their own published standard for in-water cleaning of a ship's hull with capture of the materials removed during the process, which was produced in order to consolidate the best practices of the in-water hull cleaning industry.

Next Steps: The re-established Correspondence Group on this subject will progress this work and recommend to the MEPC to extend the target completion date for this work to 2023. The Correspondence Group has been tasked to revise the Biofouling Guidelines (using a framework for the new guidance document which has already been drafted) and submit a report to PPR 9 (Spring 2022).

MARINE PLASTIC LITTER FROM SHIPS

Draft Amendments to MARPOL Annex V

The Sub-Committee considered the report of a Correspondence Group which was tasked to progress revisions to MARPOL Annex V with the objective of enhancing the reporting of the accidental loss or discharge of fishing gear. While this is something already addressed in Regulation 10.6 of MARPOL Annex V, it was previously agreed that the implementation of this needed to be emphasized and improved as part of the IMOs *Acton Plan to Address Marine Plastic Litter from Ships*. Additionally, a new Regulation 10.7 of MARPOL Annex V has been drafted to require States to notify the IMO of the loss or discharge of fishing gear, so that the information may be consolidated and studied.

There was some disagreement on details of the information to be reported to the IMO, such as whether there should be a size threshold for lost/discharged fishing gear to be reported, and whether a quantifying description of the lost/discharged fishing gear should be included in the reporting. There was agreement that such information should be reported through and accessible through a dedicated module in the IMO's GISIS database. A new Appendix III to MARPOL Annex V has also been drafted to identify the information that is to be submitted to the IMO on lost/discharged fishing gear, once this information is finalized and agreed.

Next Steps: Noting that two important reports from GESAMP (Group of Experts on the Scientific Aspects of Marine Environmental Protection) and FAO (Food and Agriculture Organization) concerning marine plastic litter are due to be submitted to MEPC 76 (June 2021), discussion on this subject will continue at PPR 9 (Spring 2022). A working group will be established at PPR 9 to consider the reports from GESAMP and FAO and progress this work on amendments to MARPOL Annex V, including draft amendments to the *2017 Guidelines for the Implementation of MARPOL Annex V* (MEPC.295(71)) to support the implementation of the proposed MARPOL Annex V amendments. The target completion date for these amendments will be extended from 2021 to 2023, pending approval by the MEPC.

LIFETIME PERFORMANCE OF SEWAGE TREATMENT PLANTS

Draft Amendments to MARPOL Annex IV

The Sub-Committee considered the report of a Correspondence Group which was tasked to progress revisions to MARPOL Annex IV with the objective of enhancing and monitoring the performance of sewage treatment plants (STPs). Amendments to MARPOL Annex IV which have been drafted by the Correspondence include both STP

commissioning requirements as well as periodic performance evaluations via sampling and testing. New regulations would also require ships equipped with STPs to maintain onboard a Sewage Management Plan and a sewage record-keeping book for recording all discharges, incinerations and sampling related to the STP. Sampling points for the STP effluent would also be required to be fitted to facilitate performance monitoring. A new Appendix II to MARPOL Annex IV would provide testing standards for STP effluent, and a new Appendix III would provide a format of the Sewage Record Book.

Regarding the scope of application of these draft amendments, several participants stated the view that any measures which are developed should not require replacement of existing STPs and should not increase the administrative burden of ships' crews. Several participants also stated the view that the number of persons onboard a ship is directly related to sewage production and scale of potential untreated discharge, and therefore this should be taken into account with any changes to MARPOL Annex IV.

Additionally, several Member States expressed concerns that the development of new regulations pertaining to STPs may unintentionally encourage ship designers to forego STPs whenever possible, in favor of using comminuting and disinfecting systems (CDSs) which have fewer associated regulations. It was noted that considering requirements for CDSs was currently outside of the scope of the work assigned to the Sub-Committee by the MEPC, but that Member States could submit requests to expand this scope.

Several Member States and industry Observers also expressed their concern over the significant business downturn among cruise ships due to the COVID-19 pandemic, and urged the Sub-Committee to consider the time needed for recovery of the cruise industry when determining a timeline for new regulatory requirements in MARPOL Annex IV.

Next Steps: A re-established Correspondence Group is tasked to progress this work and the target completion date for this work will be extended to 2023. The Correspondence Group will also take steps towards finalization of the MARPOL Annex IV amendments on STPs and consider whether the scope of work should be expanded to include standards for CDSs. The report of the Correspondence Group will be submitted to PPR 9 (Spring 2022).

Development of Consequential Guidance related to MARPOL Annex IV Draft Amendments

In support of the draft amendments to MARPOL Annex IV discussed above, the Sub-Committee has recognized that certain consequential guidance will be required in order to facilitate implementation of the proposed new regulations on sewage treatment plant (STP) performance monitoring. The Correspondence Group on this subject identified several areas where consequential guidance would be needed. These included:

1) Guidance for the development of Sewage Management Plan;
2) Guidance for the Commissioning Testing for Sewage Treatment Plants;
3) Guidance for the Performance Testing for Sewage Treatment Plants;
4) Guidance for the Indicative Monitoring Performance;
5) Guidance for Installation Requirements (for related equipment); and
6) Reviewing the current guidelines with sections addressing maintenance, familiarization and survey and certificates.

Next Steps: A re-established Correspondence Group will progress the development of the above noted guidance along with the MARPOL Annex IV amendments. This guidance may be progressed as amendments to the *2012 Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants* (MEPC.227(64)). The report of the Correspondence Group will be submitted to PPR 9 (Spring 2022). The target completion year will be extended to 2023.