

The IMO Marine Environment Protection Committee (MEPC) held its 73rd session from October 22 to 26, 2018. This Brief provides an overview of the more significant issues progressed at this session. A full report of the meeting will be included in the next ABS International Regulatory News Update.

Air Pollution and Energy Efficiency

Prohibition of Carriage of non-compliant Fuel Oil

The Committee adopted resolution MEPC.305(73) which amends regulation 14 of MARPOL Annex VI and the form of the Supplement to the IAPP Certificate to prohibit the carriage of non-compliant fuel oil for combustion purposes for propulsion or operation on board a ship. The carriage prohibition does not apply to ships employing an alternative arrangement (e.g., exhaust gas cleaning system) approved under regulation 4.1 of MARPOL Annex VI which is annotated in the Supplement to International Air Pollution Prevention Certificate. This carriage ban enters into force on 1 March 2020; two months after the 1 January 2020 ban on using non-compliant fuel oil for propulsion or operation on board a ship as per resolution MEPC.280(70).

Guidance on Best Practice for Fuel Oil Suppliers

The Committee approved MEPC.1/Circ.875/Add.1 on the Guidance on Best Practice for Fuel Oil Suppliers for assuring the quality of fuel oil delivered to ships. The Best Practices address quality control during production of bunkers, in the supply chain and during transport, storage and transfer excluding low flashpoint fuels such as LNG, LPG or methyl/ethyl alcohols and pure biofuels. Sampling and testing should be carried out and documented at each point of product custody transfer throughout the supply chain and at the receiving ship's bunker inlet manifold as per resolution MEPC.182(59). To afford transparency and traceability in the supply chain, records of custody transfer of cargoes, certificates of quality, sample seal numbers and quality analysis reports should be documented.

2020 Global Sulphur Limit

A proposal recommending the implementation of an experience-building phase, EBP, to monitor the implementation of the 0.50% m/m global fuel oil sulphur limit was considered by the Committee. The EBP would establish a formalized data collection and analysis measure to identify aspects of implementation that are working well and to shed light on issues that are less effective and require further attention. The proposed EBP includes a systematic and evidence-based process for reviewing and possibly improving the regulatory framework under MARPOL Annex VI related to fuel oil quality and non-availability situations under Regulation 18. The Committee was evenly split on the proposal and invited further concrete proposals on how to enhance the implementation of regulation 18 of MARPOL Annex VI, in particular on fuel oil quality and reporting of non-availability of compliant fuel oils, including the enhancement of the GISIS module for data collection and analysis.

Guidance on Development of Ship Implementation Plan for 0.50% Global Sulphur Limit

The Committee approved MEPC.1/Circ.878 containing guidance for developing a non-mandatory plan for ships to consistently implement the 0.50% sulphur limit by the 1 January 2020 compliance date. Items recommended to be addressed by the plan include risk assessment and mitigation plan on the impact of new fuels; modifications of the fuel oil system and tank cleaning (as needed); fuel oil capacity and segregation capability; procurement of compliant fuel; fuel oil changeover and documentation and reporting.

The Plan should also address issues relating to the use of compliant fuel oil which include the capability/suitability of the ship's equipment (pumps/boilers) to handle different fuel types and associated characteristics, heating requirements, compatibility of different types which are commingled in bunkering or fuel oil changeover and crew preparedness/training for changeover procedures during fuel switching from residual fuel oil to 0.50% compliant fuel oils.

Proposed Amendments to Phase 3 EEDI Reduction Factors

The Committee agreed, in principle, to draft revisions to MARPOL Annex VI, Chapter 4, subject to submission of data which substantiates the revisions, concerning the calculation of the Required Energy Efficiency Design Index (Required EEDI). The revisions are twofold:

1. The current application of Phase 3 reduction factors for the following ship types which are contracted for construction on/after 1 January 2025 are proposed to be accelerated to 1 January 2022.
 - Container Ships
 - General Cargo ships
 - Gas Carriers
 - Refrigerated Cargo Carriers
 - Combination Carriers
 - LNG Carriers
 - Cruise Passenger Ship (with non-conventional propulsion)
2. The Phase 3 reduction factor, which is applied to the Required EEDI, is proposed to be increased from the current 30% threshold to 40% for container ships.

Despite concerns raised about the ability of the following ship types to comply with the current Phase 3 reduction factors, no revision of the Phase 3 reduction factors was agreed at this point in time:

- Bulk Carriers
- Tanker (Oil, Chemical and NLS)

The **proposed** amendments will be further considered at MEPC 74 in May 2019.

MARPOL Fuel Oil Data Collection System – Interpretations

The Committee approved three unified interpretations as MEPC.1/Circ.795/Rev.3 which pertain to implement collection and reporting ship specific data related to fuel consumption which begins on 1 January 2019 under the provisions of MARPOL Annex VI, Chapter 4, as per resolution MEPC.278(70):

- Data relating to Boil-off Gas (BOG) consumed on board the ship for propulsion or operation is to be collected and reported as fuel consumed under the Data Collection System.
- Ships which have their keel laid prior to 1 January 2019 (the start of the initial period that fuel data is to be collected) but are delivered on or after 1 January 2019 should be provided with a Ship Energy Efficiency Management Plan (SEEMP) that includes a description of the methodology that will be used to collect the fuel consumption data required by regulation MARPOL VI, regulation 22A.
- Fuel consumption source data, which is used to provide the aggregate data to be reported to the IMO, is not required to be kept onboard the vessel on the condition that access to the source data can be provided by the Company.

EEDI Survey and Certification Guidelines

The Committee adopted resolution MEPC.309(73) which contains amendments to the 2014 Guidelines on Survey and Certification of the Energy Efficiency Design Index (EEDI) to take into account the 2017 update of the International Towing Tank Conference Recommended Procedure 7.5-04-01-01.1 and the paragraphs renumbering of the 2018 EEDI calculation Guidelines.

The major updates of the recommended procedure contain improvements of the methods for corrections of wind, waves, current, shallow water, seawater temperature and water density.

Method of Calculation of the Attained EEDI

The Committee adopted resolution MEPC.308(73) containing amendments to the 2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships. These new 2018 Guidelines amend the 2014 version by providing paragraphs renumbering to make them more user-friendly and including revised correction factor (f_j) for power for ice classed ships and an alternative calculation method for ice classed ship designed and constructed based on an open water ship with same shape and size of hull with EEDI Certification.

EEDI Regulations for Ice-strengthened Ships

The Committee approved draft amendments to MARPOL VI/19 concerning the exemption provisions on the application of EEDI (Attained and Required) requirements. The amendment replaces exemption for “*cargo ships having ice-breaking capability*” with “*Category A ships as defined in the Polar Code*”. Category A ships are assigned to ships certified with the highest ice-strengthened structural capacity under the Polar Code.

Miscellaneous

Electronic Record Books

The Committee approved, in principle, amendments concerning the acceptability of using electronic record books in lieu of the following paper record books:

- MARPOL Annex I: Oil Record Book Part I (Machinery space operations) and Part II (Cargo/ballast operations)
- MARPOL Annex II: NLS Cargo Record Book
- MARPOL Annex V: Garbage Record Book
- MARPOL Annex VI: Ozone-depleting substances record book, the logbook on the on/off status of marine diesel engines for NOx Code Tier Standards and the logbook for fuel-oil-change-over operation when entering an ECA
- NOX Technical Code: Record Book of Engine Parameters

While MEPC 74 is scheduled to adopt the amendments in May 2019, in which case they would enter into force in January 2021, clarification on the following two points is needed before adoption:

- The need for the hardware to be type approved; and
- The acceptance of an ODS recording system which has not been approved.

Supporting these amendments is a draft MEPC resolution on Guidelines for the use of electronic record books under MARPOL, which was approved in principle and subject to adoption at MEPC 74.

MARPOL Annex II Amendments – Approved

The Committee approved amendments to MARPOL Annex II which regulate cargo residues and tank washings of persistent floating products with a high viscosity and/or a high melting point - *persistent floaters*. An approved MEPC.2/Circular contains a list of specific vegoils and waxes which are controlled by these amendments. When operating in the areas defined as North West European waters, Baltic Sea area, Western European waters and the Norwegian Sea the revised prewash procedure for *persistent floaters* which is to be included in a revised and approved Procedures and Arrangements Manual shall be applied.

Residue/water mixture generated during the prewash is to be discharged to a reception facility at the port of unloading. Any water subsequently introduced into the tank may be discharged in accordance with the current discharge standards in MARPOL II, regulation 13.2:

- the ship is proceeding en route at a speed of at least 7 knots
- the discharge is made below the waterline through, and in accordance with the design of, the underwater discharge outlet
- the discharge is made at a distance of not less than 12 nautical miles from the nearest land in a depth of water of not less than 25 m.

The amendments are subject to adoption by MEPC 74 in May 2019.

2018 Guidelines on Exhaust Gas Recirculation Bleed-off Water

The Committee adopted resolution MEPC.307(73) containing the 2018 Guidelines on Exhaust Gas Recirculation (EGR) Bleed-off Water. The condensate of exhaust gas is generated and discharged as bleed-off water, which is handled differently depending on the fuel oil sulphur content:

- Bleed-off water, from an EGR using fuel oil not complying with the relevant sulphur limit value in MARPOL VI, should be retained onboard in a holding tank. However, it may be discharged to the sea provided the ship is *en-route* outside polar waters, ports, harbors or estuaries and provided the bleed-off water meets the washwater discharge criteria under the 2015 Guidelines for Exhaust Gas Cleaning Systems (MEPC.259(68)) and that samples are provided to the Administration.
- Bleed-off water, from an EGR using fuel oil complying with the relevant sulphur limit value in MARPOL VI, should either (a) meet the same requirements for EGR using non-compliant fuel oil (b) or may be discharged to the sea provided its oil content is monitored to not exceed 15 ppm by an oil content meter that is type approved under resolution MEPC.107(49).

The Guidelines should apply to marine diesel engines, fitted with an EGR device having a bleed-off water discharge arrangement, that are initially certified under the NOx Code on or after 1 June 2019.

NOx Technical Code Revisions - SCR Systems

The Committee approved draft amendments to sub-paragraph 2.2.5.1 of the NOx Technical Code 2008 concerning certification requirements for Selective Catalytic Reduction (SCR) systems, with a view to adoption at MEPC 74 in May 2019. The amendments continue to specify the established principles that:

- a NOx-reducing device is to be included within the engine's certification;
- the device must be recognized as a component of the engine;
- the device must be recorded in the engine's Technical File.

However, the amendments clarify the equivalency and application of Scheme B of the 2017 SCR Guidelines. In all cases, the applicable test procedure is to be performed and the combined engine/NOx-reducing device shall be approved and pre-certified by the Administration taking into account the amended 2017 SCR Guidelines noted below.

For engines not pre-certified on a test-bed in combination with the SCR, pre-certification in accordance with Scheme B of these Guidelines (which allows for analytic modeling to estimate the effect that the proposed SCR design and arrangement will have on the NOx emissions from the engine) may be applied. Under Scheme B, the pre-certification survey procedure may be accepted for an Individual Engine or for an Engine Group represented by the Parent Engine only, but it is not to be accepted for an Engine Family certification. The single applicant principle, that the applicant for certification should be the entity responsible for the complete engine system fitted with SCR, remains applicable.

Associated amendments to the 2017 Guidelines addressing additional aspects to the NOx Technical Code 2008 related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) Systems (resolution MEPC.291(71)) were approved in principle and are also subject to adoption at MEPC 74.

Guidelines for applying MARPOL Annex I to FPSOs

The Committee adopted resolution MEPC.311(73) containing the 2018 Guidelines for the application of MARPOL Annex I requirements to floating production, storage and offloading facilities (FPSOs) and floating storage units (FSUs). This version of the Guidelines updates the Guidelines in resolution MEPC.139(53), as amended, in order to clarify the application of MARPOL Annex I amendments that have entered into force since the earlier version of the Guidelines which include requirements for stability instruments, access to stability and residual strength calculations and the transfer of oil cargo between oil tankers at sea (*STS operations*).

Marine plastic litter from ships

Recognizing the negative impacts that marine litter has on marine life, biodiversity, human health, tourism, fisheries and shipping, and that marine plastic litter presents the biggest challenge due to its low degradability and likelihood to enter the human food chain, the Committee adopted a resolution MEPC.310(73) containing an Action Plan towards preventing marine plastic litter entering the oceans through ship-based activities. Plastic litter includes both macroplastics (e.g. plastic bags, water bottles and fishing gear) and microplastics (small plastic particles generally 5mm or less in size).

The actions in the Plan are projected to be completed by 2025 and include:

- mandate application of the IMO Ship Identification Number Scheme for fishing vessels
- mandate marking of all fishing gear with the associated IMO Ship Identification Number
- revise MARPOL Annex V to require ships greater than 100 gt (currently 400 gt) to maintain on board a Garbage Record Book
- develop a mandatory system of reporting loss of containers at sea
- improve the effectiveness of port reception and treatment facilities for marine plastic litter
- require that Garbage Management Plans be approved under MARPOL Annex V

A correspondence group has been tasked to determine the most appropriate mechanism (literature review and/or a quantitative study) for a proposed IMO Study on marine plastic litter from ships and identify issues to be addressed by the Study and all international regulatory instruments and best practices associated with the issue of marine plastic litter from ships.

Ballast Water Management

BWM System Commissioning Test

The Committee approved BWM.2/Circ.70 containing guidance for validating the compliance of individual ballast water management systems approved under regulation D-2 of the BWM Convention in conjunction with their commissioning on board the ship. The guidance recommends that International Ballast Water Management Certificate should not be issued until commissioning testing has been successfully completed. The guidance recommends that samples, which may be local waters that are compatible with the systems design, should be taken in accordance with IMO's G2 Guidelines for Sampling (resolution MEPC.173(58)). These samples should be representative of the whole discharge of ballast water from any single tank or any combination of tanks being discharged. Samples are to be analyzed using, as a minimum, the indicative analysis method which consists of a relatively quick indirect or direct measurement of parameters (e.g. dissolved oxygen levels and residual chlorine levels) that are comparable to that used to assess compliance with the D-2 standard (refer to BWM.2/Circ.42/Rev.1).

The Committee invited Delegates to submit proposals to MEPC 74 (May 2019) to mandate that commissioning tests are carried out for newly installed ballast water management systems installed on new and existing ships.

Application of IMO's G8 Type Approval Guidelines

The Code for Approval of BWM Systems (resolution MEPC.300(72)) was clarified by the Committee's approval of BWM.2/Circ.69 which addresses the application of the System Design Limitations (SDL) approach to the BWM System type approval process and the provision of a continuous self-monitoring function that may be associated with these SDLs. This clarification impacts both the operation of BWM Systems (e.g., minimum and maximum flow rates, time between ballast uptake and discharge) and the design limits (e.g., water quality expressed by oxidant demand and ultraviolet transmittance).

Self-monitoring of the BWM System functions should provide data pertaining to the SDL which may be measured directly, when feasible, or indirectly. The new Circular identifies potential SDL for the various types of technologies used in BWM Systems and self-monitoring parameters associated with SDL.

BW Management Plans

The Committee adopted MEPC.306(73) which revises the Guidelines for Development of BWM Plans (G4) as per resolution MEPC.127(53). It recommends that new BWM Plans may include contingency measures to be taken in the event it is determined that the ballast water to be discharged is not compliant with the D-2 biological standard. Such action should be based on BWM.2/Circ.62 and provide for the management of ballast water so that it does not pose any unacceptable risks to the environment, human health, property and resources.

BW Management System Approvals

Basic Approval was granted by the Committee for *BIOBALLAST 1000 BWMS* submitted by Germany (MEPC 73/4). *BIOBALLAST 1000* treats ballast water by ozone during the uptake and, when needed, neutralization with sodium thiosulfate at discharge. Compressed air is used to produce pure oxygen that is stored in a process oxygen tank and used by the ozone generator. No filtration is used other than a debris-filter at the ballast water sea chest.

Final Approval was granted by the Committee for *Envirocleanse inTank™ BWTS (Electrochlorination Variation)* submitted by Norway (MEPC 73/4/1) generates hypochlorous acid by electrochemical activation in a fully closed system which is dosed as an Active Substance into ballast water after uptake. Generated hydrogen gas passes through a degasser before being vented to atmosphere in a safe location away from potential sources of ignition. Monitoring of residual oxidant levels of ballast water occurs during carriage in tanks (typically 12 to 24 hours after uptake is complete) to prevent organism regrowth. Prior to discharge, appropriate amounts of sodium thiosulfate are introduced to neutralize any remaining oxidant. Treatment and neutralization time depends on tank circulation and mixing that is designed for each tank configuration.

GHG Reduction Efforts

The Committee approved a program of follow-up actions to implement the *Initial IMO Strategy on reduction of GHG emissions from ships* (resolution MEPC.304(72)) and considered how to further progress reduction of GHG emissions from ships taking into account the candidate short-, mid- and long-term further measures, with possible timelines, identified in the *Initial IMO Strategy* (see [MEPC 72 Brief](#)).

Follow-up actions to the *Initial IMO Strategy*

The program of follow-up actions, which includes a timeline to 2023, contains the following streams of activity, but recognizes that further activity deemed necessary to implement the *Initial IMO Strategy* that may be developed:

- *Group A* candidate short-term measures that can be considered and addressed under existing IMO regulations
- *Group B* candidate short-term measures that are not in progress and are subject to data analysis
- *Group C* candidate short-term measures that are not in progress and not subject to data analysis

- Candidate mid-/long-term measures and action to address the identified barriers;
- Impacts on States (both negative and positive) taking into account geographic remoteness/connectivity to main markets, cargo value/type, transport dependency/ costs, food security, disaster response, cost-effectiveness and socio-economic progress and development
- Fourth IMO GHG Study (see below)
- Capacity-building, technical cooperation, research and development, particularly for least developed countries and small island developing states
- Follow-up actions towards the development of the revised Strategy.

Concrete proposals on candidate short-term measures will be considered at MEPC 74 (May 2019) and on candidate mid-/long-term measures at MEPC 74 and MEPC 75 (March 2020).

Fourth IMO GHG Study

The Committee initiated the development of the draft terms of reference for a *Fourth IMO GHG Study* on the emissions of six specific Green House Gases from ships of 100 GT and above engaged in international voyages. A Steering Committee to be established should be geographically balanced and equitably represent developing and developed countries. Technical and methodological aspects of the *Study* will be subject to review by an Expert Workshop, to be held in March 2019, prior to finalization. GHG emissions from 2013 to 2018, or as far as statistical data are available, will be estimated using:

- a top-down methodology such as fuel sales and shipping demand subject to data availability; and
- a bottom-up, ship activity, methodology which would be complemented with activity data derived from all relevant sources and follow the methodology and assumptions used in the Second and Third IMO GHG Studies.

Additionally, emissions are to be projected out to 2050 and beyond. The results of both methodologies will be compared, and any discrepancies analyzed and explained, as far as possible. The Study would include suggested approaches to analyze ship fuel oil consumption data collected under regulation 22A of MARPOL Annex VI which could be considered by MEPC 76 in the autumn of 2020 when the analysis of fuel oil data under IMO's GHG Strategy will begin.

Progressing further reduction of GHG emissions from ships

The Committee noted the initial discussions held on potential early measures that might be developed. Tentative measures include optimal ship routing, speed optimization (taking into account fuel consumption), mandatory goal setting and speed-fuel curves for energy efficiency, enhancing energy efficiency of port activities, incorporating GHG reduction measures in the ship's SEEMP, implementing goal-based energy efficiency measures and alternative low carbon fuels.