The IMO Marine Environment Protection Committee (MEPC) held its 70th session from October 24 to 28. 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.

MARPOL Amendments Adopted

MARPOL Annex VI (Fuel Oil Data Collection)

Amendments to Chapter 4 of MARPOL Annex VI were adopted, which establish a new requirement for all ships of 5000 GT and above on international voyages to collect data related to fuel consumption. Beginning on January 1, 2019, the following information is to be collected during the calendar year, from January 1 until December 31:

- fuel consumption data for each type of fuel used onboard the ship (HFO, MGO, LNG, etc.)
- distance travelled while the ship is underway; and
- hours while the ship is underway.

After the end of each calendar year, the collected data is required to be aggregated into annual values and reported by the shipowner to the ship's Flag Administration or Recognized Organization for subsequent transmission to a central database managed by the IMO. After the required data has been submitted to, and verified by, the Administration or the Recognized Organization, a Statement of Compliance is to be issued within five months after the end of the year the data was collected.

Additionally, the regulations require the Flag State (or Recognized Organization) to confirm prior to January 1, 2019, that the Ship Energy Efficiency Management Plan (SEEMP) has been updated to document the methodologies that will be used for collecting the required data and reporting that data to the Flag Administration. In this regard, revisions to the SEEMP Guidelines have been adopted, which provide direction for developing the methodologies to be followed for collecting and reporting the data, as well as further clarifying the above mentioned data that needs to be collected.

MARPOL Annex V (Garbage Record Book)

- *Cargo Residues Harmful to the Marine Environment (HME)*

  MARPOL Annex V currently prohibits the discharge of cargo residues, cleaning agents or additives contained in hold washing water of any substance classified as HME, but there is no mandatory criteria to classify cargoes as either HME or non-HME. Amendments adopted at MEPC 70 now mandate that solid bulk cargoes, other than grain, shall be classified in accordance with (1) the criteria specified in the 2012 Guidelines for the implementation of MARPOL Annex V, resolution MEPC.219(63) and (2) the declaration provided by the shipper as to whether or not they are harmful to the marine environment.

The Garbage Record Book (GRB) was amended to include the record-keeping for disposal of cargo residues, non-HME and cargo residues HME. The new format of record-keeping in the GRB for cargo hold washings, whether that be by incineration or discharge to the sea, to a reception facility or to another ship, becomes mandatory for all ships to which MARPOL Annex V applies as of March 1, 2018.

- Electronic Waste (E-Waste)
  Building on resolution MEPC.239(65), which introduced in May 2013 a new category of "E-waste" to the 2012 Guidelines for the implementation of MARPOL Annex V, the Committee adopted revisions of MARPOL Annex V that add "E-Waste" as a new category of garbage in the Garbage Record Book. E-Waste is generally comprised of any electronic equipment and computers, including its components, sub-assemblies and consumables, when disposed of as a waste. The recording of this waste using the new format of the GRB is required as of March 1, 2018.

MARPOL Annex I, IOPP Supplement Form B

Amendments were adopted that remove obsolete sections from the Supplement, Form B, to the International Oil Pollution Prevention Certificate (IOPPC). Items referring to *Dedicated Clean Ballast Tanks*, which were applied to oil tankers delivered before 1982, were deleted and other sections renumbered. The amendments enter into force on March 1, 2018, and apply to oil tankers. The revised Form B does not apply to ships other than oil tankers with cargo tanks under regulation 2.2 of MARPOL Annex I to which a Form B is also issued. As no new requirements were added to the Form B, the IOPPC and its Supplement remain valid until the first Renewal Survey performed on or after March 1, 2018.

Air Pollution and Energy Efficiency

New Emission Control Areas

The Committee agreed to establish both the North Sea area (including the English Channel) and the Baltic Sea area as new Emission Control Areas ECAs) for nitrogen oxides, and approved draft amendments to regulation 13 of MARPOL Annex VI, with a view toward adoption at MEPC 71. Under MARPOL Annex VI provisions, marine diesel engines will be required to comply with the Tier III NOx emission standard when installed on ships meeting the following criteria:

- constructed on or after January 1, 2021; and
- operating in either of these two new ECAs

except for ships having:

- a length less than 24m specifically designed/used for recreational purposes; or
- a combined propulsion power less than 750kW that cannot comply due to design or construction limitations.

Fuel Oil Matters

- *FO Availability Review*
  Under the provisions of MARPOL Annex VI, Regulation 14, the availability of fuel oil to meet the global 0.50% sulphur limit in 2020 or 2025 is to be determined by the Committee by 2018.

A Steering Committee, represented by Member States, reviewed the Study carried out for the IMO by CE Delft and funded by Australia, the United Kingdom and the United States. The demand for compliant fuel oil was determined based on bottom-up modeling (fuel consumption and emissions from individual ship movements) and the supply of compliant fuel oil include geographical fuel availability based on current and projected refinery capacity.

The Study concludes that the refining sector has the capability to provide fuel oil with a sulphur content of 0.50% m/m or less in 2020 to meet the demand of the shipping sector, while maintaining the supply for the use of fuels by the non-marine sector. Concerns were raised by some NGOs with respect to fuel oil quality due to the expected increase of new fuels and on transitioning, on a global scale, from 3.50% to 0.50%. Concerns were also expressed from NGOs representing the supply side and by several States regarding potential regional supply deficits. Notwithstanding these concerns, based on the views expressed by the majority of Delegations, the Committee agreed to retain the current text of MARPOL Annex VI, Regulation 14. Accordingly, the sulphur content fuel oil used by ships globally is not to exceed 0.50% m/m as of January 1, 2020.

- *Sampling/Verification of Fuel Oil*

  The Committee approved new Guidelines addressing onboard sampling for the verification of the sulphur content of the fuel oil used on board ships. To facilitate effective control and enforcement of liquid fuel oil being used on board ships, the Guidelines recommend sampling from a designated sampling point or points that is/are readily and safely accessible, downstream of the fuel oil service tank in use, and as close as safely feasible to the fuel oil combustion machinery (shielded from heated surfaces or electrical equipment), taking into account different fuel oil grades being used onboard. The Committee also agreed to a new work program to amend regulation 14 of MARPOL Annex VI so as to require all ships to be provided with designated sulphur sampling point(s) in order to ensure that a representative sample of fuel oil in-use can be drawn from ships' fuel oil systems in a safe manner.

Attained Energy Efficiency Design Index (EEDI)

The Committee adopted amendments to the 2014 guidelines on the method of calculation of the attained EEDI for new ships, resolution MEPC.263(68), incorporating the following changes:

- *EEDI Calculations for Dual Fuel Engines*

  The Committee agreed to a proposal by China to amend the calculation method for determining the Attained EEDI for ships with dual fuel engines where the gas fuel is not the primary fuel. The proposal uses a weighted carbon conversion factor and specific fuel consumption based partially on gas fuel and partially on the primary fuel. The current calculation method, as contained in the *2014 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships*, resolution MEPC.245(66), requires the carbon conversion factor and the specific fuel consumption for gas fuel to be used only when gas fuel is considered as primary fuel.

- *EEDI Calculations for Bulk Carriers*

  The Committee agreed to a proposal by Australia, Japan and Viet Nam to amend the calculation method for determining the Attained EEDI by including a correction factor for bulk carriers designed to carry low density cargoes, such as wood chip carriers.

Currently, the Attained EEDI for these types of ships, which is based on deadweight rather than cubic capacity, is negatively impacted due to their relatively small deadweight with large cubic capacity.

Ballast Water Management

BW Management Convention Implementation

In light of the lack of a clear decision on a single implementation scheme for complying with the D-2 biological standard following entry into force of the Convention for existing ships, two proposed schemes will be considered at MEPC 71 in May 2017:

1. Compliance with D-2 for ships constructed prior to September 8, 2017 at the first IOPP renewal survey after September 8, 2017.
2. Compliance with D-2 for ships constructed prior to September 8, 2019 at the first IOPP renewal survey completed after September 8, 2017, unless that survey is completed prior to September 8, 2019, in which case compliance is at the first IOPP renewal survey completed after September 8, 2019.

Under the provisions for amending the BW Management Convention, MEPC 71 will then need to *approve* and *circulate* for *adoption* at MEPC 72, in March 2018, the agreed revised implementation scheme.

Unfortunately, the lack of a decision on a single D-2 implementation scheme leaves industry in a predicament in that there is no agreed implementation scheme at this point in time to be applied upon entry into force of the Convention on September 8, 2017. Given the dependency of the implementation schemes on the IOPP Renewal Survey, and without a strong majority view expressed at this session of MEPC, ABS understands that implementation of scheme 1, above, will result in an earlier D-2 compliance date. Ship owners should therefore take into account both schemes when considering compliance planning.

Revised Type Approval Guidelines (G8)

The Committee approved a set of substantial revisions to the G8 Guidelines that were prepared by an Intersessional Working Group, which met the week before MEPC 70. The Committee also agreed that the G8 Guidelines are to be reviewed and revised into a mandatory Code at a subsequent session of the Committee.

This revision of the G8 Guidelines recommends that BWT systems *"**installed**** on board ships:

- on or after 28 October 2020 should be approved taking into account the revised Guidelines (G8); and
- prior to 28 October 2020 should be approved taking into account either resolution MEPC.174(58), or preferably the revised Guidelines (G8) approved at MEPC 70.

* "***installed***" means the contractual date of delivery of the BWT system to the ship or, in the absence of such a date, the actual date of delivery of the BWT system to the ship.

The revision also provides greater robustness and transparency to the Type Approval process, which should be applied when approving ballast water management systems as soon as possible, but not later than 28 October 2018, and includes the following substantive revisions:

- Testing Facilities – Testing is to be carried out by an independent facility accepted by the Administration.

  Facilities should implement a rigorous quality control/quality assurance program that addresses appropriate challenge water, sample collection, sample analysis and method detection limits.
- Salinity and Temperature – Testing is to be carried out across a full range of salinities (fresh, brackish and marine) and through a temperature range of 0^{o} C to 40^{o} C (2^{o} C to 40^{o} C for fresh waters). BWMS unable to demonstrate successful performance across these salinity and/or temperature ranges will be assigned Limiting Operating Conditions on the Type Approval Certificate.
- Consecutive Testing – Land-based testing is to consist of five consecutive *valid* test cycles that show D-2 compliance. Shipboard testing is to reflect actual ballast operations and consist of at least three consecutive *valid* tests, which show D-2 compliance spanning a period of not less than six months.
- System Design Limitations - An important development is the concept of documenting the critical parameters known as System Design Limitations (SDL). These parameters impact the operation of BWMS (e.g., minimum and maximum flow rates, time between ballast uptake and discharge) and design limits (e.g., water quality expressed by oxidant demand and ultraviolet transmittance). SDLs are to be identified by the manufacturer, validated during testing and indicated on the Type Approval Certificate.
- Bypass Arrangements – BWMS bypass or override arrangements, provided to protect the safety of the ship and personnel in the event of an emergency, should activate an alarm and be recorded by the control equipment.
- Self-monitoring - BWMS are to be provided with a system that monitors, records and stores sufficient data/parameters to verify correct operation for the past 24 months. Alerts are to indicate when the system is shutdown or when an operational parameter exceeds the approved specification.
- Scaling Effects - Mathematical modelling and/or calculations should demonstrate that any scaling of the BWMS will not affect the functioning and effectiveness on board the ship. Shipboard testing is intended to further validate the scaling and should, preferably, be carried out at the upper limit of the rated capacity of the BWMS.
- Report of Test Results – Reports for land-based and shipboard testing, submitted to the Administration, should include information regarding the test design, methods of analysis and the results of these analyses for each test cycle, including *invalid* test cycles, BWMS maintenance logs and any observed effects of the BWMS on the ballast system. Shipboard test reports should include information on the total and continuous operating time of the BWMS.
- Installation Survey and Commissioning Procedures - Prior to issuance of the International Ballast Water Management Certificate, installation of the BWMS is to be carried out in accordance with the technical installation specification, relevant Type Approval Certificate, and the manufacturer's equipment specification. The workmanship of the installed system, including completion of all agreed commissioning procedures is to be satisfactorily demonstrated.

Ballast Water Management Systems (BWMS) Approvals

Basic approval was granted for the ClearBal BWMS, submitted by Denmark (MEPC 70/4). This system employs a solution of two Active Substances, which are injected by a dosing pump and a control unit that adjusts the amount of the biocide injected into the ballast system suction pipeline based on the flow rate measurement recorded by a flow meter. Treatment requires a minimum 24-hour holding time in ballast tanks. The treated water is detoxified by a system that is comprised of a unit for dosing activated charcoal to the ballast pipe, a mixing unit and a separation unit to retrieve residual ClearBal substances and activated charcoal from the ballast water.

Final approval was granted for the ECS-HYCHEMTM System, submitted by Republic of Korea (MEPC 70/4/1). The system employs backwash filter unit mounted directly in the main ballast pipeline to eliminate the organisms and suspended matter larger than 75 µm. Auto-back-flushing occurs when the difference between inlet and outlet pressure of the filter exceeds 0.5 bar. The Active Substance, sodium dichloroisocyanurate, is dissolved with water to generate hypochlorite and sodium isocyanuric acid. Its concentration is maintained at not more than 9.5 mg/L as Cl2 during treatment. Sodium thiosulfate is the neutralizing agent so that the total residual oxidant concentration prior to discharge of treated water is not more than 0.2 mg/L as Cl2.

The Committee noted that four additional BWMS have been granted Type Approval in accordance with the G8 Guidelines for approval of ballast water management systems. This brings the current number of Type Approved BWMS to 69.

Reduction of GHG Emissions

The Committee recognized the Paris Agreement achieved at the 21st Session of the Conference of the Parties (COP 21) to the United Nations Framework Convention on Climate Change (UNFCCC), which enters into force on November 4, 2016, and requires all 180 UNFCCC Parties to take all necessary efforts to limit the global average temperature to "well below 2° C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5° C above pre-industrial levels". In the context of the Paris Agreement and taking into account that shipping is responsible for 2.2% of global emissions while accounting for over 80% of the cargo carried around the globe, the Committee discussed how it should proceed to develop measures to decrease GHG emissions.

A significant point of discussion focused on whether or not a roadmap with a timetable to define the international maritime transport sector's fair share on GHG reductions should start to be developed in parallel with the IMO's three phase approach on further technical and operational measures for enhancing the energy efficiency of international shipping. The three-phase approach calls for (1) collection of FO consumption data, (2) analysis of that data, and (3) decision making on what further measures, if any, are needed.

The Committee approved a draft roadmap for developing a comprehensive IMO strategy on reduction of GHG emissions from ships, which is expected to be adopted at MEPC 72 in 2018. It is understood the initial IMO strategy may be further developed subject to review based on fuel oil consumption data collected during the period 2019-2021.

It was also agreed that a 4th IMO GHG Study should be carried out to cover the period from 2012 to 2018 thereby bridging the gap between the 3rd IMO GHG Study and the results of the analysis of the initial period of the fuel oil data collection system scheduled to be completed in 2020.

It was also recognized that any GHG reduction strategy developed should occur after three sets of fuel oil consumption data have been collected and analyzed which is scheduled to occur in 2023. An intersessional working group to be held in May 2017 will discuss a number of issues surrounding the GHG reduction strategy including guiding principles to be applied, projected future demands for shipping, emission reduction opportunities, associated costs and benefits, and the impact of EEDI.

Miscellaneous

Unified Interpretations

- Oil Residue (Sludge) Tanks – Regulation 12 of MARPOL Annex I
  In light of the amendments of MARPOL I, regulation 12, adopted by resolution MEPC.266(68) and in order to facilitate uniform implementation of regulation 12, the Committee approved a new MEPC circular containing revised unified interpretations of regulation 12 of MARPOL Annex I. The new circular revokes previously approved unified interpretations, as well as those contained in MEPC.1/Circ.753/Rev.1.

- *NOx Code 2008 and SCR systems*
  A new Circular interpreting the 2008 NOx Technical Code (NTC) provides clarification and increased flexibility in application of the parameters that define an engine group fitted with Selective Catalytic Reduction (SCR) Systems to reduce NOx emissions. The interpretation takes into account that some of the traditional engine-based parameters required by the NTC to define an engine group may not be relevant for an engine group fitted with SCR systems and may be replaced by SCR-specific parameters such as the geometry of the catalyst blocks, which contain the catalyst to reduce NOx or the exhaust gas flow rate passing through the catalyst blocks.

2012 Effluent Standards for Sewage Treatment Plants

The Committee adopted amendments to the *2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants,* resolution MEPC.227(64). The amendments are mainly consequential to the recent amendments to MARPOL Annex IV concerning the Baltic Sea Special Area that were adopted at MEPC 69 and are expected to enter into force on September 1, 2017. The changes are based on a proposal presented by IACS concerning uniform implementation of the guidelines to align with the revised application dates of regulation 11.3 of MARPOL Annex IV, including a new type approval certificate form, and an interpretation of the phrase “installed on or after January 1, 2016".

Pollution Prevention Equipment for Machinery Space Bilges

Following approval in principle at MEPC 69 of the interpretation contained in IACS UI MPC 127 concerning specifications related to 15 ppm bilge alarms, the Committee adopted amendments to the *Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships*, resolution MEPC.107(49).

The amendments clarify that:

- The validity of calibration certificates for 15 ppm bilge alarms is subject to periodic verification at MARPOL Annex I annual/intermediate/renewal surveys; and
- The accuracy of 15 ppm bilge alarms is to be verified by calibration and testing of the equipment conducted by a manufacturer or persons authorized by the manufacturer. This is to be verified at intervals not exceeding five years or within the term specified in the manufacturer's instructions, if that is shorter.