International Regulation News Update

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Marine Environment Protection Committee's 71st Session

(July 3 to 7, 2017)

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(All Ships includes all marine craft including barges, drill rigs, submersibles, and floating platforms)

The 71st session of the Marine Environment Protection Committee met in London from 3 to 7 July 2017. This Update provides further details to information to that reported in the MEPC 71 Brief issued in July 2017.

BALLAST WATER MANAGEMENT

Implementation Scheme Approved

The Committee approved a draft resolution containing a revised implementation scheme for ships to comply with the D-2 biological standard under the BW Management Convention. The revised scheme will be considered by Member States for adoption at MEPC 72 which is scheduled from April 9-13, 2018. Under the approved scheme, ships constructed on or after September 8, 2017 are to comply with the D-2 standard on or after September 8, 2017. Ships constructed before September 8, 2017, are to comply with the D-2 standard at the first MARPOL IOPP renewal survey completed on or after:

- September 8, 2019 (Reg B-3/10.1.1); or
- September 8, 2017, in the event a MARPOL IOPP renewal survey is completed during the period on or after September 8, 2014 and prior to September 8, 2017 (Reg B-3/10.1.2).

If the survey under regulation B-3/10.1.2 is not completed, then compliance with the D-2 standard is required at the second MARPOL IOPP renewal survey after September 8, 2017, only if the first MARPOL IOPP renewal survey after September 8, 2017 is completed prior to September 8, 2019 and a MARPOL IOPP renewal survey was not completed during the period on or after September 8, 2014 and prior to September 8, 2017 (Reg B-3/10.2).

For ships constructed before September 8, 2017 and which are not subject to the MARPOL IOPP renewal survey, compliance with the D-2 standard is required not later than September 8, 2024 (Reg B-3/8).

A schematic of this scheme is provided at https://ww2.eagle.org/content/dam/eagle/regulatory-news/2017/MEPC%2071%20Brief.pdf .

An additional draft resolution was agreed which revokes the earlier implementation scheme as per resolution A.1088(28) and recommends that all parties acknowledge the revised implementation scheme until such time as it officially enters into force which is anticipated to be in September 2019.

Ballast Water System - Final Approval

Final approval was granted for ECS-HYBRIDTM BWTS developed by TECHCROSS Inc., as submitted by the Republic of Korea in document MEPC 71/4/1. The system employs automatic back-flushing filtration (40 µm), disinfection with UV irradiation and photo-catalytic oxidation and an electrochemical generator unit to produce the Active Substance on ballast water uptake. The maximum TRO dose is 15.0 mg Cl2/L.

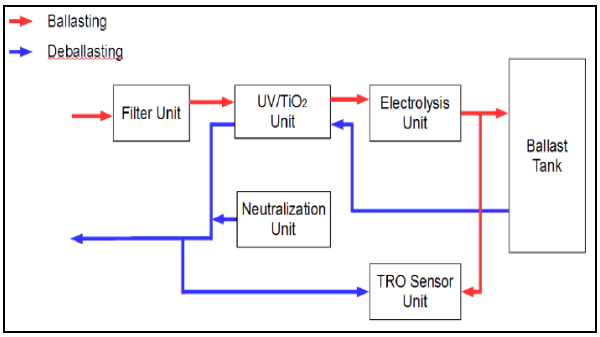

Figure 1 - ECS-HYBRIDTM System Overview

Ballast Water Systems - Basic Approvals

Basic approval was granted to two systems:

- *Envirocleanse inTank™* BWTS LLC, USA, as submitted by Norway in document MEPC 71/4/2. Hypochlorous acid, generated by electrochemical activation, is dosed as an Active Substance into ballast water after uptake. Monitoring of residual oxidant levels occurs during the carriage of water in tanks to prevent organism regrowth and prior to discharge to ensure appropriate amounts of sodium thiosulfate are introduced to neutralize any remaining oxidant. Hypochlorous acid dosage and residual oxidant levels in the ballast tank are monitored to ensure tank coatings and ship piping systems are not exposed to oxidant levels greater than 10 mg/L and for exposure durations of not more than 24 hours. Generation of hydrogen gas is limited to the cathode side of the membrane and is isolated and monitored for leaks as it is discharged overboard.
- *MICROFADE II* BWTS, submitted by the Netherlands in document MEPC 71/4, consists of three main compenents: (i) a *Filtration Unit* having a nominal filter mesh of 40 microns comprised of layers of polyolefin fibers that undergo periodic air backwashing during the filtration process;

(ii) a *Chemical Unit* which sterilizes filtered water by an aqueous solution of sodium dichloroisocyanurate dihydrate (SDCC); and (iii) a *Main Control Unit* which measures data, such as reading of the TRO concentration and flow/feeding rates.

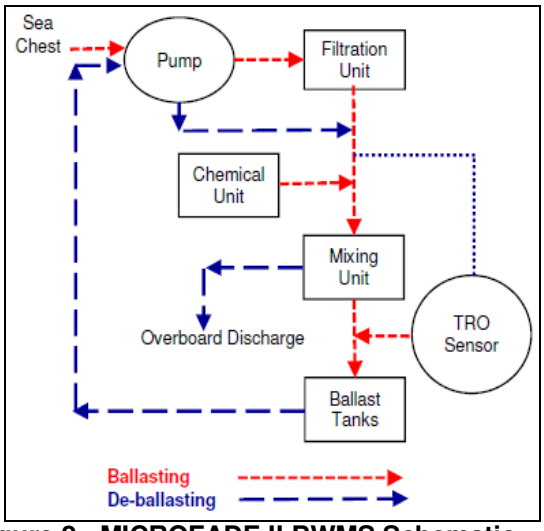

Figure 2 - MICROFADE II BWMS Schematic

Ballast Water Exchange

New BWM.2/Circ.63 was approved addressing ships operating in sea areas where Ballast Water Exchange is not possible to be carried out in accordance with regulations B-4.1 and D-1. Where voyages in such sea areas are geographically constrained, ships should record the reason why an exchange was not conducted. Such provisions do not apply to ships that are required to treat ballast water to meet the D-2 biological performance standard as per regulation B-3. Additionally, the Committee adopted revised G6 Guidelines for Ballast Water Exchange which includes an updated example of a ballast water reporting form.

Same Risk Area Concept

The Committee adopted resolution MEPC.289(71) which amends the G7 *Guidelines for Undertaking a Risk Assessment* as per regulation A-4 of the BWM Convention. Under regulation A-4, a Party may grant, based on a risk assessment, exemptions to ships operating in their jurisdictional waters from the D-1 and/or D-2 water treatment standards, or from the additional measures it may have established to prevent, reduce, or eliminate the transfer or unwanted organisms under regulation C-1.

The amendments describe how risk assessments carried out for the same risk area can be supported by validated, numerical modelling of hydrodynamic, environmental and meteorological conditions.

Survey and certification

Two new areas relating to survey and certification issues were agreed as a unified interpretation and will be issued as a new circular at MEPC 72 in April 2018:

- Under regulation E-1.1.5, the International BWM Certificate need not be endorsed after completion of an additional survey related to repair or modification of BWT Systems as this is adequately covered by the surveyors report; and
- The date of installation of a BWT System, referred to the revised G8 Guidelines and the BWMS Code, is to be the contractual date of delivery of the BWTS to the ship. In the absence of a contractual date, it is the actual date of delivery to the ship. However, the date that commissioning of the BWTS is completed is the date to be used as the Installed Date on the BWM Certificate

Guidelines on Contingency Measures

The Committee approved BWM.2/Circ.62 which contains *Guidelines on Contingency Measures under the BWM Convention*. The guidance is directed to ship owners and port States when establishing contingency measures in dealing with a vessel arriving with non-compliant ballast water. Such measures may include:

- Discharge to another vessel or shore facility,
- Managing all or part of the ballast water in a method acceptable to the port,
- BW Exchange as agreed by the ship and port State taking into account potential disruption to the cargo handling operation plan of the ship and the potential impact to related parties including port operators and cargo owners, or
- Other operational actions such as internal transfer of ballast water or the retention of ballast water on board the ship.

Experience-building Phase

Using work by an intersessional correspondence group, the Committee adopted resolution MEPC.290(71) on the experience building phase associated with the BWM Convention.

For further information, contact ABS Regulatory Affairs at tel 973-220-0144 | email: gshark@eagle.org

This resolution outlines the expected activities leading up to, and following, the entry into force of the Convention. Activities considered include:

- Non-penalization of ships that have installed BWT Systems in advance (early movers) prior to the required D-2 compliance date that experience non-compliances, despite proper use and maintenance of the installed systems;
- Gathering of data related to the implementation and operational experience of BWMS;
- Analysis of data reported with respect to pace and progress of implementation as well as any unforeseen safety or environmental concerns; and
- Subsequent review of the Convention and possible amendments based on experience gained.

Code for Approval of BWMS

The Committee approved a *Code for Approval of Ballast Water Management Systems*, BWMS Code, as well as amendments to the BWM Convention. Subject to adoption at MEPC 72 in April 2018, the amendments to the Convention will mandate that systems be approved under the Code. This Code is technically consistent with the 2016 G8 guidelines adopted by resolution MEPC.279(70). The Committee agreed that Ballast Water Treatment Systems, BWTS, approved under:

- the revised G8 Guidelines (MEPC.279(70)) are deemed to be in accordance with the Code; and
- the earlier versions of the G8 Guidelines, as per resolutions MEPC.125(53) and MEPC.174(58) not later than 28 October 2018, may continue to be installed on board ships until 28 October 2020.

MARPOL AMENDMENTS ADOPTED

Two New Emission Control Areas

The Committee adopted resolution MEPC.286(71) which designate both the North Sea area (including the English Channel) and the Baltic Sea area as new Emission Control Areas (ECAs) for Nitrogen Oxides (NOx). These ECAs are in addition to the current North America ECA and US Caribbean ECAs (see Figure 1).

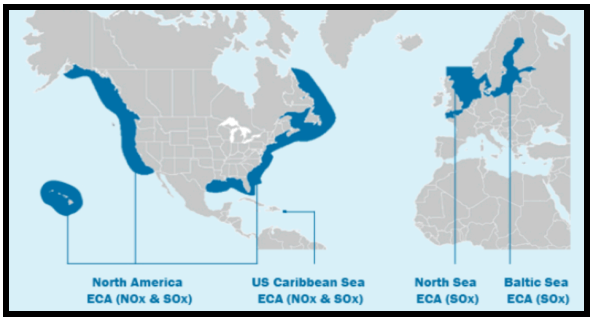

Figure 1 - Emission Control Areas (ECAs)

The North Sea and Baltic Sea ECAs are currently designated as emission control areas for Sulphur Oxide (SOx) emissions. With the designation of the North Sea and Baltic Sea ECAs as new emission control areas for NOx, 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.

Bunker Delivery Notes

New resolution MEPC.286(71) revises Appendix V of MARPOL Annex VI concerning the information to be included in the bunker delivery note required under regulation 18.5 of MARPOL Annex VI. The declaration of conformity, required to be provided by the bunker supplier, now allows for the option to document the sulphur content specified by the purchaser, which may exceed limit values for use on ships fitted with SOx abatement equipment or which are undergoing emission reduction and control technology research. Bunker delivery notes issued as of January 1, 2019 will be required to contain this revised information.

AIR POLLUTION AND ENERGY EFFICIENCY

Fuel Oil Data Collection System

New resolution MEPC.292(71) contains Guidelines for verification of annual fuel oil consumption data to be reported in accordance with the IMO Ship Fuel Oil Consumption data collection system under MARPOL VI/22A (resolution MEPC.278(70)).

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The Guidelines aim to provide a pragmatic verification procedure that ensures consistent, reliable and robust data by incorporating concepts on data quality assurance and verification. The Guidelines do not alter ship's reporting responsibilities as outlined in MARPOL Annex VI, however Administrations may request additional documentation to be submitted in order to facilitate data verification.

Associated Guidelines for the management of the IMO Ship Fuel Oil Consumption Database, that will be the central repository for all data submitted by Administrations to the IMO, were also adopted by resolution MEPC.293(71). Data will be anonymized by rounding figures on the reported ship technical characteristics. A summary report will be produced for the MEPC on an annual basis, including information on annual fuel consumption by fuel type, aggregated data on FO consumption, distance travelled and hours underway by ship type, and the number of ships registered in the Party of Annex VI, of 5,000 gt and above, for which data was and was not received.

A comparison of IMO's Data Collection System versus the EU Monitoring Verification Scheme is provided below.

Parameter	IMO DCS	EU MRV
Reporting Frequency	Annually	Annually and Per Voyage
Ship Data to be collected	• Fuel Consumed type • Distance Travelled • Time Underway	• CO_2 Emissions • At sea and at berth • Amount of cargo carried
Required Documentation	SEEMP-Part II: confirmed by 31 Dec 2018	Approved Monitoring Plan: approval by 31 August 2017
Initial Data Collection Period	Calendar Year 2019	Calendar Year 2018
Data Verifier	Flag State or RO	Accredited Verifier
Data Verification Period	3 months following data collection period	4 mo following data collection period
Certification Validity	17 months	18 months
Database Management	IMO Secretariat	European Commission

Table 1 – IMO DCS vs EU MRV

To facilitate full participation in data collection, Guidance, new MEPC.1/Circ.871 was issued clarifying the methods for submitting FO Consumption data from ships under a flag that is not a Party to MARPOL Annex VI.

Attained Energy Efficiency Design Index

- Ro-Ro Cargo & Ro-Ro Passenger Ships - The Committee approved amendments to Regulation 21 of MARPOL Annex VI, with a view to adoption at MEPC 72 in April 2018. The amendments revise the reference line parameters for the Ro-Ro Cargo and Ro-Ro Passenger Ship types by imposing a 20% offset to the EEDI baselines for these two ship types. Also, it introduces a new concept which sets constant threshold values for Ro-Ro Cargo Ships of 17,000 DWT, and above, and for Ro-Ro Passenger Ships of 10,000 DWT, and above. This approach effectively results in an additional 20% margin to account for identified discrepancies in the currently calculated baselines that were developed using overly optimistic presumptions in relation to achievable physical properties for these specific ship types.
- Minimum Propulsion Power - Some progress was made on the development of amendments to the 2013 Interim Guidelines for determining minimum propulsion power to maintain the maneuverability of ships in adverse conditions. However, it was decided that the draft revised Guidelines were still not at a suitable stage to be finalized at this session. Additional insight is needed as to the range of technologies (engine technologies, materials, appliances, apparatus, alternative fuels, reduction of engine power and speed, hull improvements) that may be available or have already been employed to comply with the required EEDI. Accordingly, it was decided to consider the issue further at MEPC 72 and to extend the applicability of the 2013 Interim Guidelines to Phase 2 EEDI requirements as an interim solution.
- Status of Technological Developments – A correspondence group has been established to undertake an early review of EEDI Phase 3 requirements which calls for a 30% reduction factor applied to the required EEDI under Regulation 21 of MARPOL Annex VI. The review will consider the possibility of advancing the Phase 3 contract for construction implementation date from 1 January 2025 to 2022 pending resolution of the concerns about maintaining minimum propulsion power under Phase 3.

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The group will also consider whether a new set of Phase 4 EEDI reduction rates should be introduced, and if so, recommend an appropriate time period for implementation and associated reduction rates. Available information regarding the status of compliance with existing EEDI requirements and new energy efficiency improving technologies will be gathered and analyzed to support decisions regarding future EEDI reduction rates. The group is expected to complete its work and submit a final report to MEPC 74 in 2019. The group will also consider the necessity of amending attained EEDI calculation guidelines and reference lines to address issues relating to ice classed ships, associated correction factors and application of EEDI requirements to ships with ice classes higher than *IA Super*.

MISCELLANEOUS

GHG Reduction

The Committee tried to progress the development of a comprehensive IMO strategy on reduction of GHG emissions based on the Roadmap approved at MEPC 70. IMO is expected to adopt a strategy on reduction of GHG emissions from ships at MEPC 72 in April 2018. After considering a report from the first Intersessional Working Group, the Committee noted a draft outline for the structure of the initial IMO strategy:

1. Preamble/introduction/context including emission scenarios
2. Vision
3. Levels of ambition / Guiding principles
4. List of candidate short-, mid- and long-term further measures with possible timelines and their impacts on States
5. Barriers and supportive measures; capacity building and technical cooperation; R&D
6. Follow-up actions towards the development of the revised strategy
7. Periodic review of the Strategy;
8. Analysis of that data; and
9. Decision making on what further measures, if any, are needed.

It was recognized that any initial IMO strategy may be revised based on Phase 1, but should not prejudge any specific measures that may be implemented in Phase 3, of the agreed 3-step approach:

- Phase 1 - collection of FO consumption data (2019-2021)
- Phase 2 - analysis of that data
- Phase 3 - decision making on what further measures, if any, are needed

When considering GHG emission reduction opportunities, the first Intersessional Working Group received proposals for:

- short-term measures which included effective implementation of the data collection system for fuel oil consumption and analyzing the use of operational energy efficiency measures such as speed reduction;
- short- to medium-term measures which included potentials to improve energy efficiencies in design and development of operational energy efficiency indicators and guidelines; and
- mid- and long-term measures including robust analysis of data collected from the data collection system before a decision on whether further measures, if any, are required and consideration of Market Based Measures as incentive mechanisms

Engine Mapping

Based on the recommendation of the IMO Sub-Committee on Pollution Prevention and Response (PPR), the Committee considered the need to develop amendments to MARPOL Annex VI and the NOx Technical Code addressing the use of multiple engine operational profiles (Maps).

Modern engines can be programmed to electronically control aspects such as the start and end of injection as well as the intensity and distribution of that injection) to accommodate different operational profiles in order to optimize fuel consumption under different operating modes, such as, dual fuel operation, selected catalytic reduction operation for Tier III, harbor/sea modes, etc.

However, due to concerns that utilization of multiple maps without appropriate restrictions may present an opportunity for an increase in NOx emissions, the Committee did not pursue this further.

The recommendation was returned the recommendation back to the PPR Sub-Committee for further consideration and development of an appropriate scope of work to address concerns raised.

Revisions to 2011 SCR Guidelines

The Committee adopted revised guidelines for the approval, testing and survey of Selective Catalytic Reduction (SCR) systems under Resolution MEPC.291(71). These new guidelines replace the previous 2011 SCR guidelines adopted by resolution MEPC.198(62), as amended by MEPC.260(68). This latest revision was largely triggered by an IACS initiative based on practical issues faced by IACS members when applying the SCR guidelines to the 'Scheme B' approval route permitted by the guidelines. The Scheme B process is applied where it is not possible to test the combined engines fitted with SCR units at testbed and allows testing of the engine and SCR separately, and which is then validated for the parent engine approval by an onboard confirmation test of the combined engine and SCR installation.

IMO has taken the opportunity to update the guidelines by incorporating IACS and other industry experience and includes a number of revisions covering the following main areas:

- Reinforcement that the NOx reducing device under the NOx Technical Code is considered a component of the engine and must be included within the technical file is added
- Rephrasing of the criteria under which the testing of an engine/SCR combination is prohibited at the test bed
- Expansion of the list of technical NOx critical features and operating limits of the SCR system, together with catalyst through life efficiency monitoring, that must be included in the technical file has been made
- Clarification on the contents of the engine's Technical File regarding ammonia slip has been included, but it does not include an acceptable ammonia slip limit value (ppm)
- Additional guidance for engines that are to be certified to both Tier II and Tier III NOx limits which clarifies that both Tier II and Tier III emissions values are to be given on the EIAPP certificate and covered by a single technical file
- Further clarification to reinforce the NOx Technical Code requirement that the selected parent engine for the engine + SCR testing must be the combination from the engine group/family with the highest NOx emission value
- Clarification that it is not necessary to test the SCR at the test bed measurements with the SCR bypass fitted provided any influence of the bypass must be declared by the applicant
- The acceptability of a differential pressure sensor used for monitoring the pressure drop across the SCR
- Further guidance for application of SCR under Scheme B including (a) permitted modelling; (b) some relaxation of the exhaust gas species concentration limits subject to satisfactory demonstration that the relaxation does not influence NOx formation; (c) use of ammonia gas provided the reductant concentration on the surface of the catalyst is representative of engines in service; (d) requiring the onboard confirmation test for all installed engine/SCR systems from a particular engine group if the first installed system is not the parent engine unless they are identical NOx engines.

2017 Guidelines on MARPOL Annex V

The Committee adopted resolution MEPC.295(71) containing the 2017 Guidelines for the implementation of MARPOL Annex V. The amendments address disposition of E-waste, cargo residues and restrictions imposed by the Polar Code. A definition of E-waste has also been included for the purpose of the revised guidelines.

Implementing the Global 0.50% Sulphur Limit

A new work program on the consistent implementation of the 0.50% global sulphur limit in 2020, as per MARPOL VI regulation 14.1.3, was agreed to be included in the PPR Sub-Committee's agenda for 2018-2019.

Under this regulation, the sulphur content of fuel oil used onboard ships shall not exceed 0.50% m/m as of January 1, 2020.

Recognizing challenges to implement this requirement, the Committee agreed the scope of this high priority agenda item should include the following:

- transitional issues that may arise when shifting to the new 0.50% m/m sulphur limit;
- possible impact on fuel and machinery systems that may result from the use of fuel oils with a 0.50% m/m sulphur limit;
- verification/control actions that may be necessary to ensure compliance;
- development of a draft standard format for reporting fuel oil non-availability;
- development of guidance that may assist stakeholders in assessing the sulphur content of fuel oil delivered to the ship is as stated on the bunker delivery note;
- safety implications with regard to using blended fuels to meet the 0.50% sulphur limit; and
- any consequential regulatory amendments and/or guidelines needed to address the above issues

ISO has also been requested to consider the framework of ISO 8217 with a view to consistency with the relevant ISO standards on marine fuel oils in this regard.