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MARINE CIRCULAR

MC-10/2026/1

08/2026

FOR: Ship Owners, Ship Managers, Ship Operators, Ship Masters, Ship Officers, Recognized Organizations.

SUBJECT: REVISION OF MARPOL ANNEX VI AND THE NO_x TECHNICAL CODE

DEFINITIONS:

The following abbreviations stand for:

- "ECAs" – Emission Control Areas
- "EGCS" – Exhaust Gas Cleaning System
- "EIAPPC" – Engine International Air Pollution Prevention Certificate
- "GT" – Gross Tonnage in accordance with ITC 69
- "HCFCs" – Hydro-chlorofluorocarbons
- "HSFO" – High Sulphur Fuel Oil
- "IAPPC" – International Air Pollution Prevention Certificate
- "IMO" – International Maritime Organization
- "ITC 69" – International Convention on the Tonnage Measurement of Ships, 1969
- "LSFO" – Low Sulphur Fuel Oil
- "MARPOL" – International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978
- "MEPC" – Marine Environment Protection Committee (IMO)
- "MSC" – Maritime Safety Committee (IMO)
- "NO_x" – Nitrogen Oxides
- "ODS" – Ozone-depleting Substances
- "PCBs" – Polychlorinated biphenyls
- "PM" – Particulate Matter
- "PSC" – Port State Control
- "PVCs" – Polyvinyl Chlorides
- "RO" – Recognized Organization duly authorized by the Administration in accordance with the IMO Code for Recognized Organizations (RO Code).
- "SO_x" – Sulphur Oxides
- "VEC" – Vapour Emissions Control
- "VECS" – Vapour Emissions Control Systems
- "VOC" – Volatile Organic Compounds
- "SOLAS" – International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended

The term "Administration" or "TSR" shall mean Tuvalu Ship Registry

PURPOSE:

The purpose of this marine circular is to provide the air emissions requirements of the revised MARPOL Annex VI which entered into force on 1 November 2022, and subsequent amendments, including amendments to the NO_x Technical Code 2008.

REFERENCES:

- (a) International Convention for the Prevention of Pollution from Ships, 1973, As Modified by the Protocol of 1978 (MARPOL)
- (b) IMO Resolution MEPC.177(58) – Amendments to the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (NOX Technical Code 2008)
- (c) IMO MSC-MEPC.2/Circ.18 – 2024 Guidelines for the sampling of fuel oil for determination of compliance with MARPOL Annex VI and SOLAS chapter II-2
- (d) IMO Resolution MEPC.185(59) – Guidelines for the development of a VOC management plan
- (e) IMO Resolution MEPC.190(60) – North American Emission Control Area
- (f) IMO Resolution MEPC.202(62) – United States Caribbean Sea Emission Control Area
- (g) IMO Resolution MEPC.244(66) – 2014 Standard specification for shipboard incinerators
- (h) IMO Resolution MEPC.316(74) - Electronic Record Books and EEDI regulations for ice-strengthened ships
- (i) IMO Resolution MEPC.320(74) - 2019 Guidelines for consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI
- (j) IMO Resolution MEPC.324(75) - Procedures for sampling and verification of the sulphur content of fuel oil and the Energy Efficiency Design Index (EEDI)
- (k) IMO Resolution MEPC.328(76) – 2021 Revised MARPOL Annex VI
- (l) IMO Resolution MEPC.338(76) – 2021 Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3)
- (m) IMO Resolution MEPC.340(77) – 2021 Guidelines for Exhaust Gas Cleaning Systems
- (n) IMO Resolution MEPC.361(79) – Mediterranean Sea Emission Control Area for Sulphur Oxides and Particulate Matter
- (o) IMO Resolution MEPC.368(79) – Amendments to the 2014 Standard specification for shipboard incinerators (Resolution MEPC.244(66))
- (p) IMO Resolution MEPC.373(80) – 2023 Guidelines for Thermal Waste Treatment Devices (TWTD)
- (q) IMO Resolution MEPC.385(81) - Low-flashpoint fuels and other fuel oil related issues, marine diesel engine replacing steam system, accessibility of data and inclusion of data on transport work and enhanced granularity in the IMO Ship Fuel Consumption Database (IMO DCS)
- (r) IMO Resolution MEPC.386(81) - 2024 Guidelines as required by Regulation 13.2.2 of MARPOL Annex VI in respect of non-identical replacement engines not required to meet the Tier III limit
- (s) IMO Resolution MEPC.392(82) – Canadian Arctic and the Norwegian Sea Emission Control Areas
- (t) IMO Resolution MEPC.395(82) – 2024 Guidelines for the development of a SEEMP
- (u) IMO Resolution MEPC.397(83) – Amendments to the NOx Technical Code 2008 (use of multiple engine operational profiles for a marine diesel engine, including clarifying engine test cycles)
- (v) IMO Resolution MEPC.398(83) – Amendments to the NOx Technical Code 2008
- (w) IMO Resolution MEPC.407(84) - Clarification of entries in data reporting required by regulations 27 and 28, designation of the North-East Atlantic as an Emission Control Area for Nitrogen Oxides, Sulphur Oxides and Particulate Matter, accessibility to the IMO Ship Fuel Oil Consumption Database, and review clause of the short-term GHG reduction measure
- (x) IMO Resolution MEPC.408(84) – Amendments to MARPOL Annex VI (use of multiple engine operational profiles for a marine diesel engine, including clarifying engine test cycles)
- (y) IMO MEPC.1/Circ.509 – Notification to the Organization on Ports or Terminals where Volatile Organic Compounds (VOCs) Emissions are to be Regulated
- (z) IMO MSC/Circ.585 – Standards for Vapour Emission Control Systems
- (aa) IMO MEPC.1/Circ.680 – Technical information on systems and operation to assist development of VOC management plans.
- (bb) IMO MEPC.1/Circ.719 – Technical information on a vapour pressure control system in order to facilitate the development and the update of VOC management plans
- (cc) IMO MEPC.1/Circ.774 – Information on Designated Ports at which VOC emissions are regulated
- (dd) IMO MEPC.1/Circ.864/Rev.1 - 2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships
- (ee) IMO MEPC.1/Circ.889 - 2020 guidelines for on board sampling of fuel oil intended to be used or carried for use on board a ship
- (ff) Tuvalu Marine Guidance 4/2012/1 – Revised MARPOL Annex VI
- (gg) Tuvalu Marine Circular MC-2/2026/1 – MARPOL Annex VI – 2024 SEEMP Guidelines (MEPC.395(82))
- (hh) Tuvalu Marine Circular MC-2/2019/1 - 2019 Guidelines for Consistent Implementation of the 0.50% Sulphur Limit under MARPOL ANNEX VI

- (ii) Tuvalu Marine Circular MC-4/2018/1 - Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL ANNEX VI
- (jj) Tuvalu Marine Circular MC-1/2010/12/2 - Revision of MARPOL Annex VI and the NOx Technical Code

APPLICATION:

This marine circular applies to all Tuvalu-flagged ships to which MARPOL Annex VI applies, except where expressly provided otherwise.

CONTENTS:

1. General

- 1.1. MARPOL Annex VI sets limits on ship SOx and NOx emissions. It also regulates VOCs, specifies fuel oil quality standards and prohibits deliberate emissions of ODS and incineration of certain products on board ships.
- 1.2. NOx and SOx emissions from ships contribute to air pollution and may have adverse impacts on human health and the environment.
- 1.3. MEPC 76 adopted the 2021 Revised MARPOL Annex VI, which entered into force on 1 November 2022 and has subsequently been amended.

2. Requirements for Control of Emissions

The following emissions from ships shall be addressed:

2.1. Ozone-Depleting Substances (Regulation 12)

- 2.1.1. ODS means controlled substances defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A, B, C or E to the said Protocol in force at the time of application or interpretation of this annex. ODS that may be found on board ship include, but are not limited to:
 - Halon 1211 Bromochlorodifluoromethane
 - Halon 1301 Bromotrifluoromethane
 - Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (a/k/a Halon 114B2)
 - CFC-11 Trichlorofluoromethane
 - CFC-12 Dichlorodifluoromethane
 - CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane
 - CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 - CFC-115 Chloropentafluoroethane
- 2.1.2. Any deliberate emissions of ODS, including emissions that occur in the course of maintenance, service, repair or disposal of systems or equipment, are prohibited. Minimal releases from the recapture or recycling of ozone-depleting substances are not considered deliberate releases.
- 2.1.3. These requirements do not apply to permanently sealed equipment where there are no refrigerant charging connections or potentially removable components that contain ODS.
- 2.1.4. Installations containing ODS other than HCFCs are prohibited on ships constructed on or after 19 May 2005. Furthermore, installations containing HCFCs are prohibited on ships constructed on or after 1 January 2020. In the case of ships constructed before the relevant cut-off date, installations which have a contractual delivery date to the ship or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship, are prohibited on or after the relevant cut-off date.

- 2.1.5. Use of appropriate reception facilities for disposal of ODS, and equipment containing those substances is required.
- 2.1.6. All ships 400 GT and above, and drill rigs and platforms, regardless of tonnage, are to maintain a list of equipment containing ODS onboard the ship under section 2.1 of the Supplement to the IAPPC.
- 2.1.7. All ships 400 GT and above, and drill rigs and platforms, regardless of tonnage, are to maintain an ODS Record Book (which may form part of an existing log book or electronic record book) for recording entries, in terms of mass (kg) of substance, and shall be completed without delay for the following occasions:
 - 2.1.7.1. Recharge, full or partial, of equipment containing ODS;
 - 2.1.7.2. Repair or maintenance of equipment containing ODS;
 - 2.1.7.3. Discharge of ODS to the atmosphere either deliberately or non-deliberately;
 - 2.1.7.4. Discharge of ODS to land-based reception facilities; and
 - 2.1.7.5. Supply of ODS to the ship.
- 2.2. Emission Control Areas (ECAs) (Regulations 13 and 14)
 - 2.2.1. For the purposes of Regulations 13 and 14 of revised MARPOL Annex VI, ECAs are special sea areas designated by the IMO, in which more stringent emission limits are established. Such ECAs can be designated for either NO_x controls, SO_x and Particulate Matter (PM) controls, or all three emission controls (NO_x, SO_x and PM).
 - 2.2.2. For the purposes of Regulation 14, the following ECAs are designated for SO_x and particulate matter (PM) control. The North-East Atlantic ECA was adopted by Resolution MEPC.407(84), with the amendments entering into force on 1 September 2027 and the ECA taking effect on 1 September 2028:
 - 2.2.2.1. Baltic Sea Area – as defined in Regulation 1.11.2 of MARPOL Annex I;
 - 2.2.2.2. North Sea – as defined in Regulation 1.14.6 of MARPOL Annex V;
 - 2.2.2.3. North American Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex VI;
 - 2.2.2.4. United States Caribbean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex VI;
 - 2.2.2.5. Mediterranean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to this Annex VI;
 - 2.2.2.6. Canadian Arctic Emission Control area, which means the area described by the coordinates provided in appendix VII to this Annex VI;
 - 2.2.2.7. Norwegian Sea as defined in regulation 13.9.4 of Annex II of the present Convention; and
 - 2.2.2.8. North-East Atlantic Emission Control Area, which means the area described by the coordinates provided in appendix VII to Annex VI (adopted by Resolution MEPC.407(84); amendments enter into force on 1 September 2027; ECA takes effect on 1 September 2028).
 - 2.2.3. For the purposes of Regulation 13, a NO_x Tier III Emission Control Area shall be any sea area, including any port area, designated by IMO in accordance with the criteria and procedures set forth in appendix III to Annex VI. The NO_x Tier III emission control areas are:
 - 2.2.3.1. North American Emission Control Area, which means the area described by the coordinates provided in appendix VII to Annex VI;
 - 2.2.3.2. United States Caribbean Sea Emission Control Area, which means the area described by the coordinates provided in appendix VII to Annex VI;

- 2.2.3.3. Baltic Sea area as defined in regulation 1.11.2 of Annex I of the present Convention;
- 2.2.3.4. North Sea area as defined in regulation 1.14.6 of Annex V of the present Convention;
- 2.2.3.5. Canadian Arctic Emission Control area, which means the area described by the coordinates provided in appendix VII to Annex VI;
- 2.2.3.6. Norwegian Sea as defined in regulation 13.9.4 of Annex II of the present Convention; and
- 2.2.3.7. North-East Atlantic Emission Control Area, which means the area described by the coordinates provided in appendix VII to Annex VI (adopted by Resolution MEPC.407(84); amendments enter into force on 1 September 2027; ECA takes effect on 1 September 2028).

2.3. NOx (Regulation 13)

- 2.3.1. These requirements apply to marine diesel engines with a power output of more than 130 kW installed on a ship, and to such engines that undergo a major conversion on or after 1 January 2000, except as expressly provided otherwise in Regulation 13.

- 2.3.1.1. Emergency diesel engines, engines installed in lifeboats and devices or equipment used solely for emergency; or

- 2.3.1.2. Engines subject to alternative NOx control measures established by an Administration for vessels solely engaged in voyages within waters subject to the jurisdiction of the State the flag of which the ship is entitled to fly.

- 2.3.2. The operation of a marine diesel engine which is installed, or undergoes a major conversion on or after 1 January 2000 on any ship, irrespective of tonnage, except when the engine is an identical replacement to the engine that it is replacing, and subject to the approval of this Administration, is prohibited, unless it complies with the NOx emission limits and requirements specified in Regulation 13 of MARPOL Annex VI.

- 2.3.3. The specific limits and requirements for applicable marine diesel engines are subdivided into three "Tiers" summarized as follows:

2.3.3.1. Tier I

Tier I applies to marine diesel engine installed on a ship constructed on or after 1 January 2000 and will apply to engines installed on board ships constructed until 31 December 2010. The emission requirements are set at the same level as current requirements (the NOx emission limits are related to engine rated crankshaft speed (n)):

Engine Speed (n) rpm	NOx Emission Limit g/kWh
Less than 130	17.0
130 – 1999	$45 \times n^{(-0.2)}$ (e.g. 720 rpm -12.1)
2000 and above	9.8

2.3.3.2. Tier II

Tier II applies to marine diesel engine installed on a ship constructed on or after 1 January 2011 or to engines subjected to a major modification on/after 1 January 2011.

The NOx emission limits under this Tier represent a modest reduction of about 20% from the baseline limits under Tier I, and can be found in paragraph 4 of Regulation 13 of MARPOL Annex VI.

Engine Speed (n) rpm	NOx Emission Limit g/kWh
Less than 130	14.40
130 – 1999	$44 \times n^{(-0.23)}$ (e.g. 720 rpm – 9.7)
2000 and above	7.7

2.3.3.3. Tier III

Tier III applies only to applicable marine diesel engines installed on ships constructed on or after the date specified for the relevant NOx Tier III ECA and while the ship is operating in that ECA. The applicable construction dates are 1 January 2016 for the North American and United States Caribbean Sea ECAs, 1 January 2021 for the Baltic Sea and North Sea ECAs, 1 January 2025 for the Canadian Arctic ECA, 1 March 2026 for the Norwegian Sea ECA, and 1 January 2027 for the North-East Atlantic ECA under Resolution MEPC.407(84), with the Tier III requirements applying in that ECA from 1 September 2028.

The NOx emission limits under this Tier aims to achieve an aggressive reduction of about 80% from the baseline limits under Tier I, and can be found in paragraph 5.1.1 of Regulation 13 of MARPOL Annex VI.

Engine Speed (n) rpm	NOx Emission Limit g/kWh
Less than 130	3.4
130 – 1999	$9 \times n^{(-0.2)}$ (e.g. 720 rpm – 2.4)
2000 and above	2.0

The Tier III standards do not apply to: (i) a marine diesel engine installed on a ship of less than 24 m in length that is specifically designed and used solely for recreational purposes; (ii) a marine diesel engine installed on a ship with a combined nameplate diesel engine propulsion power of less than 750 kW where it is demonstrated, to the satisfaction of the Administration, that compliance is not possible because of design or construction limitations; or (iii) a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 GT and 24 m or over in length that is specifically designed and used solely for recreational purposes.

Where a non-identical replacement engine is required to meet Tier III but it is not possible for that engine to meet the Tier III standard, a Tier II replacement engine may be accepted only in accordance with Regulation 13.2.2, taking into account Resolution MEPC.386(81), and subject to approval by the Administration.

- 2.3.4. A major conversion means a modification of a marine diesel engine not already certified compliant with the NOx emission limits and requirements specified in Regulation 13 of MARPOL Annex VI where:

- 2.3.4.1. The engine is replaced by a non-identical marine diesel engine or an additional marine diesel engine is installed;
- 2.3.4.2. Any substantial modification, as defined in the revised NOx Technical Code 2008, is made to the engine, or
- 2.3.4.3. The maximum continuous rating of the engine is increased by more than 10% compared to the maximum continuous rating of the original certification of the engine.
- 2.3.5. For a major conversion involving the replacement of a marine diesel engine with a non-identical marine diesel engine, or the installation of an additional marine diesel engine, the standards in this regulation at the time of the replacement or addition of the engine shall apply. For the purpose of this regulation, the installation of a marine diesel engine replacing a steam system shall be considered a replacement engine. In the case of replacement engines only, if it is not possible for such a replacement engine to meet the standards set forth in paragraph 5.1.1 of Regulation 13 (Tier III, as applicable), then that replacement engine shall meet the standards set forth in paragraph 4 of Regulation 13 (Tier II), taking into account the guidelines developed by the IMO Resolution MEPC.386(81). The vessel shall notify the RO and Administration in those instances where a Tier II rather than a Tier III replacement engine has been installed on or after 1 August 2025 in accordance with the provisions of this paragraph.
- 2.3.6. From 1 September 2026, the certification of an engine subject to substantial modification, or being certified to a Tier to which the engine was not certified at the time of its installation, shall be carried out in accordance with Resolution MEPC.398(83), Amendments to the NOx Technical Code 2008.
- 2.3.7. Marine diesel engines with a power output of more than 5,000 kW and a per-cylinder displacement at or above 90 litres, installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000, shall comply with the applicable Tier I requirements where an Approved Method has been certified and is applicable, subject to Regulation 13.7.
 - 2.3.7.1. The engine has a power output of more than 5,000 kW;
 - 2.3.7.2. The engine has a per-cylinder displacement at or above 90 litres; and
 - 2.3.7.3. An Approved Method exists for that engine.
- 2.3.8. An Approved Method is a method for a particular engine, or range of engines, that when applied will ensure the engine complies with the NOx emission limits as applicable. This method is to be certified by a Party to MARPOL Annex VI and submitted to the IMO for circulation before it becomes applicable. Notifications of Approved Methods are available through IMO GISIS.
- 2.3.9. When an Approved Method has been established for a particular type or class of engine subject to section 2.3.7 above, it is required to be applied to the relevant engine no later than the first Renewal Survey beginning 12 months after the effective date of notification, subject to commercial availability in accordance with Regulation 13.7.2.
- 2.3.10. Ships with an engine subject to section 2.3.7 above shall indicate on the IAPPC, as applicable, whether an Approved Method has been applied, whether the engine has otherwise been certified, whether an Approved Method is not yet commercially available, or whether an Approved Method is not applicable. An Approved Method File shall accompany an engine to which an Approved Method has been applied.
- 2.3.11. The tier and on/off status of marine diesel engines installed on board a ship to which NOx regulation applies which are certified to both Tier II and Tier III or which are

certified to Tier II only shall be recorded in such logbook or electronic record book, at entry into and exit from a NOX Tier III emission control area, or when the on/off status changes within such an area, together with the date, time and position of the ship.

2.4. SOx (Regulation 14)

- 2.4.1. While a ship is operating within an emission control area, the Sulphur content of fuel oil used on board that ship shall not exceed 0.10% m/m.
- 2.4.2. The sulphur content of fuel oil used or carried for use on board a ship shall not exceed 0.50% m/m, except where an equivalent means of compliance approved under Regulation 4 is used.
- 2.4.3. All ships using separate fuel oils when operating within a SOx ECA are to carry a written fuel oil changeover procedure, developed specifically for that ship, detailing:
 - 2.4.3.1. A step-by-step process for carrying out the fuel oil changeover; and
 - 2.4.3.2. Methods for calculating the time necessary to ensure the fuel oil service system is fully flushed of all fuel oils exceeding the applicable sulphur content limit prior to entering into the SOx ECA.
- 2.4.4. All ships using separate fuel oils when operating within a SOx ECA are to also maintain a log book or electronic record book for recording entries of any fuel oil changeover operation, and shall record, without delay, the following information upon completion of every operation:
 - 2.4.4.1. The date, time and position of the ship; and
 - 2.4.4.2. The volume of low sulphur fuel oils in each tank.
- 2.4.5. For ships required to have in-use fuel oil sampling points under Regulation 14.10, one or more sampling points shall be fitted or designated not later than the first renewal survey on or after 1 April 2023. In-use sampling shall be carried out taking into account MEPC.1/Circ.864/Rev.1, and onboard sampling shall be carried out taking into account MEPC.1/Circ.889.
- 2.4.6. Where a Party requires a MARPOL delivered sample, in-use sample or onboard sample to be analysed, verification shall be carried out in accordance with the procedures in Appendix VI to MARPOL Annex VI, as amended by Resolution MEPC.324(75).
- 2.4.7. The requirements for in-use fuel oil sampling points are not applicable to a fuel oil service system used for a low-flashpoint fuel or a gas fuel, in accordance with Resolution MEPC.385(81).

2.5. VOCs (Regulation 15)

- 2.5.1. The emissions of VOCs from tankers are to be regulated in those ports or terminals that have notified the IMO of their intent to do so. In accordance with IMO MEPC.1/Circ.509, the IMO shall provide, through MEPC circulars, a listing of ports and terminals where VOCs are controlled (please see MEPC.1/Circ.774), along with information regarding the size of tankers to be controlled, the cargoes requiring VECS, and the effective date of such controls.
- 2.5.2. Tankers to which Regulation 15.1 applies shall be provided with a vapour emission collection system approved by the Administration or a duly authorized RO, taking into account IMO MSC/Circ.585, and shall use such system during the loading of relevant cargoes. A designated port or terminal may accept tankers not fitted with such

systems for a period of up to three (3) years from the effective date of the applicable VOC control.

- 2.5.3. Gas carriers must comply with the requirements of this section only if their loading and containment systems allow safe retention of non-methane VOCs on board, or their safe return ashore.
- 2.5.4. Notwithstanding the above requirements, effective 1 July 2010, all tankers carrying crude oil are to maintain a VOC management plan onboard, specific to each ship, approved by an RO on behalf of the Administration.
- 2.5.5. Guidance on the development of a VOC management plan is provided in IMO Resolution MEPC.185(59) and additional information on VOC requirements are in MEPC.1/Circ.680 and MEPC.1/Circ.719.

2.6. Shipboard Incineration (Regulation 16)

- 2.6.1. Shipboard incineration shall be carried out only in a shipboard incinerator, except as otherwise permitted under Regulation 16, including sections 2.6.3 and 2.6.7 below.
- 2.6.2. Incineration of the following substances is prohibited:
 - 2.6.2.1. Annexes I, II and III cargo residues of the present MARPOL Convention and related contaminated packing materials;
 - 2.6.2.2. Polychlorinated biphenyls (PCBs);
 - 2.6.2.3. Garbage, as defined in Annex V of the present MARPOL Convention containing more than traces of heavy metals;
 - 2.6.2.4. Refined petroleum products containing halogen compounds;
 - 2.6.2.5. Sewage sludge and sludge oil neither of which is generated on board the ship;
 - 2.6.2.6. Exhaust gas cleaning system residues; and
 - 2.6.2.7. Polyvinyl Chlorides (PVCs) unless incinerated in shipboard incinerators for which IMO Type Approval Certificates have been issued.
- 2.6.3. Shipboard incineration of sewage sludge and sludge oil generated during normal operations of a ship is allowed in the main or auxiliary power plant or boilers, but in those cases shall not take place inside ports, harbours and estuaries.
- 2.6.4. An incinerator on a ship constructed on or after 1 January 2000, or installed on or after 1 January 2000, shall meet the requirements of Appendix IV to MARPOL Annex VI and shall be approved by the RO on behalf of the Administration, taking into account the 2014 Standard specification for shipboard incinerators, Resolution MEPC.244(66), as amended by Resolution MEPC.368(79).
- 2.6.5. All ships with an incinerator to which section 2.6.4 above applies must possess a manufacturer's operating manual that provides guidance on incinerator operations within the prescribed limits. Personnel with responsibilities for incinerator operations must be trained and capable of implementing the guidance provided in the manual.
- 2.6.6. Monitoring flue gas temperature for incinerators to which section 2.6.4 above applies is required at all times when the unit is in operation.

- 2.6.6.1. For a continuous-feed incinerator (where waste is fed into a combustion chamber without human assistance): waste shall not be fed when the flue gas temperature is below 850°C.
- 2.6.6.2. For a batch-loaded incinerator: the unit shall be designed so that the temperature in the combustion chamber reaches 600°C within five (5) minutes of start-up, and thereafter stabilize at a temperature not less than 850°C.
- 2.6.7. Alternative thermal waste treatment devices permitted under Regulation 16 shall comply with the applicable requirements of MARPOL Annex VI and the 2023 Guidelines for Thermal Waste Treatment Devices (TWTD), Resolution MEPC.373(80).

3. Fuel Oil Quality (Regulation 18)

- 3.1. Fuel oil delivered to and used onboard any ship to which revised MARPOL Annex VI applies must meet the standards of Regulation 18 which address the composition of hydrocarbons to be used for combustion purposes.
- 3.2. Fuel oil for combustion purposes derived from methods other than petroleum refining must meet the standards of Regulation 18 regarding their composition, must not exceed the sulphur content requirements set forth in Regulation 14, and must not cause an engine to exceed the NOx emission limits set forth in Regulation 13.
- 3.3. The fuel oil quality standards do not apply to coal in its solid form or nuclear fuels or to the use of hydrocarbons for platforms and drilling rigs which are produced and subsequently used on site as fuel, when approved by the Administration.

4. Bunker Delivery Notes and Fuel Oil Samples

- 4.1. For every ship of 400 GT and above and every fixed and floating drilling rig and other platform, details of fuel delivered for combustion purposes shall be recorded by means of a Bunker Delivery Note. The Bunker Delivery Note must include (as per Appendix V of revised MARPOL Annex VI), at a minimum, the following information:
 - Name and IMO number of receiving ship;
 - Port;
 - Date of commencement of delivery;
 - Name, address, and telephone number of marine fuel oil supplier;
 - Product name(s);
 - Quantity (metric tonnes);
 - Density at 15° C (kg/m³);
 - Sulphur content (% m/m); and
 - A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with the applicable requirements of revised MARPOL Annex VI.
- 4.2. For each ship subject to regulations 5 and 6 of Annex VI, details of low-flashpoint fuel or gas fuel delivered to and used on board that ship shall be recorded by means of a bunker delivery note that shall include at least the information specified in items 1 to 6 of Appendix V to Annex VI, the density as determined by a test method appropriate to the fuel type together with the associated temperature and a declaration signed and certified by the fuel oil supplier's representative that the fuel oil is in conformity with paragraph 3 of Regulation 18. In addition the sulphur content of a low-flashpoint fuel or a gas fuel delivered to a ship specifically for use on board that ship shall be documented on the bunker delivery note by the supplier in terms of either the actual value as determined by a test method appropriate to the fuel type or, with the agreement of the appropriate authority at the port of supply, a statement that the sulphur content, when tested by such a method, is less than 0.001% m/m.
- 4.3. Bunker Delivery Notes:

- 4.3.1. Shall be kept on board in the MARPOL Annex VI Record Book and be readily available for inspection;
- 4.3.2. Shall be retained for a period of three (3) years after the fuel has been delivered on board; and
- 4.3.3. Are subject to inspection by PSC authorities as well as the Administration.
- 4.4. Upon completion of the bunkering operations, a representative sample of the fuel oil delivered shall accompany the Bunker Delivery Note. Representative samples under this requirement shall be obtained in accordance with MSC-MEPC.2/Circ.18.. The sample shall be:
 - 4.4.1. Sealed and signed by the bunker supplier's representative;
 - 4.4.2. Sealed and signed by the master or officer in charge of bunker operations;
 - 4.4.3. Retained under ship's control until the fuel oil is substantially consumed, but not less than 12 months from time of delivery; and
 - 4.4.4. Analysed in accordance with the verification procedure set forth in Appendix VI of revised MARPOL Annex VI, Fuel verification procedure for MARPOL Annex VI fuel oil samples, should the Administration require such an analysis.
- 4.5. For every ship of 400 GT and above, on scheduled services with frequent and regular port calls which would render compliance with the requirements of this section impracticable, an alternative documentation and sampling storage plan may be accepted by the Administration, after consideration of the circumstances involved and consultation with the affected States concerned.
- 4.6. If a Bunker Delivery Note or representative sample is not provided by the bunker supplier or fuel oil is found not to be in compliance with that stated on the Bunker Delivery Note, details shall be recorded in the ship's log, and the Administration shall be notified at technical@tvship.com

5. Fuel Oil Availability

- 5.1. If a ship, despite all best efforts, is unable to obtain the required fuel oil to meet the applicable emission requirements, the Competent Authority of the relevant port of destination and the Administration shall be promptly notified and provided with the following information:
 - 5.1.1. A record of actions taken to attempt to achieve compliance; and
 - 5.1.2. Evidence that the ship attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources for such fuel oil and that despite best efforts to obtain compliant fuel oil, no such fuel oil was made available for purchase.
- 5.2. Submission of the above information does not exempt the ship from Port State Control action. Where compliant fuel oil could not be obtained despite best efforts, the relevant port State authorities are to take into account all relevant circumstances and the evidence provided when determining the appropriate action. Prompt notification to the Administration and the competent authority of the port of destination is therefore required.

6. Surveys and Certificates

- 6.1. Every ship of 400 GT and above and every fixed and floating drilling rig and other platform are subject to initial, annual, intermediate, renewal and additional surveys to establish compliance with the revised MARPOL Annex VI air emissions requirements. Upon successful completion of the appropriate survey, an IAPPC shall be issued by the RO.

- 6.2. Each engine installed on a ship, irrespective of tonnage, to which section 2.3 of this circular applies shall be subject to survey and certified with an EIAPPC, in accordance with the NOx Technical Code.
- 6.3. A new IAPPC is required upon transfer of the ship to Tuvalu flag. A new IAPPC shall be issued only when the RO is fully satisfied that the ship is in compliance with the requirements of revised MARPOL Annex VI.
- 6.4. Whenever an accident occurs or a defect is discovered that affects the efficiency or completeness of equipment, the master or shipowner, must:
 - 6.4.1. Report this information, at the earliest opportunity, to the Administration or RO responsible for issuing the relevant certificate; and
 - 6.4.2. Establish a corrective action plan acceptable to the Administration or RO.

7. Recordkeeping

- 7.1. A MARPOL Annex VI Record Book, to be retained in the custody of the chief engineer, shall be established and maintained for the purpose of filing:
 - 7.1.1. The Engine Technical Files;
 - 7.1.2. The Record Book of Engine Parameters, when the Engine Parametric Check Method is employed;
 - 7.1.3. The Approved Method File, if applicable;
 - 7.1.4. Bunker Delivery Notes; and
 - 7.1.5. Tracking/control system for fuel oil samples.
- 7.2. The ODS record book required under section 2.1.7 of this circular, and the fuel oil changeover log book required under section 2.4.4 of this circular may be incorporated into the MARPOL Annex VI Record Book, provided such entries are differentiated as separate and independent sections of the MARPOL Annex VI Record Book.

8. Equivalent

- 8.1. Approval by the Administration is required for any changes/alternatives in the equipment, systems, fittings, arrangements or material covered by a survey. Approval for a change/alternative will be granted on condition the ship's RO confirms to the Administration that the change/alternative is at least as effective as that required by MARPOL Annex VI. Direct replacement of such equipment and fittings that conform to the revised MARPOL Annex VI is permitted.
- 8.2. Ships intending to use an EGCS as an equivalent means of compliance with Regulation 14 shall obtain Administration approval under Regulation 4. The EGCS shall comply with Resolution MEPC.340(77).

Yours sincerely,

Deputy Registrar
Tuvalu Ship Registry