



INFORMATION BULLETIN No. 75

MARPOL Annex VI – Air Pollution Prevention

Guidance and Instructions for Bahamas Recognised Organisations, Bahamas Approved Nautical Inspectors, Ship Owners, Managers and Masters

1. Purpose

- 1.1. This Bulletin documents the position of The Bahamas Maritime Authority (BMA) on Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI).
- 1.2. Any references to Articles and Regulations in this Bulletin are references to MARPOL Annex VI unless stated otherwise.
- 1.3. For ease of use, provisions relating to Regulation 14 (*sulphur oxides (SO_x)*) and Regulation 18 (*fuel oil availability and quality*) have been transferred to [BMA Information Bulletin No. 183](#).
- 1.4. The provisions of Regulation 22A of MARPOL Annex VI, in respect of fuel consumption data collection and reporting, are addressed separately in [BMA Information Bulletin No. 172](#).
- 1.5. This Bulletin should be read in conjunction with the documents listed in Annex 1.

2. Application

- 2.1. MARPOL Annex VI applies to all ships, except where expressly provided for in the Annex.
- 2.2. All Bahamian ships of 400 gross tonnage and above, engaged on international voyages, shall be surveyed and certificated in accordance with Regulation 5 and 6 of the Annex by the Recognised Organisation responsible for issuing the statutory certification.

3. Exceptions (Regulation 3.1)

- 3.1. The provisions of MARPOL Annex VI do not apply to:
- 3.1.1. any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or
- 3.1.2. any emission resulting from damage to a ship or its equipment:
- i. provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the emission for the purpose of preventing or minimizing the emission; and
 - ii. except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result.
- 3.2. Any emission described in 3.1 above shall be promptly notified to the BMA Investigation Department via email (casualty@bahamasmaritime.com) and the details recorded in the Official Log Book.

4. Exemptions (Regulations 3.2 & 3.3)

- 4.1. Based on the provisions of Regulation 3.2 of the Annex and recognising the necessity to allow development and promulgation of new technology, the BMA will, in cooperation with other Administrations as appropriate, consider applications for exemption from specific provisions of the Annex and issue a permit for a ship to conduct trials for the development of ship emission reduction and control technologies and engine design programmes.
- 4.2. Such applications, if accepted by the BMA, shall be provided only to the minimum number of ships necessary and for the maximum periods specified in Regulation 3.2.

5. Equivalent (Regulation 4)

- 5.1. Regulation 4 of Annex VI allows the Administration to approve the use of alternative compliance methods being at least as effective in terms of emission reductions as that required by the Annex, including the standards set out in Regulations 13 and 14.
- 5.2. Such methods may include use of SO_x emission reduction system (exhaust gas scrubbing, de-sulphuring of fuel or others), NO_x emission reduction

apparatus (if not installed as part of the engine) or any other technology that is verifiable and enforceable to limit:

- i. nitrogen oxides (NO_x) emissions to a level equivalent to that described in Regulation 13 of the Annex; or
- ii. SO_x emissions to a level equivalent to that described in Regulation 14 of the Annex.

5.3. The equivalent arrangements to the specific provisions of Annex VI and alternative compliance methods will be considered on a case-by-case basis in accordance with the provisions of Regulation 4.

5.4. All applications for acceptance of equivalents and alternative compliance methods are to be forwarded to the BMA by the Recognised Organisation, as per [BMA Information Bulletin No.8](#).

5.5. Upon satisfactory review of the application, the BMA will notify the International Maritime Organization (IMO) of the acceptance of the equivalent/alternative compliance by making an entry in the IMO Global Integrated Shipping Information System (GISIS)¹.

6. Surveys and certification (Regulations 5 to 9)

6.1. International Air Pollution Prevention (IAPP) Certificate

Ships of 400 gross tonnage and above, including every fixed and floating drilling rig and other platforms, shall undergo surveys in accordance with Regulation 5.1.

6.2. International Energy Efficiency Certificate (IEEC)

6.2.1. Ships of 400 gross tonnage and above to which Chapter 4 of MARPOL Annex VI applies shall undergo surveys in accordance with Regulation 5.4.

6.2.2. Ships which are not required to keep a Ship Energy Efficiency Management Plan (SEEMP) do not require an IEE Certificate (see Section [15](#) below).

6.3. Compliance Control

6.3.1. The following shall be made available upon request to duly authorised officials, in addition to the statutory certificates:

¹ <https://gisis.imo.org> (Registration required)

- i. Bunker delivery notes and samples including collection and analysis records, any issued Fuel Oil Non-Availability Reports (FONAR) as required by Regulation 18 and related communications - see [BMA Information Bulletin No.183](#);
 - ii. Technical File for each applicable engine, inclusive of record book of engine parameters, including Engine International Air Pollution Prevention Certificate (EIAPPC);
 - iii. Documented procedures and records to ensure compliance while in a Sulphur Emissions Control Area (SECA);
 - iv. Documented procedure for oily garbage screening and segregation;
 - v. MARPOL VI Record Book, see [BMA Information Bulletin No.126](#);
 - vi. Control and Monitoring system data where EGCS and/or SCR is installed on board;
 - vii. An Exemption Certificate and a Permit where the BMA has agreed to allow the ship to conduct EGCS on-board commissioning and trials, under the provisions of Regulation 3.2.
- 6.4. The Master or crew should be able to demonstrate familiarity with essential procedures regarding the operation of air pollution prevention equipment (e.g. maintenance of diesel engines, fuel oil change over procedures, garbage screening procedures and operation of EGCS/SCR if installed).
- 6.5. In exceptional circumstances when original records/documents or associated samples are removed by a duly authorised officer, the Master or crew should document the fact in the Official Log Book and appropriate section of the Bahamas Annex VI Record Book (where carried) and obtain contact information of the port or coastal State Authority that took such action.

7. Ozone depleting substances (Regulation 12)

- 7.1. Regulation 12 does not apply to permanently sealed equipment where there are no refrigerant charging connections or potentially removable components containing ozone depleting substances.
- 7.2. Deliberate emission of ozone-depleting substances is prohibited. This includes emissions occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment.
- 7.3. Deliberate emissions do not include minimal releases associated with the recapture or recycling of an ozone depleting substance.

- 7.4. Companies² should be aware that emissions arising from leaks of an ozone depleting substance, whether or not deliberate, may be regulated by parties to Annex VI.
- 7.5. Ozone depleting substances, and equipment containing such substances, shall be delivered to appropriate reception facilities when removed from a ship.
- 7.6. Each ship to which Annex VI applies shall maintain a list of equipment containing ozone depleting substances.
- 7.7. Records of shipboard operations related to ozone depleting substances shall be kept. The BMA has issued the Bahamas MARPOL Annex VI Record Book that can be utilised to maintain the required records. Please refer to [BMA Information Bulletin No. 126](#).
- 7.8. The BMA has issued guidance on the use of hydrochlorofluorocarbon (HCFC) refrigerants – please refer to [BMA Information Bulletin No. 123](#).
- 7.9. Further details of controlled ozone depleting substances, as outlined in Regulation 2.16 of MARPOL Annex VI and a summary of control measures defined under UNEP Montreal Protocol can be found in the official guidelines to the Montreal Protocol.

8. Nitrogen oxides (NO_x) Emissions (Regulation 13)

- 8.1. The Regulations regarding NO_x controls apply to any diesel engine with a power output of more than 130kW that has been installed on a ship constructed on or after 01 January 2000 or, if installed on a ship constructed earlier, has undergone a major conversion on or after 01 January 2000.
- 8.2. "Major conversion", for the purposes of Regulation 13, means a modification on or after 01 January 2000 of a marine diesel engine which has not already been certified to Tier I, II or III standards where:
 - i. the engine is replaced by a marine diesel engine or an additional marine diesel engine is installed; or
 - ii. any substantial modification, as defined in the revised NO_x Technical Code 2008, is made to the engine; or
 - iii. 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 The "Company" means the owner or any other organisation or person, such as the manager, or the bareboat charterer, who has assumed responsibility for the operation of the ship.

- 8.3. When a major conversion involves replacement of a marine diesel engine with a non-identical engine, or installation of an additional engine, the new engine shall comply with the NO_x standards of Regulation 13.4 or 13.5.1 applicable at the time of replacement.
- 8.4. Where a replacement engine is fitted that is unable to demonstrate compliance with the standards outlined in Regulation 13.5.1, such engine shall meet the standards applicable to Tier II. Any additional engine however shall demonstrate compliance with Tier III emission limits.
- 8.5. More details addressing non-identical replacement engines compliance with Tier III limits can be found in [IMO Resolution MEPC.230\(65\)](#).
- 8.6. Regulation 13 does not apply to diesel engines intended to be used solely in the case of emergency, including lifeboat engines. However, lifeboats used as tenders must comply with Regulation 13.
- 8.7. Emissions from fixed or floating platforms and drilling rig engines that are solely dedicated to the exploration, exploitation and associated offshore processing of seabed mineral resources are exempted from the regulations regarding NO_x controls. The BMA interprets that Annex VI requirements shall apply to engines that jointly supply power to exploration and processing machinery and also the platform domestic load.
- 8.8. Each engine on board a Bahamian ship subject to the Annex is required to have an associated Engine Technical File. The Technical file shall remain on board the ship for as long as the engine remains on board and shall be available for inspection by duly authorised officers.
- 8.9. The Technical File shall include an on-board NO_x verification procedure, the parent engine's emission test report and the Engine International Air Pollution Prevention Certificate (EIAPPC).
- 8.10. Boilers and gas turbines are not covered under the NO_x controls regulations.

8.11. Marine diesel engines subject to Regulation 13 shall comply with the following NO_x emission standards:

Ship constructed on or after:	Nitrogen Oxide Emissions (calculated as total weighted emission of NO ₂) g/kWh		
	Rated engine speed less than 130 rpm	Rated engine speed between 130 and 1999 rpm	Rated engine speed 2000 rpm and over
1 Jan 2000 - Tier I	17.0	$45 * n^{(-0.2)}$	9.8
1 Jan 2011 - Tier II	14.4	$44 * n^{(-0.23)}$	7.7
1 Jan 2016 - Tier III	3.4	$9 * n^{(-0.2)}$	2.0

- i. The requirements of Tier III standard shall apply only when the ship is constructed on or after 01 January 2016 and operating in a NO_x Emission Control Area (ECA) designated under Regulation 13.6 of Annex VI.
- ii. The requirements of Tier III standard shall also apply when the ship is operating in a NO_x Emission Control Area (ECA) newly designated under Regulation 13.6 of Annex VI and has been constructed on or after the date of adaption of such new emission control area designation;
- iii. When the ship is operating outside of a NO_x Emission Control Area the Tier II standards apply. At the time of publication of this Bulletin the only designated NO_x Emission Control Areas are the North American and the United States Caribbean Sea areas, as described in Appendix VII to Annex VI.

8.12. The Tier III emission standards however shall not apply to:

- i. A marine diesel engine installed prior to 01 January 2021 on a ship of less than 500 gross tonnage specifically designed and used for recreational (non-commercial) purposes, with a length (*L*) of **24 meters or over** (as defined in regulation 1.19 of MARPOL Annex I). In the case of such a ship where a marine diesel engine is installed on or after 01 January 2021, compliance to Tier III requirements shall be demonstrated;
- ii. A marine diesel engine installed on a ship specifically designed and used for recreational (non-commercial) purposes, with a length (*L*) of **less than 24 meters** (as defined in regulation 1.19 of MARPOL Annex I);
- iii. A marine diesel engine installed on a ship with a combined nameplate propulsion power of less than 750 kW where the ship cannot comply with Tier III emission requirements due to design or construction limitations, subject to acceptance by the BMA.

- 8.13. 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 or after 1 January 1990 but before 1 January 2000, shall comply with the Tier I limits shown above, provided that an Approved Method for that engine is commercially available and has been certified by an Administration of a Party to Annex VI and notified to IMO.
- 8.14. The IAPP Certificate shall indicate that an approved method:
- has been applied pursuant to paragraph 7.1.1 of Regulation 13; or the engine has been certified pursuant to paragraph 7.1.2 of Regulation 13; or
 - an Approved Method is not yet commercially available as described in paragraph 7.2 of Regulation 13, or
 - is not available.

9. Volatile organic compounds VOC (Regulation 15)

- 9.1. These provisions apply only to tankers in designated ports and terminals where emission of VOC is regulated.
- 9.2. Compliance with VOC emission control requirements may be achieved through the following:
- i.
 - ii. fitting of Vapour Emission Collection Systems (VECS) in accordance with IMO MSC/Circ.585; and
 - iii. obtaining certification and class notation from Recognised Organisation referred to in paragraph 2.2.
- 9.3. All tankers carrying crude oil shall have an approved VOC management plan implemented onboard. Companies should refer to MEPC.185(59), MEPC.1/Circ.680 and MEPC.1/Circ.719 when developing the VOC management plan. VOC management plans are to be approved by a Recognised Organisation on behalf of the BMA.
- 9.4. The provisions of Regulation 15 also apply to gas carriers where cargo loading and containment systems are designed to allow retention of non-methane VOC on board for safe return to shore facilities.
- 9.5. A list of current designated ports may be viewed on IMO [GISIS](https://gisis.imo.org)³.

³ <https://gisis.imo.org> (Registration required)

10. Shipboard incineration (Regulation 16)

- 10.1. This Regulation applies to all incinerators installed on or after 01 January 2000.
- i. Incinerators installed on or after 01 January 2000 with capacity up to 1500 kW shall be type approved in accordance with MEPC.76(40);
 - ii. Incinerators with capacity over 1500kW and up to 4000 kW shall be type approved in accordance with MEPC.244(66).
- 10.2. Existing incinerators installed before 01 January 2000 are acceptable to the BMA, provided that they are type approved in accordance with IMO MEPC.59(33) or MEPC.76(40), as amended. Existing incinerators that are not type approved may still be used, however they may not be used for the incineration of polyvinyl chlorides (PVCs).
- 10.3. Shipboard incineration of the following substances is prohibited:
- i. Residues of cargoes subject to MARPOL Annex I, II or III or related contaminated packing materials;
 - ii. Polychlorinated biphenyls (PCBs);
 - iii. Garbage, as defined by MARPOL Annex V, containing more than traces of heavy metals;
 - iv. Refined petroleum products containing halogen compounds;
 - v. Sewage sludge and sludge oil which is not generated on the ship; and
 - vi. Exhaust gas cleaning system residues.
- 10.4. Shipboard incineration of sewage sludge and sludge oil generated during normal operations of a ship may also take place in the main or auxiliary power plant or boilers, but in those cases, shall not take place inside ports, harbours and estuaries.
- 10.5. Operation of incinerators within ECAs must be agreed with individual port States and affected coastal States in all cases.

11. Reception facilities (Regulation 17)

- 11.1. Reports on alleged unavailability or inadequacy of reception facilities provided under Regulation 17 should be sent to the Maritime Affairs department of the BMA via email (ma@bahamasmaritime.com) and copied to the Inspections & Surveys Department (tech@bahamasmaritime.com).
- 11.2. The BMA will report such allegations to IMO, in accordance with Regulation 17.4.

12. Energy Efficiency Requirements (Regulation 19 to 23)

- 12.1. Regulation 19 outlines the application of Chapter 4 of Annex VI *Regulations on Energy Efficiency for Ships* (i.e. Regulations 19 to 23).
- 12.2. Regulations 19 to 23 apply to all ships of 400 gross tonnage and above, with the exception of:
- i. ships not propelled by mechanical means;
 - ii. offshore platforms, including FPSOs and FSUs and drilling rigs, regardless of their propulsion;
 - iii. ships operating exclusively in Bahamian waters, provided that such ships are constructed and act in a manner consistent with Chapter 4 so far as is reasonable and practicable.
- 12.3. Regulations 20 and 21 shall not apply to following ships:
- i. Cargo ships having ice-breaking capability;
 - ii. Ships which have non-conventional propulsion.
- 12.4. Notwithstanding the above, Regulations 20 and 21 shall apply to the following ship types delivered on or after 01 September 2019:
- i. cruise ships having non-conventional propulsion;
 - ii. LNG carriers of any propulsion.
- 12.5. The provisions of Chapter 4 of MARPOL Annex VI may be waived, subject to BMA agreement, except for the ships:
- i. for which the building contract is placed on or after 1 January 2017; or
 - ii. in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2017; or

- iii. in cases of a major conversion of a new or existing ship, as defined in regulation 2.24 of the Annex, on or after 1 January 2017, and in which regulations 5.4.2 and 5.4.3 of the Annex apply.

13. Attained EEDI (Regulation 20)

- 13.1. *EEDI* means Energy Efficiency Design Index and represents the equivalent amount of carbon dioxide that a ship as a whole emits, in relation to the amount of cargo carried per mile sailed.
- 13.2. The attained EEDI is a calculated value that represents the actual amount of emissions. The attained EEDI should be lower than the required EEDI prescribed in Regulation 21 of Annex VI
- 13.3. The attained EEDI shall be calculated for every ship specified in Regulation 20.1, including new and existing ships which have undergone a major conversion, using *Guidelines on the Method of Calculation of the Attained EEDI for New Ships* published by the IMO as Resolution MEPC.308(73).
- 13.4. The attained EEDI shall be verified by a Bahamas Recognised Organisation, based on the EEDI technical file.

14. Required EEDI (Regulation 21)

- 14.1. The Required EEDI is a calculated hypothetical maximum carbon dioxide emission value for the ship as a whole, including all combustion machinery.
- 14.2. The Required EEDI shall be calculated for every ship specified in Regulation 21.1, including new and existing ships which have undergone a major conversion.

15. Ship Energy Efficiency Management Plan (SEEMP) (Regulation 22)

- 15.1. Each ship of 400 gross tonnage and above, except those listed in paragraph 12.2, shall keep a ship specific SEEMP on board, prepared taking into account Resolution MEPC.282(70).
- 15.2. The SEEMP shall be provided on board before issuance of the IEE Certificate.
- 15.3. SEEMP Part I does not require verification or approval by the Administration.
- 15.4. See paragraph 3.3 of [BMA Information Bulletin No.172](#) addressing SEEMP Part II.

- 15.5. The SEEMP shall be prepared in the working language or languages of the ship. Where the working language is not English, a copy of the SEEMP shall also be available in English.

16. Revision History

Rev.05 (29 October 2019) – Complete revision, Bulletin renamed “MARPOL Annex VI – Air Pollution Prevention”

Rev.04 (18 December 2014) – Complete revision

Rev.03 (03 November 2010)

Rev.02 (18 June 2010)

Rev.01 (12 April 2007)

Rev.00 (31 May 2005) – First issue

Annex 1 – Related Documents

- i. International Maritime Organization (IMO) Assembly Resolution:
 - [A.1120\(30\) Survey guidelines under the harmonised system of survey and certification \(HSSC\), 2017](#), Annex 3,
 -
- ii. IMO Marine Environment Protection Committee (MEPC) Resolutions:
 - [MEPC.177\(58\) Amendments to the technical code on control of emission of nitrogen oxides from marine diesel engines \(NOx Technical Code 2008\)](#);
 - [MEPC.181\(59\) 2009 guidelines for port state control under the revised MARPOL Annex IV](#);
 - [MEPC.182\(59\) 2009 guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex IV](#);
 - [MEPC.185\(59\) Guidelines for the development of a VOC management plan](#);
 - [MEPC.219\(63\) 2012 guidelines for the implementation of MARPOL Annex VI](#);
 - [MEPC.230\(65\) 2013 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](#);
 - [MEPC.244\(66\) 2014 standard specification for shipboard incinerators](#);
 - [MEPC.247\(66\) Amendments to \[MARPOL Annex IV\]](#);
 - [MEPC.251\(66\) Amendments to \[MARPOL Annex IV\]](#);
 - [MEPC.254\(67\) 2014 guidelines on survey and certification of the energy efficiency design index \(EEDI\)](#), as amended by [MEPC.261\(68\)](#) and [MEPC.309\(73\)](#);
 - [MEPC.259\(68\) 2015 guidelines for exhaust gas cleaning systems](#);
 - [MEPC.301\(72\) Amendments to \[MARPOL Annex VI\]](#);
 - [MEPC.308\(73\) 2018 guidelines on the method of calculation of the attained energy efficiency design index \(EEDI\) for new ships](#);
- iii. IMO Circulars:
 - [MEPC.1/Circ.680 Technical information on systems and operation to assist development of VOC management plans](#);
 - [MEPC.1/Circ.719 Technical information on a vapour pressure control system in order to facilitate the development and management of VOC management plans](#);
 - [MEPC.1/Circ.793 Type approval of shipboard incinerators](#);
 - [MEPC.1/Circ.795/Rev.4 Unified interpretations to MARPOL Annex IV](#);
 - [MEPC.5/Circ.9 Pollution prevention equipment required by MARPOL 73/78](#);
 - and
 - [MSC/Circ.585 Standards for vapour emission control systems](#).
- iv. [BMA Information Bulletin No. 123](#);
[BMA Information Bulletin No. 126](#);
[BMA Information Bulletin No. 172](#); and
[BMA Information Bulletin No. 183](#).