

PREVENTION OF POLLUTION OF THE SEA ACT

(CHAPTER 243)

PREVENTION OF POLLUTION OF THE SEA (AIR) REGULATIONS 2005

In exercise of the powers conferred by section 34 of the Prevention of Pollution of the Sea Act, the Maritime and Port Authority of Singapore, with the approval of the Minister for Transport, hereby makes the following Regulations:

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PREVENTION OF POLLUTION OF THE SEA ACT

(CHAPTER 243)

PREVENTION OF POLLUTION OF THE SEA (AIR) REGULATIONS 2005

In exercise of the powers conferred by section 34 of the Prevention of Pollution of the Sea Act, the Maritime and Port Authority of Singapore, with the approval of the Minister for Transport, hereby makes the following Regulations:

Citation and commencement

1. These Regulations may be cited as the Prevention of Pollution of the Sea (Air) Regulations 2005 and shall come into operation on 19th May 2005.

Definitions

2. In these Regulations, unless the context otherwise requires —

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"Annex VI" means Annex VI to the Convention which contains regulations for the prevention of air pollution from ships and which is set out in the First Schedule;

"authorised organisation" means an organisation authorised by regulations made under section 116 of the Merchant Shipping Act (Cap. 179) for the purposes of surveying ships and issuing certificates under Part V of that Act;

"IAPP Certificate" means an International Air Pollution Prevention Certificate issued under regulation 6 of Annex VI by the Administration of any Contracting Party to the Convention;

"IMO" means the International Maritime Organisation;

"SAPP Certificate" means a Singapore Air Pollution Prevention Certificate issued by the Director or an authorised organisation under regulation 8.

Application

3.—(1) Annex VI shall, subject to these Regulations, have the force of law in Singapore.

(2) A provision of Annex VI interpreted or explained by a provision of these Regulations shall be read as having the same meaning attributed by that provision.

(3) For the purpose of regulation 1 of Annex VI, reference to "all ships" in that regulation shall be read as a reference to —

- (a) Singapore ships; and
- (b) other ships while they are in Singapore waters,

and these Regulations shall apply to such ships.

Exemptions

4. The Director may grant exemptions from all or any of these Regulations including Annex VI (as may be specified in the exemption) for classes of cases or individual cases on such terms as he may specify and may, subject to giving reasonable notice, alter or cancel any such exemption.

Administration

5.—(1) Except where provided in these Regulations, for the purposes of these Regulations, references to the Administration and to officer of the Administration shall be read as references to the Director and the surveyor of ships respectively and references to the nominated surveyor or recognised organisation shall be read as references to an authorised organisation respectively.

(2) For the purposes of regulation 6 (3) of Annex VI, references to the Administration shall be read as a reference to the Director and references to persons or organisations duly authorised by the Administration shall be read as references to authorised organisations respectively.

(3) For the purpose of regulations 18 (5) and (7) (a), (b), (c) and (d) and 19 (3) of Annex VI, references to the Administration, appropriate authorities or competent authorities shall be read as references to the Authority.

Powers to inspect

6.—(1) A ship to which these Regulations apply shall be subject, in Singapore waters, to inspection by a surveyor of ships.

(2) Any such inspection shall be limited to verifying that there is on board in relation to that ship a valid IAPP Certificate in the form prescribed by the Convention or a valid SAPP Certificate unless there are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of that Certificate.

(3) In the case referred to in paragraph (2), or if the ship does not carry a valid Certificate, the surveyor of ships shall take such steps as he may consider necessary to ensure that the ship shall not sail until it can proceed to sea without presenting an unreasonable threat of harm to the atmosphere or sea.

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- (4) The Director may in such a case permit the ship to proceed to the nearest appropriate repair yard.
- (5) Upon receiving evidence that a particular ship has emitted any of the substances covered by Annex VI in violation of the provisions of these Regulations, the Director shall cause the matter to be investigated by an inspector and shall inform the State which has reported the contravention as well as IMO, of the action taken.
- (6) The Director may also cause a ship other than a Singapore ship to be inspected by an inspector when it enters Singapore waters if a request for an investigation is received from any State which is a Party to the Convention together with sufficient evidence that the ship has emitted any of the substances covered by Annex VI in violation of the provisions of these Regulations in any place.
- (7) The report of such investigation may be sent to the State requesting the investigation and the State in which the ship is registered.

Prohibition on proceeding to sea without IAPP Certificate

7.—(1) The master of every ship of 400 gross tonnage and above shall produce to the Port Master, at the time a clearance for the ship is demanded for a voyage from Singapore to a port or place outside Singapore waters, the IAPP Certificate to be in force when the ship proceeds to sea.

(2) A clearance shall not be granted, and the ship may be detained, until the IAPP Certificate is so produced.

SAPP Certificate

8. The Director or an authorised organisation shall, after a survey in accordance with the provisions of regulation 5 of Annex VI which relates to all ships of 400 gross tonnage and above which operate within Singapore waters and are not engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention, issue in relation to that ship a SAPP Certificate in such form as the Director may determine.

Penalties

9. If any ship fails to comply with any requirement of these Regulations, the owner and the master of the ship shall each be guilty of an offence and shall each be liable on conviction to a fine not exceeding \$10,000 or to imprisonment for a term not exceeding 2 years or to both.

Fees

10. The fees specified in the Second Schedule shall be payable to the Director in respect of the services provided by the Director specified in that Schedule.

FIRST SCHEDULE

Regulation 2

ANNEX VI OF THE CONVENTION REGULATIONS FOR THE PREVENTION OF AIR POLLUTION FROM SHIPS

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CHAPTER I

GENERAL

REGULATION 1

APPLICATION

The provisions of this Annex shall apply to all ships, except where expressly provided otherwise in regulations 3, 5, 6, 13, 15, 18 and 19 of this Annex.

REGULATION 2

DEFINITIONS

For the purpose of this Annex:

- (1) *A similar stage of construction* means the stage at which:
 - (a) construction identifiable with a specific ship begins; and
 - (b) assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.
- (2) *Continuous feeding* is defined as the process whereby waste is fed into a combustion chamber without human assistance while the incinerator is in normal operating conditions with the combustion chamber operative temperature between 850°C and 1200°C.
- (3) *Emission* means any release of substances, subject to control by this Annex from ships into the atmosphere or sea.
- (4) *New installations*, in relation to regulation 12 of this Annex, means the installation of systems, equipment, including new portable fire-extinguishing units, insulation, or other material on a ship after the date on which this Annex enters into force, but excludes repair or recharge of previously installed systems, equipment, insulation, or other material, or recharge of portable fire-extinguishing units.
- (5) *NO_x Technical Code* means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by Conference resolution 2, as may be amended by the Organization, provided that such amendments are adopted and brought into force in accordance with the provisions of article 16 of the present Convention concerning amendment procedures applicable to an appendix to an Annex.
- (6) *Organization* means the International Maritime Organization.
- (7) *Ozone-depleting substances* 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.

Ozone-depleting substances 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 (also known as 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

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- (8) *Sludge oil* means sludge from the fuel or lubricating oil separators, waste lubricating oil from main or auxiliary machinery, or waste oil from bilge water separators, oil filtering equipment or drip trays.
- (9) *Shipboard incineration* means the incineration of wastes or other matter on board a ship, if such wastes or other matter were generated during the normal operation of that ship.
- (10) *Shipboard incinerator* means a shipboard facility designed for the primary purpose of incineration.
- (11) *Ships constructed* means ships the keels of which are laid or which are at a similar stage of construction.
- (12) *SO_x emission control area* means an area where the adoption of special mandatory measures for SO_x emissions from ships is required to prevent, reduce and control air pollution from SO_x and its attendant adverse impacts on land and sea areas. SO_x emission control areas shall include those listed in regulation 14 of this Annex.
- (13) *Tanker* means an oil tanker as defined in regulation 1 (4) of Annex I or a chemical tanker as defined in regulation 1 (1) of Annex II of the present Convention.
- (14) *The Protocol of 1997* means the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 relating thereto.
- (15) *Anniversary date* means the day and the month of each year which will correspond to the date of expiry of the International Air Pollution Prevention Certificate.

REGULATION 3

GENERAL EXCEPTIONS

Regulations of this Annex shall not apply to:

- (a) any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or
- (b) 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.

REGULATION 4

EQUIVALENTS

- (1) The Administration may allow any fitting, material, appliance or apparatus to be fitted in a ship as an alternative to that required by this Annex if such fitting, material, appliance or apparatus is at least as effective as that required by this Annex.
- (2) The Administration which allows a fitting, material, appliance or apparatus as an alternative to that required by this Annex shall communicate to the Organization for circulation to the Parties to

the present Convention particulars thereof, for their information and appropriate action, if any.

CHAPTER II

SURVEY, CERTIFICATION AND MEANS OF CONTROL

REGULATION 5

SURVEYS

(1) Every ship of 400 gross tonnage and above and every fixed and floating drilling rig and other platforms shall be subject to the surveys specified below:

(a) an initial survey before the ship is put into service or before the certificate required under regulation 6 of this Annex is issued for the first time. This survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of this Annex;

(b) a renewal survey at intervals specified by the Administration, but not exceeding five years, except where regulation 9 (2), (5), (6) or (7) of this Annex is applicable. The renewal survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of this Annex;

(c) an intermediate survey within three months before or after the second anniversary date or within three months before or after the third anniversary date of the certificate which shall take the place of one of the annual surveys specified in paragraph (1) (d) of this regulation. The intermediate survey shall be such as to ensure that the equipment and arrangements fully comply with the applicable requirements of this Annex and are in good working order. Such intermediate surveys shall be endorsed on the certificate issued under regulation 6 or 7 of this Annex;

(d) an annual survey within three months before or after each anniversary date of the certificate, including a general inspection of the equipment, systems, fittings, arrangements and material referred to in paragraph (1) (a) of this regulation to ensure that they have been maintained in accordance with paragraph (4) of this regulation and that they remain satisfactory for the service for which the ship is intended. Such annual surveys shall be endorsed on the certificate issued under regulation 6 or 7 of this Annex; and

(e) an additional survey either general or partial, according to the circumstances, shall be made after a repair resulting from investigations prescribed in paragraph (4) of this regulation, or whenever any important repairs or renewals are made. The survey shall be such as to ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are in all respects satisfactory and that the ship complies in all respects with the requirements of this Annex.

(2) In the case of ships of less than 400 gross tonnage, the Administration may establish appropriate measures in order to ensure that the applicable provisions of this Annex are complied with.

(3)

(a) Surveys of ships as regards the enforcement of the provisions of this Annex shall be carried out by officers of the Administration. The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it. Such organizations shall comply with the guidelines adopted by the Organization*.

*Refer to the Guidelines for the authorization of organizations acting on behalf of the Administration, adopted by the Organization by resolution A.739 (18), and the Specifications

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on the survey and certification functions of recognized organizations acting on behalf of the Administration, adopted by the Organization by resolution A. 789 (19).

(b) The survey of engines and equipment for compliance with regulation 13 of this Annex shall be conducted in accordance with the NOx Technical Code.

(c) When a nominated surveyor or recognized organization determines that the condition of the equipment does not correspond substantially with the particulars of the certificate, they shall ensure that corrective action is taken and shall in due course notify the Administration. If such corrective action is not taken, the certificate should be withdrawn by the Administration. If the ship is in a port of another Party, the appropriate authorities of the port State shall also be notified immediately. When an officer of the Administration, a nominated surveyor or recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this regulation.

(d) In every case, the Administration concerned shall fully guarantee the completeness and efficiency of the survey and shall undertake to ensure the necessary arrangements to satisfy this obligation.

(4)

(a) The equipment shall be maintained to conform with the provisions of this Annex and no changes shall be made in the equipment, systems, fittings, arrangements, or material covered by the survey, without the express approval of the Administration. The direct replacement of such equipment and fittings with equipment and fittings that conform with the provisions of this Annex is permitted.

(b) Whenever an accident occurs to a ship or a defect is discovered, which substantially affects the efficiency or completeness of its equipment covered by this Annex, the master or owner of the ship shall report at the earliest opportunity to the Administration, a nominated surveyor, or recognized organization responsible for issuing the relevant certificate.

REGULATION 6

ISSUE OR ENDORSEMENT OF CERTIFICATE

(1) An International Air Pollution Prevention Certificate shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 5 of this Annex, to:

(a) any ship of 400 gross tonnage and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties; and

(b) platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties to the Protocol of 1997.

(2) Ships constructed before the date of entry into force of the Protocol of 1997 shall be issued with an International Air Pollution Prevention Certificate in accordance with paragraph (1) of this regulation no later than the first scheduled drydocking after entry into force of the Protocol of 1997, but in no case later than three years after entry into force of the Protocol of 1997.

(3) Such certificate shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it. In every case the Administration assumes full responsibility for the certificate.

REGULATION 7

ISSUE OR ENDORSEMENT OF A CERTIFICATE BY ANOTHER GOVERNMENT

- (1) The Government of a Party to the Protocol of 1997 may, at the request of the Administration, cause a ship to be surveyed and, if satisfied that the provisions of this Annex are complied with, shall issue or authorize the issuance of an International Air Pollution Prevention Certificate to the ship, and where appropriate, endorse or authorize the endorsement of that certificate on the ship, in accordance with this Annex.
- (2) A copy of the certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.
- (3) A certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a certificate issued under regulation 6 of this Annex.
- (4) No International Air Pollution Prevention Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party to the Protocol of 1997.

REGULATION 8

FORM OF CERTIFICATE

The International Air Pollution Prevention Certificate shall be drawn up in a form corresponding to the model given in Appendix I to this Annex and shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of dispute or discrepancy.

REGULATION 9

DURATION AND VALIDITY OF CERTIFICATE

- (1) An International Air Pollution Prevention Certificate shall be issued for a period specified by the Administration, which shall not exceed five years.
- (2)
 - (a) Notwithstanding the requirements of paragraph (1) of this regulation, when the renewal survey is completed within three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate.
 - (b) When the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate.
 - (c) When the renewal survey is completed more than three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.
- (3) If a certificate is issued for a period of less than five years, the Administration may extend the validity of the certificate beyond the expiry date to the maximum period specified in paragraph (1) of this regulation, provided that the surveys referred to in regulation 5 (1) (c) and (d) of this Annex applicable when a certificate is issued for a period of five years are carried out as appropriate.
- (4) If a renewal survey has been completed and a new certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the person or organization

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authorized by the Administration may endorse the existing certificate and such a certificate shall be accepted as valid for a further period which shall not exceed five months from the expiry date.

(5) If a ship, at the time when a certificate expires, is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

(6) A certificate issued to a ship engaged on short voyages which has not been extended under the foregoing provisions of this regulation may be extended by the Administration for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

(7) In special circumstances, as determined by the Administration, a new certificate need not be dated from the date of expiry of the existing certificate as required by paragraph (2) (b), (5) or (6) of this regulation. In these special circumstances, the new certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.

(8) If an annual or intermediate survey is completed before the period specified in regulation 5 of this Annex, then:

(a) the anniversary date shown on the certificate shall be amended by endorsement to a date which shall not be more than three months later than the date on which the survey was completed;

(b) the subsequent annual or intermediate survey required by regulation 5 of this Annex shall be completed at the intervals prescribed by that regulation using the new anniversary date;

(c) the expiry date may remain unchanged provided one or more annual or intermediate surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by regulation 5 of this Annex are not exceeded.

(9) A certificate issued under regulation 6 or 7 of this Annex shall cease to be valid in any of the following cases:

(a) if the relevant surveys are not completed within the periods specified under regulation 5 (1) of this Annex;

(b) if the certificate is not endorsed in accordance with regulation 5 (1) (c) or (d) of this Annex;

(c) upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Government issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of regulation 5(4)(a) of this Annex. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Government of the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports.

REGULATION 10

PORT STATE CONTROL ON OPERATIONAL REQUIREMENTS

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- (1) A ship, when in a port or an offshore terminal under the jurisdiction of another Party to the Protocol of 1997, is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex, where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of air pollution from ships.
- (2) In the circumstances given in paragraph (1) of this regulation, the Party shall take such steps as will ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.
- (3) Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.
- (4) Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.

REGULATION 11

DETECTION OF VIOLATIONS AND ENFORCEMENT

- (1) Parties to this Annex shall co-operate in the detection of violations and the enforcement of the provisions of this Annex, using all appropriate and practicable measures of detection and environmental monitoring, adequate procedures for reporting and accumulation of evidence.
- (2) A ship to which the present Annex applies may, in any port or offshore terminal of a Party, be subject to inspection by officers appointed or authorized by that Party for the purpose of verifying whether the ship has emitted any of the substances covered by this Annex in violation of the provision of this Annex. If an inspection indicates a violation of this Annex, a report shall be forwarded to the Administration for any appropriate action.
- (3) Any Party shall furnish to the Administration evidence, if any, that the ship has emitted any of the substances covered by this Annex in violation of the provisions of this Annex. If it is practicable to do so, the competent authority of the former Party shall notify the master of the ship of the alleged violation.
- (4) Upon receiving such evidence, the Administration so informed shall investigate the matter, and may request the other Party to furnish further or better evidence of the alleged contravention. If the Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken in accordance with its law as soon as possible. The Administration shall promptly inform the Party which has reported the alleged violation, as well as the Organization, of the action taken.
- (5) A Party may also inspect a ship to which this Annex applies when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party together with sufficient evidence that the ship has emitted any of the substances covered by the Annex in any place in violation of this Annex. The report of such investigation shall be sent to the Party requesting it and to the Administration so that the appropriate action may be taken under the present Convention.
- (6) The international law concerning the prevention, reduction, and control of pollution of the marine environment from ships, including that law relating to enforcement and safeguards, in force at the time of application or interpretation of this Annex, applies, *mutatis mutandis*, to the rules and standards set forth in this Annex.

CHAPTER III

REQUIREMENTS FOR CONTROL OF EMISSIONS FROM SHIPS

REGULATION 12

OZONE-DEPLETING SUBSTANCES

- (1) Subject to the provisions of regulation 3, any deliberate emissions of ozone-depleting substances shall be prohibited. Deliberate emissions include emissions occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment, except that deliberate emissions do not include minimal releases associated with the recapture or recycling of an ozone-depleting substance. Emissions arising from leaks of an ozone-depleting substance, whether or not the leaks are deliberate, may be regulated by Parties to the Protocol of 1997.
- (2) New installations which contain ozone-depleting substances shall be prohibited on all ships, except that new installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1st January 2020.
- (3) The substances referred to in this regulation, and equipment containing such substances, shall be delivered to appropriate reception facilities when removed from ships.

REGULATION 13

NITROGEN OXIDES (NO_x)

- (1)
- (a) This regulation shall apply to:
- (i) each diesel engine with a power output of more than 130 kW which is installed on a ship constructed on or after 1st January 2000; and
 - (ii) each diesel engine with a power output of more than 130 kW which undergoes a major conversion on or after 1st January 2000.
- (b) This regulation does not apply to:
- (i) emergency diesel engines, engines installed in lifeboats and any device or equipment intended to be used solely in case of emergency; and
 - (ii) engines installed on ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly, provided that such engines are subject to an alternative NO_x control measure established by the Administration.
- (c) Notwithstanding the provisions of sub-paragraph (a) of this paragraph, the Administration may allow exclusion from the application of this regulation to any diesel engine which is installed on a ship constructed, or on a ship which undergoes a major conversion, before the date of entry into force of the present Protocol, provided that the ship is solely engaged in voyages to ports or offshore terminals within the State the flag of which the ship is entitled to fly.
- (2)
- (a) For the purpose of this regulation, *major conversion* means a modification of an engine where:
- (i) the engine is replaced by a new engine built on or after 1st January 2000, or

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(ii) any substantial modification, as defined in the NO_x Technical Code, is made to the engine, or

(iii) the maximum continuous rating of the engine is increased by more than 10%.

(b) The NO_x emission resulting from modifications referred to in the sub-paragraph (a) of this paragraph shall be documented in accordance with the NO_x Technical Code for approval by the Administration.

(3)

(a) Subject to the provision of regulation 3 of this Annex, the operation of each diesel engine to which this regulation applies is prohibited, except when the emission of nitrogen oxides (calculated as the total weighted emission of NO₂) from the engine is within the following limits:

(i) 17.0 g/kW h when n is less than 130 rpm

(ii) $45.0 \times n^{(-0.2)}$ g/kW h when n is 130 or more but less than 2000 rpm

(iii) 9.8 g/kW h when n is 2000 rpm or more

where n = rated engine speed (crankshaft revolutions per minute).

When using fuel composed of blends from hydrocarbons derived from petroleum refining, test procedure and measurement methods shall be in accordance with the NO_x Technical Code, taking into consideration the test cycles and weighting factors outlined in Appendix II to this Annex.

(b) Notwithstanding the provisions of sub-paragraph (a) of this paragraph, the operation of a diesel engine is permitted when:

(i) an exhaust gas cleaning system, approved by the Administration in accordance with the NO_x Technical Code, is applied to the engine to reduce onboard NO_x emissions at least to the limits specified in sub-paragraph (a), or

(ii) any other equivalent method, approved by the Administration taking into account relevant guidelines to be developed by the Organization, is applied to reduce onboard NO_x emissions at least to the limit specified in sub-paragraph (a) of this paragraph.

REGULATION 14

SULPHUR OXIDES (SO_x)

GENERAL REQUIREMENTS

(1) The sulphur content of any fuel oil used on board ships shall not exceed 4.5% m/m.

(2) The worldwide average sulphur content of residual fuel oil supplied for use on board ships shall be monitored taking into account guidelines to be developed by the Organization*.

*Refer to resolution MEPC.82 (43). Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use on board ships.

REQUIREMENTS WITHIN SO_x EMISSION CONTROL AREAS

- (3) For the purpose of this regulation, SO_x emission control areas shall include:
- (a) the Baltic Sea area as defined in regulation 10 (1) (b) of Annex I and the North Sea area as defined in regulation 5 (1) (f) of Annex V; and
 - (b) any other sea area, including port areas, designated by the Organization in accordance with criteria and procedures for designation of SO_x emission control areas with respect to the prevention of air pollution from ships contained in Appendix III to this Annex.
- (4) While ships are within SO_x emission control areas, at least one of the following conditions shall be fulfilled:
- (a) the sulphur content of fuel oil used on board ships in a SO_x emission control area does not exceed 1.5% m/m;
 - (b) an exhaust gas cleaning system, approved by the Administration taking into account guidelines to be developed by the Organization, is applied to reduce the total emission of sulphur oxides from ships, including both auxiliary and main propulsion engines, to 6.0 g SO_x/kW h or less calculated as the total weight of sulphur dioxide emission. Waste streams from the use of such equipment shall not be discharged into enclosed ports, harbours and estuaries unless it can be thoroughly documented by the ship that such waste streams have no adverse impact on the ecosystems of such enclosed ports, harbours and estuaries, based upon criteria communicated by the authorities of the port State to the Organization. The Organization shall circulate the criteria to all Parties to the Convention; or
 - (c) any other technological method that is verifiable and enforceable to limit SO_x emissions to a level equivalent to that described in sub-paragraph (b) is applied. These methods shall be approved by the Administration taking into account guidelines to be developed by the Organization.
- (5) The sulphur content of fuel oil referred to in paragraph (1) and paragraph (4) (a) of this regulation shall be documented by the supplier as required by regulation 18 of this Annex.
- (6) Those ships using separate fuel oils to comply with paragraph (4) (a) of this regulation shall allow sufficient time for the fuel oil service system to be fully flushed of all fuels exceeding 1.5% m/m sulphur content prior to entry into a SO_x emission control area. The volume of low sulphur fuel oils (less than or equal to 1.5% sulphur content) in each tank as well as the date, time, and position of the ship when any fuel changeover operation is completed, shall be recorded in such log book as prescribed by the Administration.
- (7) During the first 12 months immediately following entry into force of the present Protocol, or of an amendment to the present Protocol designating a specific SO_x emission control area under paragraph (3) (b) of this regulation, ships entering a SO_x emission control area referred to in paragraph (3) (a) of this regulation or designated under paragraph (3) (b) of this regulation are exempted from the requirements in paragraphs (4) and (6) of this regulation and from the requirements of paragraph (5) of this regulation insofar as they relate to paragraph (4) (a) of this regulation.

REGULATION 15

VOLATILE ORGANIC COMPOUNDS

- (1) If the emissions of volatile organic compounds (VOCs) from tankers are to be regulated in ports or terminals under the jurisdiction of a Party to the Protocol of 1997, they shall be regulated

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in accordance with the provisions of this regulation.

(2) A Party to the Protocol of 1997 which designates ports or terminals under its jurisdiction in which VOCs emissions are to be regulated, shall submit a notification to the Organization. This notification shall include information on the size of tankers to be controlled, on cargoes requiring vapour emission control systems, and the effective date of such control. The notification shall be submitted at least six months before the effective date.

(3) The Government of each Party to the Protocol of 1997 which designates ports or terminals at which VOCs emissions from tankers are to be regulated shall ensure that vapour emission control systems, approved by that Government taking into account the safety standards developed by the Organization*, are provided in ports and terminals designated, and are operated safely and in a manner so as to avoid undue delay to the ship.

*Refer to MSC/Circ.585, Standards for vapour emission control systems.

(4) The Organization shall circulate a list of the ports and terminals designated by the Parties to the Protocol of 1997 to other Parties to the Protocol of 1997 and Member States of the Organization for their information.

(5) All tankers which are subject to vapour emission control in accordance with the provisions of paragraph (2) of this regulation shall be provided with a vapour collection system approved by the Administration taking into account the safety standards developed by the Organization*, and shall use such system during the loading of such cargoes. Terminals which have installed vapour emission control systems in accordance with this regulation may accept existing tankers which are not fitted with vapour collection systems for a period of three years after the effective date identified in paragraph (2).

*Refer to MSC/Circ.585, Standards for vapour emission control systems.

(6) This regulation shall only apply to gas carriers when the type of loading and containment systems allow safe retention of non-methane VOCs on board, or their safe return ashore.

REGULATION 16

SHIPBOARD INCINERATION

(1) Except as provided in paragraph (5), shipboard incineration shall be allowed only in a shipboard incinerator.

(2)

(a) Except as provided in sub-paragraph (b) of this paragraph, each incinerator installed on board a ship on or after 1st January 2000 shall meet the requirements contained in Appendix IV to this Annex. Each incinerator shall be approved by the Administration taking into account the standard specifications for shipboard incinerators developed by the Organization*.

*Refer to resolution MEPC 76 (40), Standard specification for shipboard incinerators, and resolution MEPC.93 (45), Amendments to the Standard specification for shipboard incinerators.

(b) The Administration may allow exclusion from the application of sub-paragraph (a) of this paragraph to any incinerator which is installed on board a ship before the date of entry into force of the Protocol of 1997, provided that the ship is solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly.

(3) Nothing in this regulation affects the prohibition in, or other requirements of, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended,

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and the 1996 Protocol thereto.

(4) Shipboard incineration of the following substances shall be prohibited:

- (a) Annex I, II and III cargo residues of the present Convention and related contaminated packing materials;
- (b) polychlorinated biphenyls (PCBs);
- (c) garbage, as defined in Annex V of the present Convention, containing more than traces of heavy metals; and
- (d) refined petroleum products containing halogen compounds.

(5) Shipboard incineration of sewage sludge and sludge oil generated during the normal operation 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.

(6) Shipboard incineration of polyvinyl chlorides (PVCs) shall be prohibited, except in shipboard incinerators for which IMO Type Approval Certificates have been issued.

(7) All ships with incinerators subject to this regulation shall possess a manufacturer's operating manual which shall specify how to operate the incinerator within the limits described in paragraph (2) of Appendix IV to this Annex.

(8) Personnel responsible for operation of any incinerator shall be trained and capable of implementing the guidance provided in the manufacturer's operating manual.

(9) Monitoring of combustion flue gas outlet temperature shall be required at all times and waste shall not be fed into a continuous-feed shipboard incinerator when the temperature is below the minimum allowed temperature of 850°C. For batch-loaded shipboard incinerators, the unit shall be designed so that the temperature in the combustion chamber shall reach 600°C within five minutes after start-up.

(10) Nothing in this regulation precludes the development, installation and operation of alternative design shipboard thermal waste treatment devices that meet or exceed the requirements of this regulation.

REGULATION 17

RECEPTION FACILITIES

(1) The Government of each Party to the Protocol of 1997 undertakes to ensure the provision of facilities adequate to meet the:

- (a) needs of ships using its repair ports for the reception of ozone-depleting substances and equipment containing such substances when removed from ships;
- (b) needs of ships using its ports, terminals or repair ports for the reception of exhaust gas cleaning residues from an approved exhaust gas cleaning system when discharge into the marine environment of these residues is not permitted under regulation 14 of this Annex;

without causing undue delay to ships, and

- (c) needs in ship breaking facilities for the reception of ozone-depleting substances and equipment containing such substances when removed from ships.

(2) Each Party to the Protocol of 1997 shall notify the Organization for transmission to the

Members of the Organization of all cases where the facilities provided under this regulation are unavailable or alleged to be inadequate.

REGULATION 18

FUEL OIL QUALITY

(1) Fuel oil for combustion purposes delivered to and used on board ships to which this Annex applies shall meet the following requirements:

(a) except as provided in sub-paragraph (b):

(i) the fuel oil shall be blends of hydrocarbons derived from petroleum refining. This shall not preclude the incorporation of small amounts of additives intended to improve some aspects of performance;

(ii) the fuel oil shall be free from inorganic acid;

(iii) the fuel oil shall not include any added substance or chemical waste which either:

(1) jeopardizes the safety of ships or adversely affects the performance of the machinery, or

(2) is harmful to personnel, or

(3) contributes overall to additional air pollution; and

(b) fuel oil for combustion purposes derived by methods other than petroleum refining shall not:

(i) exceed the sulphur content set forth in regulation 14 of this Annex;

(ii) cause an engine to exceed the NO_x emission limits set forth in regulation 13 (3) (a) of this Annex;

(iii) contain inorganic acid; and

(iv)

(1) jeopardize the safety of ships or adversely affect the performance of the machinery, or

(2) be harmful to personnel, or

(3) contribute overall to additional air pollution.

(2) This regulation does not apply to coal in its solid form or nuclear fuels.

(3) For each ship subject to regulations 5 and 6 of this Annex, details of fuel oil for combustion purposes delivered to and used on board shall be recorded by means of a bunker delivery note which shall contain at least the information specified in Appendix V to this Annex.

(4) The bunker delivery note shall be kept on board the ship in such a place as to be readily available for inspection at all reasonable times. It shall be retained for a period of three years after the fuel oil has been delivered on board.

(5)

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(a) The competent authority* of the Government of a Party to the Protocol of 1997 may inspect the bunker delivery notes on board any ship to which this Annex applies while the ship is in its port or offshore terminal, may make a copy of each delivery note, and may require the master or person in charge of the ship to certify that each copy is a true copy of such bunker delivery note. The competent authority may also verify the contents of each note through consultations with the port where the note was issued.

*Refer to resolution A.787 (19), Procedures for port State control, as amended by A.882 (21); See IMO sales publication IMO-650E.

(b) The inspection of the bunker delivery notes and the taking of certified copies by the competent authority under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

(6) The bunker delivery note shall be accompanied by a representative sample of the fuel oil delivered, taking into account guidelines to be developed by the Organization. The sample is to be sealed and signed by the supplier's representative and the master or officer in charge of the bunker operation on completion of bunkering operations and retained under the ship's control until the fuel oil is substantially consumed, but in any case for a period of not less than 12 months from the time of delivery.

(7) Parties to the Protocol of 1997 undertake to ensure that appropriate authorities designated by them:

(a) maintain a register of local suppliers of fuel oil;

(b) require local suppliers to provide the bunker delivery note and sample as required by this regulation, certified by the fuel oil supplier that the fuel oil meets the requirements of regulations 14 and 18 of this Annex;

(c) require local suppliers to retain a copy of the bunker delivery note for at least three years for inspection and verification by the port State as necessary;

(d) take action as appropriate against fuel oil suppliers that have been found to deliver fuel oil that does not comply with that stated on the bunker delivery note;

(e) inform the Administration of any ship receiving fuel oil found to be non-compliant with the requirements of regulations 14 and 18 of this Annex; and

(f) inform the Organization for transmission to Parties to the Protocol of 1997 of all cases where fuel oil suppliers have failed to meet the requirements specified in regulations 14 and 18 of this Annex.

(8) In connection with port State inspections carried out by Parties to the Protocol of 1997, the Parties further undertake to:

(a) inform the Party or non-Party under whose jurisdiction a bunker delivery note was issued of cases of delivery of non-compliant fuel oil, giving all relevant information; and

(b) ensure that remedial action as appropriate is taken to bring non-compliant fuel oil discovered into compliance.

REGULATION 19

REQUIREMENTS FOR PLATFORMS AND DRILLING RIGS

(1) Subject to the provisions of paragraphs (2) and (3) of this regulation, fixed and floating platforms and drilling rigs shall comply with the requirements of this Annex.

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(2) Emissions directly arising from the exploration, exploitation and associated offshore processing of sea-bed mineral resources are, consistent with article 2 (3) (b) (ii) of the present Convention, exempt from the provisions of this Annex. Such emissions include the following:

- (a) emissions resulting from the incineration of substances that are solely and directly the result of exploration, exploitation and associated offshore processing of sea-bed mineral resources, including but not limited to the flaring of hydrocarbons and the burning of cuttings, muds, and/or stimulation fluids during well completion and testing operations, and flaring arising from upset conditions;
- (b) the release of gases and volatile compounds entrained in drilling fluids and cuttings;
- (c) emissions associated solely and directly with the treatment, handling, or storage of sea-bed minerals; and
- (d) emissions from diesel engines that are solely dedicated to the exploration, exploitation and associated offshore processing of sea-bed mineral resources.

(3) The requirements of regulation 18 of this Annex shall not apply to the use of hydrocarbons which are produced and subsequently used on site as fuel, when approved by the Administration.

APPENDICES TO ANNEX VI

APPENDIX I

INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified of the Protocol of 1978 related thereto (hereinafter referred to as “the Convention”) under the authority of the Government of:

.....
(full designation of the country)

by
(full designation of the competent person or organization authorized under the provisions of the Convention)

Name of ship	Distinctive number or letters	IMO number	Port of registry	Gross tonnage

Type of ship: tanker
 ships other than a tanker

THIS IS TO CERTIFY:

1. That the ship has been surveyed in accordance with regulation 5 of Annex VI of the Convention; and

2. That the survey shows that the equipment, systems, fittings, arrangements and materials fully comply with the applicable requirements of Annex VI of the Convention.

This certificate is valid until subject to surveys in accordance with regulation 5 of Annex VI of the Convention.

Issued at
(Place of issue of certificate)

.....
(Date of issue)

.....
(Signature of duly authorized official issuing the certificate)

(Seal or stamp of the authority, as appropriate)

INTERNATIONAL AIR POLLUTION
PREVENTION CERTIFICATE

Issued under the provisions of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and as amended by resolution MEPC.132(53), (hereinafter referred to as “the Convention”) under the authority of the Government of:

.....
(full designation of the country)

by
(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship*

Name of ship

Distinctive number or letters

Port of registry

Gross tonnage

IMO Number†

Type of ship:

Tanker

Ship other than a tanker

*Alternatively, the particulars of the ship may be placed horizontally in boxes.

†In accordance with IMO ship identification number scheme adopted by the Organization by resolution A.600(15).

THIS IS TO CERTIFY:

1. That the ship has been surveyed in accordance with regulation 5 of Annex VI of the Convention; and

2. That the survey shows that the equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of Annex VI of the Convention.

Completion date of the survey on which this certificate is based:

..... dd/mm/yyyy

This certificate is valid until †subject to surveys in accordance with regulation 5 of Annex VI of the Convention.

Issued at

(Place of issue of certificate)

.....
(Date of Issue)

.....
*(Signature of authorized official
issuing the certificate)*

(Seal or stamp of the authority, as appropriate)

†Insert the date of expiry as specified by the Administration in accordance with regulation 9 (1) of Annex VI of the Convention. The day and the month of this date correspond to the anniversary date as defined in regulation 2 (14) of Annex VI of the Convention, unless amended in accordance with regulation 9 (8) of Annex VI of the Convention.

ENDORSEMENT FOR
ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that at a survey required by regulation 5 of Annex VI of the Convention the ship was found to comply with the relevant provisions of the Convention:

Annual survey: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

Annual/Intermediate survey*: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

Annual/Intermediate survey*: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

*Delete as appropriate.

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that at a survey required by regulation 5 of Annex VI of the Convention the ship was found to comply with the relevant provisions of the Convention:

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Annual/Intermediate* survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Annual/Intermediate* survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate.

ANNUAL/INTERMEDIATE SURVEY
IN ACCORDANCE WITH REGULATION 9 (8) (c)

THIS IS TO CERTIFY that, at an annual/intermediate* survey in accordance with regulation 9 (8) (c) of Annex VI of the Convention, the ship was found to comply with the relevant provisions of the Convention:

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID
FOR LESS THAN 5 YEARS WHERE REGULATION 9 (3) APPLIES

The ship complies with the relevant provisions of the Convention, and this certificate shall, in accordance with regulation 9 (3) of Annex VI of the Convention, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

*Delete as appropriate.

ENDORSEMENT WHERE THE RENEWAL SURVEY
HAS BEEN COMPLETED AND REGULATION 9 (4) APPLIES

The ship complies with the relevant provisions of the Convention, and this certificate shall, in accordance with regulation 9 (4) of Annex VI of the Convention, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT TO EXTEND THE VALIDITY OF
THE CERTIFICATE UNTIL REACHING THE PORT OF
SURVEY OR FOR A PERIOD OF GRACE WHERE
REGULATION 9 (5) OR (6) APPLIES

This certificate shall, in accordance with regulation 9 (5) or (6)* of Annex VI of the Convention, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

*Delete as appropriate.

ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE
WHERE REGULATION 9(8) APPLIES

In accordance with regulation 9(8) of Annex VI of the Convention, the new anniversary date
is

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

In accordance with regulation 9(8) of Annex VI of the Convention, the new anniversary date
is

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

SUPPLEMENT TO
INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(IAPP CERTIFICATE)

RECORD OF CONSTRUCTION AND EQUIPMENT

In respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as “the Convention”).

Notes:

1. This Record shall be permanently attached to the IAPP Certificate. The IAPP Certificate shall be available on board the ship at all times.
2. The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
3. Entries in boxes shall be made by inserting either a cross (x) for the answer “yes” and “applicable” or a (–) for the answers “no” and “not applicable” as appropriate.
4. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and resolutions or circulars refer to those adopted by the International Maritime Organization.

1. Particulars of ship

- 1.1 Name of ship
- 1.2 Distinctive number or letters
- 1.3 IMO number
- 1.4 Port of registry
- 1.5 Gross tonnage
- 1.6 Date on which keel was laid or ship was at a similar stage of construction
.....
- 1.7 Date of commencement of major engine conversion (if applicable)
(regulation 13):

2. Control of emissions from ships

2.1 *Ozone-depleting substances (regulation 12)*

2.1.1 The following fire extinguishing systems and equipment containing halons may continue in service:

<i>System equipment</i>	<i>Location on board</i>

2.1.2 The following systems and equipment containing CFCs may continue in service:

<i>System equipment</i>	<i>Location on board</i>

2.1.3 The following systems containing hydro-chlorofluorocarbons (HCFCs) installed before 1st January 2020 may continue in service:

<i>System equipment</i>	<i>Location on board</i>

2.2 *Nitrogen oxides (NO_x) (regulation 13)*

2.2.1 The following diesel engines with power output greater than 130 kW, and installed on a ship constructed on or after 1st January 2000, comply with the emission standards of regulation 13 (3) (a) in accordance with the NO_x Technical Code:

<i>Manufacturer and model</i>	<i>Serial number</i>	<i>Use</i>	<i>Power output (kW)</i>	<i>Rated speed (rpm)</i>

2.2.2 The following diesel engines with power output greater than 130 kW, and which underwent major conversion per regulation 13 (2) on or after 1st January 2000, comply with the emission standards of regulation 13 (3) (a) in accordance with the NO_x Technical Code:

<i>Manufacturer and model</i>	<i>Serial number</i>	<i>Use</i>	<i>Power output (kW)</i>	<i>Rated speed (rpm)</i>

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2.2.3 The following diesel engines with a power output greater than 130 kW and installed on a ship constructed on or after 1st January 2000, or with a power output greater than 130 kW and which underwent major conversion per regulation 13 (2) on or after 1st January 2000, are fitted with an exhaust gas cleaning system or other equivalent methods in accordance with regulation 13 (3), and the NO_x Technical Code:

<i>Manufacturer and model</i>	<i>Serial number</i>	<i>Use</i>	<i>Power output (kW)</i>	<i>Rated speed (rpm)</i>

2.2.4 The following diesel engines from 2.2.1, 2.2.2 and 2.2.3 above are fitted with NO_x emission monitoring and recording devices in accordance with the NO_x Technical Code:

<i>Manufacturer and model</i>	<i>Serial number</i>	<i>Use</i>	<i>Power output (kW)</i>	<i>Rated speed (rpm)</i>

2.3 Sulphur oxides (SO_x) (regulation 14)

2.3.1 When the ship operates within an SO_x emission control area specified in regulation 14 (3), the ship uses:

- .1 fuel oil with a sulphur content that does not exceed 1.5% m/m as documented by bunker delivery notes; or
- .2 an approved exhaust gas cleaning system to reduce SO_x emissions below 6.0 g SO_x/kW h; or
- .3 other approved technology to reduce SO_x emissions below 6.0 g SO_x/kW h

2.4 Volatile organic compounds (VOCs) (regulation 15)

2.4.1 The tanker has a vapour collection system installed and approved in accordance with MSC/Circ.585

2.5 The ship has an incinerator:

- .1 which complies with resolution MEPC.76 (40) as amended
- .2 installed before 1st January 2000 which does not comply with resolution MEPC.76 (40) as amended

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at
(Place of issue of the Record)

.....
(Date of issue)

.....
(Signature of duly authorized official issuing the Record)

(Seal or stamp of the authority, as appropriate)

APPENDIX II

TEST CYCLES AND WEIGHTING FACTORS (REGULATION 13)

The following test cycles and weighting factors should be applied for verification of compliance of marine diesel engines with the NO_x limits in accordance with regulation 13 of this Annex using the test procedure and calculation method as specified in the NO_x Technical Code.

- .1 For constant-speed marine engines for ship main propulsion, including diesel-electric

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drive, test cycle E2 should be applied.

.2 For variable-pitch propeller sets test cycle E2 should be applied.

.3 For propeller-law-operated main and propeller-law-operated auxiliary engines test cycle E3 should be applied.

.4 For constant-speed auxiliary engines test cycle D2 should be applied.

.5 For variable-speed, variable-load auxiliary engines, not included above, test cycle C1 should be applied.

Test cycle for *constant-speed main propulsion* application (including diesel-electric drive or variable-pitch propeller installations)

Test cycle type E2	Speed	100%	100%	100%	100%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Test cycle for propeller-law-operated main and propeller-law-operated auxiliary engine application

Test cycle type E3	Speed	100%	91%	80%	63%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Test cycle for constant-speed auxiliary engine application

Test cycle type D2	Speed	100%	100%	100%	100%	100%
	Power	100%	75%	50%	25%	10%
	Weighting factor	0.05	0.25	0.3	0.3	0.1

Test cycle for variable-speed and -load auxiliary engine application

Test cycle type C1	Speed	Rated				Intermediate			Idle
	Torque	100%	75%	50%	10%	100%	75%	50%	0%
	Weighting factor	0.15	0.15	0.15	0.1	0.1	0.1	0.1	0.15

CRITERIA AND PROCEDURES FOR DESIGNATION OF SO_x EMISSION CONTROL AREAS

(REGULATION 14)

1. Objectives

1.1 The purpose of this appendix is to provide the criteria and procedures for the designation of SO_x emission control areas. The objective of SO_x emission control areas is to prevent, reduce, and control air pollution from SO_x emissions from ships and their attendant adverse impacts on land and sea areas.

1.2 A SO_x emission control area should be considered for adoption by the Organization if supported by a demonstrated need to prevent, reduce, and control air pollution from SO_x emissions from ships.

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2. Proposal criteria for designation of a SO_x emission control area

2.1 A proposal to the Organization for designation of a SO_x emission control area may be submitted only by Contracting States to the Protocol of 1997. Where two or more Contracting States have a common interest in a particular area, they should formulate a co-ordinated proposal.

2.2 The proposal shall include:

.1 a clear delineation of the proposed area of application of controls on SO_x emissions from ships, along with a reference chart on which the area is marked;

.2 a description of the land and sea areas at risk from the impacts of ship SO_x emissions;

.3 an assessment that SO_x emissions from ships operating in the proposed area of application of the SO_x emission controls are contributing to air pollution from SO_x, including SO_x deposition, and their attendant adverse impacts on the land and sea areas under consideration. Such assessment shall include a description of the impacts of SO_x emissions on terrestrial and aquatic ecosystems, areas of natural productivity, critical habitats, water quality, human health, and areas of cultural and scientific significance, if applicable. The sources of relevant data, including methodologies used, shall be identified;

.4 relevant information pertaining to the meteorological conditions in the proposed area of application of the SO_x emission controls and the land and sea areas at risk, in particular prevailing wind patterns, or to topographical, geological, oceanographic, morphological, or other conditions that may lead to an increased probability of higher localized air pollution or levels of acidification;

.5 the nature of the ship traffic in the proposed SO_x emission control area, including the patterns and density of such traffic; and

.6 a description of the control measures taken by the proposing Contracting State or Contracting States addressing land-based sources of SO_x emissions affecting the area at risk that are in place and operating concurrent with the consideration of measures to be adopted in relation to provisions of regulation 14 of Annex VI of the present Convention.

2.3 The geographical limits of an SO_x emission control area will be based on the relevant criteria outlined above, including SO_x emission and deposition from ships navigating in the proposed area, traffic patterns and density, and wind conditions.

2.4 A proposal to designate a given area as an SO_x emission control area should be submitted to the Organization in accordance with the rules and procedures established by the Organization.

3. Procedures for the assessment and adoption of SO_x emission control areas by the Organization

3.1 The Organization shall consider each proposal submitted to it by a Contracting State or Contracting States.

3.2 A SO_x emission control area shall be designated by means of an amendment to this Annex, considered, adopted and brought into force in accordance with article 16 of the present Convention.

3.3 In assessing the proposal, the Organization shall take into account the criteria which are

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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 tons)

Density at 15°C (kg/m³)*

*Fuel oil should be tested in accordance with ISO 3675.

Sulphur content (% m/m)*

*Fuel oil should be tested in accordance with ISO 8754.

SECOND SCHEDULE

Regulation 10

FEES

1. Time spent involving the following:

(a) review of plans, drawings, record books, manuals, specifications, calculations, arrangements and details of hull, systems, materials, machinery and equipment and processing applications for exemption and extension of certificates;

(b) surveys (initial, annual, intermediate and renewal) full or partial; or

(c) inspection of equipment for the issue of type approval or acceptance certificate (per model):

(i) per hour or part thereof \$60

(ii) transport for each visit within Singapore, if required \$40

2. Inspection or survey outside office hours (in addition to the appropriate fee prescribed for the survey or inspection):

(a) first hour or part thereof; \$120

(b) each additional 30 minutes or part thereof; \$60

(c) transport for each visit within Singapore, if required \$40

3. Survey or inspection conducted abroad (in addition to the appropriate fee prescribed for the survey or inspection):

(a) first 24 hours or part thereof during which the surveyor is absent from Singapore on account of such survey or inspection; \$600

(b) each subsequent hour or part thereof after the first 24 hours, subject to a maximum charge of \$600 for each period of 24 hours; \$60

(c) travelling, taxation, fee for a visa if required and any expenses incurred arising from the survey abroad; and Actual cost

(d) board, lodging, insurance coverage and reasonable subsistence for the surveyor Sum to be determined by the Director in accordance with Instruction Manual of the Authority

4. Issue of a certificate or a report or a new certificate on strength of an existing certificate \$65

Prevention of Pollution of the Sea (Air) Regulations

- | | |
|---|--------|
| 5. Amendment of any particulars on any certificate (if any inspection or survey is required, charges in accordance with item 1 shall be added) | \$14 |
| 6. Engine International Air Pollution Certificate and type approval/acceptance certificate on strength of certificate/report issued by other Convention countries (per model) | \$180. |

Made this 9th day of March 2005.

PETER ONG
Chairman,
Maritime and Port Authority of Singapore.

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